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# THE BIRDS OF DURGAPUR AND THE DAMODAR VALLEY<sup>1</sup>

F. M. GAUNTLETT<sup>2</sup>

(With a map)

A systematic list is given of birds recorded by the author during a 3 year stay in Durgapur, West Bengal. The diversity of species was found to be comparable with other areas of lowland India. The seasonal occurrence of species is examined and compared with information for the Delhi area. Migrant species were much more numerous in spring than autumn.

## INTRODUCTION

Ornithological observations were made for three years between January 1968 and March 1971 while I was residing in Durgapur, West Bengal and this paper summarises the results which it is hoped will fill a gap in the published literature. E. H. N. Lowther worked in the Dhanbad area to the west in the 1930's (Lowther 1949) and various observations have been made in the Calcutta area to the east but the intervening area appears to have been ignored by ornithologists except for the author's earlier paper relating to Durgapur Barrage (Gauntlett 1972). Some details of that paper are included, extended and amended where necessary with the third year of observations.

The literature available to assist the amateur field ornithologist and relevant to the area was sparse to start with, compared with other areas such as Europe, but has improved considerably since, particularly with the completion of the HANDBOOK OF THE BIRDS OF INDIA AND PAKISTAN (Ali & Ripley 1968-1974), "The

handbook" henceforth and King *et al.* (1975). The standards of field identification of certain difficult species and groups, particularly birds of prey, have also been greatly assisted by new information which has appeared in more recent years. Some of my records have been reassessed in the light of this new information.

## METHODS

All observations were made as a part time hobby, but were almost daily in and around my bungalow and garden and twice daily trip to and from my office approx. 1.3 km away. On Saturday afternoons and Sundays excursions were made locally or further afield as opportunity and inclination arose. See appendix 1 for frequency of visits to main locations.

A certain amount of travelling was necessary in the course of my work and these journeys were also used for casual observations. These trips were to Calcutta, usually by train, occasionally by car, when a track-side transect of birds was carried out to while away the time. Road journeys were made by car to Santaldih or Jamshedpur, the route being across the R. Damodar at the barrage then via Maliara, Kusthalia, Saltora, Rangunathpur, then either continuing westward to Dudra

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and Santaldih, or turning southwards to Purulia, Balarampur, Chandil and Jamshedpur. Purulia was taken as the arbitrary limit for ornithological records. Trips were also made by car north-west up the GT road to Topchanchi, turning south through Gomoh to Chandrapura. A driver was usually provided for these journeys.

When the possibilities of making an ornithological contribution were realised, a regular diary was kept from March 1968 onwards. Notes during the first two months acclimatisation and familiarisation period were rather more haphazard and dates quoted are best estimates. Inevitable absences occurred from time to time due to local or home leave and periods of a week or more are listed in appendix 2. The poor coverage for October will be noted.

#### THE STUDY AREA

Durgapur is a heavy industrial development begun in the early 1960's located at 23° 30' North, 87° 15' East on the north bank of the Damodar river 185 km NW of Calcutta about half way between Burdwan and Asansol in the Burdwan district of West Bengal. The industrial area was about 20 km long by 6-7 km wide on a low laterite ridge which was once dense sal jungle. At the stage of development reached during the author's stay it was a patchwork of factory compounds, housing colonies, villages, bustees, patches of sal jungle and scrub, a few tanks and jeels and bare eroded scrubby wasteland. The highest point of the area is the triangulation point at 371' (113 m) above what was to become the town centre. The river level at the barrage is 219' (67 m). The axis of the area is governed by the river and runs from WNW to SSE and is followed by the Grand Trunk Road and the main line of the Eastern Railway.

From NW through E to SE a level plain stretches away to the R. Ganges, R. Hoogly and Calcutta with a dense rural population devoted to rice cultivation. The Ajoy (or Ajay) river some 20 to 30 km to the north follows a similar directional trend.

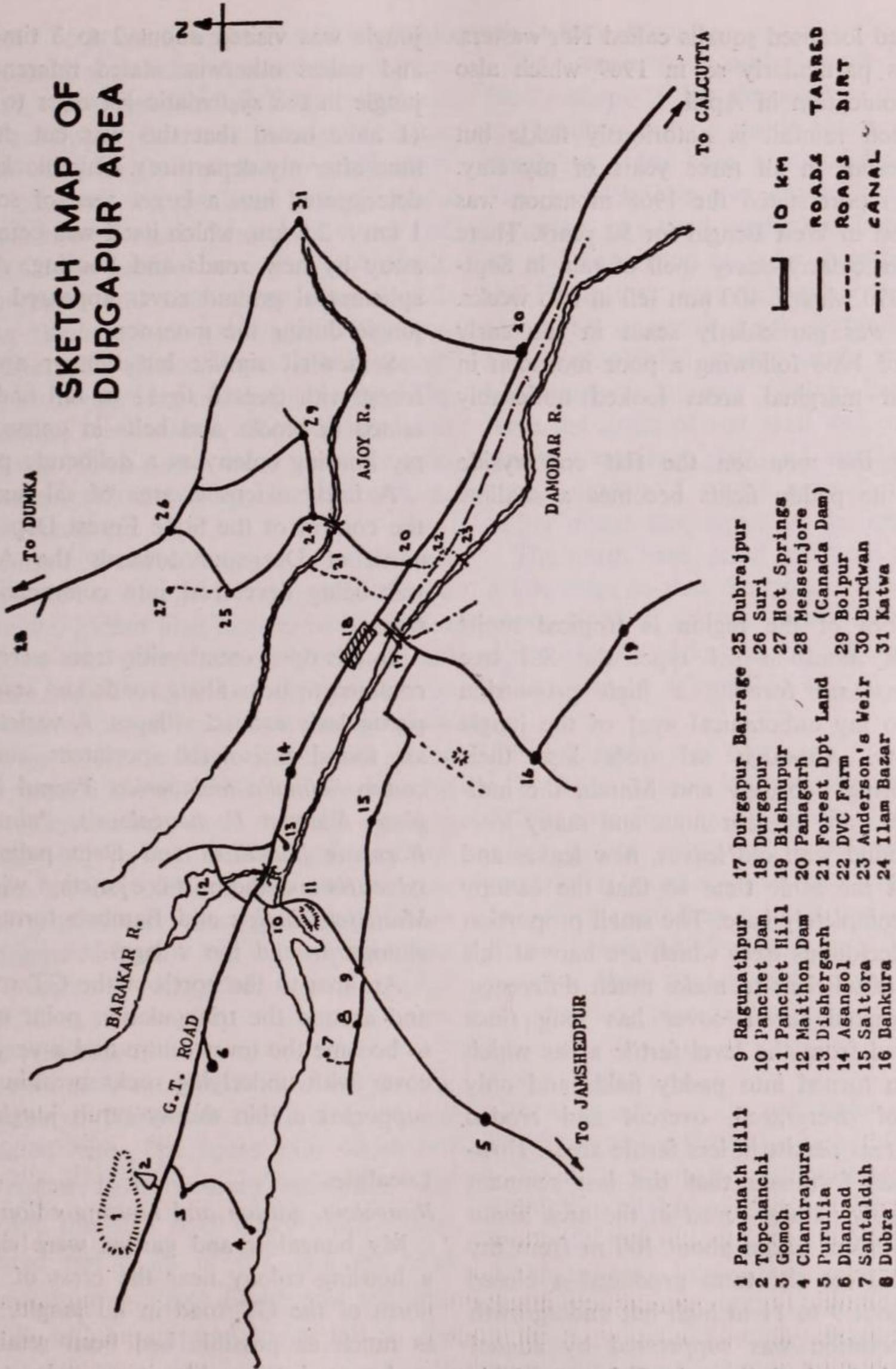
To the westward is the Jahria coalfield and the industrial towns of Asansol, Kulti, Burnpur, Dishergarh and the country is more undulating with isolated volcanic outcrops culminating in Panchet Hill 2110' (643 m) and the low hills around Maithon dam on the Barakar river which forms the border with Bihar. South of the Damodar river is Bankura district which is less fertile and more undulating, these trends being more pronounced in Purulia district which geographically resembles Bihar more than West Bengal.

#### Climate

The climate of Durgapur is tropical monsoon in character with most (+90%) of the annual rainfall (c. 1400 mm) falling in heavy thunderstorms from the end of May to early September during the SW monsoon (which actually comes in from the SE). The rainy season can sometimes be extended into October or November when fringes of cyclones in the head of the Bay of Bengal cover the area as was the case in 1970.

The monsoon is followed by a cool (relatively) dry winter from October to February although a little rain can occur in early January (known locally as Christmas rains). Day temperatures rise to around 18° to 24°C. Frost is unknown, the minimum temperature during my stay according to press weather report was 8.3°C.

From early March the temperature begins to rise and mid-day shade temperatures by mid April can be expected to reach 43°C and with 49°C not unknown in May. During the hot weather brief showers can be brought by



short lived localised squalls called Nor'westers. This was particularly so in 1969 which also had cyclonic rain in April.

Monsoon rainfall is notoriously fickle but was generous in all three years of my stay. A press report stated the 1968 monsoon was the wettest in West Bengal for 50 years. There was a particularly heavy spell of rain in September 1970 when c 400 mm fell in two weeks. Rainfall was particularly scant in the early months of 1968 following a poor monsoon in 1967 and marginal areas looked noticeably arid.

During the monsoon the flat countryside with all its paddy fields becomes a shallow swamp.

### Flora

The flora of the region is tropical moist deciduous monsoon sal type, the Sal tree *Shorea robusta* forming a high proportion (+80% to my unbotanical eye) of the jungle community. Although sal trees lose their leaves during February and March, the individual trees are asynchronous and many trees can be found with old leaves, new leaves and flowers at the same time so that the canopy is never completely bare. The small proportion of truly deciduous trees which are bare at this time are insufficient to make much difference.

The original forest cover has long since disappeared from the level fertile areas which have been turned into paddy fields and only pockets of overgrazed, overcut and eroded scrubby areas persist in less fertile areas. However I was fortunate that the last remnant of reasonably natural forest in the area about 400 m × 400 m began about 100 m from my bungalow. Here the trees produced a closed canopy about 9 to 11 m high but undergrowth and regeneration was suppressed by annual burning of the leaf litter in February. This

jungle was visited about 2 to 3 times a week and unless otherwise stated references to sal jungle in the systematic list refer to this area. (I have heard that this was cut down some time after my departure). This block gradually deteriorated into a larger area of scrub about 1 km × 2.5 km, which itself was being whittled away by new roads and housing. A flush of ephemereal ground cover appeared in the sal jungle during the monsoon.

Somewhat similar but thinner areas of sal forest with trees 8 to 11 m tall had been retained in blocks and belts in unused parts of my housing colony as a deliberate policy.

A fairly extensive area of sal jungle under the control of the State Forest Dept some km north of Durgapur towards the Ajoy river was being developed into commercial plantations.

In the open countryside trees were generally confined to belts along roads and small clumps particularly around villages. A variety of trees are found as isolated specimens, such as silk cotton *Salmalia malabarica*, Peepul *Ficus religiosa*, Banyan *F. bengalensis*, Palmyra palm *Borassus flabellifer* and Date palm *Phoenix sylvestris* and these in conjunction with Mango *Mangifera indica* and Bamboo form much of clumps around the villages.

An area to the north of the GT road below and around the triangulation point which was to become the town centre had a very thin soil cover with underlying rocks breaking through supported a thin thorny scrub jungle.

### Localities

*Bungalow, garden and housing colony.*

My bungalow and garden were situated in a housing colony near the crest of the ridge north of the GT road in sal jungle, of which as much as possible had been retained. My garden, and others like it, was about 0.27 ha

(2/3 acre) of lawn, flowerbeds and vegetable garden dotted with sal and other jungle trees. Flowering exotics included Gul Mohr *Delonix regia*, Frangipani *Plumeria rubra*, Hibiscus, Poinsettia *Euphorbia pulcherrima*, Oleander *Nerium odorum* and Malayan cherry *Muntingia calabura*. Bananas *Musa sapientum* and Papayas *Carica papaya* were grown for fruit. The bungalow and trees were draped with flowering climbers such as bougainvillea, bigonia, quisqualis, alamanda etc. It was screened from its neighbours and adjacent roads by hedges of sal trees with a thick undergrowth of hibiscus, lantana and other shrubs, again well covered with flowering climbers such as ipomoea, ixora, etc.

The verges of the colony roads were lined with trees such as Mango, Tulip tree *Spathodea campanulata*, Indian lilac *Lagerstroemia indica* and others. As stated above blocks of sal had been retained within the colony and were interspersed amongst the houses and gardens. The 400 m × 400 m block mentioned under "Flora" formed the boundary of the housing colony on one side. About half the distance of my daily trip to the office had sal jungle on both sides of the road and half past an area of waste ground with short grass dotted with dense clumps of bushes and a few palms with several hectares of paddy field beyond.

#### *Durgapur Barrage.*

This area was described in detail in my previous paper (Gauntlett 1972) and will not be repeated here. The heavy rain which fell in September 1970 occurred after that was written and the high river flows which resulted scoured out a lot of the incipient sand banks and water hyacinth *Eichhornia crassipes* islands. It will be referred to as DB in the systematic list.

#### *Anderson's Weir.*

This was a river control work built in the 1930's about 19 km downstream of Durgapur at Rondhia and its sluice fed a north bank canal but it has been rendered largely redundant by DB. The area around the inspection bungalow and head works had been landscaped and an avenue of large spreading trees of the Holm Oak type (*Quercus* sp.?) planted along the approach road. Some acacias had also been planted on the sandy river terrace. Upstream of the weir siltation had produced large flat areas of wet sand and mud. Downstream were large stabilised sandbanks with a sparse growth of coarse grasses. This gave a rather desert like aspect to the area.

The north bank canal had been cut through a low ridge so that the banks were quite high, about 10-12 m and the inner slopes carried a dense growth of low thorny shrubs.

The area is referred to as AW henceforth.

#### *DVC Experimental farm.*

This was located between Panagarh (13 km ESE) and Rondhia alongside the Damodar canal on the way to AW. Parts of it were sometimes irrigated from the adjacent canal in winter providing a local wet environment in an otherwise dry landscape. The kutchra road ran along the top of the canal bank giving a wide view over the flat countryside.

#### *Maithon Dam.*

The Barakar river has been dammed at Maithon (53 km WNW) where it flows through an area of low rocky hills before joining the Damodar. Visits here were social functions at the invitation of the yacht club and bird watching was rather circumscribed. However the lake was very turbid and did not appear to support much bird life. Brief acquaintance of the thick scrub clothing the low hills showed

it to be a difficult and unpleasant habitat to work, undergrowth being mostly thorny stinging creepers and shrubs. Sal was still the predominate tree.

#### *Messenjore Dam.*

A single visit was made to this locality, also known as Canada Dam, the setting being rather similar to Maithon but the tree cover is more deciduous. It is about 70 km N of Durgapur.

#### *Panchet Dam.*

On the Damodar close to Maithon and very similar but with more barren surroundings except for the wooded mass of Panchet hill overlooking it.

#### *Topchanchi.*

The Jahria Water Board reservoir at Topchanchi is at the eastern foot of Parasnath hill 4481' (1366 m) about 130 km WNW of Durgapur. The lower slopes of Parasnath and adjacent hills are well forested with much greater botanical variety than the sal jungle around Durgapur. Bamboo was much in evidence. Zoologically it is probably more akin to the Chotanagpur plateau than the Damodar valley.

### SYSTEMATIC LIST

The sequence and nomenclature follows the HANDBOOK, Ali and Ripley 1968-74 with English names for species according to the SYNOPSIS, Ripley 1982.

#### **Podiceps cristatus** (Linnaeus),

GREAT CRESTED GREBE

2 birds at DB on 8.ii.69 are the only record.

#### **Podiceps ruficollis** (Pallas),

LITTLE GREBE

A small resident population at DB with numbers buliding up to about 100 at the end of the hot weather in May when display and trilling recorded. Although none have been positively recorded elsewhere the marked drop in numbers at the start of the monsoon could indicate a dispersal to flooded jheels.

#### **Phalacrocorax carbo** (Linnaeus),

LARGE CORMORANT

Only three records, all at DB: In Feb. 1968, date uncertain, 3 on 20.xii.70 and 2 on 27.xii.70.

#### **Phalacrocorax fuscicollis** Stephens,

INDIAN SHAG

One at DB on 18.v.68 and a possible at AW on 20.i.68. A bird over my bungalow on 18.vi.68 which appeared bulkier than a Little Cormorant may also have been this species. Not easy to identify and may be more frequent than the records suggest.

#### **Phalacrocorax niger** (Vieillot),

LITTLE CORMORANT

A common and widespread resident on rivers, lakes, tanks, jheels, concentrating on the larger areas of permanent water in the dry season and spreading out widely to flood water during the monsoon when the birds become very mobile with many small flocks flying over my garden. Maximum flock of 150 at DB in Feb. and March.

#### **Anhinga rufa** (Daudin),

DARTER

Those recorded at DB as detailed in my previous paper are the only records in the area, apart from those in the cormorant colony in Calcutta zoo.

**Ardea cinerea** Linnaeus,

GREY HERON

DB was the main haunt where it was present throughout the year except during June and July. Maximum of 12 on two occasions in Feb./March 1970. Also recorded twice from AW and from the train to Calcutta.

**Ardea purpurea** Linnaeus,

PURPLE HERON

One at a jheel beside the road to Suri on 19.i.69 was the only record away from DB where it was probably resident with a maximum of 6 in one day.

**Ardeola striatus** (Linnaeus),

LITTLE GREEN HERON

Only one further record added to those in my earlier paper was again at DB on 16.i.71. One of the first species I encountered in India, one being seen beside the canal on the way from Dum Dum airport on the day of my arrival on 10.i.68. It was never seen there again.

**Ardeola grayii** (Sykes),

POND HERON

An abundant resident to be found on almost every bit of water from large lakes to the smallest puddles. Very mobile during the monsoon when often seen flying over my bungalow.

**Bubulcus ibis** (Linnaeus),

CATTLE EGRET

An abundant resident in both wet and dry areas, even entering sal jungle. Flocks of up to 50 in favoured localities. Often seen flying over my bungalow or walking on the road outside. Of about 600 egrets to be seen from the train on a typical trip to Calcutta during the monsoon, about 2/3 appeared to be Cattle Egrets. Acquisition of breeding plumage was noted in April.

**Egretta alba** (Linnaeus),

LARGE EGRET

8 or 10 present at DB throughout the year. Also recorded twice at AW in Feb. and 1 or 2 recorded on most train journeys to Calcutta.

**Egretta intermedia** (Wagler),

SMALLER EGRET

Status much as Large Egret but about twice as numerous and more likely to be found at roadside jheels and flooded paddy.

**Egretta garzetta** (Linnaeus),

LITTLE EGRET

Abundant resident second in numbers to Cattle Egret but more confined to wet habitats such as DB and AW. Widespread at jheels and flooded paddy during the monsoon. About 1/3 of the egrets seen from the train to Calcutta were this species. Often seen passing over my garden.

**Nycticorax nycticorax** (Linnaeus),

NIGHT HERON

Principally a monsoon visitor from May to September with 50+ mostly immatures at DB with much commuting to and fro over my bungalow at dusk. Outside this season, recorded at Messenjore Dam on 23.iii.69 and a single bird over my bungalow on 26.ii.70.

**Ixobrychus cinnamomeus** (Gmelin),

CHESTNUT BITTERN

Records at DB, c. 6, now extended from May to September. About a dozen records on floodwater and paddy during the monsoon.

**Ixobrychus sinensis** (Gmelin),

YELLOW BITTERN

Unlike the previous species never recorded away from DB where the status remains unchanged; 12+ from April to August.

**Dupetor flavicollis** (Latham),

BLACK BITTERN

Another monsoon bird at DB from May to September with 7 or 8 on 31.v.70. 5 or 6 records of single birds out in the countryside during June and July suggests some dispersion.

**Ibis leucocephalus** (Pennant),

PAINTED STORK

The single immature at DB on 17.iii.68 as given in my previous paper remains the only record for the area.

**Anastomus oscitans** (Boddaert),

OPENBILL STORK

Common resident recorded in every month of the year with a breeding colony in a village off the road near Saltora. Flocks of 90 to 100 recorded near Saltora on 18.vi.69, near the DVC farm on 17.viii.69 and at DB on 28.iii.70 and 18.vi.70. 10 to 20 was the more usual flock size but singles and pairs by no means uncommon. Between 10 and 30 recorded on most journeys to Calcutta. 18 records of varying numbers flying high over my garden.

**Ciconia episcopus** (Boddaert),

WHITENECKED STORK

Odd pairs thinly distributed over the countryside but a flock of 10 on irrigated paddy at the DVC farm on 2.ii.68 was unusual. Most records from January to May. Not recorded in June, July, November or December.

**Leptoptilos dubius** (Gmelin),

ADJUTANT

One beside the road to Jamshedpur in Bankura district with other storks and egrets on 25.vii.70.

**Leptoptilos javanicus** (Horsfield),

LESSER ADJUTANT

One bird at DB on 23.ii.69 was the only record.

**Threskiornis melanocephala** (Latham),

WHITE IBIS

A monsoon visitor with 7 records from June to August at DB or in flooded paddy. Maximum of 7 seen from the train to Calcutta on 20.vii.68.

**Pseudibis papillosa** (Temminck),

BLACK IBIS

One bird seen from the train to Calcutta on 2.v.68.

**Anser indicus** (Latham),

BARHEADED GOOSE

4 at DB on 17.iii.68.

**Dendrocygna javanica** (Horsfield),

LESSER WHISTLING TEAL

Present at DB throughout the year with numbers building up to a peak at the end of the dry season with approx. 3000 on 18.iv.70 and 6.iii.71. Spreads out to jheels and flood-water during the monsoon with many small flocks passing over my garden. 320 seen from the train to Calcutta on 17.vi.69.

**Dendrocygna bicolor** (Vieillot),

LARGE WHISTLING TEAL

Possibly overlooked amongst the previous species but the only definite record was a flock of 7 or 8 passing over my bungalow on 9.vi.68. Identified by white upper tail coverts and more ponderous wing beats.

**Tadorna ferruginea** (Pallas),

RUDDY SHELDUCK

Common winter visitor to sandy river beds

at DB and AW, usually upto 25 but 35 at DB on 16.i.71 and an exceptional 82 on the lake at DB on 11.i.69. Also recorded on the lake at Topchanchi on 10.iii.68 and a single bird flying over my garden on 20.i.69.

**Anas acuta** Linnaeus,

PINTAIL

Even the large numbers mentioned in my previous paper were surpassed in 1971. From about 3000 at the beginning of the year there were 4500 on 16.i.71, 11000 to 12000 on 23.i.71, 15000 on 7.ii.71 and c. 18000 on 14.ii.71. Three weeks later numbers had dropped to c. 6000. A flock of between 100 and 200 flying northwards over my bungalow on 11.iii.71 may be evidence for my earlier suggestion that this is a pre-migration gathering. The apparent yearly increase in peak numbers is believed to be a true effect because, despite the short duration of the peak, coverage was fairly regular at the critical season.

The species was also recorded at AW and Topchanchi.

**Anas crecca** Linnaeus,

TEAL

Another species where 1971 numbers exceeded those recorded previously with c. 1000 on 28.i.71, 7.ii.71 and 14.ii.71. Also recorded at Topchanchi on 25.i.70.

**Anas platyrhynchos** Linnaeus,

MALLARD

No further record to add to the 4 at DB on 23.xi.69 reported in my previous paper.

**Anas strepera** Linnaeus,

GADWALL

Numbers at DB during November and December 1970 were at or near the previous maximum of 200 but this increased to 500 on

16.i.71 and 1000 from 23.i.71 to 14.ii.71. The latest date of the season was 4 on 18.iv.70. Also recorded at AW on 23.xi.69.

**Anas penelope** Linnaeus,

WIGEON

Unlike other surface feeding ducks there was no increase in numbers in 1970/1971, the maximum again being 25. Only recorded at DB.

**Anas querquedula** Linnaeus,

GARGANEY

Recorded upto April at DB when 150 still present on 18.iv.70. Numbers during the 1970/71 winter built up from 23 on 15.xi.70 to c. 500 on 7.ii.71.

**Anas clypeata** Linnaeus,

SHOVELLER

Only at DB. Maximum numbers up from the previous 60 to c. 100 in early February 1971.

**Netta rufina** (Pallas),

REDCRESTED POCHARD

All at DB with two more records bringing the total to five. The Dec./Jan. season extended to February and March with 2 birds on 28.iii.70 and 7.ii.71.

**Aythya ferina** (Linnaeus),

POCHARD

Two more records of 12 on 23.xi.70 and 20 on 7.ii.71 brings the total number of records at DB to six. Its status in Durgapur does not reflect the comment in the **HANDBOOK** that it is one of the commonest diving ducks, that position being held by the Tufted Duck.

**Aythya nyroca** (Goldenstadt),

WHITE-EYED POCHARD

The previous two records at DB were doubled with 15 on 16.i.71 and 10 on 7.ii.71.

**Aythya fuligula** (Linnaeus),

TUFTED DUCK

The commonest diving duck being a regular winter visitor to DB from November to April with a peak of 200 in February and March. Two out of season records with 1 on 2.vi.68 and 4 males and 1 female on 1.viii.70. Unlike the surface feeding ducks diving ducks did not show any dramatic increase in numbers in 1970/71 compared with previous years.

**Nettapus coromandelianus** (Gmelin),

COTTON TEAL

DB was the headquarters for the species in the area with numbers reaching a maximum of 150 in March. Numerous small parties during the monsoon when it spread out to jheels and floodwater. Courtship flights seen in May.

**Sarkidiornis melanotos** (Pennant),

COMB DUCK

An irregular winter visitor to DB, quite common in some seasons and almost absent in others. Only two more records of 11 birds in February 1971. 1969/70 appears to have been a particularly good year.

**Elanus caeruleus** (Desfontaines),

BLACKWINGED KITE

Quite common, recorded in every month of the year with 3 together on one occasion. I can see no grounds for considering the bird crepuscular, all my observations being in broad daylight. Most records were of birds over paddyfields and scrub outside my office. Also seen quite frequently between Panagarh AW.

**Pernis ptilorhyncus** (Temminck),

HONEY BUZZARD

A total of nine records in January, February, March, August and September, three of these being birds flying over my garden. The others were over open country, particularly the better wooded areas such as Maithon and Messanjore Dam.

**Milvus migrans** (Boddaert),

BLACK KITE

Abundant resident augmented by winter visitors showing more prominent carpal patches. Several birds over my garden daily.

**Haliastur indus** (Boddaert),

BRAHMINY KITE

A single bird could usually be found on every visit to DB or AW. Much more widespread over jheels and flooded paddy during the monsoon when upto 6 could be seen in an afternoon. 1 over my garden on 30.ix.68.

**Accipiter badius** (Gmelin),

SHIKRA

Apart from 1 record at Dishergarh on 21.xii.69, the remaining 15 records were of single birds over or near my garden concentrated in the period November to March but also seen in June and July.

**Accipiter trivirgatus** (Temminck),

CRESTED GOSHAWK

1 at Topchanchi on 26.i.70. By coincidence what appeared to be a large accipiter flew past my office on the following day but was not identified for certain.

**Buteo rufinus** (Cretzschmar),

LONGLEGGED BUZZARD

A bird watched at close range on the ground beside the road between Bolpur and

Katwa remained a puzzle for a long time but when my notes and sketches could be compared with detailed descriptions it proved to be an immature pale phase of this species. Another *Buteo* at DVC farm on 26.i.68 was probably this species.

**Butastur teesa** (Franklin),

WHITE-EYED BUZZARD

Apart from one record in July all other records were for the dry season from October to May. A bird of the better wooded areas and sal jungles, with 15 records of birds over my garden or adjacent parts of the colony.

**Spizaetus cirrhatus** (Gmelin),

CRESTED HAWK-EAGLE

5 records between June and September 1968 of birds over my garden or the surrounding jungle. After an absence in 1969 another 5 records spread evenly throughout in 1970 with 1 more on 2.i.71.

**Hieraaetus fasciatus** (Vieillot),

BONELLI'S EAGLE

1 adult at AW on 16.ii.69.

**Hieraaetus pennatus** (Gmelin),

BOOTED EAGLE

Single birds over my garden on 14.ii.68 and 3.vii.70. A more problematical dark phase bird near the DVC farm on an unrecorded date.

**Aquila heliaca** Savigny,

IMPERIAL EAGLE

1 at the DVC farm on 21.i.68 identified by its light coloured shoulder patches.

**Aquila rapax** (Temminck),

TAWNY EAGLE

The aquila eagles are notoriously difficult

to identify with various immature plumages and colour phases but more recent published literature and field guides have thrown some light on the problem. Unless there was good reason for thinking otherwise aquilas were attributed to this species although the only aquila listed by Lowther for the Dhanbad district was *A. pomarina* Lesser Spotted Eagle. 1 near the road to Dubrajpur on 24.i.68, 1 low over the road between Panagarh and Ilam Bazar in Feb. 1968 (actual date not recorded) had its identification confirmed with the aid of a colour photograph taken with a 450 mm telephoto lense and 1 at AW on 5.i.69. The only monsoon record of an *Aquila* sp. was of one being mobbed by terns over the Ajoy river on 16.vi.68, which may have been a Lesser Spotted. Apart from this record all the others were confined to January-March with the majority in 1968 which was the driest period.

**Aquila clanga** Pallas,

GREATER SPOTTED EAGLE

1 near the Ajoy river from the Panagarh — Ilam Bazar road on 24.i.68 showing a white rump. This was about 16 km from where the Tawny Eagle was seen the same day. 1 over the lake at Topchanchi on 10.iii.68 showing the very broad wings and short tail of an immature and 1 over irrigated paddy at the DVC farm on 16.ii.69.

**Ictinaetus malayensis** (Temminck),

BLACK EAGLE

1 record of this unmistakable bird gliding with its characteristic slow flight along a wooded slope beside the reservoir at Messanjore dam on 23.iii.69.

**Torgos calvus** (Scopoli),

PONDICHERRY VULTURE

A pair seen at Maithon on most visits, a

single bird eating some offal on the office lawn on 18.xi.68 and 1 on 15.ii.70 in Bankura district near the road to Purulia.

**Gyps fulvus** (Hablizl),

GRIFFON VULTURE

9 records of pale *Gyps* vultures with white heads. 8 of these occurred in February, 6 of these being over my garden in 1969 and 1971. A single bird was presumably responsible for the 5 records from 6.ii.69 to 19.ii.69. The only non-February record was 1 on 5.xi.70. Grubb (1978) has indicated the difficulties of separating this species from immature Long-billed Vulture when the latter lacks its black head and neck. However I believe only Griffons could display such pale creamy white plumage as that seen on these birds.

**Gyps indicus** (Scopoli),

LONGBILLED VULTURE

Probably under-recorded by the 9 records spread over February, March, April, June, October and December without any discernible pattern. Single birds over my garden on 4 occasions. 3 of the other records were of 2 birds together.

**Gyps bengalensis** (Gmelin),

INDIAN WHITEBACKED VULTURE

Abundant resident with hardly a day going by without seeing at least one. Seen circling over my garden on numerous occasions in flocks upto 45. A steady stream heading east in ones or twos almost all day long on 1 and 2.iv.68 may suggest some seasonal movement with the monsoon.

**Neophron percnopterus** (Linnaeus),

EGYPTIAN VULTURE

Rather scarce in Durgapur itself with only 3 records. Commoner in Purulia District and

beyond Asansol into Bihar when most excursions into these areas would produce a bird or two.

**Circus cyaneus** (Linnaeus),

HEN HARRIER

1 at the DVC farm on 20.i.68.

**Circus macrourus** (S. G. Gmelin),

PALLID HARRIER

The statement in my previous paper that the species was quite common in winter now appears to have been over optimistic. There was 1 outside my office on 15.i.68 and then 4 records between 18.xii.68 and 24.iii.69, one of these being over my garden on 4.i.69. None at all were seen in either of the next two winters. A number of female or immature harriers could not be identified as to species and this might alter the picture.

**Circus melanoleucos** (Pennant),

PIED HARRIER

Winter visitor with 19 records between November and March, almost half of which were at DB. More likely to be found away from water than the Marsh Harrier. A complete absence of records for the 1970/71 winter suggests this was a particularly poor year for harriers.

**Circus aeruginosus** (Linnaeus),

MARSH HARRIER

By far the commonest harrier and recorded in every month except May, June and July. Most numerous over the reed beds at DB with upto 4 at once, but also seen over other watery habitats such as AW, canals and jheels. 2 records of birds flying over my garden. Unlike other harriers the species maintained its numbers in 1970/71.

**Circaetus gallicus** (Gmelin),

SHORT-TOED EAGLE

1 hunting over the sand banks at AW on 12.v.68.

**Spilornis cheela** (Latham),

CRESTED SERPENT EAGLE

1 over my garden on 31.v. or 1.vi.68 and 1 over the nearby jungle on 23.i.70.

**Pandion haliaetus** (Linnaeus),

OSPREY

June and July remain the only months when this bird has not been seen at DB. Also several records from AW with 2 on 15.xii.68.

**Falco peregrinus** Tunstall,

PEREGRINE FALCON

1 at DB on 15.ix.70.

**Falco subbuteo** Linnaeus or **F. severus** Horsfield, HOBBY or ORIENTAL HOBBY

A falcon believed to be *F. subbuteo* from a brief glimpse as it flew over my garden on 14.v.70 but the date is very late for a supposed winter visitor. The same or a similar bird was seen over the nearby jungle six weeks later on 26.vi.70.

**Falco chicquera** Daudin,

REDHEADED MERLIN

1 clearly seen beside DB on 29.xi.70. A small blue-grey falcon seen disappearing into a *Borassus* palm near my office 21.iii.68 was probably this species.

**Falco naumanni** Fleischer,

LESSER KESTREL

A party of 4 birds outside my office on 8.xii.69 showing the characteristic blue-grey wing coverts. Another group of 3 at Dishergarh on 21.xii.69.

**Falco tinnunculus** Linnaeus,

KESTREL

A winter visitor to the open countryside from early October to the end of March. 17 records in all with 1 over my garden on 29.iii.69, the latest date.

**Francolinus francolinus** (Linnaeus),

BLACK PARTRIDGE

4 records between 13.iv.68 and 2.vi.68 of a single bird in scrub habitats varying from sal jungle to dry riverside scrub downstream of DB. 1 seen from a train to Calcutta on 22.ix.70.

**Francolinus pondicerianus** (Gmelin),

INDIAN GREY PARTRIDGE

11 records spread throughout the year but not March, November or December. Usually 2 birds but 4 together on one occasion at DB. The grassy area with clumps of dense bushes beside the approach road to my office was a favourite haunt.

**Coturnix coromandelica** (Gmelin),

RAIN QUAIL

2 beside the road on the way to Rangunathpur on 9.vi.70. On several other occasions quail-like birds, either singly or in pairs, were seen scuttling across roads but were not specifically identified.

**Perdicula asiatica** (Latham),

JUNGLE BUSH QUAIL

A covey in an area of long grass and lantana scrub beside the road to Bishnupur on 18.ii.68. No other record nearer than Hazaribagh N.P.

**Galloperdix lunulata** (Valenciennes),

PAINTED SPURFOWL

No first hand evidence but friends reported birds seen quite often in the early morning on

the road to Maithon Yacht Club. This ran along the side of a wooded rocky hill and would appear an ideal habitat. Lowther found the bird at Topchanchi.

**Gallus gallus** (Linnaeus),

RED JUNGLE FOWL

A call was heard from deep in the sal jungle on 18.v.68 but nothing could be found on following it up. An early rising neighbour reported birds visiting his garden in the early mornings in April 1969 and two tail feathers had been picked up.

**Turnix tanki** Blyth,

YELLOWLEGGED BUTTON QUAIL

1 on fallow land at AW on 30.iii.69.

**Turnix suscitator** (Gmelin),

BUSTARD-QUAIL

The commonest of the small quail-like birds of the area and probably more numerous than the 10 records suggest, being found in most areas with a mixture of scrub and open ground, a habitat becoming increasingly widespread as the woodland disappeared. 1 bird scuttled across the road and into my garden on 21 viii.69.

**Amaurornis phoenicurus** (Pennant),

WHITEBREASTED WATERHEN

Quite common along the canal bund road to AW when they would emerge from the canal-side vegetation in the evening. Found in flooded paddy and even the office lawn during the monsoon. 1970 records at DB were confined to May but 7-8 on 31st was an unusually large number.

**Gallicrex cinerea** (Gmelin),

WATERCOCK

Only recorded from DB during the monsoon, at least 2 birds but none seen in 1970.

**Gallinula chloropus** (Linnaeus),

MOORHEN

The March-August pattern at DB continued in 1970 but with increased numbers of 20-30 at the end of May. An adult with chicks on 1.viii.70. Also seen at a roadside jheel near Ragunathpur on 16.xii.70 (the only winter record) and from the train to Calcutta on 7.iv.69.

**Porphyrio porphyrio** (Linnaeus),

PURPLE MOORHEN

DB was the only place where the species was recorded and the status remained unchanged from that reported previously, i.e. upto 7-8 from March to August.

**Fulica atra** Linnaeus,

COOT

Wintering in small numbers at DB but maximum in 1970/71 was only 3. The solitary record on 2.vi.68 at DB remains the only summer record.

**Hydrophasianus chirurgus** (Scopoli),

PHEASANT-TAILED JACANA

Common resident at DB with upto 200 in April. Recorded in every month except October (but only two visits in three years at that time). Could also be found on suitable marshy jheels but less likely than next species. Nuptial display was noted in May and birds began moulting out of breeding dress in mid-September. Thus they could be more retiring and less likely to be seen in October.

**Metopidius indicus** (Latham),

BRONZEWINGED JACANA

Common and widespread resident on jheels and wet habitats, but less gregarious than the previous species. 24 were recorded from the train to Calcutta on 7.iv.69. Numbers con-

centrated at DB during the hot weather with 50-60 in March and April. Smaller numbers recorded there throughout the year except October.

**Vanellus cinereus** (Blyth),

GREYHEADED LAPWING

1 at DB on 18.iv.70.

**Vanellus indicus** (Boddaert)

REDWATTLED LAPWING

A common resident in wet areas becoming more mobile during the monsoon. DB and AW were regular haunts but also found on jheels and flooded paddy. 2 records of birds flying over my garden in June.

**Vanellus spinosus** (Linnaeus),

SPURWINGED LAPWING

1 or 2 records of single birds on the sand banks at AW in January and February in each winter.

**Vanellus malabaricus** (Boddaert),

YELLOW-WATTLED LAPWING

Usually a pair or two on the dry sandy areas at AW from January to May. Maximum number was 6 on 3.i.71. A pair also found an area of the adjacent factory compound used for dumping foundry slag to their liking producing the only June record on 4.vi.70. 1 downstream of DB on 11.iv.70 was the only record there.

**Pluvialis squatarola** (Linnaeus),

GREY PLOVER

1 downstream of DB on 24.iii.68 and 1 on fallow land in Bankura district about 1 or 2 km south of DB on 29.ix.68.

**Pluvialis dominica** (P. L. S. Muller),

LESSER (OR EASTERN) GOLDEN PLOVER

The situation at DB remained unchanged in 1970/71 with upto 50 from December to April, latest date 18th. Also at AW with 30 on 30.iii.69.

**Charadrius dubius** Scopoli,

LITTLE RINGED PLOVER

A dry season bird of sandy rivers at DB or AW, usually 6 or 7 but upto 10 or 12 at times. Also seen on the Ajoy river on 16.vi.68. Display flight and mobbing recorded in January.

**Charadrius alexandrinus** Linnaeus,

KENTISH PLOVER

A common dry season bird of sandy river beds at DB or AW, maximum number was 62 on 5.xii.70.

**Charadrius placidus** J. E. Gray or **C.**

**hiaticula** Linnaeus,

Longbilled Ringed Plover or Ringed Plover

1 at DB on 16.iii.69, probably the former. See comments in my earlier paper.

**Charadrius mongolus** Pallas,

LESSER SAND PLOVER

Two more records at DB of 3 on 30.ix.68 and 1 on 11.i.69 omitted from my earlier paper bring the total to five.

**Numenius arquata** (Linnaeus),

CURLEW

**Numenius phaeopus** (Linnaeus),

WHIMBREL

One more record of 1 at DB on 27.ix.70, again flying SE like the 2 previous records, and again the preference was for Whimbrel rather than Curlew.

**Tringa erythropus** (Pallas),

SPOTTED REDSHANK

A winter visitor from November to April at DB or AW with an exceptionally early record of 1 on flooded paddy near the DVC farm on 31.viii.68. The latest date was 2 at AW 21.iv.68. A flock of 8 or 9 flew over my garden on 23.iii.70. The supposedly commoner Redshank *T. totanus* remained as elusive as ever and I never saw one in W. Bengal, the nearest being 1 in Madhya Pradesh between Jabulpur and Katni.

**Tringa stagnatilis** (Bechstein),

MARSH SANDPIPER

The only additional observation to add to the 8 records at DB in my previous paper was 1 at AW on 23.xi.69. None at all were seen in the 1970/71 winter.

**Tringa nebularia** (Gunnerus),

GREENSHANK

Common winter visitor to the Damodar river and suitable wet areas such as flooded paddy. The earliest date was 1st August and the latest was 18th April. The usual number was 5 or less but upto 20 on occasions.

**Tringa ochropus** Linnaeus,

GREEN SANDPIPER

Whilst DB and AW were the main haunts, it was the small sandpiper most likely to be found in wet ditches and jheels. Earliest date 14th August and latest 18th April. Common and often seen in small groups of upto 5.

**Tringa glareola** Linnaeus,

WOOD SANDPIPER

DB was the birds favourite haunt but also found regularly at AW and occasionally elsewhere. One of the earliest waders to arrive being found on flooded paddy on 27th July

with 5 August records of upto 15 birds. The latest date was 21st April. This species was much commoner than either Green or Common Sandpipers.

**Tringa terek** (Latham),

TEREK SANDPIPER

A small sandpiper slightly larger than Common Sandpiper with similar bobbing action but with upturned bill and yellow legs was seen at DB on 1 or 7.ix.68 was omitted from my previous paper because the bill did not seem long enough or show a yellow base. However subsequent experience of the species and comparison with more detailed descriptions confirmed the identification.

**Tringa hypoleucos** Linnaeus,

COMMON SANDPIPER

Common winter visitor with DB and AW its main haunts but also found on jheels and wet paddy. Earliest 31st August, latest 18th April.

**Gallinago stenura** (Bonaparte),

PINTAIL SNIPE

Some birds flushed from dry grass and lantana scrub beside the road to Bishnupur on 18.ii.68 was the only occasion when I felt justified in identifying this species. It was a most un-snipelike habitat (the same place as the Jungle Bush Quail). The published information on the separation of Pintail and Common Snipe in the field was not available until after I left India.

**Gallinago gallinago** (Linnaeus),

FANTAIL (OR COMMON) SNIPE

Recorded at DB in every month except June and July. More numerous in winter when upto 15. Also at AW on 15.xii.68. Mobile during the monsoon when 2 birds flew over my garden on 6.viii.68 and 1 on 19.ix.70.

**Gallinago minima** (Brunnich),

JACK SNIPE

1 at DB on 3.i.70 was the only record.

**Calidris canutus** (Linnaeus),

KNOT

The identification of 1 at DB on 3.i.70 mentioned in my previous paper received further confirmation in King *et al.* (1975) who state that the Eastern (or Great) Knot *C. tenuirostris* shows clear white upper tail coverts whereas my notes refer to this area being greyish white contrasting little with the back, typical of Knot.

**Calidris minuta** (Leisler),

LITTLE STINT

Mainly at DB from September to April, also at AW with a latest date of 21.iv.68. Less frequent than previously during the 1970/71 winter.

**Calidris temminckii** (Leisler),

TEMMINCK'S STINT

The most numerous wader. A very common winter visitor to the river beds with early arrivals on flooded paddy, earliest 31st August. The latest date was 21st April, with a probable at AW on 12.v.68. The largest concentrations were downstream of DB.

**Calidris subminuta** (Maddendorff),

LONGTOED STINT

1 at AW on 7.iii.68. Several other observations of birds among flocks of Little and Temminck's Stints were probably this species.

**Calidris testacea** (Pallas),

CURLEW SANDPIPER

1 at DB on 13.ix.70.

**Philomachus pugnax** (Linnaeus),

RUFF

A small flock seen at AW several times in Jan./Feb. 1968 but I can find written evidence for only one subsequent record on 15.xii.68. However I have distinct recollections of greater regularity there. There were no additions to the 2 records at DB but this variable species was probably the origin of a number of unidentified waders.

**Rostratula benghalensis** (Linnaeus),

PAINTED SNIPE

The office drain provided a small area of wet paddy which supported 3 or 4 during April-June 1968. The only records were from DB in March-April 1969. These were all hot weather records when wet habitats were otherwise scarce.

**Himantopus himantopus** (Linnaeus),

BLACKWINGED STILT

A flock on a marshy jheel between Bolpur and Katwa in February 1968 and on flooded paddy near the DVC farm on 31.viii.68 were the only records away from DB. No more records of large flocks there with a maximum of only 7 between 1.iii.70 and 23.v.70. The high rainfall and river flow in September 1970 scoured away much of the shallow areas on the upstream side of DB which was their favourite haunt.

**Burhinus oedicnemus** (Linnaeus),

STONE CURLEW

2 in the scrub on the north side of the GT road on 6.iv.68 in the area which was eventually to become the town centre and 3 birds flushed from the edge of the lake at Maithon on 24.i.71.

**Cursorius coromandelicus** (Gmelin),

INDIAN COURSER

3 on a stabilised sandbank below AW on 21.i.68. It should be noted that this was during a very dry spell.

**Glareola lactea** Temminck,

SMALL INDIAN PRATINCOLE

Much scarcer at DB in 1970/71 with only two more records, both of single birds, 1 on the unseasonable date of 15.ix.70 and 1 on 23.i.70. A small flock at AW on 5.i.69 and 4.i.70. 2 records of 1 and 4 birds over my garden in March 1969.

**Larus argentatus** Pontoppidan,

HERRING GULL

Recorded on the Hoogly at Calcutta in February.

**Larus ichthyaetus** Pallas,

GREAT BLACKHEADED GULL

An immature at DB on 27.xii.70 identified by its huge size and broad black subterminal tail band. It was watched in flight and through a telescope at rest.

**Larus brunnicephalus** Jerdon,

BROWNHEADED GULL

3 at AW on 12.v.68 and 1 at DB in April 1968 suggests spring migration from the Calcutta area where they winter along with Herring and Blackheaded Gulls. Latest date at Calcutta was 26th April.

**Larus ridibundus** Linnaeus,

BLACKHEADED GULL

Quite common on the Hoogly in winter at Calcutta in January and February.

**Chlidonias hybrida** (Pallas),

WHISKERED TERN

The commonest and most numerous tern of the sandy rivers at DB and AW, also Ajoy river. It could also be found in flocks over flooded paddy particularly when attracted by agricultural operations. Display noted at DB in April and birds in juvenile plumage in September. 1 over my garden on 30.v.69 and several possibles.

**Gelochelidon nilotica** (Gmelin),

GULLBILLED TERN

2 at DB on 5.xii.70. It is a matter of conjecture whether there was any connection with the record of the Great Blackheaded Gull three weeks later.

**Sterna aurantia** J. E. Gray,

INDIAN RIVER TERN

April to August at AW and March to October at DB. Usually 1 or 2, occasionally 3 but 7-8 at DB on 1.viii.70 was exceptional. Like most other terns it foraged over flooded paddy during the monsoon when seen over my garden on 5.viii.68.

**Sterna hirundo** Linnaeus,

COMMON TERN

A rather scarce winter visitor. 1 at AW on 23.xi.69 was in line with 3 previous November/December records at DB but 1 at DB on 1.viii.70. was outside this pattern.

**Sterna acuticauda** J. E. Gray,

BLACKBELLIED TERN

This bird preferred sand banks to marshes and was seen more frequently at AW than DB, being seen in every month except August and September. Seen carrying fish at DB on 14.iv.68 which could have been nuptial display and a pair had 2 small young at AW

on 12.v.68. Some dispersal during the monsoon with 6 or 7 outside my office on 14.vii.69. April and May records of birds flying over my garden.

**Sterna albifrons** Pallas,

LITTLE TERN

A seventh record at DB on 11.iv.70 was added to the previous 6, all between March and June.

**Treron bicincta** (Jerdon),

ORANGEBREASTED GREEN PIGEON

1 at Topchanchi on 25.i.70.

**Streptopelia decaocto** (Frisvaldszky),

COLLARED DOVE

Much less numerous than the Spotted Dove but still quite common in the Durgapur area. More a bird of the open countryside but could be found in sal jungle in March-May. Rather scarce in my garden to start with but a regular visitor by 1970, presumably an effect of increased de-forestation. Usually outnumbered the Spotted Dove in counts made from the train to Calcutta.

**Streptopelia tranquebarica** (Hermann),

RED TURTLE DOVE

Apart from 1 on the office lawn on 15.vii.68, only seen at AW between March and August with a maximum of 4.

**Streptopelia chinensis** (Scopoli),

SPOTTED DOVE

An abundant resident in gardens and sal jungle. Display noted in February and September and nesting took place in my garden in April. Flocks of upto 14 recorded.

**Streptopelia senegalensis** (Linnaeus),

SENEGAL (OR LAUGHING, OR LITTLE BROWN)

DOVE

Thinly distributed over the countryside and sal scrub. Mostly avoided gardens but appeared in mine on 2 occasions. The telegraph wires along the approach road to my office were a favourite haunt. Apparently resident but December records rather sparse.

**Columba livia** Gmelin,

ROCK PIGEON

Common resident, probably all of feral origin but a small proportion resembled the true wild type.

**Psittacula eupatria** (Linnaeus),

LARGE INDIAN PARAKEET

Recorded at Topchanchi on 10.iii.68. The species is included in Lowther's list of breeding birds of Manbhum around Dhanbad.

**Psittacula krameri** (Scopoli),

ROSERINGED PARAKEET

A common resident but nothing like so abundant as it is around Delhi and Agra. Flocks of about 20 at DB and AW. A fairly frequent visitor to my garden particularly during the monsoon to raid the sweet corn *Zea mays*.

**Psittacula cyanocephala** (Linnaeus),

BLOSSOMHEADED PARAKEET

An influx of 3 or more into my garden in January 1971 were suspected to be of captive origin. It was a favourite cage bird and a number of ex-patriates had recently left. Prior to this birds had appeared in my garden on 18.vi.68, 7.ii.69 and 3 on 10.ii.69. It was quite common at Topchanchi.

**Clamator jacobinus** (Boddaert),

PIED CRESTED CUCKOO

A common monsoon visitor whose arrival dates in the three years were 1st June, 4th June and 31st May. Most records were from my garden but seen quite frequently elsewhere. The latest date for an adult was 22nd September but young birds were recorded on 5th and 6th October in different locations. Rather fewer records in 1970 compared with previous years.

**Cuculus varius** Vahl,

COMMON HAWK-CUCKOO

Very common, probably resident but not in evidence when silent in November and December. 1 January sight record. Heard in and around my garden in every month from February to October.

**Cuculus micropterus** Gould,

INDIAN CUCKOO

Probably only a monsoon visitor to my garden and surrounding area but could be over looked when silent. Garden records during 12.vi.68-14.vii.68 and 25.ii.69-12.vii.69 2 other records on 29.ix.68 and 6.x.68, the later being a juvenile at AW.

**Cacomantis sonneratii** (Latham),

BANDED BAY CUCKOO

1 beside the road near Ragunathpur on 13.ii.70 and 1 at DB on 1.iii.70.

**Cacomantis merulinus** (Scopoli),

PLAINTIVE CUCKOO

Probably resident in small numbers, occurring in gardens and surrounding area from April to October and in reed beds at DB during November to January. The only records in 1969 were at DB in January.

**Surniculus lugubris** (Horsfield),

DRONGO-CUCKOO

1 at AW on 8.ix.68.

**Eudynamys scolopacea** (Linnaeus),

KOEL

Very common resident of gardens, jungle and almost any grove of trees. Of almost daily occurrence in my garden particularly favouring the fruits of the *Muntingia*.

**Centropus sinensis** (Stephens),

COUCAL

Common resident in gardens and country with suitable cover. Recorded in my garden in every month of the year.

**Tyto alba** (Scopoli),

BARN OWL

1 in the car headlights on the road from Ragunathpur after dark on 19.xii.69. No other owl would have looked so white in the circumstances.

**Otus bakkamoena** Pennant,

COLLARED SCOPS OWL

Heard calling at night in or near my garden on 5 occasions; 14.i.68, 25.vi.68, 3.vii.68, 25.vii.68 and 30.ix.70.

**Glaucidium radiatum** (Tickell),

JUNGLE OWLET

1 at Topchanchi on 25.i.70.

**Athene brama** (Temminck),

SPOTTED OWLET

Probably much overlooked. A pair in the avenue of large trees at AW on every visit during January-May 1968 but not subsequently: 1 perched in a tree near the colony entrance on the GT road in January 1968 and another in a roadside tree between Ragunathpur and Purulia on 29.xi.68.

? **Strix ocellata** (Lesson),

OWL

The silhouette of a large owl was seen flying over my garden after dark on 10.ix.68. A couple of weeks later a neighbour reported seeing an owl about 45 cm (18 in.) tall standing in a colony road illuminated by his car headlights. It was not white like a Barn Owl. Mottled Wood Owl appears to be the likeliest identification.

**Caprimulgus macrurus** Horsfield,

LONGTAILED NIGHTJAR

Fairly common in sal jungle and other areas which could provide dense cover, with a rather variable pattern of occurrence from year to year. 9 records between 5.iv.68-23.ix.68, 3 between 28.ii.69-5.vi.69 and 9 between 29.xii.69-3.iv.70. Birds appeared in my gardens on several occasions to hunt termite swarms with Little Nightjars and drongos at dusk. The continued destruction of the sal jungle must adversely affect the species.

**Caprimulgus asiaticus** Latham,

INDIAN LITTLE NIGHTJAR

A common bird but not in evidence during November-December. A regular garden visitor and it would call for hours at a time from my bungalow roof, January to April being the most vocal period.

**Apus affinis** (J. E. Gray),

HOUSE SWIFT

Very common over the area, including my garden, but absent from October to January.

**Cypsiurus parvus** (Lichtenstein),

PALM SWIFT

A very common resident throughout the area and recorded over my garden in every month, the largest numbers being about 100 in February.

**Hemiprocne longipennis** (Rafinesque),

CRESTED TREE SWIFT

Several at Topchanchi on 12.i.69 where it was also found by Lowther.

**Ceryle rudis** (Linnaeus),

LESSER PIED KINGFISHER

Resident pairs at DB (2 or 3) and AW. Could also be seen at track side jheels on most train journeys to Calcutta.

**Alcedo atthis** (Linnaeus),

COMMON (OR SMALL BLUE) KINGFISHER

Scarce winter visitor, the earliest being 1 at a roadside ditch near the DVC farm on 28.ix.68. Otherwise at AW or DB with 4 records in January-March.

**Halcyon smyrnensis** (Linnaeus),

WHITEBREASTED KINGFISHER

Common but thinly distributed resident from waterside habitats at DB and AW to dry country. The roadside wires on the way to my office were a favourite haunt and twice seen from my garden.

**Merops philippinus** Linnaeus,

BLUETAILED BEE-EATER

Quite common summer visitor to rivers, jheels and flooded paddy. Earliest date 30th March and latest 29th September. Several records during the monsoon of upto 6 birds over my garden.

**Merops orientalis** Latham,

LITTLE GREEN BEE-EATER

Common resident in a wide variety of habitats with small parties flying or hunting over my garden in most months.

**Coracias benghalensis** (Linnaeus),

INDIAN ROLLER

A common bird of open countryside with upto 24 being counted on a train journey to

Calcutta. It would occasionally penetrate into more wooded areas and gardens.

**Upupa epops** Linnaeus,

HOOPOE

Apparently a thinly distributed resident with a winter influx. The sandy areas at AW were a favourite winter haunt with upto 4 birds. 5 records for the period April to September but over 20 for October to March. Seen in or from my garden six times; twice in February, twice in March, once in July and once in September.

**Tockus birostris** (Scopoli),

GREY HORNBILL

1 at Topchanchi on 26.i.70.

**Megalaima zeylanica** (Gmelin),

GREEN BARBET

Common only at Topchanchi. It obviously preferred the more deciduous and varied forest to the sal jungle around Durgapur. The HANDBOOK states that it straggles as far as Calcutta but the SYNOPSIS gives the eastern limit as Bihar. It would be difficult to overlook such a noisy bird if it were present and hence I would support the latter distribution.

**Megalaima haemacephala** (P. L. S. Muller),

CRIMSONBREASTED BARBET

A very common resident with birds' calling from almost every clump of trees. A pair took up residence in my garden in 1969 and began excavating a nest hole in a broken branch of a Gul Mohr on 2.iii.70. Fledged young were visible at the nest hole on 23.v.70 and flew shortly afterwards. The parents were excavating a new hole on 26.vii.70.

**Jynx torquilla** Linnaeus,

WRYNECK

A common winter visitor, regular haunts being my garden, canal side scrub at AW and piles of facing stones left along the bund road at DB. The earliest date was 15th September and the latest 14th April.

**Dinopium benghalense** (Linnaeus),

LESSER GOLDENBACKED WOODPECKER

Fairly common, apparently more so than the Yellowfronted Pied Woodpecker but this may be because the larger species is more conspicuous and more ready to come out in the open. A permanent feature of my garden from November 1970 after only 2 previous records.

**Picoides mahrattensis** (Latham),

YELLOWFRONTED PIED WOODPECKER

A pair became resident in my garden from December 1969 until my departure after only 3 records in the two previous years. 3 birds indulging in a nuptial chase on 20.ii.71. The pair started to excavate a nest hole in a rather half-hearted fashion in a large tree in my garden, and it was surprising to find the Lesser Goldenbacked Woodpecker taking turns from time to time when they got bored, with the Blossomheaded Parakeets keeping an eye on overall progress. Unfortunately I left the country before this intriguing situation was resolved.

**Picoides nanus** (Vigors),

BROWNCROWNED PIGMY WOODPECKER

1 in my garden on 9.iv.68.

**Chrysocolaptes lucidus** (Scopoli),

LARGER GOLDENBACKED WOODPECKER

A goldenbacked woodpecker with a red rump was seen beside the GT road about 15 km outside Calcutta on 22.viii.70 and was most probably this species.

**Pitta brachyura** (Linnaeus),

INDIAN PITTA

The evidence for this species is somewhat circumstantial. My notes for 21.iii.68 refer to an unidentified loud whistle written down as 'ke-weEEp'. On 22.iii.68 my wife reported a strange bird (like a Nuthatch *Sitta europa* with long legs) on our bungalow lawn. Finally on 30.iv.68 I had a fleeting glimpse of a medium sized passerine with rounded wings, white wing patches and dipping flight flying across my lawn. It is difficult to find a conclusion other than a Pitta to fit these facts.

It is a species recorded by Lowther (1949) as nesting in Manbhum.

**Mirafra javanica** Horsfield,

SINGING BUSH LARK

A pair of these larks were apparently resident in scrubby cultivation just upstream of AW. Probably overlooked elsewhere and was not specifically identified unless the white outer tail feathers could be seen.

**Mirafra assamica** Horsfield,

BUSH LARK

**Mirafra erythroptera** Blyth,

REDWINGED BUSH LARK

Whistler says these two species may be separated by the former being heavier, darker and greyer. However opportunities for close inspection or direct comparison were few and the species have been taken together. One or both were quite common in thin scrub or poor cultivation and recorded in all months except May and November. Most visits to AW or DB would find a bird or two on the road or wires.

**Eremopterix grisea** (Scopoli),

ASHYCROWNED FINCH-LARK

Common in thin scrub and poor cultivation.

During the monsoon flocks occur in drier areas. On 14.viii.69. my notes refer to frequent flocks of 12-15 birds on a journey to Ragunathpur. Probably resident but no records from its usual haunts during November-January.

**Ammomanes phoenicurus** (Franklin),

RUFOUSTAILED FINCH-LARK

The only place where this species was seen was the dam at Maithon where it was quite regular on the sloping face of the dam near the water's edge.

**Calandrella cinerea** (Gmelin),

SHORT-TOED LARK

One in the stock yard of the works compound on 1.i.70. This is not as odd as it might seem because the area in question was surfaced with coarse gravel with a few weeds, hence resembled a small stony desert.

**Calandrella raytal** (Blyth),

SAND LARK

Common on the sand banks below DB and AW. Display seen in October and a nest with eggs in March.

**Galerida** sp.,

CRESTED LARK OR SYKES'S CRESTED LARK

There are two records of larger larks, one in a sandy river bed beside the road to Ilam Bazar on 11.ii.68 which was definitely considered to be a species of crested lark and another downstream of DB which was distinctly larger than the Sand Larks. The HANDBOOK and the SYNOPSIS give the eastern limit of both species as Bihar.

**Alauda gulgula** Franklin,

EASTERN SKYLARK

Probably commoner than the comparatively

few records suggest. It appears to be a thinly distributed resident in light scrub and cultivation, areas which were not examined very thoroughly. Most car journeys would produce records of several unidentified larks, probably this species. The larks of West Bengal would benefit from a more critical inspection.

**Riparia riparia** (Linnaeus),

COLLARED SAND MARTIN

Scarce but probably overlooked amongst other hirundines. Only two records, 5 or 6 at DB on 14.xii.68. and a few at AW on 26.ix.70.

**Riparia paludicola** (Vieillot),

PLAIN SAND MARTIN

A large colony in the river bank just upstream of AW in Jan. 1968 was washed out by the monsoon floods. Another smaller colony was found about 2 km downstream of DB on 22.ii.70. Records were confined to the vicinity of the Damodar river and for the period November-May, the birds apparently departing during the monsoon.

**Hirundo concolor** Sykes,

DUSKY CRAG MARTIN

2 on Parasnath Hill on 10.ii.70.

**Hirundo rustica** Linnaeus,

BARN SWALLOW

Common and widespread winter visitor. The March gathering at DB in 1970 was only 300 strong, a tenth of previous years. Small flocks frequently seen over my garden. The earliest record was 4th August and the latest 12th May.

**Hirundo smithii** Leach,

WIRETAILED SWALLOW

Several at the DVC power station on 24.iv.68.

Also at DB in February 1968 probably 4th. This record was overlooked in my previous paper.

**Hirundo fluvicola** Blyth,

INDIAN CLIFF SWALLOW

The only record other than those in my previous paper at DB was of several birds at AW on 12.v.68.

**Hirundo daurica** Linnaeus,

REDRUMPED SWALLOW

Winter visitor in varying numbers, earliest 26th Sept. and latest 20th April. This species preferred hunting over open area such as the DVC farm rather than the river. Several 1970 records of birds over my garden, max. 12. Some swallows seen in the vicinity of Perulia on 23.vii.70 were probably this species which Lowther recorded as a nesting species in Manbhum.

**Lanius vittatus** Valenciennes,

BAYBACKED SHRIKE

I obtained a photograph of a single bird at AW on a date which was not recorded but was probably during Feb. 1970.

**Lanius schach** Linnaeus,

BLACKHEADED SHRIKE

Apart from a single rufous backed form on the way to AW on 15.xii.70, all other records (c. 60) were of the black headed form. Usually seen singly but several records of 2 or 3 together. Status uncertain but probably a small resident population with a winter influx. About 2/3 of all records were for the period Nov.-Feb., 5 records for the period April-June. The birds appeared to be territorial, taking up a favoured perch where they could be seen day after day. One bird took up residence in my garden from 28.iv.70 to 13.v.70 and reappeared on 5.viii.70.

**Lanius cristatus** Linnaeus,

BROWN SHRIKE

A very common and widespread winter visitor to gardens and open countryside, avoiding only closed forest. Earliest date 5th Sept., latest 4th May, both being from my garden where it was almost a permanent feature except during the monsoon.

**Oriolus oriolus** (Linnaeus),

GOLDEN ORIOLE

A common monsoon visitor to gardens, sal jungle and countryside with trees. In 1968 birds were present from 6th April to 6th Oct. in 1969 from 6th April to mid-August and in 1970 from March to July. This is at variance with the HANDBOOK which suggests it is mainly a winter visitor to the plains with 'small numbers also resident and patchy breeding'.

**Oriolus xanthornus** (Linnaeus),

BLACKHEADED ORIOLE

A common resident of gardens, sal jungle and wooded country. During the monsoon it tended to surrender the gardens to the Golden Oriole and was then found mainly in sal jungle.

**Dicrurus adsimilis** (Bechstein),

BLACK DRONGO

Common resident of gardens, scrub and open country, penetrating sal jungle at times. Breeding occurred during the monsoon with fledged young appearing in July and August. Termite flights would attract parties of 20-30 to my garden.

**Dicrurus leucophaeus** Vieillot,

GREY DRONGO

The specific identification of all drongos in winter would be a time consuming process, and the species was only readily identified in

assemblies with Black Drongos after termite swarms when smaller size and greyer plumage could be compared. The speed with which several birds could arrive at a termite swarm in my garden suggests it may have been commoner than the four records, all January-April, suggest.

**Dicrurus caerulescens** (Linnaeus),

WHITEBELLIED DRONGO

A winter visitor to my garden with 15 records between 22.xi.69 and 22.ii.70. It, or another, reappeared the following winter with 8 records between 19.xi.70 and 21.ii.71, a surprising consistency in dates. The species was also found at Topchanchi and Hazaribagh in Jan. and Feb. 1970.

**Dicrurus aeneus** Vieillot,

BRONZED DRONGO

Small glossy blue drongos with less strongly forked tails were recorded on 4 occasions deep in the sal jungle on 18.vi.68 (2), 24.viii.68, 13.ii.69 and 2.iv.69. It is possible to birds may have occupied a territory because they were always in the same place. A feature of these birds was a long-headed appearance due to a tuft of plush-like feathers on the forehead hiding the base of the bill and longish feathers on the nape, rather like *D. remifer* Lesser Racket-tailed Drongo.

**Dicrurus hottentottus** (Linnaeus),

HAIRCRESTED DRONGO

A scarce but annual visitor to my garden in spring with 4 records on 5.iv.68, 24.iii.69, 19.ii.70 and 6.iii.71. Another was seen near Panagarh on an unrecorded date.

**Dicrurus paradiseus** (Linnaeus),

GREATER RACKET-TAILED DRONGO

One in the sal jungle on 21.iv.68. Rather a scruffy specimen without rackets.

**Artamus fuscus** Vieillot,

ASHY SWALLOW-SHRIKE

A common resident throughout the area seen circling in the sky or bunched together on wires or bare tree branches. The birds were rather less in evidence over my garden during April and May but numerous in June, July and August. This suggests the birds may have retired to breed during the hot weather so that free flying young could reap the harvest of flying insects during the monsoon.

**Sturnus malabaricus** (Gmelin),

GREYHEADED MYNA

Quite a common resident with small flocks scattered about the countryside, flowering Silk Cotton trees and lantana bushes being favoured haunts. Birds recorded in my garden between March and July.

**Sturnus pagodarum** (Gmelin),

BRAHMINY MYNA

Recorded only from Topchanchi. Lowther listed it for Manbhum.

**Sturnus contra** Linnaeus,

PIED MYNA

A very common resident favouring the wetter parts of the area. A well watered lawn proved attractive during the hot weather. It would usually outnumber the Common Myna on Calcutta train counts.

**Acridotheres tristis** (Linnaeus),

COMMON MYNA

An abundant resident throughout the area, but outnumbered by Pied Myna in wet paddy. Fledged young appeared on my lawn in June 1969 and August 1970.

**Acridotheres ginginianus** (Latham),

BANK MYNA

Birds could be seen regularly at Howrah station in December 1970 and January 1971. Apart from these the only record was of two pairs beside the GT road on the Durgapur side of Burdwan on 26.v.68.

**Dendrocitta vagabunda** (Latham),

INDIAN TREE PIE

A common resident throughout the area, particularly my garden and the sal jungle.

**Corvus splendens** Vieillot,

HOUSE CROW

An excessively abundant resident throughout the area. The maximum count from the Calcutta train was 91.

**Corvus macrorhynchos** Wagler,

JUNGLE CROW

Thinly distributed resident and much less numerous than previous species. Maximum count from the Calcutta train was 23 but usually only 6 to 8. A bird in Dalhousie Square on 11.xii.70 suggests it is quite capable of penetrating urban areas. Birds were visiting my garden quite regularly from March 1970 onwards.

**Tephrodornis pondicerianus** (Gmelin),

COMMON WOOD SHRIKE

Probably resident but rather scarce with 10 records scattered through the year. All were singles except for 2 together in my garden on 21.xi.70.

**Coracina novaehollandiae** (Gmelin),

LARGE CUCKOO-SHRIKE

5 records from in and around my garden in April and June 1968 and 8 between March and July 1969 (3 together on one occasion)

suggested the species was a hot weather and monsoon visitor. However in 1970 the only records were in August and December, apart from January and February records from Topchanchi and Hazaribagh. The species is probably a mobile resident.

**Coracina melanoptera** (Ruppell),

BLACKHEADED CUCKOO-SHRIKE

In 1968 and 1969 it appeared to be a monsoon visitor from April to August, once October. However in 1970 it first appeared on 29th March and was seen regularly upto 21st November and two more records in January 1971 suggested it was resident. Nearly all the records were for my garden, the few outside being in the nearby sal jungle. Never more than a pair together.

**Pericrocotus flammeus** (Forster),

SCARLET MINIVET

Only found at Topchanchi on 25.i.70.

**Aegithina tiphia** (Linnaeus),

COMMON IORA

A common resident of my garden and adjacent jungle, usually in pairs. Seen in every month of the year but less frequently in December.

**Chloropsis cochinchinensis** (Gmelin),

GOLDMANTLED CHLOROPSIS

Birds in my garden in every month of the year, usually a pair but 4 on 2.xi.70. This nectar feeding species has presumably benefited from the widespread planting of exotics such as poinsettia, hibiscus etc. in gardens. It was never found in sal jungle but would be hard to find in the canopy. It was found at Topchanchi on 25.i.70 which is more open and varied.

**Pycnonotus jocosus** (Linnaeus),

REDWHISKERED BULBUL

A very common resident of my garden and jungle with small parties throughout the year. It showed a stronger preference for better wooded areas than the even commoner Redvented Bulbul. One or more pairs nested in my garden every year, activity first recorded on 17th April with nearly fledged young in June and July.

**Pycnonotus cafer** (Linnaeus),

REDVENTED BULBUL

One of the most abundant birds of West Bengal, occurring widely in gardens, sal jungle and scrub. Upto 7 or 8 birds in my garden throughout the year where it nested regularly. Activity first recorded on 20th April with fledged young in July. With so little attempt to hide the flimsy nest structures the loss through predation and storm damage must have been very high.

**Pycnonotus luteolus** (Lesson),

WHITEBROWED BULBUL

3 together in some scrub in the Forest Dept plantations towards the Ajoy river on 18.i.70. This is about 100 km NE of the Midnapore limit given in the HANDBOOK.

**Dumetia hyperythra** (Franklin),

RUFOSBELLIED BABBLER

A regular monsoon visitor to my garden between May and August, usually 2 or 3 but upto 6 in 1970.

**Chrysomma sinense** (Gmelin),

YELLOWEYED BABBLER

A common resident usually found in pairs but 4 together on one occasion. Frequent visitor to my garden in every month of the year. Water-side scrub at AW was another favoured haunt.

**Turdoides striatus** (Dumont),

JUNGLE BABBLER

A very common bird of gardens and sal jungle, being seen in my garden almost daily. It nested during the monsoon with fledged young appearing in August and September. It was also found at Topchanchi.

**Muscicapa latirostris** Raffles,

BROWN FLYCATCHER

Only two records, both in April in different years. One on the edge of the sal jungle near my bungalow and one in scrub near the triangulation point.

**Muscicapa muttui** (Layard),

BROWNBREASTED FLYCATCHER

Two records, one in sal jungle near my bungalow and the other at AW, on 20.ix.70 and 26.ix.70 respectively. These records fit the expected migration pattern of birds moving between their breeding areas in Assam and beyond and the wintering area in SW India.

**Muscicapa ruficauda** Swainson,

RUFOUSTAILED FLYCATCHER

One in my garden on 26.iii.69 in company with the Blackbrowed Flycatcher Warbler (*Seicercus burkii*). Additional literature which was not available to me at the time indicates the possibility of other flycatchers with reddish tails but has not changed my opinion.

**Muscicapa parva** Bechstein,

REDBREASTED FLYCATCHER

One of the commonest and most conspicuous of winter visitors to gardens and the fringes of sal jungle. Low branches of trees bordering the colony roads and providing a clear view of open ground were particularly favoured. The earliest arrival was on 14th Oct. and the latest on 6th April, a bird with a red breast. The only other record of a redbreasted bird was on 23.i.70.

**Muscicapa superciliaris** Jerdon,

WHITEBROWED BLUE FLYCATCHER

One at AW on 30.iii.69, also 1 at Hazaribagh NP on 9.ii.70 which suggests the status of scarce spring migrant.

**Muscicapa rubeculoides** (Vigors),

BLUETHROATED FLYCATCHER

One beside the road outside my garden in the first week of March 1968.

**Muscicapa tickelliae** (Blyth),

TICKELL'S BLUE FLYCATCHER

One in the next door garden on 24.iii.68 and probable females in my garden on 28.x.68 and 20.xii.69.

**Muscicapa thalassina** Swainson,

VERDITER FLYCATCHER

Regular winter visitor in small numbers with at least one record each year from my garden or the sal jungle. Two together in my garden on 10.iii.71. Also seen at Topchanchi on 25.i.70 and Maithon Dam on 24.i.70.

**Culicicapa ceylonensis** (Swainson),

GREYHEADED FLYCATCHER

An irregular winter visitor in sal jungle with 7 records between 14.xi.68 and 23.ii.69. Also at Topchanchi on 26.i.70.

**Rhipidura aureola** Lesson,

WHITEBROWED FANTAIL FLYCATCHER

Not recorded nearer than Topchanchi where it was seen on 25.i.70. It was also found at Hazaribagh NP on 9.ii.70. The species appears to prefer a more definitely deciduous biotope than Durgapur could offer.

**Rhipidura albicollis** (Vieillot),

WHITETHROATED FANTAIL FLYCATCHER

A single individual took up residence in and around my garden from 1.vii.69 to 23.viii.69 during which time it was seen almost daily.

**Terpsiphone paradisi** (Linnaeus),

PARADISE FLYCATCHER

A common and conspicuous monsoon visitor of almost daily occurrence in gardens and sal jungle between extreme dates of 28th March and 30th September. Females tended to arrive a few days before males. The first males of the year were recorded on 3.iv.68, 3.iv.69 and 4.iv.70.

**Hypothymis azurea** (Boddaert),

BLACKNAPED FLYCATCHER

A regular winter visitor to the sal jungle from November to February. Usually singly or in pairs with mixed groups of warblers and flycatchers.

**Cisticola juncidis** (Rafinesque),

STREAKED FANTAIL WARBLER

Rather scarce and local but probably resident in suitable areas of long grass or dense low shrubs which were free of grazing pressure. Tussocks of 'pampas' grass (*Cortaderia* sp?) on the sand banks downstream of AW and also the downstream face of Maithon Dam.

**Prinia hodgsonii** Blyth,

FRANKLIN'S LONGTAIL WARBLER OR  
WREN WARBLER

Much scarcer than *P. socialis* and recorded only between April and September in 1968 and 1969. Due to closer similarity with *P. socialis* when in winter plumage it may have been overlooked at other times.

**Prinia subflava** (Gmelin),

PLAIN, OR TAWNYFLANKED LONGTAIL, OR  
WREN WARBLER

Nearly all records from waterside vegetation at DB where it was present throughout the year except Sept.-Oct. and only a single Nov.

record. Birds were nesting in water hyacinth on 21.vi.68. It was also found in canal-side vegetation on the way to AW and at Canada Dam on 23.iii.69.

**Prinia socialis** Sykes,

ASHY LONGTAIL WARBLER OR WREN WARBLER

A very common resident in and around gardens occurring in small parties.

**Orthotomus sutorius** (Pennant),

TAILOR BIRD

A common garden resident, also found in sal jungle and suitable scrubby cover. A protracted monsoon breeding season with feeding of young noted between April and September.

**Locustella certhiola** (Pallas),

PALLAS'S GRASSHOPPER WARBLER

One at AW in March 1968. Another *Locustella* of uncertain species at the same place on 27.iv.69.

**Chaetornis striatus** (Jerdon),

BRISTLED GRASS WARBLER

My experience with this species is an example of how a mistake once made can be difficult to rectify. Shortly after my arrival in India I found some birds resembling Jungle Babblers but with streaked upper parts in an area of long grass between Panagarh and the Damodar canal. With my limited experience at that time I put these down as Common Babblers, *T. caudatus*. Similar birds were subsequently seen on four occasions in long grass or scrub at AW and 1 downstream of DB on 5.xii.70 and 2 birds were seen in a track-side ditch from a train to Calcutta. It was not until after I left India did I learn of the similarity and possibility of confusion between this species and Common Babbler, a bird which reaches its eastern limit in Bihar.

The fact that I always saw these birds in ones or twos and not the small parties so typical of *Turdoides* spp. should have given a warning that something was not right. With the benefit of hindsight it is now evident the original diagnosis was wrong, hence the entry under this species.

**Acrocephalus aedon** (Pallas),

THICKBILLED WARBLER

One bird watched closely at DB on 17.ii.68. Detailed notes refer to the lack of supercilium, massive bill and short wings.

**Acrocephalus stentoreus** (Hemprich & Ehrenberg),

INDIAN, OR CLAMOROUS GREAT REED WARBLER

A winter visitor to waterside vegetation at AW and DB from 15th Nov. to 11th April.

**Acrocephalus dumetorum** Blyth,

BLYTH'S REED WARBLER

A common spring migrant through my garden and sal jungle in March, April and May with 2 February records and 1 at AW in January, the latest date was 23rd May.

**Acrocephalus agricola** (Jerdon),

PADDYFIELD WARBLER

2 records at DB, one in February 1968 and one on 11.iv.70.

**Hippolais caligata** (Lichtenstein),

BOOTED WARBLER

Mainly a late winter visitor or spring migrant between February and May but 1 at AW on 26.ix.70. 4 records in my garden during April/May 1970 may have been the same individual.

**Phylloscopus collybita** (Vieillot),

CHIFFCHAFF

Winter resident in small numbers to my garden and sal jungle. Another regular haunt was the avenue of large trees leading down

to AW. Recorded between 23rd November and 20th April.

**Phylloscopus affinis** (Tickell),

TICKELL'S LEAF WARBLER

Winter visitor in small and irregular numbers. Several records in sal jungle in February/April 1968 and in my garden in February/March 1971. Only 2 1970 records.

**Phylloscopus griseolus** Blyth,

OLIVACEOUS LEAF WARBLER OR  
SULPHURBELLIED WARBLER

The species was quite common at Topchanchi on 25.i.70, and also in Hazaribagh NP the following month. A bird seen in the sal jungle at Durgapur on 3.iv.68 with other phylloscopi was thought at the time to be a Radde's Warbler *P. schwarzi*, a species not officially recorded within Indian limits. Having had the opportunity of seeing both species on their respective breeding grounds in the Tien Shan mountains and Siberia I now think it probable the bird was *P. griseolus*. Another rather uncertain record on 25.ii.69.

**Phylloscopus fuscatus** (Blyth),

DUSKY LEAF WARBLER

Three records in Dec. and Jan. of several birds in low thorny scrub at AW and DB.

**Phylloscopus inornatus** (Blyth),

YELLOWBROWED LEAF WARBLER

Common winter visitor, the second commonest *Phylloscopus* after Greenish Warbler. Distinctly gregarious, usually in groups of 5-15 in sal jungle but once in my garden. The earliest arrival was 14th Nov. and the latest was 16th April, but 1968 was the only year when it was recorded after February.

**Phylloscopus magnirostris** Blyth,

LARGE-BILLED LEAF WARBLER

Single birds in February 1968 and 1969 identified by larger size, heavier bill and stronger colouring compared with associated Greenish Warblers. Could only be identified under optimum conditions and may have been under recorded. A detailed study, using mist nets, of the phylloscopi in West Bengal in winter would be rewarding.

**Phylloscopus trochiloides** (Sundevall),

GREENISH WARBLER, OR DULL GREEN LEAF WARBLER

The commonest *Phylloscopus* to visit West Bengal in winter. Frequently seen in my garden, sal jungle or any sort of trees with a reasonable canopy. The earliest date was 15th Sept. and the latest 17th May. Much more likely than other members of its genus to be found singly but not averse to joining mixed flocks.

**Phylloscopus nitidus** Blyth,

BRIGHT GREEN LEAF WARBLER

A single bird in my garden on 4.v.68.

**Phylloscopus occipitalis** (Blyth),

LARGE CROWNED LEAF WARBLER

Either a late winter visitor or spring migrant. After 2 or 3 earlier records, birds were seen on 31.iii.68, 3.iv.68, 4.iv.68, 11.ii.69 and 23.ii.69 in sal jungle, also at Topchanchi on 26.i.70.

**Phylloscopus reguloides** (Blyth),

BLYTH'S CROWNED LEAF WARBLER

A single bird in my garden on 10.v.68 was watched at close range for some time and detailed notes taken enabled it to be identified as this species rather than the previous one. This record is rather late and further south than might be expected from the information in the HANDBOOK.

**Seicercus burkii** (Burton),

YELLOW-EYED FLYCATCHER-WARBLER

One in my garden on 26.iii.69, in association with the Rufoustailed Flycatcher.

**Erithacus svecicus** (Linnaeus),

BLUETHROAT

Regular winter visitor to waterside scrub at DB and AW. Earliest 28th Dec. latest 28th March.

**Copsychus saularis** (Linnaeus),

MAGPIE ROBIN

Common resident in gardens, seldom seen in sal jungle. An opportunist nester taking over old nest of Indian Robin and Crimson-breasted Barbet. The nesting season was prolonged with song and display seen in February, eggs in July (1969) and fledged young in August (1969 and 1970).

**Phoenicurus ochruros** (Gmelin),

BLACK REDSTART

Winter visitor to roadsides, jungle fringes and open areas, earliest 22nd November, latest 17th April. Only one in my garden but often seen close to it.

**Saxicola torquata** (Linnaeus),

STONE CHAT

Winter visitor, probably regular to riverside vegetation and sandy scrub at AW and DB between 6th Oct. and 7th April. Usually a pair but 2 pairs at AW on 6.x.68.

**Saxicoloides fulicata** (Linnaeus),

INDIAN ROBIN

A very common bird of gardens, sal jungle and scrub. Seen almost every day in my garden. Display noted in February and nesting from May to July.

**Monticola cinclorhynchus** (Vigors),

BLUEHEADED ROCK THRUSH

One bird, a male, in the jungle close to my bungalow on 31.iii.68.

**Monticola solitarius** (Linnaeus),

BLUE ROCK THRUSH

A single bird wintering at AW favouring an overgrow pile of old facing stones. Also at Canada Dam on 23.iii.69.

**Zoothera citrina** (Latham),

ORANGEHEADED GROUND THRUSH

A regular winter visitor to my garden and sal jungle, normally only one bird but two on one occasion. Earliest date was 26th October and the latest 15th April. All the birds I saw were *Z. c. citrina*. It is listed by Lowther as a breeding bird in Manbhum district but presumably *Z. c. cyanotus*.

**Zoothera dauma** (Latham),

WHITE'S THRUSH

Two birds together in the local sal jungle on 12.xii.68.

**Turdus unicolor** Tickell,

TICKELL'S THRUSH

A scarce winter visitor to my garden and sal jungle between 15th November and 14th March. The only record in 1968 was at Topchanchi on 14.iii.68.

**Anthus hodgsoni** Richmond,

INDIAN TREE PIPIT, OR OLIVEBACKED PIPIT

Common winter visitor to my garden and adjacent jungle in small flocks upto 6, earliest date was 24th October and the latest 14th April.

**Anthus trivialis** (Linnaeus),

TREE PIPIT

Erratic winter visitor recorded at DB and

AW on several occasions between 14.xii.68 and 18.i.69. No records for subsequent years.

**Anthus novaeseelandiae** Gmelin,

PADDYFIELD PIPIT, OR RICHARD'S PIPIT

*A. n. rufulus* resident in small numbers in suitable open areas such as bund roads, sand banks with some vegetation, playing fields etc. Nesting behaviour noted in April. 2 records of *A. n. richardi* at DB in March.

**Anthus campestris** (Linnaeus),

TAWNY PIPIT

5 winter records from AW and DB between September and Feb.

**Anthus roseatus** (Blyth),

HODGSON'S PIPIT, OR VINACEOUSBREASTED PIPIT

One at DB on 14.iv.68 is the only record.

**Anthus similis** Jerdon,

BROWN ROCK PIPIT, OR LONGBILLED PIPIT

I obtained photographs of a large almost unmarked pipit on the shore of Panchet reservoir in February 1968 and another in fallow land near AW on 16.ii.69 which could be directly compared with photographs of Tawny Pipits taken in France and Greece. These birds lacked the dark row of covert spots so noticeable on Tawny Pipits.

**Motacilla indica** Gmelin,

FOREST WAGTAIL

A passage migrant in March/April and September with records in my garden on 28.iv.68, 18.iii.69, 1.ix.70 and 6.ix.70 and 1 in nearby jungle on 17.ix.68.

**Motacilla flava** Linnaeus,

YELLOW WAGTAIL

Numerous winter visitor to AW and DB

from November to April. Birds were also seen on playing fields at Dishegarh on 29.xii.69. Those which could be assigned to a particular race appeared to be *M. f. beema*.

**Motacilla citreola** Pallas,

YELLOWHEADED WAGTAIL, or CITRINE WAGTAIL

Winter visitor to DB and AW in fluctuating numbers. It was recorded commonly in the early months of 1968 and again from December 1968 to April 1969. The following winter it was recorded only during Jan. and Feb. 1970. There were no records at all for the 1970/71 winter.

**Motacilla cinerea** Tunstall,

GREY WAGTAIL

1 at DB on 13.ii.70 and 1 on the village tank near the hot spring shrine north of Dubrajpur on 23 or 24.i.68.

**Motacilla alba** Linnaeus,

PIED WAGTAIL

Common and widespread winter visitor to a variety of habitats, including my office window-sill. It is impossible to know if a bird at AW on 27.vii.69 really was a very early winter visitor or an individual which had summered. Apart from this unusual date the species was recorded from 26th September to 11th April.

**Motacilla maderaspatensis** Gmelin,

LARGE PIED WAGTAIL

Apparently resident at DB with 3 birds on two occasions in March and September 1970. Recorded 3 times at AW from 11.viii.68 to 5.i.69 and on the only visit to Canada dam on 23.iii.69.

**Dicaeum agile** (Tickell),

THICKBILLED FLOWERPECKER

One or two records in my garden each summer between 15th April and 17th Sept.

**Dicaeum erythrorhynchos** (Latham),

TICKELL'S FLOWERPECKER

A regular monsoon visitor to my garden from mid-May to mid-September with a single bird of almost daily occurrence. 2 birds were seen together on 25.vii.69. It was seen regularly from mid-April in 1970. The fruits of the Malayan 'cherry' *Muntingia calabura* proved irresistible to it.

**Nectarinia zeylonica** (Linnaeus),

PURPLERUMPED SUNBIRD

1 outside Woodlands Nursing home in Calcutta on 14.vii.70 is the only record. From the map in the HANDBOOK Durgapur would only be on the extreme border line of the bird's distribution.

**Nectarinia asiatica** (Latham),

PURPLE SUNBIRD

A common resident which must have benefited greatly from the planting of decorative trees and shrubs in gardens. The birds appeared to breed in the dry season which coincided with the peak flowering of the local flora. Display was noted in my garden in January with the first signs of eclipse plumage showing at the end of June. By August all males were in complete eclipse with full breeding plumage being regained in December.

**Zosterops palpebrosa** (Temminck),

WHITE-EYE

Quite common in the undergrowth at Topchanchi but only a scarce winter visitor to the Durgapur area. Records of 2 or more birds in the sal jungle on 16.ii.69 and in my garden on 3.i.70 and exactly a year later on 3.i.71.

**Passer domesticus** (Linnaeus),

HOUSE SPARROW

Excessively abundant resident around all houses and habitation. No clearly defined breeding season, being almost year-round.

**Petronia xanthocollis** (Burton),

YELLOWTHROATED SPARROW

7 records between March and July of 1 or 2 birds in my garden or sal jungle. Seen 4 times in 1968, twice in 1969 and once in 1970.

**Ploceus philippinus** (Linnaeus),

BAYA WEAVER

An abundant resident, their colony nests suspended from palmyra palms and other trees being a common sight. Nest building usually began in May and continued through the monsoon.

**Ploceus benghalensis** (Linnaeus),

BLACKTHROATED WEAVER

Not always distinguished from and sometimes mixed with Baya Weavers. Flocks could be found fairly regularly in waterside vegetation at DB and along the canal on the way to AW.

**Estrilda amandava** (Linnaeus),

RED MUNIA

A resident flock of 20-30 at DB were the only ones seen in the area.

**Lonchura malabarica** (Linnaeus),

WHITETHROATED MUNIA

Common resident with flocks of upto 25 with Spotted Munias on seeding grasses and flowers during the monsoon. Seen much less frequently from December to March.

**Lonchura punctulata** (Linnaeus),

SPOTTED MUNIA

A very common resident with flocks of upto 100 on lawns in May and June. Nest building was very protracted from June to November but few nests reached a more productive stage. Many complete but empty nests were taken over by Whitethroated Munias.

**Lonchura malacca** (Linnaeus),

BLACKHEADED MUNIA

1 appeared at DB on 1.viii.70 and was seen subsequently on 13.ix.70 and 15.xi.70. This was a white bellied bird of the race *L. m. malacca* and thus may have been an escaped cage bird because Durgapur is within the range of the chestnut bellied race *L. m. atricapilla*. However the dates would fit post breeding dispersal.

**Carpodacus erythrinus** (Pallas),

COMMON ROSEFINCH

A scarce spring migrant with 2 records in or near my garden on 4.iii.68 and 5.v.68. Also at Topchanchi on 25.i.70.

**Melophus lathamii** (Gray),

CRESTED BUNTING

A single record of a male of this unmistakable species among scrub in a small sandy river bed beside the Panagarh — Ilam Bazar road on 24.i.68. This locality would appear to be outside the expected range given in the HANDBOOK but the date is suitable for winter movements. The particularly dry weather at the time could have caused a wider dispersal than usual.

DISCUSSION

The systematic list covers 294 species found in an area about 320 km long from Topchanchi to Calcutta by about 150 km from Messenjore (Canada Dam) to Bankura. Of these species, 11 were found only at Topchanchi but more diligent searching might find some of them on the forest clad hills such as Panchet and those round Maithon. The latter place was the only locality for 2 species, Painted Spurfowl and Rufostailed Finch Lark. 4 species, Herring Gull, Blackheaded

BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

Gull, Larger Goldenbacked Woodpecker and Purplerumped Sunbird were found only in or near Calcutta but the two gulls could well turn up in Durgapur as they do occasionally at Delhi which is a lot of further from the sea. A further 5 species, Greater Adjutant, Black Ibis, Black Eagle, Rain Quail, and Bank Myna were single records more than 50 km from Durgapur. This leaves a total of 272 species within an arbitrary 50 km from Durgapur in 3 years and 3 months by a single part time observer.

Hutson (1954) recorded c. 250 species within 16 km of Delhi in 2½ years and the checklist of the Delhi Birdwatching Club gives 333 species (excluding accidentals). That is the total effort by numerous observers over a large number of years. Doubtless the Durgapur list could be expanded by a similar effort.

Holmes and Wright (1968) working in Sind for 3 years listed 267 species recorded by themselves, again on a part time basis but with more opportunity for observation.

Ghorpade (1973) in his survey of Sandur district in Karnataka listed 167 species and suggested the ultimate total might be about 250. However his area was largely devoid of aquatic habitat.

The number of species recorded in or from my garden was 126 which compares with the 135 species recorded by MacDonald (1960) in the larger more mature garden of the British High Commission in Delhi also over a 3 year period.

If records for the adjacent colony, sal jungle and my regular daily route to and from my office are included, the total rises to 162. This will be referred to as the colony area. The observations made in the colony area can be compared with the work of Gaston (1978) on the New Delhi ridge who studied a restricted area there regularly over 3 years.

In a study of this nature the seasonal status of a species must be of a somewhat subjective nature. My category of 'resident' does not necessarily imply breeding, only that it was seen regularly throughout the year.

Table 1 gives the seasonal categories of the 162 species in the colony area and 272 for Durgapur as a whole and compares them with the 167 species recorded by Gaston on the New Delhi ridge (ND ridge) and the 333 of the Birds of Delhi and District : Field Check List (ND list). Gaston's data is slightly different because he considered only 322 species from the check list.

TABLE 1

|                            | Colony area |            | Durgapur   |            | ND Ridge   |            | ND List    |            |
|----------------------------|-------------|------------|------------|------------|------------|------------|------------|------------|
|                            | No.         | %          | No.        | %          | No.        | %          | No.        | %          |
| Resident or Regular        | 62          | 38         | 93         | 34         | 47         | 28         | 186        | 56         |
| Winter visitor             | 36          | 22         | 90         | 33         | 27         | 16         | 107        | 32         |
| Summer visitor             | 33          | 20         | 28         | 11         | 23         | 14         | 15         | 5          |
| Migrant                    | 22          | 14         | 44         | 16         | 38         | 23         | 21         | 6          |
| Occasional or non-seasonal | 9           | 6          | 17         | 6          | 32         | 19         | 4          | 1          |
| <b>Total</b>               | <b>162</b>  | <b>100</b> | <b>272</b> | <b>100</b> | <b>167</b> | <b>100</b> | <b>333</b> | <b>100</b> |

The apparent anomaly of the colony area having more summer visitors than the whole of Durgapur of which it is a part, is explained by a number of species, particularly water birds which are resident in other parts such as DB, spread out widely during the monsoon and turn up in the colony area at that time. Also, certain species occur only on passage in the colony area in autumn but winter elsewhere in Durgapur. Gaston noted a similar situation when comparing his study area with rest of Delhi.

Care must be exercised when comparing the figures in such a table due to different observational techniques and different interpretations of the various categories by the authors. Gaston's low figure for residents and high figure for occasionals may be due to a more rigorous definition of resident but the comparative lack of habitat variety in his study area is a factor. However he recorded 32 species in every week of his study with 30 species in every week in my colony area. (see appendix 3). Of the species which occurred in every week, only 13 are common to both areas.

It is evident that the whole of Delhi has much the highest number and proportion of residents and this reflects the more complete coverage over the years. The low figure for occasionals in the Delhi list is misleading because the table excludes 60 species listed as accidental (less than 5 records in 40 years). If these are included, the figure becomes 64 occasionals out of a total of 393 or 19%, the same percentage as Gaston's figure for the ridge. 10 of the Delhi accidentals are quite common or regular in Durgapur. These are Crested Hawk Eagle, Bronze-winged Jacana, Lesser Golden Plover, Blackheaded Oriole, Ashy Swallow-Shrike, Greyheaded Myna, Large Cuckoo-Shrike, Rufousbellied Babbler, Forest Wagtail and Thickbilled Flowerpecker.

The proportion of winter visitors is very similar in Durgapur and Delhi but the composition is a bit different. Due to its geographical location Delhi is reached by a number of species from SE Europe and SW Asia which do not extend across to Durgapur. The Brown Shrike is the only eastern species which extends its winter range westwards into the Durgapur area. The mountain ranges of Tibet and the Himalayas are a formidable barrier to eastern palaearctic birds and they are steered to the south east away from India.

Durgapur has many more summer visitors than Delhi. The colony area has almost half as many again as the ND ridge and the whole Durgapur area has almost twice as many as the ND list. The longer and wetter rainy season in West Bengal is clearly a factor. Some of the smaller herons listed as summer visitors in Durgapur may actually be resident but they are only seen when active during the monsoon.

The low figure for migrants in the ND list is a bit surprising compared with Gaston's figure but he does say that birds passing through his area do winter elsewhere in Delhi. Durgapur has more migrant species but the most striking difference is the relative proportions between spring and autumn.

Gaston identifies 38 species as passage migrants, 8 being mainly in autumn, 4 mainly in spring and the remaining 26 being equally divided. The 22 migrant species in the colony area are divided into 4 species in autumn only, 17 spring only and 1 in both seasons. The 44 migrants in Durgapur are divided into 7 in autumn only, 35 in spring only and 2 (Grey Plover and Forest Wagtail) in both.

The likely explanation for this difference in migration pattern is that birds arriving in the Delhi region from the north and north-west in autumn encounter congenial feeding grounds nourished by the recent monsoon and these are exploited until increasing desiccation forces the birds to disperse to the more humid south and east. Thus birds appearing in Durgapur in spring are completing the last part of their winter stay in the sub-continent in Bengal. The Yellowbrowed Warbler becomes more numerous in late winter and early spring suggesting immigration from elsewhere. It has already been noted that the sal jungle around Durgapur still carries a good leaf cover during February-April whereas the forest 130 km to the west is almost bare. A single January visit

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to the Hazaribagh NP some 200 km to the west found the absence of foliage was more pronounced. Almost half the spring migrants in Durgapur are canopy feeding insectivorous warblers and flycatchers which exploit this to advantage. A second explanation is that some species which migrate southwards through Delhi in autumn continue down the west side of the peninsular and return up the eastern side in spring for the reason given above. Blyth's Reed Warbler is a case in point.

This preponderance of spring migrants gives a different complexion to the avifauna of Durgapur compared with Delhi when the number of species occurring in each month is considered. See table 2 below.

months, and minima in June and January. There may be some observer bias tending to exaggerate the difference between best and worst periods in that better rewards may spur greater effort. Also birdwatching during monsoon thunderstorms is neither very pleasant nor productive.

The results of the work embodied in this paper show that the ornithologically neglected West Bengal plains have a diversity of avifauna comparable with other parts of lowland India. Thus the naturalist who finds himself in an area of heavy industrial development located in a monotonous plain under a monoculture of rice need not despair. The results can be surprising.

TABLE 2

|          | J   | F   | M   | A   | M   | J   | J   | A   | S   | O   | N   | D   |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Durgapur | 164 | 174 | 168 | 154 | 122 | 110 | 102 | 114 | 124 | 97  | 121 | 135 |
| ND ridge | 68  | 90  | 118 | 109 | 71  | 60  | 80  | 84  | 111 | 103 | 92  | 89  |

The Durgapur figures show a single late winter peak falling to a minimum in July. The low figure for October is almost certainly due to the poor coverage in that month, I was absent for part or the whole of that month in each year. (See appendix 2). In contrast the ND ridge figures show peaks in March and September, the main migration

ACKNOWLEDGEMENTS

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APPENDIX 1

FREQUENCY OF VISITS TO DB AND AW. VISITS PER MONTH IN EACH YEAR

|      | J | F | M | A | M | J | J | A | S | O | N | D |
|------|---|---|---|---|---|---|---|---|---|---|---|---|
| DB   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1968 | - | 2 | 3 | 3 | 2 | 2 | 1 | 4 | 3 | 1 | 2 | 2 |
| 1969 | 1 | 5 | 3 | 3 | 1 | 1 | 1 | - | - | - | 2 | 2 |
| 1970 | 3 | 3 | 2 | 2 | 2 | - | 1 | 1 | 3 | 1 | 3 | 3 |
| 1971 | 2 | 2 | 1 |   |   |   |   |   |   |   |   |   |
| AW   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1968 | 3 | 1 | - | 1 | 1 | - | - | 2 | - | 1 | - | 1 |
| 1969 | 1 | 2 | - | 1 | - | - | 1 | 1 | - | - | 1 | - |
| 1970 | 1 | 1 | - | - | - | - | - | 1 | 1 | 1 | - | - |
| 1971 | 1 | - | - |   |   |   |   |   |   |   |   |   |

APPENDIX 2

MY ABSENCES OF A WEEK OR MORE FROM DURGAPUR

|      |   |
|------|---|
| 1968 | 13/x - 22/x,  |
| 1969 | 1/iii - 7/iii, 7/iv - 16/iv, 30/iv - 11/v,<br>25/viii - 14/xi |
| 1970 | 7/iii - 21/iii, 4/x - 13/x,                                   |
| 1971 | Departed 18.iii.71.   |

APPENDIX 3

LIST OF BIRDS RECORDED IN EVERY WEEK

|                        |                       |
|------------------------|-----------------------|
| Pond Heron             | * House Crow          |
| Cattle Egret           | Common Iora           |
| Little Egret           | Goldmantled           |
| * Black Kite           | Chloropsis            |
| * Whitebacked Vulture  | * Redwhiskered Bulbul |
| Spotted Dove           | * Redvented Bulbul    |
| * Roseringed Parakeet  | * Jungle Babbler      |
| Koel                   | * Ashy Wren-Warbler   |
| Palm Swift             | * Tailorbird          |
| Indian Roller          | Magpie Robin          |
| Little Green Bee-eater | * Indian Robin        |
| Black Drongo           | * Purple Sunbird      |
| Ashy Swallow-Shrike    | House Sparrow         |
| Pied Myna              | Baya Weaver           |
| * Common Myna          | Spotted Munia         |
| * Tree Pie             |                       |

An \* indicates those species which also appear on Gaston's list of birds recorded in every week.

A further 4 species, Collared Dove, Little Brown Dove, Yellow-eyed Babbler and Blackheaded Oriole failed to make the above list by only a narrow margin.

## BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

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THE BIRDS OF DURGAPUR AND THE  
DAMODAR VALLEY 1

F. M. Gauntlett 2

{With a map}

A systematic list is given of birds recorded by the author during a 3 year stay in Durgapur, West Bengal. The diversity of species was found to be comparable with other areas of lowland India. The seasonal occurrence of species is examined and compared with information for the Delhi area. Migrant species were much more numerous in spring than autumn.

Introduction

Ornithological observations were made for three years between January 1968 and March 1971 while I was residing in Durgapur, West Bengal and this paper summarises the results which it is hoped will fill a gap in the published literature. E. H. N. Lowther worked in the Dhanbad area to the west in the 1930's (Lowther 1949) and various observations have been made in the Calcutta area to the east but the intervening area appears to have been ignored by ornithologists except for the author's earlier paper relating to Durgapur Barrage (Gauntlett 1972). Some details of that paper are included, extended and amended where necessary with the third year of observations.

The literature available to assist the amateur field ornithologist and relevant to the area was sparse to start with, compared with other areas such as Europe, but has improved considerably since, particularly with the completion of the HANDBOOK OF THE BIRDS OF INDIA AND PAKISTAN (Ali & Ripley 1968-1974), "The

1 Accepted December 1983.  
2 55 Larkfield Avenue, Kenton, Harrow, Middlesex HA3 8NQ, U.K.

handbook" henceforth and King et al. (1975).

The standards of field identification of certain difficult species and groups, particularly birds of prey, have also been greatly assisted by new information which has appeared in more recent years. Some of my records have been reassessed in the light of this new information.

Methods

All observations were made as a part time hobby, but were almost daily in and around my bungalow and garden and twice daily trip to and from my office approx. 1.3 km away. On Saturday afternoons and Sundays excursions were made locally or further afield as opportunity and inclination arose. See appendix 1

for frequency of visits to main locations. A certain amount of travelling was necessary in the course of my work and these journeys were also used for casual observations. These trips were to Calcutta, usually by train, occasionally by car, when a track-side transect of birds was carried out to while away the time. Road journeys were made by car to Santaldih or Jamshedpur, the route being across the R. Damodar at the barrage then via Maliara, Kusthalia, Saltora, Ragunathpur, then either continuing westward to Dudra  
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JOURNAL, BOMBAY NATURAL HIST. SOCIETY, Vol. 82 and Santaldih, or turning southwards to Purulia, Balarampur, Chandil and Jamshedpur. Purulia was taken as the arbitrary limit for ornithological records. Trips were also made by car north-west up the GT road to Topchanchi, turning south through Gomoh to Chandrapura. A driver was usually provided for these journeys.

When the possibilities of making an ornithological contribution were realised, a regular diary was kept from March 1968 onwards. Notes during the first two months acclimatisation and familiarisation period were rather more haphazard and dates quoted are best estimates. Inevitable absences occurred from time to time due to local or home leave and periods of a week or more are listed in appendix 2. The poor coverage for October will be noted.

The study area

Durgapur is a heavy industrial development begun in the early 1960's located at 23° 30' North, 87° 15' East on the north bank of the Damodar river 185 km NW of Calcutta about half way between Burdwan and Asansol in the Burdwan district of West Bengal. The industrial area was about 20 km long by 6-7 km wide on a low laterite ridge which was once dense sal jungle. At the stage of development reached during the author's stay it was a patchwork of factory compounds, housing colonies, villages, bustees, patches of sal jungle and scrub, a few tanks and jeels and bare eroded scrubby wasteland. The highest point of the area is the triangulation point at 371' (113 m) above what was to become the town centre. The river level at the barrage is 219' (67 m). The axis of the area is governed by

the river and runs from WNW to SSE and is followed by the Grand Trunk Road and the main line of the Eastern Railway.

From NW through E to SE a level plain stretches away to the R. Ganges, R. Hoogly and Calcutta with a dense rural population devoted to rice cultivation. The Ajoy (or Ajay) river some 20 to 30 km to the north follows a similar directional trend.

To the westward is the Jahria coalfield and the industrial towns of Asansol, Kulti, Bum, pur, Dishergarh and the country is more undulating with isolated volcanic outcrops culminating in Panchet Hill 2110' (643 m) and the low hills around Maithon dam on the Barakar river which forms the border with Bihar. South of the Damodar river is Bankura district which is less fertile and more undulating, these trends being more pronounced in Purulia district which geographically resembles Bihar more than West Bengal.

#### Climate

The climate of Durgapur is tropical monsoon in character with most (+90%) of the annual rainfall (c. 1400 mm) falling in heavy thunderstorms from the end of May to early September during the SW monsoon (which actually comes in from the SE). The rainy season can sometimes be extended into October or November when fringes of cyclones in the head of the Bay of Bengal cover the area as was the case in 1970.

The monsoon is followed by a cool (relatively) dry winter from October to February although a little rain can occur in early January (known locally as Christmas rains). Day temperatures rise to around 18° to 24°C. Frost is unknown, the minimum temperature during my stay according to press weather report was 8.3°C. From early March the temperature begins to rise and mid-day shade temperatures by mid April can be expected to reach 43°C and with 49°C not unknown in May. During the hot weather brief showers can be brought by

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short lived localised squalls called Nor'westers.

This was particularly so in 1969 which also had cyclonic rain in April.

Monsoon rainfall is notoriously fickle but was generous in all three years of my stay.

A press report stated the 1968 monsoon was the Wettest in West Bengal for 50 years. There

was a particularly heavy spell of rain in September 1970 when c 400 mm fell in two weeks.

Rainfall was particularly scant in the early months of 1968 following a poor monsoon in 1967 and marginal areas looked noticeably arid.

During the monsoon the flat countryside with all its paddy fields becomes a shallow swamp.

Flora

The flora of the region is tropical moist deciduous monsoon sal type, the Sal tree *Shorea robusta* forming a high proportion (+80% to my unbotanical eye) of the jungle community. Although sal trees lose their leaves during February and March, the individual trees are asynchronous and many trees can be found with old leaves, new leaves and flowers at the same time so that the canopy is never completely bare. The small proportion of truly deciduous trees which are bare at this time are insufficient to make much difference. The original forest cover has long since disappeared from the level fertile areas which have been turned into paddy fields and only pockets of overgrazed, overcut and eroded scrubby areas persist in less fertile areas. However I was fortunate that the last remnant of reasonably natural forest in the area about 400 m x 400 m began about 100 m from my bungalow. Here the trees produced a closed canopy about 9 to 11 m high but undergrowth and regeneration was suppressed by annual burning of the leaf litter in February. This jungle was visited about 2 to 3 times a week and unless otherwise stated references to sal jungle in the systematic list refer to this area. (I have heard that this was cut down some time after my departure). This block gradually deteriorated into a larger area of scrub about 1 km x 2.5 km, which itself was being whittled away by new roads and housing. A flush of ephemeral ground cover appeared in the sal jungle during the monsoon.

Somewhat similar but thinner areas of sal forest with trees 8 to 11 m tall had been re-

tained in blocks and belts in unused parts of my housing colony as a deliberate policy. A fairly extensive area of sal jungle under the control of the State Forest Dept some km north of Durgapur towards the Ajoy river was being developed into commercial plantations.

In the open countryside trees were generally confined to belts along roads and small clumps particularly around villages. A variety of trees are found as isolated specimens, such as silk cotton *Salmalia malabarica*, Peepul *Ficus religiosa*, Banyan *F. bengalensis*, Palmyra palm *Borassus flabellifer* and Date palm *Phoenix sylvestris* and these in conjunction with Mango *Mangifera indica* and Bamboo form much of clumps around the villages.

An area to the north of the GT road below and around the triangulation point which was to become the town centre had a very thin soil cover with underlying rocks breaking through supported a thin thorny scrub jungle.

Localities

Bungalow, garden and housing colony.

My bungalow and garden were situated in a housing colony near the crest of the ridge north of the GT. road in sal jungle, of which as much as possible had been retained. My garden, and others like it, was about 0.27 ha

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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

(2/3 acre) of lawn, flowerbeds and vegetable garden dotted with sal and other jungle trees. Flowering exotics included Gul Mohr *Delonix regia*. Frangipani *Plumeria rubra*. Hibiscus, Poinsettia *Euphorbia pulcherrima*, Oleander *Nerium odorum* and Malayan cherry *Muntingia calabura*. Bananas *Musa sapientum* and Papayas *Carica papaya* were grown for fruit. The bungalow and trees were draped with flowering climbers such as bougainvillea, *bigonia*, *quisqualis*, *alamanda* etc. It was screened from its neighbours and adjacent roads by hedges of sal trees with a thick undergrowth of hibiscus, lantana and other shrubs, again well covered with flowering climbers such as *ipomoea*, *ixora*, etc.

The verges of the colony roads were lined with trees such as Mango, Tulip tree *Spathodea campanulata*, Indian lilac *Lagerstroemia indica* and others. As stated above blocks of sal had been retained within the colony and were

interspersed amongst the houses and gardens. The 400 m x 400 m block mentioned under "Flora" formed the boundary of the housing colony on one side. About half the distance of my daily trip to the office had sal jungle on both sides of the road and half past an area of waste ground with short grass dotted with dense clumps of bushes and a few palms with several hectares of paddy field beyond.

#### Durgapur Barrage.

This area was described in detail in my previous paper (Gauntlett 1972) and will not be repeated here. The heavy rain which fell in September 1970 occurred after that was written and the high river flows which resulted scoured out a lot of the incipient sand banks and water hyacinth *Eichhornia crassipes* islands. It will be referred to as DB in the systematic list.

#### Anderson's Weir.

This was a river control work built in the 1930's about 19 km downstream of Durgapur at Rondhia and its sluice fed a north bank canal but it has been rendered largely redundant by DB. The area around the inspection bungalow and head works had been landscaped and an avenue of large spreading trees of the Holm Oak type (*Quercus* sp. ?) planted along the approach road. Some acacias had also been planted on the sandy river terrace. Upstream of the weir siltation had produced large flat areas of wet sand and mud. Downstream were large stabilised sandbanks with a sparse growth of coarse grasses. This gave a rather desert like aspect to the area.

The north bank canal had been cut through a low ridge so that the banks were quite high, about 10-12 m and the inner slopes carried a dense growth of low thorny shrubs.

The area is referred to as AW henceforth.

#### DVC Experimental farm.

This was located between Panagarh (13 km ESE) and Rondhia alongside the Damodar canal on the way to AW. Parts of it were sometimes irrigated from the adjacent canal in winter providing a local wet environment in an otherwise dry landscape. The kutchra road ran along the top of the canal bank giving a wide view over the flat countryside.

#### Maithon Dam.

The Barakar river has been dammed at Maithon (53 km WNW) where it flows through an area of low rocky hills before joining the Damodar. Visits here were social functions at the invitation of the yacht club and bird watching was rather circumscribed. However the lake was very turbid and did not appear

to support much bird life. Brief acquaintance of the thick scrub clothing the low hills showed 505

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it to be a difficult and unpleasant habitat to work, undergrowth being mostly thorny stinging creepers and shrubs. Sal was still the predominate tree.

Messenjore Dam.

A single visit was made to this locality, also known as Canada Dam, the setting being rather similar to Maithon but the tree cover is more deciduous. It is about 70 km N of Durgapur.

Panchet Dam.

On the Damodar close to Maithon and very similar but with more barren surroundings except for the wooded mass of Panchet hill overlooking it.

Topchanchi.

The Jahria Water Board reservoir at Topchanchi is at the eastern foot of Parasnath hill 4481' (1366 m) about 130 km WNW of Durgapur. The lower slopes of Parasnath and adjacent hills are well forested with much greater botanical variety than the sal jungle around Durgapur. Bamboo was much in evidence. Zoologically it is probably more akin to the Chotanagpur plateau than the Damodar valley.

Systematic List

The sequence and nomenclature follows the handbook, Ali and Ripley 1968-74 with English names for species according to the synopsis, Ripley 1982.

*Podiceps cristatus* (Linnaeus),

**GREAT CRESTED GREBE**

2 birds at DB on 8 . ii . 69 are the only record.

*Podiceps ruficollis* (Pallas),

**LITTLE GREBE**

A small resident population at DB with numbers buliding up to about 100 at the end of the hot weather in May when display and trilling recorded. Although none have been positively recorded elsewhere the marked drop in numbers at the start of the monsoon could indicate a dispersal to flooded jheels.

*Phalacrocorax carbo* (Linnaeus),

**LARGE CORMORANT**

Only three records, all at DB: In Feb. 1968, date uncertain. 3 on 20.xii.70 and 2 on 27.xii.70.

Phalacrocorax fuscicollis Stephens,  
INDIAN SHAG

One at DB on 18.V.68 and a possible at  
AW on 20.i.68. A bird over my bungalow  
on 18.vi.68 which appeared bulkier than a  
Little Cormorant may also have been this  
species. Not easy to identify and may be more  
frequent than the records suggest.

Phalacrocorax niger (Vieillot),  
LITTLE CORMORANT

A common and widespread resident on  
rivers, lakes, tanks, jheels, concentrating on the  
larger areas of permanent water in the dry  
season and spreading out widely to flood water  
during the monsoon when the birds become  
very mobile with many small flocks flying over  
my garden. Maximum flock of 150 at DB  
in Feb. and March.

Anhinga rufa (Daudin),  
DARTER

Those recorded at DB as detailed in my  
previous paper are the only records in the  
area, apart from those in the cormorant colony  
in Calcutta zoo.

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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

Ardea cinerea Linnaeus,  
GREY HERON

DB was the main haunt where it was pre-  
sent throughout the year except during June  
and July. Maximum of 12 on two occasions  
in Feb. /March 1970. Also recorded twice from  
AW and from the train to Calcutta.

Ardea purpurea Linnaeus,  
PURPLE HERON

One at a jheel beside the road to Suri on  
19 . i . 69 was the only record away from DB  
where it was probably resident with a maxi-  
mum of 6 in one day.

Ardeola striatus (Linnaeus),  
LITTLE GREEN HERON

Only one further record added to those in  
my earlier paper was again at DB on 16 . i . 71 .  
One of the first species I encountered in India,  
one being seen beside the canal on the way  
from Dum Dum airport on the day of my  
arrival on 10.i.68. It was never seen there  
again.

Ardeola grayii (Sykes),  
POND HERON

An abundant resident to be found on almost  
every bit of water from large lakes to the

smallest puddles. Very mobile during the monsoon when often seen flying over my bungalow.

*Bubulcus ibis* (Linnaeus),

#### CATTLE EGRET

An abundant resident in both wet and dry areas, even entering sal jungle. Flocks of up to 50 in favoured localities. Often seen flying over my bungalow or walking on the road outside. Of about 600 egrets to be seen from the train on a typical trip to Calcutta during the monsoon, about 2/3 appeared to be Cattle Egrets. Acquisition of breeding plumage was noted in April.

*Egretta alba* (Linnaeus),

#### LARGE EGRET

8 or 10 present at DB throughout the year. Also recorded twice at AW in Feb. and 1 or 2 recorded on most train journeys to Calcutta.

*Egretta intermedia* (Wagler),

#### SMALLER EGRET

Status much as Large Egret but about twice as numerous and more likely to be found at roadside jheels and flooded paddy.

*Egretta garzetta* (Linnaeus),

#### LITTLE EGRET

Abundant resident second in numbers to Cattle Egret but more confined to wet habitats such as DB and AW. Widespread at jheels and flooded paddy during the monsoon. About 1/3 of the egrets seen from the train to Calcutta were this species. Often seen passing over my garden.

*Nycticorax nycticorax* (Linnaeus),

#### NIGHT HERON

Principally a monsoon visitor from May to September with 50+ mostly immatures at DB with much commuting to and fro over my bungalow at dusk. Outside this season, recorded at Messenjore Dam on 23.iii.69 and a single bird over my bungalow on 26.ii.70.

*Ixobrychus cinnamomeus* (Gmelin),

#### CHESTNUT BITTERN

Records at DB, c. 6, now extended from May to September. About a dozen records on floodwater and paddy during the monsoon.

*Ixobrychus sinensis* (Gmelin),

#### YELLOW BITTERN

Unlike the previous species never recorded away from DB where the status remains unchanged; 12+ from April to August.

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*Dupetor flavicollis* (Latham),

BLACK BITTERN

Another monsoon bird at DB from May to September with 7 or 8 on 31.V.70. 5 or 6 records of single birds out in the countryside during June and July suggests some dispersion.

*Ibis leucocephalus* (Pennant),

PAINTED STORK

The single immature at DB on 17.iii.68 as given in my previous paper remains the only record for the area.

*Anastomus oscitans* (Boddaert),

OPEN BILL STORK

Common resident recorded in every month of the year with a breeding colony in a village off the road near Saltora. Flocks of 90 to 100 recorded near Saltora on 18.vi.69, near the DVC farm on 17.viii.69 and at DB on 28.iii.70 and 18.vi.70. 10 to 20 was the more usual flock size but singles and pairs by no means uncommon. Between 10 and 30 recorded on most journeys to Calcutta. 18 records of varying numbers flying high over my garden.

*Ciconia episcopus* (Boddaert),

WHITE NECKED STORK

Odd pairs thinly distributed over the countryside but a flock of 10 on irrigated paddy at the DVC farm on 2.ii.68 was unusual. Most records from January to May. Not recorded in June, July, November or December.

*Leptoptilos dubius* (Gmelin),

ADJUTANT

One beside the road to Jamshedpur in Bankura district with other storks and egrets on 25.vii.70.

*Leptoptilos javanicus* (Horsfield),

LESSER ADJUTANT

One bird at DB on 23.ii.69 was the only record.

*Threskiomis melanocephala* (Latham),

WHITE IBIS

A monsoon visitor with 7 records from June to August at DB or in flooded paddy. Maximum of 7 seen from the train to Calcutta on 20.vii.68.

*Pseudibis papillosa* (Temminck),

BLACK IBIS

One bird seen from the train to Calcutta on 2.V.68.

*Anser indicus* (Latham),

BARHEADED GOOSE

4 at DB on 17.iii.68.

*Dendrocygna javanica* (Horsfield),

#### LESSER WHISTLING TEAL

Present at DB throughout the year with numbers building up to a peak at the end of the dry season with approx. 3000 on 18.iv.70 and 6 . iii . 71 . Spreads out to jheels and flood-water during the monsoon with many small flocks passing over my garden. 320 seen from the train to Calcutta on 17.vi.69.

*Dendrocygna bicolor* (Vieillot),

#### LARGE WHISTLING TEAL

Possibly overlooked amongst the previous species but the only definite record was a flock of 7 or 8 passing over my bungalow on 9.vi.68. Identified by white upper tail coverts and more ponderous wing beats.

*Tadoma ferruginea* (Pallas),

#### RUDDY SHELDUCK

Common winter visitor to sandy river beds  
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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

at DB and AW, usually upto 25 but 35 at DB on 16 . i . 71 and an exceptional 82 on the lake at DB on 11.1.69. Also recorded on the lake at Topchanchi on 10.iii.68 and a single bird flying over my garden on 20.i.69.

*Anas acuta* Linnaeus,

#### PINTAIL

Even the large numbers mentioned in my previous paper were surpassed in 1971. From about 3000 at the beginning of the year there were 4500 on 16 . i . 71, 11000 to 12000 on 23 .1.71, 15000 on 7.ii.71 and c. 18000 on 14.11.71. Three weeks later numbers had dropped to c. 6000. A flock of between 100 and 200 flying northwards over my bungalow on 11 . iii . 71 may be evidence for my earlier suggestion that this is a pre-migration gathering. The apparent yearly increase in peak numbers is believed to be a true effect because, despite the short duration of the peak, coverage was fairly regular at the critical season.

The species was also recorded at AW and Topchanchi.

*Anas crecca* Linnaeus,

#### TEAL

Another species where 1971 numbers exceeded those recorded previously with c. 1000 on 28 . i . 71 , 7 . ii . 71 and 14.ii.71. Also recorded at Topchanchi on 25 . i . 70.

*Anas platyrhynchos* Linnaeus,

#### MALLARD

No further record to add to the 4 at DB

on 23.xi.69 reported in my previous paper.

*Anas strepera* Linnaeus,  
GADWALL

Numbers at DB during November and December 1970 were at or near the previous maximum of 200 but this increased to 500 on 16 . i .71 and 1000 from 23. i. 71 to 14 .ii .71. The latest date of the season was 4 on 18.iv.70. Also recorded at AW on 23.xi.69.

*Anas penelope* Linnaeus,  
WIGEON

Unlike other surface feeding ducks there was no increase in numbers in 1970/1971, the maximum again being 25. Only recorded at DB.

*Anas querquedula* Linnaeus,  
GARGANEY

Recorded upto April at DB when 150 still present on 1 8 . iv . 70. Numbers during the 1970/71 winter built up from 23 on 15.xi.70 to c. 500 on 7 . ii . 7 1 .

*Anas clypeata* Linnaeus,  
SHOVELLER

Only at DB. Maximum numbers up from the previous 60 to c. 100 in early February 1971.

*Netta rufina* (Pallas),  
REDCRESTED POCHARD

All at DB with two more records bringing the total to five. The Dec./Jan. season extended to February and March with 2 birds on 28. iii. 70 and 7 . ii . 7 1 .

*Aythya ferina* (Linnaeus),  
POCHARD

Two more records of 12 on 23.xi.70 and 20 on 7 . ii . 7 1 brings the total number of records at DB to six. Its status in Durgapur does not reflect the comment in the handbook that it is one of the commonest diving ducks, that position being held by the Tufted Duck.

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*Aythya nyroca* (Goldenstadt),  
WHITE-EYED POCHARD

The previous two records at DB were doubled with 15 on 16 . i .71 and 10 on 7 . ii . 7 1 .

*Aythya fuligula* (Linnaeus),  
TUFTED DUCK

The commonest diving duck being a regular winter visitor to DB from November to

April with a peak of 200 in February and March. Two out of season records with 1 on 2.vi.68 and 4 males and 1 female on 1.viii.70. Unlike the surface feeding ducks diving ducks did not show any dramatic increase in numbers in 1970/71 compared with previous years. *Nettapus coromandelianus* (Gmelin),

#### COTTON TEAL

DB was the headquarters for the species in the area with numbers reaching a maximum of 150 in March. Numerous small parties during the monsoon when it spread out to jheels and floodwater. Courtship flights seen in May. *Sarkidiornis melanotos* (Pennant),

#### COMB DUCK

An irregular winter visitor to DB, quite common in some seasons and almost absent in others. Only two more records of 1 1 birds in February 1971. 1969/70 appears to have been a particularly good year.

*Elanus caeruleus* (Desfontaines),

#### BLACK WINGED KITE

Quite common, recorded in every month of the year with 3 together on one occasion. I can see no grounds for considering the bird crepuscular, all my observations being in broad daylight. Most records were of birds over paddyfields and scrub outside my office. Also seen quite frequently between Panagarh AW.

*Pernis ptilorhyncus* (Temminck),

#### HONEY BUZZARD

A total of nine records in January, February, March, August and September, three of these being birds flying over my garden. The others were over open country, particularly the better wooded areas such as Maithon and Messanjore Dam.

*Milvus migrans* (Boddaert),

#### BLACK KITE

Abundant resident augmented by winter visitors showing more prominent carpal patches. Several birds over my garden daily.

*Haliastur indus* (Boddaert),

#### BRAHMINY KITE

A single bird could usually be found on every visit to DB or AW. Much more widespread over jheels and flooded paddy during the monsoon when upto 6 could be seen in an afternoon. 1 over my garden on 30.ix.68.

*Accipiter badius* (Gmelin),

#### SHIKRA

Apart from 1 record at Dishergarh on 21.xii.69, the remaining 15 records were of single birds over or near my garden concentrated in the period November to March but also seen in June and July.

*Accipiter trivirgatus* (Temminck),

#### CRESTED GOSHAWK

1 at Topchanchi on 26.i.70. By coincidence what appeared to be a large accipiter flew past my office on the following day but was not identified for certain.

*Buteo rufinus* (Cretzschmar),

#### LONGLEGGED BUZZARD

A bird watched at close range on the ground beside the road between Bolpur and 510

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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

Katwa remained a puzzle for a long time but when my notes and sketches could be compared with detailed descriptions it proved to be an immature pale phase of this species.

Another *Buteo* at DVC farm on 26 . i . 68 was probably this species.

*Butastur teesa* (Franklin),

#### WHITE-EYED BUZZARD

Apart from one record in July all other records were for the dry season from October to May. A bird of the better wooded areas and sal jungles, with 15 records of birds over my garden or adjacent parts of the colony.

*Spizaetus cirrhatus* (Gmelin),

#### CRESTED HAWK -EAGLE

5 records between June and September 1968 of birds over my garden or the surrounding jungle. After an absence in 1969 another 5 records spread evenly throughout in 1970 with 1 more on 2 . i . 7 1 .

*Hieraaetus fasciatus* (Vieillot),

#### BONELLI'S EAGLE

1 adult at AW on 16.ii.69.

*Hieraaetus pennatus* (Gmelin),

#### BOOTED EAGLE

Single birds over my garden on 14.ii.68 and 3 . vii . 70. A more problematical dark phase bird near the DVC farm on an unrecorded date.

*Aquila heliaca* Savigny,

#### IMPERIAL EAGLE

1 at the DVC farm on 2 1 . i . 68 identified by its light coloured shoulder patches.

*Aquila rapax* (Temminck),

#### TAWNY EAGLE

The aquila eagles are notoriously difficult to identify with various immature plumages and colour phases but more recent published literature and field guides have thrown some light on the problem. Unless there was good reason for thinking otherwise aquilas were

attributed to this species although the only aquila listed by Lowther for the Dhanbad district was *A. pomerina* Lesser Spotted Eagle. 1 near the road to Dubrajpur on 24.i.68, 1 low over the road between Panagarh and Ilam Bazar in Feb. 1968 (actual date not recorded) had its identification confirmed with the aid of a colour photograph taken with a 450 mm telephoto lense and 1 at AW on 5 . i . 69. The only monsoon record of an *Aquila* sp. was of one being mobbed by terns over the Ajoy river on 16.vi.68, which may have been a Lesser Spotted. Apart from this record all the others were confined to January-March with the majority in 1968 which was the driest period.

*Aquila clanga* Pallas,

#### GREATER SPOTTED EAGLE

1 near the Ajoy river from the Panagarh — Ilam Bazar road on 24 . i . 68 showing a white rump. This was about 16 km from where the Tawny Eagle was seen the same day. 1 over the lake at Topchanchi on 10.iii.68 showing the very broad wings and short tail of an immature and 1 over irrigated paddy at the DVC farm on 16.ii.69.

*Ictinaetus malayensis* (Temminck),

#### BLACK EAGLE

1 record of this unmistakable bird gliding with its characteristic slow flight along a wooded slope beside the reservoir at Messanjore dam on 23.iii.69.

*Torgos calvus* (Scopoli),

#### PONDICHERRY VULTURE

A pair seen at Maithon on most visits, a  
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single bird eating some offal on the office lawn on 18.xi.68 and 1 on 15.ii.70 in Bankura district near the road to Purulia.

*Gyps fulvus* (Hablizl),

#### GRIFFON VULTURE

9 records of pale *Gyps* vultures with white heads. 8 of these occurred in February, 6 of these being over my garden in 1969 and 1971. A single bird was presumably responsible for the 5 records from 6.ii.69 to 19.ii.69. The only non-February record was 1 on 5.xi.70. Grubh (1978) has indicated the difficulties of separating this species from immature Long-billed Vulture when the latter lacks its black head and neck. However I believe only

Griffons could display such pale creamy white plumage as that seen on these birds.

*Gyps indicus* (Scopoli),  
LONGBILLED VULTURE

Probably under-recorded by the 9 records spread over February, March, April, June, October and December without any discernible pattern. Single birds over my garden on 4 occasions. 3 of the other records were of 2 birds together.

*Gyps bengalensis* (Gmelin),  
INDIAN WHITEBACKED VULTURE

Abundant resident with hardly a day going by without seeing at least one. Seen circling over my garden on numerous occasions in flocks upto 45. A steady stream heading east in ones or twos almost all day long on 1 and 2.iv.68 may suggest some seasonal movement with the monsoon.

*Neophron percnopterus* (Linnaeus),  
EGYPTIAN VULTURE

Rather scarce in Durgapur itself with only 3 records. Commoner in Purulia District and beyond Asansol into Bihar when most excursions into these areas would produce a bird or two.

*Circus cyaneus* (Linnaeus),  
HEN HARRIER

1 at the DVC farm on 20.L68.

*Circus macrourus* (S. G. Gmelin),  
PALLID HARRIER

The statement in my previous paper that the species was quite common in winter now appears to have been over optimistic. There was 1 outside my office on 15 . i . 68 and then 4 records between 18.xii.68 and 24.iii.69, one of these being over my garden on 4.i.69. None at all were seen in either of the next two winters. A number of female or immature harriers could not be identified as to species and this might alter the picture.

*Circus melanoleucos* (Pennant),  
PIED HARRIER

Winter visitor with 19 records between November and March, almost half of which were at DB. More likely to be found away from water than the Marsh Harrier. A complete absence of records for the 1970/71 winter suggests this was a particularly poor year for harriers.

*Circus aeruginosus* (Linnaeus),  
MARSH HARRIER

By far the commonest harrier and recorded in every month except May, June and July. Most numerous over the reed beds at DB with upto 4 at once, but also seen over other watery habitats such as AW, canals and jheels.

2 records of birds flying over my garden. Unlike other harriers the species maintained its numbers in 1970/71.  
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**BIRDS OF DURGAPUR AND THE DAMODAR VALLEY**

*Circaetus gallicus* (Gmelin),

**SHORT-TOED EAGLE**

1 hunting over the sand banks at AW on 12.V.68.

*Spilornis cheela* (Latham),

**CRESTED SERPENT EAGLE**

1 over my garden on 31. v. or I.vi.68 and 1 over the nearby jungle on 23 . i . 70.

*Pandion haliaetus* (Linnaeus),

**OSPREY**

June and July remain the only months when this bird has not been seen at DB. Also several records from AW with 2 on 15.xii.68.

*Falco peregrinus* Tunstall,

**PEREGRINE FALCON**

1 at DB on 15.ix.70.

*Falco subbuteo* Linnaeus or *F. severus*

Horsfield, hobby or oriental hobby

A falcon believed to be *F. subbuteo* from a brief glimpse as it flew over my garden on 14.V.70 but the date is very late for a supposed winter visitor. The same or a similar bird was seen over the nearby jungle six weeks later on 26.vi.70.

*Falco chicquera* Daudin,

**REDHEADED MERLIN**

1 clearly seen beside DB on 29.xi.70. A small blue-grey falcon seen disappearing into a *Borassus* palm near my office 21.iii.68 was probably this species.

*Falco naumanni* Fleischer,

**LESSER KESTREL**

A party of 4 birds outside my office on 8 . xii . 69 showing the characteristic blue-grey wing coverts. Another group of 3 at Dishergarh on 21. xii. 69.

*Falco tinnunculus* Linnaeus,

**KESTREL**

A winter visitor to the open countryside from early October to the end of March. 17 records in all with 1 over my garden on 29.iii.69, the latest date.

*Francolinus francolinus* (Linnaeus),

**BLACK PARTRIDGE**

4 records between 13.iv.68 and 2.vi.68 of a single bird in scrub habitats varying from sal jungle to dry riverside scrub downstream

of DB. 1 seen from a train to Calcutta on 22.ix.70.

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*Francolinus pondicerianus* (Gmelin),  
INDIAN GREY PARTRIDGE

11 records spread throughout the year but not March, November or December. Usually 2 birds but 4 together on one occasion at DB. The grassy area with clumps of dense bushes beside the approach road to my office was a favourite haunt.

*Coturnix coroniandelica* (Gmelin),  
RAIN QUAIL

2 beside the road on the way to Ragunathpur on 9.vi.70. On several other occasions quail-like birds, either singly or in pairs, were seen scuttling across roads but were not specifically identified.

*Perdicula asiatica* (Latham),  
JUNGLE BUSH QUAIL

A covey in an area of long grass and lantana scrub beside the road to Bishnupur on 18.ii.68. No other record nearer than Hazaribagh N.P.

*Galloperdix lunulata* (Valenciennes),  
PAINTED SPURFOWL

No first hand evidence but friends reported birds seen quite often in the early morning on 513

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the road to Maithon Yacht Club. This ran along the side of a wooded rocky hill and would appear an ideal habitat. Lowther found the bird at Topchanchi.

*Gallus gallus* (Linnaeus),  
RED JUNGLE FOWL

A call was heard from deep in the sal jungle on 18.V.68 but nothing could be found on following it up. An early rising neighbour reported birds visiting his garden in the early mornings in April 1969 and two tail feathers had been picked up.

*Tumix tanki* Blvth,  
YELLOWLEGGED BUTTON QUAIL

1 on fallow land at AW on 30.iii.69.

*Tumix suscitator* (Gmelin),  
BUSTARD-QUAIL

The commonest of the small quail-like birds of the area and probably more numerous than the 10 records suggest, being found in most areas with a mixture of scrub and open ground, a habitat becoming increasingly wide-

spread as the woodland disappeared. 1 bird scuttled across the road and into my garden on 21.viii.69.

*Amaurornis phoenicurus* (Pennant),  
WHITEBREASTED WATERHEN

Quite common along the canal bund road to AW when they would emerge from the canal-side vegetation in the evening. Found in flooded paddy and even the office lawn during the monsoon. 1970 records at DB were confined to May but 7-8 on 31st was an unusually large number.

*Gallixrex cinerea* (Gmelin),  
WATERCOCK

Only recorded from DB during the monsoon. at least 2 birds but none seen in 1970.

*Gallinula chloropus* (Linnaeus),  
MOORHEN

The March-August pattern at DB continued in 1970 but with increased numbers of 20-30 at the end of May. An adult with chicks on 1.viii.70. Also seen at a roadside jheel near Rangunathpur on 16.xii.70 (the only winter record) and from the train to Calcutta on 7.iv.69.

*Porphyrio porphyrio* (Linnaeus),  
PURPLE MOORHEN

DB was the only place where the species was recorded and the status remained unchanged from that reported previously, i.e. upto 7-8 from March to August.

*Fulica atra* Linnaeus,  
COOT

Wintering in small numbers at DB but maximum in 1970/71 was only 3. The solitary record on 2.vi.68 at DB remains the only summer record.

*Hydrophasianus chirurgus* (Scopoli),  
PHEASANT-TAILED JACANA

Common resident at DB with upto 200 in April. Recorded in every month except October (but only two visits in three years at that time). Could also be found on suitable marshy jheels but less likely than next species. Nuptial display was noted in May and birds began moulting out of breeding dress in mid-September. Thus they could be more retiring and less likely to be seen in October.

*Metopidius indicus* (Latham),  
BRONZE-WINGED JACANA

Common and widespread resident on jheels and wet habitats, but less gregarious than the previous species. 24 were recorded from the train to Calcutta on 7.iv.69. Numbers con-

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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

concentrated at DB during the hot weather with 50-60 in March and April. Smaller numbers recorded there throughout the year except October.

*Vanellus cinereus* (Blyth),  
GREYHEADED LAPWING

1 at DB on 18.iv.70.

*Vanellus indicus* (Boddaert)  
REDWATTLED LAPWING

A common resident in wet areas becoming more mobile during the monsoon. DB and AW were regular haunts but also found on jheels and flooded paddy. 2 records of birds flying over my garden in June.

*Vanellus spinosus* (Linnaeus),  
SPURWINGED LAPWING

1 or 2 records of single birds on the sand banks at AW in January and February in each winter.

*Vanellus malabaricus* (Boddaert),  
YELLOW-WATTLED LAPWING

Usually a pair or two on the dry sandy areas at AW from January to May. Maximum number was 6 on 3.i.71. A pair also found an area of the adjacent factory compound used for dumping foundry slag to their liking producing the only June record on 4.vi.70. 1 downstream of DB on 11.iv.70 was the only record there.

*Pluvialis squatarola* (Linnaeus),  
GREY PLOVER

1 downstream of DB on 24.iii.68 and 1 on fallow land in Bankura district about 1 or 2 km south of DB on 29.ix.68.

*Pluvialis dominica* (P. L. S. Muller),  
LESSER (or eastern) golden plover

The situation at DB remained unchanged in 1970/71 with upto 50 from December to April, latest date 18th. Also at AW with 30 on 30.iii.69.

*Charadrius dubius* Scopoli,  
LITTLE RINGED PLOVER

A dry season bird of sandy rivers at DB or AW, usually 6 or 7 but upto 10 or 12 at times. Also seen on the Ajoy river on 16.vi.68. Display flight and mobbing recorded in January.

*Charadrius alexandrinus* Linnaeus,  
KENTISH PLOVER

A common dry season bird of sandy river beds at DB or AW, maximum number was 62 on 5.xii.70.

*Charadrius placidus* J. E. Gray or C.

*hiaticula* Linnaeus,

LONGBILLED RINGED PLOVER Or RINGED PLOVER

1 at DB on 16.iii.69, probably the former.

See comments in my earlier paper.

*Charadrius mongolus* Pallas,

LESSER SAND PLOVER

Two more records at DB of 3 on 30.ix.68

and 1 on 11.i.69 omitted from my earlier

paper bring the total to five.

*Numenius arquata* (Linnaeus),

CURLEW

*Numenius phaeopus* (Linnaeus),

WHIMBREL

One more record of 1 at DB on 27.ix.70,

again flying SE like the 2 previous records,

and again the preference was for Whimbrel  
rather than Curlew.

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*Tringa erythropus* (Pallas),

SPOTTED REDSHANK

A winter visitor from November to April

at DB or AW with an exceptionally early re-

cord of 1 on flooded paddy near the DVC

farm on 31.viii.68. The latest date was 2 at

AW 21 .iv.68. A flock of 8 or 9 flew over my

garden on 23 . iii . 70. The supposedly commoner

Redshank *T. totanus* remained as elusive as

ever and I never saw one in W. Bengal, the

nearest being 1 in Madhya Pradesh between

Jabalpur and Katni.

*Tringa stagnatilis* (Bechstein),

MARSH SANDPIPER

The only additional observation to add to

the 8 records at DB in my previous paper was

1 at AW on 23.xi.69. None at all were seen

in the 1970/71 winter.

*Tringa nebularia* (Gunnerus),

GREENSHANK

Common winter visitor to the Damodar

river and suitable wet areas such as flooded

paddy. The earliest date was 1st August and

the latest was 18th April. The usual number

was 5 or less but upto 20 on occasions.

*Tringa ochropus* Linnaeus,

GREEN SANDPIPER

Whilst DB and AW were the main haunts,

it was the small sandpiper most likely to be

found in wet ditches and jheels. Earliest date

14th August and latest 18th April. Common

and often seen in small groups of upto 5.

*Tringa glareola* Linnaeus,  
WOOD SANDPIPER

DB was the birds favourite haunt but also found regularly at AW and occasionally elsewhere. One of the earliest waders to arrive being found on flooded paddy on 27th July with 5 August records of upto 15 birds. The latest date was 21st April. This species was much commoner than either Green or Common Sandpipers.

*Tringa terek* (Latham),  
TEREK SANDPIPER

A small sandpiper slightly larger than Common Sandpiper with similar bobbing action but with upturned bill and yellow legs was seen at DB on 1 or 7.ix.68 was omitted from my previous paper because the bill did not seem long enough or show a yellow base. However subsequent experience of the species and comparison with more detailed descriptions confirmed the identification.

*Tringa hypoleucos* Linnaeus,  
COMMON SANDPIPER

Common winter visitor with DB and AW its main haunts but also found on jheels and wet paddy. Earliest 31st August, latest 18th April.

*Gallinago stenura* (Bonaparte),  
PINTAIL SNIPE

Some birds flushed from dry grass and lantana scrub beside the road to Bishnupur on 18.ii.68 was the only occasion when I felt justified in identifying this species. It was a most un-snipe like habitat (the same place as the Jungle Bush Quail). The published information on the separation of Pintail and Common Snipe in the field was not available until after I left India.

*Gallinago gallinago* (Linnaeus),  
FANTAIL (or COMMON) SNIPE

Recorded at DB in every month except June and July. More numerous in winter when upto 15. Also at AW on 15.xii.68. Mobile during the monsoon when 2 birds flew over my garden on 6 . viii . 68 and 1 on 19.ix.70.  
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BIRDS OF DU RGAPUR AND THE DAMODAR VALLEY

*Gallinago minima* (Brunnich),  
JACK SNIPE

1 at DB on 3 . i . 70 was the only record.

*Calidris canutus* (Linnaeus),  
KNOT

The identification of 1 at DB on 3 . i . 70 mentioned in my previous paper received further confirmation in King et al. (1975) who state that the Eastern (or Great) Knot *C. tenuirostris* shows clear white upper tail coverts | whereas my notes refer to this area being greyish white contrasting little with the back, typical of Knot.

*Calidris minuta* (Leisler),

#### LITTLE STINT

Mainly at DB from September to April, also at AW with a latest date of 21.iv.68.

Less frequent than previously during the 1970/71 winter.

*Calidris temminckii* (Leisler),

#### temminck's stint

The most numerous wader. A very common winter visitor to the river beds with early arrivals on flooded paddy, earliest 31st August.

The latest date was 21st April, with a probable at AW on 12.V.68. The largest concentrations were downstream of DB.

*Calidris subminuta* (Maddendorff),

#### LONGTOED STINT

1 at AW on 7 . iii . 68. Several other observations of birds among flocks of Little and Temminck's Stints were probably this species.

*Calidris testacea* (Pallas),

#### CURLEW SANDPIPER

1 at DB on 13.ix.70.

*Philomachus pugnax* (Linnaeus),

#### RUFF

A small flock seen at AW several times in Jan. /Feb. 1968 but I can find written evidence for only one subsequent record on 15.xii.68. However I have distinct recollections of greater regularity there. There were no additions to the 2 records at DB but this variable species was probably the origin of a number of unidentified waders.

*Rostratula benghalensis* (Lannaeus),

#### PAINTED SNIPE

The office drain provided a small area of wet paddy which supported 3 or 4 during April-June 1968. The only records were from DB in March- April 1969. These were all hot weather records when wet habitats were otherwise scarce.

*Himantopus himantopus* (Linnaeus),

#### BLACK WINGED STILT

A flock on a marshy jheel between Bolpur and Katwa in February 1968 and on flooded paddy near the DVC farm on 31.viii.68 were the only records away from DB. No more records of large flocks there with a maximum of only 7 between 1. iii. 70 and 23.V.70. The high rainfall and river flow in September 1970

scoured away much of the shallow areas on the upstream side of DB which was their favourite haunt.

*Burhinus oedicnemus* (Linnaeus),  
STONE CURLEW

2 in the scrub on the north side of the GT road on 6.iv.68 in the area which was eventually to become the town centre and 3 birds flushed from the edge of the lake at Maithon on 24 . i . 7 1 .  
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*Cursorius coromandelicus* (Gmelin),  
INDIAN COURSER

3 on a stabilised sandbank below AW on 21 .i.68. It should be noted that this was during a very dry spell.

*Glareola lactea* Temminck,  
SMALL INDIAN PRATINCOLE

Much scarcer at DB in 1970/71 with only two more records, both of single birds, 1 on the unseasonable date of 15.ix.70 and 1 on 23 . i . 70. A small flock at AW on 5 . i . 69 and 4 . i . 70. 2 records of 1 and 4 birds over my garden in March 1969.

*Larus argentatus* Pontoppidan,  
HERRING GULL

Recorded on the Hoogly at Calcutta in February.

*Larus ichthyaetus* Pallas,  
GREAT BLACK HEADED GULL

An immature at DB on 27.xii.70 identified by its huge size and broad black subterminal tail band. It was watched in flight and through a telescope at rest.

*Larus brunnicephalus* Jerdon,  
BROWN HEADED GULL

3 at AW on 12.V.68 and 1 at DB in April 1968 suggests spring migration from the Calcutta area where they winter along with Herring and Blackheaded Gulls. Latest date at Calcutta was 26th April.

*Larus ridibundus* Linnaeus.  
BLACK HEADED GULL

Quite common on the Hoogly in winter at Calcutta in January and February.

*Chlidonias hybrida* (Pallas),  
WHISKERED TERN

The commonest and most numerous tern of the sandy rivers at DB and AW, also Ajoy river. It could also be found in flocks over flooded paddy particularly when attracted by

agricultural operations. Display noted at DB in April and birds in juvenile plumage in September. 1 over my garden on 30.V.69 and several possibles.

*Gelochelidon nilotica* (Gmelin),  
GULLBILLED TERN

2 at DB on 5.xii.70. It is a matter of conjecture whether there was any connection with the record of the Great Blackheaded Gull three weeks later.

*Sterna aurantia* J. E. Gray,  
INDIAN RIVER TERN

April to August at AW and March to October at DB. Usually 1 or 2, occasionally 3 but 7-8 at DB on 1 . viii . 70 was exceptional. Like most other terns it foraged over flooded paddy during the monsoon when seen over my garden on 5. viii. 68.

*Sterna hirundo* Linnaeus,  
COMMON TERN

A rather scarce winter visitor. 1 at AW on 23.xi.69 was in line with 3 previous November/December records at DB but 1 at DB on 1 . viii. 70. was outside this pattern.

*Sterna acuticauda* J. E. Gray,  
BLACK BELLIED TERN

This bird preferred sand banks to marshes and was seen more frequently at AW than DB, being seen in every month except August and September. Seen carrying fish at DB on 14.iv.68 which could have been nuptial display and a pair had 2 small young at AW  
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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

on 12.V.68. Some dispersal during the monsoon with 6 or 7 outside my office on 14.vii.69. April and May records of birds flying over my garden.

*Sterna albifrons* Pallas,  
LITTLE TERN

A seventh record at DB on 1 1 . iv . 70 was added to the previous 6, all between March and June.

*Treron bicincta* (Jerdon),  
ORANGEBREASTED GREEN PIGEON

1 at Topchanchi on 25 . i . 70.

*Streptopelia decaocto* (Frivaldszky),  
COLLARED DOVE

Much less numerous than the Spotted Dove but still quite common in the Durgapur area. More a bird of the open countryside but could be found in sal jungle in March-May. Rather

scarce in my garden to start with but a regular visitor by 1970, presumably an effect of increased de-forestation. Usually outnumbered the Spotted Dove in counts made from the train to Calcutta.

*Streptopelia tranquebarica* (Hermann),  
RED TURTLE DOVE

Apart from 1 on the office lawn on 15.vii.68, only seen at AW between March and August with a maximum of 4.

*Streptopelia chinensis* (Scopoli),  
SPOTTED DOVE

An abundant resident in gardens and sal jungle. Display noted in February and September and nesting took place in my garden in April. Flocks of upto 14 recorded.

*Streptopelia senegalensis* (Linnaeus).  
SENEGAL (or LAUGHING, Or LITTLE BROWN)  
DOVE

Thinly distributed over the countryside and sal scrub. Mostly avoided gardens but appeared in mine on 2 occasions. The telegraph wires along the approach road to my office were a favourite haunt. Apparently resident but December records rather sparse.

*Columba livia* Gmelin.  
ROCK PIGEON

Common resident, probably all of feral origin but a small proportion resembled the true wild type.

*Psittacula eupatria* (Linnaeus),  
LARGE INDIAN PARAKEET

Recorded at Topchanchi on 10.iii.68. The species is included in Lowther's list of breeding birds of Manbhum around Dhanbad.

*Psittacula krameri* (Scopoli),  
ROSE RINGED PARAKEET

A common resident but nothing like so abundant as it is around Delhi and Agra. Flocks of about 20 at DB and AW. A fairly frequent visitor to my garden particularly during the monsoon to raid the sweet corn Zea mays.

*Psittacula cyanocephala* (Linnaeus),  
BLOSSOM HEADED PARAKEET

An influx of 3 or more into my garden in January 1971 were suspected to be of captive origin. It was a favourite cage bird and a number of ex-patriates had recently left. Prior to this birds had appeared in my garden on 18.vi.68, 7 . ii . 69 and 3 on 10.ii.69. It was quite common at Topchanchi.

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*Claniator jacobinus* (Boddaert),  
PIED CRESTED CUCKOO

A common monsoon visitor whose arrival dates in the three years were 1st June, 4th June and 31st May. Most records were from my garden but seen quite frequently elsewhere. The latest date, for an adult was 22nd September but young birds were recorded on 5th and 6th October in different locations. Rather fewer records in 1970 compared with previous years.

*Cuculus varius* Vahl,  
COMMON HAWK -CUCKOO

Very common, probably resident but not in evidence when silent in November and December. 1 January sight record. Heard in and around my garden in every month from February to October.

*Cuculus micropterus* Gould,  
INDIAN CUCKOO

Probably only a monsoon visitor to my garden and surrounding area but could be over looked when silent. Garden records during 12.vi.68-14.vii.68 and 25.ii.69-12.vii.69 2 other records on 29.ix.68 and 6.x. 68, the later being a juvenile at AW.

*Cacomantis sonneratii* (Latham),  
BANDED BAY CUCKOO

1 beside the road near Ragunathpur on 13.ii.70 and 1 at DB on 1.iii.70.

*Cacomantis merulinus* (Scopoli),  
PLAINTIVE CUCKOO

Probably resident in small numbers, occurring in gardens and surrounding area from April to October and in reed beds at DB during November to January. The only records in 1969 were at DB in January.

*Surniculus lugubris* (Horsfield),  
DRONGO-CUCKOO

1 at AW on 8.ix.68.

*Eudynamis scolopacea* (Linnaeus),  
KOEL sc

Very common resident of gardens, jungle and almost any grove of trees. Of almost daily occurrence in my garden particularly favouring the fruits of the Muntingia.

*Centropus sinensis* (Stephens), ^  
COUCAL

Common resident in gardens and country with suitable cover. Recorded in my garden in every month of the year.

*Tyto alba* (Scopoli),  
BARN OWL

1 in the car headlights on the road from Rangunathpur after dark on 19.xii.69. No 1 other owl would have looked so white in the circumstances.

*Otus bakkamoena* Pennant,  
COLLARED SCOPS OWL

Heard calling at night in or near my garden on 5 occasions; 14 . i . 68, 25.vi.68, 3 . vii . 68, 25.vii.68 and 30.ix.70.

*Glaucidium radiatum* (Tickell),  
JUNGLE OWLET

1 at Topchanchi on 25 . i . 70.

*Athene brama* (Temminck),  
SPOTTED OWLET

Probably much overlooked. A pair in the avenue of large trees at AW on every visit during January-May 1968 but not subsequently: 1 perched in a tree near the colony entrance on the GT road in January 1968 and another in a roadside tree between Rangunathpur and Purulia on 29.xi.68.

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### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

? *Strix ocellata* (Lesson),  
OWL

The silhouette of a large owl was seen flying over my garden after dark on 10.ix.68. A couple of weeks later a neighbour reported seeing an owl about 45 cm (18 in.) tall standing in a colony road illuminated by his car headlights. It was not white like a Barn Owl.

Mottled Wood Owl appears to be the likeliest identification.

*Caprimulgus macrurus* Horsfield,  
LONGTAILED NIGHTJAR

Fairly common in sal jungle and other areas which could provide dense cover, with a rather variable pattern of occurrence from year to year. 9 records between 5.iv.68-23.ix.68, 3 between 28.ii.69-5.vi.69 and 9 between 29.xii.69-3.iv.70. Birds appeared in my gardens on several occasions to hunt termite swarms with Little Nightjars and drongos at dusk. The continued destruction of the sal jungle must adversely affect the species.

*Caprimulgus asiaticus* Latham,  
INDIAN LITTLE NIGHTJAR

A common bird but not in evidence during November-December. A regular garden visitor and it would call for hours at a time from my bungalow roof, January to April being the most vocal period.

*Apus affinis* (J. E. Gray),

HOUSE SWIFT

Very common over the area, including my garden, but absent from October to January.

*Cypsiurus parvus* (Lichtenstein),

PALM SWIFT

A very common resident throughout the area and recorded over my garden in every month, the largest numbers being about 100 in February.

*Hemiprocne longipennis* (Rafinesque),

CRESTED TREE SWIFT

Several at Topchanchi on 12.i.69 where it was also found by Lowther.

*Ceryle rudis* (Linnaeus),

LESSER PIED KINGFISHER

Resident pairs at DB (2 or 3) and AW.

Could also be seen at track side jheels on most train journeys to Calcutta.

*Alcedo atthis* (Linnaeus),

COMMON (or SMALL BLUE) KINGFISHER

Scarce winter visitor, the earliest being 1 at a roadside ditch near the DVC farm on 28.ix.68. Otherwise at AW or DB with 4 records in January-March.

*Halcyon smymensis* (Linnaeus),

WHITEBREASTED KINGFISHER

Common but thinly distributed resident from waterside habitats at DB and AW to dry country. The roadside wires on the way to my office were a favourite haunt and twice seen from my garden.

*Merops philippinus* Linnaeus,

BLUETAILED BEE-EATER

Quite common summer visitor to rivers, jheels and flooded paddy. Earliest date 30th March and latest 29th September. Several records during the monsoon of upto 6 birds over my garden.

*Merops orientalis* Latham.

LITTLE GREEN BEE-EATER

Common resident in a wide variety of habitats with small parties flying or hunting over my garden in most months.

*Coracias benghalensis* (Linnaeus),

INDIAN ROLLER

A common bird of open countryside with upto 24 being counted on a train journey to 521

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Calcutta. It would occasionally penetrate into more wooded areas and gardens.

*Upupa epops* Linnaeus,

**HOOPOE**

Apparently a thinly distributed resident with a winter influx. The sandy areas at AW were a favourite winter haunt with upto 4 birds.

5 records for the period April to September but over 20 for October to March. Seen in or from my garden six times; twice in February, twice in March, once in July and once in September.

*Tockus birostris* (Scopoli),

**GREY HORN BILL**

1 at Topchanchi on 26.i.70.

*Megalaima zevlanica* (Gmelin),

**GREEN BARBET**

Common only at Topchanchi. It obviously preferred the more deciduous and varied forest to the sal jungle around Durgapur. The handbook states that it straggles as far as Calcutta but the synopsis gives the eastern limit as Bihar. It would be difficult to overlook such a noisy bird if it were present and hence T would support the latter distribution.

*Megalaima haemacephala* (P. L. S. Muller),

**CRIMSON BREASTED BARBET**

A very common resident with birds' calling from almost every clump of trees. A pair took up residence in my garden in 1969 and began excavating a nest hole in a broken branch of a Gul Mohr on 2 . iii . 70. Fledged young were visible at the nest hole on 23.V.70 and flew shortly afterwards. The parents were excavating a new hole on 26.vii.70.

*Jynx torquilla* Linnaeus,

**WRYNECK**

A common winter visitor, regular haunts being my garden, canal side scrub at AW and piles of facing stones left along the bund road at DB. The earliest date was 15th September and the latest 14th April.

*Dinopium benghalense* (Linnaeus),

**LESSER GOLDEN BACKED WOODPECKER**

Fairly common, apparently more so than the Yellowfronted Pied Woodpecker but this may be because the larger species is more conspicuous and more ready to come out in the open. A permanent feature of my garden from November 1970 after only 2 previous records.

*Picoides mahrattensis* (Latham),

**YELLOWFRONTED PIED WOODPECKER**

A pair became resident in my garden from December 1969 until my departure after only 3 records in the two previous years. 3 birds indulging in a nuptial chase on 20 . ii . 71 . The pair started to excavate a nest hole in a rather half-hearted fashion in a large

tree in my garden, and it was surprising to find the Lesser Goldenbacked Woodpecker taking turns from time to time when they got bored, with the Blossomheaded Parakeets keeping an eye on overall progress. Unfortunately I left the country before this intriguing situation was resolved.

*Picoides nanus* (Vigors),  
BROWNCROWNED PIGMY WOODPECKER  
1 in my garden on 9.iv.68.

*Chrysocolaptes lucidus* (Scopoli),  
LARGER GOLDENBACKED WOODPECKER  
A goldenbacked woodpecker with a red rump was seen beside the GT road about 15 km outside Calcutta on 22.viii.70 and was most probably this species.  
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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

*Pitta brachyura* (Linnaeus),  
INDIAN PITTA

The evidence for this species is somewhat circumstantial. My notes for 21.iii.68 refer to an unidentified loud whistle written down as 'ke-weEEp'. On 22.iii.68 my wife reported a strange bird (like a Nuthatch *Sitta europa* with long legs) on our bungalow lawn. Finally on 30.iv.68 I had a fleeting glimpse of a medium sized passerine with rounded wings, white wing patches and dipping flight flying across my lawn. It is difficult to find a conclusion other than a *Pitta* to fit these facts.

It is a species recorded by Lowther (1949) as nesting in Manbhum.

*Mirafra javanica* Horsfield.

SINGING BUSH LARK

A pair of these larks were apparently resident in scrubby cultivation just upstream of AW. Probably overlooked elsewhere and was not specifically identified unless the white outer tail feathers could be seen.

*Mirafra assamica* Horsfield,  
BUSH LARK

*Mirafra erythroptera* Blyth.

REDWINGED BUSH LARK

Whistler says these two species may be separated by the former being heavier, darker and greyer. However opportunities for close inspection or direct comparison were few and the species have been taken together. One or both were quite common in thin scrub or poor cultivation and recorded in all months except May and November. Most visits to AW or

DB would find a bird or two on the road or wires.

*Eremopterix grisea* (Scopoli).

**ASHYCROWNED FINCH-LARK**

Common in thin scrub and poor cultivation.

During the monsoon flocks occur in drier areas. On 14.viii.69. my notes refer to frequent flocks of 12-15 birds on a journey to Rangunathpur. Probably resident but no records from its usual haunts during November-Januarv.

*Ammomanes phoenicurus* (Franklin),

**RUFOUSTAILED FINCH-LARK**

The only place where this species was seen was the dam at Maithon where it was quite regular on the sloping face of the dam near the water's edge.

*Calandrella cinerea* (Gmelin).

**SHORT-TOED LARK**

One in the stock yard of the works compound on 1 . i . 70. This is not as odd as it might seem because the area in question was surfaced with coarse gravel with a few weeds, hence resembled a small stony desert.

*Calandrella raytal* (Blyth),

**SAND LARK**

Common on the sand banks below DB and AW. Display seen in October and a nest with eggs in March.

*Galerida* sp..

**CRESTED LARK Or SYKES'S CRESTED LARK**

There are two records of larger larks, one in a sandy river bed beside the road to Ham Bazar on 11.ii.68 which was definitely considered to be a species of crested lark and another downstream of DB which was distinctly larger than the Sand Larks. The handbook and the synopsis give the eastern limit of both species as Bihar.

*Alauda gulgula* Franklin,

**EASTERN SKYLARK**

Probably commoner than the comparatively  
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few records suggest. It appears to be a thinly distributed resident in light scrub and cultivation, areas which were not examined very thoroughly. Most car journeys would produce records of several unidentified larks, probably this species. The larks of West Bengal would benefit from a more critical inspection.

*Riparia riparia* (Linnaeus),

#### COLLARED SAND MARTIN

Scarce but probably overlooked amongst other hirundines. Only two records, 5 or 6 at DB on 14.xii.68. and a few at AW on 26.ix.70.

*Riparia paludicola* (Vieillot),

#### PLAIN SAND MARTIN

A large colony in the river bank just upstream of AW in Jan. 1968 was washed out by the monsoon floods. Another smaller colony was found about 2 km downstream of DB on 22 . ii . 70. Records were confined to the vicinity of the Damodar river and for the period November-May, the birds apparently departing during the monsoon.

*Hirundo concolor* Sykes,

#### DUSKY CRAG MARTIN

2 on Parasnath Hill on 10 . ii . 70.

*Hirundo rustica* Linnaeus,

#### BARN SWALLOW

Common and widespread winter visitor. The March gathering at DB in 1970 was only 300 strong, a tenth of previous years. Small flocks frequently seen over my garden. The earliest record was 4th August and the latest 12th May.

*Hirundo smithii* Leach,

#### WIRETAILED SWALLOW

Several at the DVC power station on 24.iv.68.

Also at DB in February 1968 probably 4th.

This record was overlooked in my previous paper.

*Hirundo fluvicola* Blyth,

#### INDIAN CLIFF SWALLOW

The only record other than those in my previous paper at DB was of several birds at AW on 12.V.68.

*Hirundo daurica* Linnaeus,

#### REDRUM PED SWALLOW

Winter visitor in varying numbers, earliest 26th Sept, and latest 20th April. This species preferred hunting over open area such as the DVC farm rather than the river. Several 1970 records of birds over my garden, max. 12.

Some swallows seen in the vicinity of Perulia on 23.vii.70 were probably this species which Lowther recorded as a nesting species in Manbhum.

*Lanius vittatus* Valenciennes,

#### BAYBACKED SHRIKE

I obtained a photograph of a single bird at AW on a date which was not recorded but was probably during Feb. 1970.

*Lanius schach* Linnaeus,

#### BLACKHEADED SHRIKE

Apart from a single rufous backed form on the way to AW on 15 . xii . 70, all other

records (c. 60) were of the black headed form. Usually seen singly but several records of 2 or 3 together. Status uncertain but probably a small resident population with a winter influx. About 2/3 of all records were for the period Nov. -Feb., 5 records for the period April-June. The birds appeared to be territorial, taking up a favoured perch where they could be seen day after day. One bird took up residence in my garden from 28.iv.70 to 13.V.70 and reappeared on 5 . viii . 70.  
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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

*Lanius cristatus* Linnaeus,  
BROWN SHRIKE

A very common and widespread winter visitor to gardens and open countryside, avoiding only closed forest. Earliest date 5th Sept., latest 4th May, both being from my garden where it was almost a permanent feature except during the monsoon.

*Oriolus oriolus* (Linnaeus),  
GOLDEN ORIOLE

A common monsoon visitor to gardens, sal jungle and countryside with trees. In 1968 birds were present from 6th April to 6th Oct. in 1969 from 6th April to mid- August and in 1970 from March to July. This is at variance with the handbook which suggests it is mainly a winter visitor to the plains with 'small numbers also resident and patchy breeding'.

*Oriolus xanthornus* (Linnaeus),  
BLACK HEADED ORIOLE

A common resident of gardens, sal jungle and wooded country. During the monsoon it tended to surrender the gardens to the Golden Oriole and was then found mainly in sal jungle.

*Dicrurus adsimilis* (Bechstein),  
BLACK DRONGO

Common resident of gardens, scrub and open country, penetrating sal jungle at times. Breeding occurred during the monsoon with fledged young appearing in July and August. Termite flights would attract parties of 20-30 to my garden.

*Dicrurus leucophaeus* Vieillot,  
GREY DRONGO

The specific identification of all drongos in winter would be a time consuming process, and the species was only readily identified in

assemblies with Black Drongos after termite swarms when smaller size and greyer plumage could be compared. The speed with which several birds could arrive at a termite swarm in my garden suggests it may have been commoner than the four records, all January-April, suggest.

*Dicrurus caerulescens* (Linnaeus),  
WHITEBELLIED DRONGO

A winter visitor to my garden with 15 records between 22.xi.69 and 22.ii.70. It, or another, reappeared the following winter with 8 records between 19.xi.70 and 21 . ii . 7 1 , a surprising consistency in dates. The species was also found at Topchanchi and Hazaribagh in Jan. and Feb. 1970.

*Dicrurus aeneus* Vieillot,  
BRONZED DRONGO

Small glossy blue drongos with less strongly forked tails were recorded on 4 occasions deep in the sal jungle on 18.vi.68 (2), 24.viii.68, 13.ii.69 and 2.iv.69. It is possible to birds may have occupied a territory because they were always in the same place. A feature of these birds was a long-headed appearance due to a tuft of plush-like feathers on the forehead hiding the base of the bill and longish feathers on the nape, rather like *D. remifer* Lesser Racket-tailed Drongo.

*Dicrurus hottentottus* (Linnaeus),  
HAIRCRESTED DRONGO

A scarce but annual visitor to my garden in spring with 4 records on 5.iv.68, 24.iii.69, 19 . ii . 70 and 6 . iii . 71 . Another was seen near Panagarh on an unrecorded date.

*Dicrurus paradiseus* (Linnaeus),  
GREATER RACKET-TAILED DRONGO

One in the sal jungle on 21.iv.68. Rather a scruffy specimen without rackets.

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*Artamus fuscus* Vieillot,  
ASHY SWALLOW-SHRIKE

A common resident throughout the area seen circling in the sky or bunched together on wires or bare tree branches. The birds were rather less in evidence over my garden during April and May but numerous in June, July and August. This suggests the birds may have retired to breed during the hot weather so that free flying young could reap the harvest of flying insects during the monsoon.

*Sturnus malabaricus* (Gmelin),

#### GREYHEADED MYNA

Quite a common resident with small flocks scattered about the countryside, flowering Silk Cotton trees and lantana bushes being favoured haunts. Birds recorded in my garden between March and July.

*Sturnus pagodarum* (Gmelin),

#### BRAHMINY MYNA

Recorded only from Topchanchi. Lowther listed it for Manbhum.

*Sturnus contra* Linnaeus,

#### PIED MYNA

A very common resident favouring the wetter parts of the area. A well watered lawn proved attractive during the hot weather. It would usually outnumber the Common Myna on Calcutta train counts.

*Acridotheres tristis* (Linnaeus),

#### COMMON MYNA

An abundant resident throughout the area, but outnumbered by Pied Myna in wet paddy. Fledged young appeared on my lawn in June 1969 and August 1970.

*Acridotheres ginginianus* (Latham),

#### BANK MYNA

Birds could be seen regularly at Howrah station in December 1970 and January 1971. Apart from these the only record was of two pairs beside the GT road on the Durgapur side of Burdwan on 26.V.68.

*Dendrocitta vagabunda* (Latham),

#### INDIAN TREE PIE

A common resident throughout the area, particularly my garden and the sal jungle.

*Corvus splendens* Vieillot.

#### HOUSE CROW

An excessively abundant resident throughout the area. The maximum count from the Calcutta train was 91.

*Corvus macrorhynchos* Wagler,

#### JUNGLE CROW

Thinly distributed resident and much less numerous than previous species. Maximum count from the Calcutta train was 23 but usually only 6 to 8. A bird in Dalhousie Square on 11.xii.70 suggests it is quite capable of penetrating urban areas. Birds were visiting my garden quite regularly from March 1970 onwards.

*Tephrodornis pondicerianus* (Gmelin),

#### COMMON WOOD SHRIKE

Probably resident but rather scarce with 10 records scattered through the year. All were singles except for 2 together in my garden on 21.xi.70.

*Coracina novaehollandiae* (Gmelin),

## LARGE CUCKOO-SHRIKE

5 records from in and around my garden in April and June 1968 and 8 between March and July 1969 (3 together on one occasion)  
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## BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

suggested the species was a hot weather and monsoon visitor. However in 1970 the only records were in August and December, apart from January and February records from Topchanchi and Hazaribagh. The species is probably a mobile resident.

*Coracina melanoptera* (Ruppell),

## BLACKHEADED CUCKOO-SHRIKE

In 1968 and 1969 it appeared to be a monsoon visitor from April to August, once October. However in 1970 it first appeared on 29th March and was seen regularly upto 21st November and two more records in January 1971 suggested it was resident. Nearly all the records were for my garden, the few outside being in the nearby sal jungle. Never more than a pair together.

*Pericrocotus flammeus* (Forster),

## SCARLET MINIVET

Only found at Topchanchi on 25 . i . 70.

*Aegithina tiphia* (Linnaeus),

## COMMON IORA

A common resident of my garden and adjacent jungle, usually in pairs. Seen in every month of the year but less frequently in December.

*Chloropsis cochinchinensis* (Gmelin),

## GOLDMANTLED CHLOROPSIS

Birds in my garden in every month of the year, usually a pair but 4 on 2.xi.70. This nectar feeding species has presumably benefited from the widespread planting of exotics such as poinsettia, hibiscus etc. in gardens. It was never found in sal jungle but would be hard to find in the canopy. It was found at Topchanchi on 25 . i . 70 which is more open and varied.

*Pycnonotus jocosus* (Linnaeus),

## REDWHISKERED BULBUL

A very common resident of my garden and jungle with small parties throughout the year. It showed a stronger preference for better wooded areas than the even commoner Redvented Bulbul. One or more pairs nested in my garden every year, activity first recorded on 17th April with nearly fledged young in

June and July.

*Pycnonotus cafer* (Linnaeus),  
REDVENTED BULBUL

One of the most abundant birds of West Bengal, occurring widely in gardens, sal jungle and scrub. Upto 7 or 8 birds in my garden throughout the year where it nested regularly. Activity first recorded on 20th April with fledged young in July. With so little attempt to hide the flimsy nest structures the loss through predation and storm damage must have been very high.

*Pycnonotus luteolus* (Lesson),  
WHITEBROWED BULBUL

3 together in some scrub in the Forest Dept plantations towards the Ajoy river on 18 . i . 70. This is about 100 km NE of the Midnapore limit given in the handbook.

*Dumetia hyperythra* (Franklin),  
RUFUSBELLIED babbler

A regular monsoon visitor to my garden between May and August, usually 2 or 3 but upto 6 in 1970.

*Chrysomma sinense* (Gmelin),  
YELLOWEYED BABBLER

A common resident usually found in pairs but 4 together on one occasion. Frequent visitor to my garden in every month of the year. Water-side scrub at AW was another favoured haunt.

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*Turdoides striatus* (Dumont),  
JUNGLE BABBLER

A very common bird of gardens and sal jungle, being seen in my garden almost daily. It nested during the monsoon with fledged young appearing in August and September. It was also found at Topchanchi.

*Muscicapa latirostris* Raffles,  
BROWN FLYCATCHER

Only two records, both in April in different years. One on the edge of the sal jungle near my bungalow and one in scrub near the triangulation point.

*Muscicapa muttui* (Layard),  
BROWNBREASTED FLYCATCHER

Two records, one in sal jungle near my bungalow and the other at AW, on 20.ix.70 and 26 . ix . 70 respectively. These records fit the expected migration pattern of birds moving between their breeding areas in Assam and

beyond and the wintering area in SW India.

*Muscicapa ruficauda* Swainson,  
RUFUSTAILED FLYCATCHER

One in my garden on 26.iii.69 in company with the Blackbrowed Flycatcher Warbler (*Seicercus burkii*). Additional literature which was not available to me at the time indicates the possibility of other flycatchers with red-dish tails but has not changed my opinion.

*Muscicapa parva* Bechstein,  
REDBREASTED FLYCATCHER

One of the commonest and most conspicuous of winter visitors to gardens and the fringes of sal jungle. Low branches of trees bordering the colony roads and providing a clear view of open ground were particularly favoured. The earliest arrival was on 14th Oct. and the latest on 6th April, a bird with a red breast. The only other record of a redbreasted bird was on 23 . i . 70.

*Muscicapa superciliaris* Jerdon,  
WHITEBROWED BLUE FLYCATCHER

One at AW on 30.iii.69, also 1 at Hazaribagh NP on 9 . ii . 70 which suggests the status of scarce spring migrant.

*Muscicapa rubeculoides* (Vigors),  
BLUETHROATED FLYCATCHER

One beside the road outside my garden in the first week of March 1968.

*Muscicapa tickelliae* (Blyth),  
tickell's blue flycatcher

One in the next door garden on 24.iii.68 and probable females in my garden on 28.x. 68 and 20.xii.69.

*Muscicapa thalassina* Swainson,  
VERDITER FLYCATCHER

Regular winter visitor in small numbers with at least one record each year from my garden or the sal jungle. Two together in my garden on 10 . iii . 71 . Also seen at Topchanchi on 25 . i . 70 and Maithon Dam on 24.i.70.

*Culicicapa ceylonensis* (Swainson),  
GREYHEADED FLYCATCHER

An irregular winter visitor in sal jungle with 7 records between 14.xi.68 and 23.ii.69. Also at Topchanchi on 26 . i . 70.

*Rhipidura aureola* Lesson,  
WHITEBROWED FANTAIL FLYCATCHER

Not recorded nearer than Topchanchi where it was seen on 25 . i . 70. It was also found at Hazaribagh NP on 9 . ii . 70. The species appears to prefer a more definitely deciduous biotope than Durgapur could offer.

*Rhipidura albieollis* (Vieillot),  
WHITETHROATED FANTAIL FLYCATCHER

A single individual took up residence in and around my garden from I.vii.69 to

23.viii.69 during which time it was seen almost daily.  
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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

*Terpsiphone paradisi* (Linnaeus),  
PARADISE FLYCATCHER

A common and conspicuous monsoon visitor of almost daily occurrence in gardens and sal jungle between extreme dates of 28th March and 30th September. Females tended to arrive a few days before males. The first males of the year were recorded on 3.iv.68, 3.iv.69 and 4.iv.70.

*Hypothymis azurea* (Boddaert),  
BLACK NAPED FLYCATCHER

A regular winter visitor to the sal jungle from November to February. Usually singly or in pairs with mixed groups of warblers and flycatchers.

*Cisticola juncidis* (Rafinesque),  
STREAKED FANTAIL WARBLER

Rather scarce and local but probably resident in suitable areas of long grass or dense low shrubs which were free of grazing pressure. Tussocks of 'pampas' grass (*Cortaderia* sp ?) on the sand banks downstream of AW and also the downstream face of Maithon Dam.

*Prinia hodgsonii* Blyth,  
franklin's longtail warbler or  
WREN WARBLER

Much scarcer than *P. socialis* and recorded only between April and September in 1968 and 1969. Due to closer similarity with *P. socialis* when in winter plumage it may have been overlooked at other times.

*Prinia subflava* (Gmelin),  
PLAIN, or TAWNYFLANKED LONGTAIL, Or  
WREN WARBLER

Nearly all records from waterside vegetation at DB where it was present throughout the year except Sept. -Oct. and only a single Nov. record. Birds were nesting in water hyacinth on 21.vi.68. It was also found in canal-side vegetation on the way to AW and at Canada Dam on 23.iii.69.

*Prinia socialis* Sykes,  
ASHY LONGTAIL WARBLER Or WREN WARBLER

A very common resident in and around gardens occurring in small parties.

*Orthotomus sutorius* (Pennant),  
TAILOR BIRD

A common garden resident, also found in sal jungle and suitable scrubby cover. A protracted monsoon breeding season with feeding of young noted between April and September.

*Locustella certhiola* (Pallas),

**PALLAS'S GRASSHOPPER WARBLER**

One at AW in March 1968. Another *Locustella* of uncertain species at the same place on 27.iv.69.

*Chaetornis striatus* (Jerdon),

**BRISTLED GRASS WARBLER**

My experience with this species is an example of how a mistake once made can be difficult to rectify. Shortly, after my arrival in India I found some birds resembling Jungle Babblers but with streaked upper parts in an area of long grass between Panag'arh and the Damodar canal. With my limited experience at that time I put these down as Common Babblers, *T. caudatus*. Similar birds were subsequently seen on four occasions in long grass or scrub at AW and 1 downstream of DB on 5.xii.70 and 2 birds were seen in a track-side ditch from a train to Calcutta. It was not until after I left India did I learn of the similarity and possibility of confusion between this species and Common Babbler, a bird which reaches its eastern limit in Bihar.

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The fact that I always saw these birds in ones or twos and not the small parties so typical of *Turdoides* spp. should have given a warning that something was not right. With the benefit of hindsight it is now evident the original diagnosis was wrong, hence the entry under this species.

*Acrocephalus aedon* (Pallas),

**THICKBILLED WARBLER**

One bird watched closely at DB on 17.ii.68.

Detailed notes refer to the lack of supercilium. massive bill and short wings.

*Acrocephalus stentoreus* (Hemprich & Ehrenberg),

**INDIAN, or CLAMOROUS GREAT REED WARBLER**

A winter visitor to waterside vegetation at AW and DB from 15th Nov. to 11th April.

*Acrocephalus dumetorum* Blyth,

**BLYTH'S REED WARBLER**

A common spring migrant through my garden and sal jungle in March, April and May with 2 February records and 1 at AW in

January, the latest date was 23rd May.

*Acrocephalus agricola* (Jerdon),

PADDYFIF.LD WARBLER

2 records at DB, one in February 1968 and one on 11.iv.70.

*Hippolais caligata* (Lichtenstein),

BOOTED WARBLER

Mainly a late winter visitor or spring migrant between February and May but 1 at AW on 26.ix.70. 4 records in my garden during April/May 1970 may have been the same individual.

*Phylloscopus collybita* (Vieillot),

CHIFFCHAFF

Winter resident in small numbers to my garden and sal jungle. Another regular haunt was the avenue of large trees leading down to AW. Recorded between 23rd November and 20th April.

*Phylloscopus affinis* (Tickell),

tickell's leaf warbler

Winter visitor in small and irregular numbers. Several records in sal jungle in February/ I April 1968 and in my garden in February/ I March 1971. Only 2 1970 records.

*Phylloscopus griseolus* Blyth,

OLIVACEOUS LEAF WARBLER Or

S U LPH U RBELLIED WARBLER

The species was quite common at Topchanchi on 25.i.70, and also in Hazaribagh NP the following month. A bird seen in the sal jungle at Durgapur on 3.iv.68 with other phylloscopi was thought at the time to be a Radde's Warbler *P. schwarzi*, a species not officially recorded within Indian limits. Having had the opportunity of seeing both species on their respective breeding grounds in the Tien Shan mountains and Siberia I now think it probable the bird was *P. griseolus*. Another rather uncertain record on 25.ii.69.

*Phylloscopus fuscatus* (Blyth),

DUSKY LEAF WARBLER

Three records in Dec. and Jan. of several birds in low thorny scrub at AW and DB.

*Phylloscopus inornatus* (Blyth),

YELLOWBROWED LEAF WARBLER

Common winter visitor, the second commonest *Phylloscopus* after Greenish Warbler. Distinctly gregarious, usually in groups of 5-15 in sal jungle but once in my garden. The earliest arrival was 14th Nov. and the latest was 16th April, but 1968 was the only year when it was recorded after February.

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*Phylloscopus magnirostris* Blyth,  
LARGEBILLED LEAF WARBLER

Single birds in February 1968 and 1969 identified by larger size, heavier bill and stronger colouring compared with associated Greenish Warblers. Could only be identified under optimum conditions and may have been under recorded. A detailed study, using mist nets, of the phylloscopi in West Bengal in winter would be rewarding.

*Phylloscopus trochiloides* (Sundevall),  
GREENISH WARBLER, Or DULL GREEN LEAF WARBLER

The commonest *Phylloscopus* to visit West Bengal in winter. Frequently seen in my garden, sal jungle or any sort of trees with a reasonable canopy. The earliest date was 15th Sept, and the latest 17th May. Much more likely than other members of its genus to be found singly but not averse to joining mixed flocks.

*Phylloscopus nitidus* Blyth,  
BRIGHT GREEN LEAF WARBLER

A single bird in my garden on 4.V.68.

*Phylloscopus occipitalis* (Blyth),  
LARGE CROWNED LEAF WARBLER

Either a late winter visitor or spring migrant. After 2 or 3 earlier records, birds were seen on 31.iii.68, 3.iv.68, 4.iv.68, 11.ii.69 and 23.ii.69 in sal jungle, also at Topchanchi on 26 . i . 70.

*Phylloscopus reguloides* (Blyth),  
blyth's crowned leaf warbler

A single bird in my garden on 10.v.68 was watched at close range for some time and detailed notes taken enabled it to be identified as this species rather than the previous one. This record is rather late and further south than might be expected from the information in the handbook.

*Seicercus burkii* (Burton),  
YELLOW-EYED FLYCATCHER-WARBLER

One in my garden on 26.iii.69, in association with the Rufoustailed Flycatcher.

*Erithacus svecicus* (Linnaeus),  
BLUETHROAT

Regular winter visitor to waterside scrub at DB and AW. Earliest 28th Dec. latest 28th March.

*Copsychus saularis* (Linnaeus),  
MAGPIE ROBIN

Common resident in gardens, seldom seen in sal jungle. An opportunist nester taking over old nest of Indian Robin and Crimson-

breasted Barbet. The nesting season was prolonged with song and display seen in February, eggs in July (1969) and fledged young in August (1969 and 1970).

*Phoenicurus ochruros* (Gmelin),

#### BLACK REDSTART

Winter visitor to roadsides, jungle fringes and open areas, earliest 22nd November, latest 17th April. Only one in my garden but often seen close to it.

*Saxicola torquata* (Linnaeus),

#### STONE CHAT

Winter visitor, probably regular to riverside vegetation and sandy scrub at AW and DB between 6th Oct. and 7th April. Usually a pair but 2 pairs at AW on 6.x. 68.

*Saxicoloides fulicata* (Linnaeus),

#### INDIAN ROBIN

A very common bird of gardens, sal jungle and scrub. Seen almost every day in my garden. Display noted in February and nesting from May to July.

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*Monticola cinclorhynchus* (Vigors),

#### BLUEHEADED ROCK THRUSH

One bird, a male, in the jungle close to my bungalow on 31.iii.68.

*Monticola solitarius* (Linnaeus),

#### BLUE ROCK THRUSH

A single bird wintering at AW favouring an overgrow pile of old facing stones. Also at Canada Dam on 23.iii.69.

*Zoothera citrina* (Latham),

#### ORANGEHEADED GROUND THRUSH

A regular winter visitor to my garden and sal j'unglc, normally only one bird but two on one occasion. Earliest date was 26th October and the latest 15th April. All the birds I saw were *Z. c. citrina*. It is listed by Lowther as a breeding bird in Manbhum district but presumably *Z. c. cyanotus*.

*Zoothera dauma* (Latham),

white's thrush

Two birds together in the local sal jungle on 12.xii.68.

*Turdus unicolor* Tickell,

tickell's thrush

A scarce winter visitor to my garden and sal jungle between 15th November and 14th March. The only record in 1968 was at Topchanchi on 14.iii.68.

*Anthus hodgsoni* Richmond,  
INDIAN TREE PIPIT, Or OLIVEBACKED PIPIT  
Common winter visitor to my garden and adjacent jungle in small flocks upto 6, earliest date was 24th October and the latest 14th April.

*Anthus trivialis* (Linnaeus),  
TREE PIPIT

Erratic winter visitor recorded at DB and AW on several occasions between 14.xii.68 and 18.i.69. No records for subsequent years.

*Anthus novaeseelandiae* Gmelin,  
PADDYFIELD PIPIT, Or RICHARD'S PIPIT

*A. n. rufulus* resident in small numbers in suitable open areas such as bund roads, sand banks with some vegetation, playing fields etc. Nesting behaviour noted in April. 2 records of *A. n. richardi* at DB in March.

*Anthus campestris* (Linnaeus),  
TAWNY PIPIT

5 winter records from AW and DB between September and Feb.

*Anthus roseatus* (Blyth),  
HODGSON'S PIPIT, Or VINACEOUSBREASTED PIPIT

One at DB on 14.iv.68 is the only record.

*Anthus similis* Jerdon,  
BROWN ROCK PIPIT, Or LONGBILLED PIPIT

I obtained photographs of a large almost unmarked pipit on the shore of Panchet reservoir in February 1968 and another in fallow land near AW on 16.ii.69 which could be directly compared with photographs of Tawny Pipits taken in France and Greece. These birds lacked the dark row of covert spots so noticeable on Tawny Pipits.

*Motacilla indica* Gmelin,  
FOREST WAGTAIL

A passage migrant in March /April and September with records in my garden on 28.iv.68, 18.iii.69, 1.ix.70 and 6.ix.70 and 1 in nearby jungle on 17.ix.68.

*Motacilla flava* Linnaeus,  
YELLOW WAGTAIL

Numerous winter visitor to AW and DB  
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from November to April. Birds were also seen on playing fields at Dishegarh on 29.xii.69.

Those which could be assigned to a particular race appeared to be *M. f. beema*.

*Motacilla citreola* Pallas,

**YELLOWHEADED WAGTAIL, Or CITRINE WAGTAIL**

Winter visitor to DB and AW in fluctuating numbers. It was recorded commonly in the early months of 1968 and again from December 1968 to April 1969. The following winter it was recorded only during Jan. and Feb. 1970. There were no records at all for the 1970/71 winter.

*Motaeilla cinerea* Tunstall,  
**GREY WAGTAIL**

1 at DB on 13 . ii . 70 and 1 on the village tank near the hot spring shrine north of Dubrajpur on 23 or 24.i.68.

*Motaeilla alba* Linnaeus,  
**PIED WAGTAIL**

Common and widespread winter visitor to a variety of habitats, including my office window-sill. It is impossible to know if a bird at AW on 27.vii.69 really was a very early winter visitor or an individual which had summered. Apart from this unusual date the species was recorded from 26th September to 11th April.

*Motaeilla maderaspatensis* Gmelin.  
**LARGE PIED WAGTAIL**

Apparently resident at DB with 3 birds on two occasions in March and September 1970. Recorded 3 times at AW from 11.viii.68 to 5.I.69 and on the only visit to Canada dam on 23.iii.69.

*Dicaeum agile* (Tickell),  
**THICKBILLED FLOWERPECKER**

One or two records in my garden each summer between 15th April and 17th Sept.

*Dicaeum erythrorhynchos* (Latham),  
**TICKELL'S FLOWERPECKER**

A regular monsoon visitor to my garden from mid-May to mid-September with a single bird of almost daily occurrence. 2 birds were seen together on 25.vii.69. It was seen regularly from mid-April in 1970. The fruits of the Malayan 'cherry' *Muntingia calabura* proved irresistible to it.

*Nectarinia zeylonica* (Linnaeus),  
**PURPLERUMPED SUNBIRD**

1 outside Woodlands Nursing home in Calcutta on 14 . vii . 70 is the only record. From the map in the handbook Durgapur would only be on the extreme border line of the bird's distribution.

*Nectarinia asiatica* (Latham),  
**PURPLE SUNBIRD**

A common resident which must have benefited greatly from the planting of decorative trees and shrubs in gardens. The birds appeared to breed in the dry season which coincided with the peak flowering of the local

flora. Display was noted in my garden in January with the first signs of eclipse plumage showing at the end of June. By August all males were in complete eclipse with full breeding plumage being regained in December. *Zosterops palpebrosa* (Temminck).

#### WHITE-EYE

Quite common in the undergrowth at Topchanchi but only a scarce winter visitor to the Durgapur area. Records of 2 or more birds in the sal jungle on 16.ii.69 and in my garden on 3 . i . 70 and exactly a year later on 3.i.71.

*Passer domesticus* (Linnaeus),

#### HOUSE SPARROW

Excessively abundant resident around all houses and habitation. No clearly defined breeding season, being almost year-round.

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*Petronia xanthocollis* (Burton),

#### YELLOWTHROATED SPARROW

7 records between March and July of 1 or 2 birds in my garden or sal jungle. Seen 4 times in 1968, twice in 1969 and once in 1970.

*Ploceus philippinus* (Linnaeus),

#### BAYA WEAVER

An abundant resident, their colony nests suspended from palmyra palms and other trees being a common sight. Nest building usually began in May and continued through the monsoon.

*Ploceus benghalensis* (Linnaeus),

#### BLACKTHROATED WEAVER

Not always distinguished from and sometimes mixed with Baya Weavers. Flocks could be found fairly regularly in waterside vegetation at DB and along the canal on the way to AW.

*Estrilda amandava* (Linnaeus),

#### RED MUNIA

A resident flock of 20-30 at DB were the only ones seen in the area.

*Lonehura malabarica* (Linnaeus),

#### WHITETHROATED MUNIA

Common resident with flocks of upto 25 with Spotted Munias on seeding grasses and flowers during the monsoon. Seen much less frequently from December to March.

*Lonehura punctulata* (Linnaeus),

#### SPOTTED MUNIA

A very common resident with flocks of upto 100 on lawns in May and June. Nest building

was very protracted from June to November but few nests reached a more productive stage. Many complete but empty nests were taken over by Whitethroated Munias.

*Lonehura malacca* (Linnaeus),  
BLACK HEADED MUNIA

1 appeared at DB on 1 . viii . 70 and was seen subsequently on 13.ix.70 and 15.xi.70 This was a white bellied bird of the race *L. m. malacca* and thus may have been an escaped cage bird because Durgapur is within the range of the chestnut bellied race *L. m. atricapilla*. However the dates would fit post breeding dispersal.

*Carpodacus erythrinus* (Pallas),  
COMMON ROSEFINCH

A scarce spring migrant with 2 records in or near my garden on 4.iii.68 and 5.V.68. Also at Topchanchi on 25 . i . 70.

*Melophus lathami* (Gray),  
CRESTED BUNTING

A single record of a male of this unmistakable species among scrub in a small sandy river bed beside the Panagarh — Ham Bazar road on 24 . i . 68. This locality would appear to be outside the expected range given in the handbook but the date is suitable for winter movements. The particularly dry weather at the time could have caused a wider dispersal than usual.

Discussion

The systematic list covers 294 species found in an area about 320 km long from Topchanchi to Calcutta by about 150 km from Messenjore (Canada Dam) to Bankura. Of these species, 11 were found only at Topchanchi but more diligent searching might find some of them on the forest clad hills such as Panchet and those round Maithon. The latter place was the only locality for 2 species, Painted Spurfowl and Rufoustailed Finch Lark. 4 species. Herring Gull, Blackheaded

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#### BIRDS OF DURGAPUR AND THE DAMODAR VALLEY

Gull, Larger Goldenbacked Woodpecker and Purplerumped Sunbird were found only in or near Calcutta but the two gulls could well turn up in Durgapur as they do occasionally at Delhi which is a lot of further from the sea. A further 5 species. Greater Adjutant, Black Ibis, Black Eagle, Rain Quail, and Bank Myna were single records more than 50 km from

Durgapur. This leaves a total of 272 species within an arbitrary 50 km from Durgapur in 3 years and 3 months by a single part time observer.

Hutson (1954) recorded c. 250 species within 16 km of Delhi in 2 \ years and the checklist of the Delhi Birdwatching Club gives 333 species (excluding accidentals). That is the total effort by numerous observers over a large number of years. Doubtless the Durgapur list could be expanded by a similar effort.

Holmes and Wright (1968) working in Sind for 3 years listed 267 species recorded by themselves, again on a part time basis but with more opportunity for observation.

Ghorpade (1973) in his survey of Sandur district in Karnataka listed 167 species and suggested the ultimate total might be about 250. However his area was largely devoid of aquatic habitat.

The number of species recorded in or from my garden was 126 which compares with the 135 species recorded by MacDonald (1960) in the larger more mature garden of the British High Commission in Delhi also over a 3 year period.

If records for the adjacent colony, sal jungle and my regular daily route to and from my office are included, the total rises to 162. This will be referred to as the colony area. The observations made in the colony area can be compared with the work of Gaston (1978) on the New Delhi ridge who studied a restricted area there regularly over 3 years.

In a study of this nature the seasonal status of a species must be of a somewhat subjective nature. My category of 'resident' does not necessarily imply breeding, only that it was seen regularly throughout the year.

Table 1 gives the seasonal categories of the 162 species in the colony area and 272 for Durgapur as a whole and compares them with the 167 species recorded by Gaston on the New Delhi ridge (ND ridge) and the 333 of the Birds of Delhi and District : Field Check List (ND list). Gaston's data is slightly different because he considered only 322 species from the check list.

Table 1  
Colony  
area  
Durgapur  
ND  
Ridge  
ND  
List  
No. %

No. %  
No.  
%  
No. %  
Resident or  
Regular  
Winter  
62  
38  
93  
34  
47  
28  
186 56  
visitor  
Summer  
36  
22  
90  
33  
27  
16  
107 32  
visitor  
33  
20  
28  
11  
23  
14  
15 5  
Migrant  
Occasional or  
22  
14  
44  
16  
38  
23  
21 6  
non-seasonal  
9  
6  
17  
6  
32  
19  
4 1  
Total  
162  
100  
272  
100  
167  
100  
333 100  
The apparent anomaly of the colony area

having more summer visitors than the whole of Durgapur of which it is a part, is explained by a number of species, particularly water birds which are resident in other parts such as DB, spread out widely during the monsoon and turn up in the colony area at that time. Also, certain species occur only on passage in the colony area in autumn but winter elsewhere in Durgapur. Gaston noted a similar situation when comparing his study area with rest of Delhi.

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Care must be exercised when comparing the figures in such a table due to different observational techniques and different interpretations of the various categories by the authors.

Gaston's low figure for residents and high figure "for occasionals may be due to a more rigorous definition of resident but the comparative lack of habitat variety in his study area is a factor. However he recorded 32 species in every week of his study with 30 species in every week in my colony area, (see appendix 3). Of the species which occurred in every week, only 13 . are common to both areas.

It is evident that the whole of Delhi has much the highest number and proportion of residents and this reflects the more complete coverage over the years. The low figure for occasionals in the Delhi list is misleading because the table excludes 60 species listed as accidental (less than 5 records in 40 years).

If these are included, the figure becomes 64 occasionals out of a total of 393 or 19%, the same percentage as Gaston's figure for the ridge. 10 of the Delhi accidentals are quite common or regular in Durgapur. These are Crested Hawk Eagle, Bronze-winged Jacana, Lesser Golden Plover, Blackheaded Oriole, Ashy' Swallow-Shrike, Greyheaded Myna, Large Cuckoo-Shrike, Rufousbellied Babbler, Forest Wagtail and Thickbilled Flowerpecker.

The proportion of winter visitors is very similar in Durgapur and Delhi but the composition is a bit different. Due to its geographical location Delhi is reached by a number of species from SE Europe and SW Asia which do not extend across to Durgapur. The Brown Shrike is the only eastern species which extends its winter range westwards into the Durgapur area. The mountain ranges of Tibet and the

Himalayas are a formidable barrier to eastern palaearctic birds and they are steered to the south east away from India.

Durgapur has many more summer visitors than Delhi. The colony area has almost half as many again as the ND ridge and the whole Durgapur area has almost twice as many as the ND list. The longer and wetter rainy season in West Bengal is clearly a factor. Some of the smaller herons listed as summer visitors in Durgapur may actually be resident but they are only seen when active during the monsoon. The low figure for migrants in the ND list is a bit surprising compared with Gaston's figure but he does say that birds passing through his area do winter elsewhere in Delhi. Durgapur has more migrant species but the most striking difference is the relative proportions between spring and autumn.

Gaston identifies 38 species as passage migrants, 8 being mainly in autumn, 4 mainly in spring and the remaining 26 being equally divided. The 22 migrant species in the colony area are divided into 4 species in autumn only, 17 spring only and 1 in both seasons. The 44 migrants in Durgapur are divided into 7 in autumn only, 35 in spring only and 2 (Grey Plover and Forest Wagtail) in both.

The likely explanation for this difference in migration pattern is that birds arriving in the Delhi region from the north and north-west in autumn encounter congenial feeding grounds nourished by the recent monsoon and these are exploited until increasing desiccation forces the birds to disperse to the more humid south and east. Thus birds appearing in Durgapur in spring are completing the last part of their winter stay in the sub-continent in Bengal.

The Yellow-browed Warbler becomes more numerous in late winter and early spring suggesting immigration from elsewhere. It has already been noted that the sal jungle around Durgapur still carries a good leaf cover during February-April whereas the forest 130 km to the west is almost bare. A single January visit

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**BIRDS OF DURGAPUR AND THE DAMODAR VALLEY**  
to the Hazaribagh NP some 200 km to the west found the absence of foliage was more pronounced. Almost half the spring migrants in Durgapur are canopy feeding insectivorous warblers and flycatchers which exploit this to

advantage. A second explanation is that some species which migrate southwards through Delhi in autumn continue down the west side of the peninsular and return up the eastern side in spring for the reason given above.

Blyth's Reed Warbler is a case in point.

This preponderance of spring migrants gives a different complexion to the avifauna of Durgapur compared with Delhi when the number of species occurring in each month is considered. See table 2 below.

months, and minima in June and January.

There may be some observer bias tending to exaggerate the difference between best and worst periods in that better rewards may spur greater effort. Also birdwatching during monsoon thunderstorms is neither very pleasant nor productive.

The results of the work embodied in this paper show that the ornithologically neglected West Bengal plains have a diversity of avifauna comparable with other parts of lowland India. Thus the naturalist who finds himself in an area of heavy industrial development located in a monotonous plain under a monoculture of rice need not despair. The results can be surprising.

Table 2

|          |  |
|----------|--|
| J        |  |
| F        |  |
| M        |  |
| A        |  |
| M        |  |
| J        |  |
| J        |  |
| A        |  |
| S        |  |
| O        |  |
| N        |  |
| D        |  |
| Durgapur |  |
| 164      |  |
| 174      |  |
| 168      |  |
| 154      |  |
| 122      |  |
| 110      |  |
| 102      |  |
| 114      |  |
| 124      |  |
| 97       |  |
| 121      |  |
| 135      |  |
| ND ridge |  |
| 68       |  |
| 90       |  |
| 118      |  |

109  
71  
60  
80  
84  
111  
103  
92  
89

The Durgapur figures show a single late winter peak falling to a minimum in July. The low figure for October is almost certainly due to the poor coverage in that month, I was absent for part or the whole of that month in each year. (See appendix 2). In contrast the ND ridge figures show peaks in March and September, the main migration

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Appendix 1

Frequency of visits to DB and AW. Visits per month in each year

DB

J

F

M

A

M

J J

A

S

O

N

1968

-

2

3

3

2

2 1

4

3

1

2

1969

1

5  
3  
3  
1  
1 1  
-  
-  
-  
2  
1970  
3  
3  
2  
2  
2  
1  
1  
3  
1  
3  
1971  
2  
2  
1  
AW  
1968  
3  
i  
-  
1  
1  
-  
2  
-  
1  
-  
1969  
1  
2  
-  
1  
-  
1  
1  
-  
-  
1  
1970  
1  
1  
-  
-  
-  
1  
1  
1

-  
1971  
1

-  
Appendix 2

My absences of a week or more from Durgapur

1968

13/x - 22/x,

1969

1/iii - 7/iii, 7/iv - 16/iv, 30/iv - 11/v,

25/viii - 14/xi

1970

7/iii - 21/iii, 4/x - 13/x,

1971

Departed 18. iii. 71.

Appendix 3

List of birds recorded in every week

Pond Heron

\* House Crow

Cattle Egret

Common Iora

Little Egret

Goldmantled

\* Black Kite

Chloropsis

\* Whitebacked Vulture

\* Redwhiskered Bulbul

Spotted Dove

\* Redvented Bulbul

\* Roseringed Parakeet

\* Jungle Babbler

Koel

\* Ashy Wren-Warbler

Palm Swift

\* Tailorbird

Indian Roller

Magpie Robin

Little Green Bee-eater

\* Indian Robin

Black Drongo

\* Purple Sunbird

Ashy Swallow-Shrike

House Sparrow

Pied Myna

Baya Weaver

\* Common Myna

Spotted Munia

\* Tree Pie

An \* indicates those species which also appear on  
Gaston's list of birds recorded in every week.

A further 4 species, Collared Dove, Little Brown  
Dove, Yellow-eyed Babbler and Blackheaded Oriole  
failed to make the above list by only a narrow  
margin.

D

3

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