

STATE FAUNA SERIES 3

FAUNA OF WEST BENGAL

PART 1

**ZOOLOGICAL SURVEY OF INDIA
1992**



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Part 1

[OVERVIEW, MAMMALIA, AVES & WILD LIFE]

Edited by
Director, Zoological Survey of India



ZOOLOGICAL SURVEY OF INDIA

1992

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F O R E W O R D

The Zoological Survey of India was established in Calcutta, then capital of undivided Bengal on July 1, 1916. In spite of the fact that several research papers and documents have been published by the scientists of this Survey (starting from study of Fauna of Hugli-Matlah estuary to that of Darjeeling hills) on Bengal fauna, no consolidated account of all groups of fauna of the state has so far been published by the survey. As a part of State Fauna Survey programme, the state of West Bengal has recently been systematically surveyed, (1985-1990) both districtwise and group wise, the results of which are now being presented under title of Fauna of West Bengal. The entire document will be published at least in 12 parts encompassing mammalian fauna to protozoan fauna of West Bengal. The scientists of the Headquarters of Zoological Survey of India have worked ceaselessly during the field surveys and later at the laboratory to work out the collections, preserve voucher specimens and finally in writing out the scientific reports. These papers will present general feature of each group, diagnostic characters keys for identification references and illustrations, all of which it is hoped will help to initiate further studies on enormous biological diversity in the state of West Bengal. It must be stated that further intensive surveys both for specific group and covering interior geographical areas may yield more information in the future, which can be added to this well laid foundation. I would like to congratulate my colleagues in the survey and Dr. A. K. Ghosh, Joint Director and Co-ordinator of this programme for the excellent work done.

Calcutta

31st July, 1992

Dr. S. K. Bhattacharya
Joint-Director-In-Charge
Zoological Survey of India

FAUNA OF WEST BENGAL

PART 1

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THE STATE OF WEST BENGAL : AN OVER VIEW

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1.0. INTRODUCTION

The State of West Bengal forms a part of former province of Bengal in "British India" The partition of Bengal in 1947 lead to the separation of its larger eastern part to constitute erstwhile East Pakistan, now Bangladesh and the smaller Western part has been renamed as the State of West Bengal. The state has two distinct geographical units *viz*, a smaller northern unit comprising the districts of Darjiling, Jalpaiguri and Koch Behar located in the sub-Himalayan and foothill region and a much larger southern unit, comprising the districts of West Dinajpur, Maldah, Murshidabad, Nadia, Birbhum, Barddhaman, Bankura, Hugli, Haora, Calcutta, 24 Parganas, Medinipur; in 1957 a narrow corridor, formerly a part of neighbouring state of Bihar was transferred to establish a link between northern and southern unit, and most part of the district of Puruliya was also annexed to West Bengal. In recent years, the largest district of the state has been divided into south 24 Parganas and north 24 Parganas.

The state has a total area of 88,70,000 km ranking 11th among the states of India, and a population of 54,468,000 (as per 1981 census), having 614 person per sq. km., ranking only second to the state of Kerala. It may be noted that out of an area of 88,70,000 km., only 2,60,000 km. belong to urban landscape, rest being peri-urban and rural.

2.0. TOPOGRAPHY

The state of West Bengal (Map 1) can be broadly classified into two distinct regions the Eastern Himalaya Darjiling district and the lower Ganga Plain.

The south western corner of Eastern Himalaya comprise Darjiling district (excluding Siliguri subdivision); located on the flank of Himalaya, this area is characterised by changing elevation, hill streams cutting through soft rocks and forming longitudinal valleys and preponderance of length over breadth. The climatic changes in this part can be correlated with rapid changes in topographic and altitudinal aspects and a contrast between sheltered valleys and foot hills and mountain tops, with regard to temperature and rainfall, can be evidenced. Rocks mainly consist of shales, schists and conglomerates. In the higher slopes, soil acidity caused by heavy rainfall is noted; in the foot hills, the soils are alluvial in nature, loams, or sandy loams mixed with pebbled and in the valleys soils are clayey alluvium. The climate and the soil in this part helped to propagate the diverse flora and in turn create niches ideal for faunal diversity and evolution.

Geographers recognise at least four subregions in the Darjiling - Sikkim Himalaya *viz*. Singallia range, Donkhya range, Darjiling and Kalimpong, as district physical units. The valley of Tista further divides Kalimpong subregion into western and eastern sections. Darjiling town has an average elevation of 2280 m.

The lower Ganga Plain (21° 25' - 26° 50' N 86° 89° 58' E) covers an area of 80,968 sq. km., extending from foot hills of Darjiling Himalaya in the north to the bay of Bengal in the south (max. stretch about 580 km) and Chotanagpur highlands in the west to the border to Bangladesh and

Assam in the east (max. stretch 200 km). The occurrence of old mud, new mud and marshes in a deltaic setting provide as almost plains landscape; while the areas in some district may have elevation slightly above 150 m, in most part of the region it remains within 30 m. The general slopes tends to be in the south-east.

Singh *et. al.* (1971) recognised 4 physiographic subdivisions in lower Ganga Plain as under (i) the northern plains comprising two distinct land forms (a) the Duars (the Barid tract (ii) the Delta proper comprising (a) the land of dead and decaying river in the north (Murshidabad and Nadia) (b) the active "delta of Sundarban and (c) the Mature delta – parts of Birbhum, Bardhaman and Medinipur and the entire district of Hugli and Haora and (iii) the Western margin of the delta called Rarh Plain.

The vast plains is endowed with fertile soil, numerous wetlands caused by frequent changes in the stream courses and the major river system of Ganga and its tributaries. Mineral deposits are noted to be concurrent with the older formations of Duars in the north and Rarh in the west; iron ore, Dolomite china clay, limestones etc., form the major mineral resource which contribute to more than 20% of national mineral production in India.

Of the total land area, forest covers about 13.4% and cultivation 62.7%; rest of the area can be classified as area not available for cultivation (15.7%), current fallows (1.2%) and other uncultivated land (7.0) (Table 1).

TABLE 1
Land Utilisation in West Bengal
(1983-84)

1. Net Area shown	62.7%
2. Current fallows	1.2%
3. Area under forests	13.4%
4. Area not available for cultivation	15.7%
5. Other uncultivated lands excluding current fallows	7.0%
<hr/>	
Total	100%

Source : Economic Review 1985-86
Bureau of Applied Economics & statistics,
Government of West Bengal

3.0. GEOLOGY

The state is divided into three distinct geomorphological units as follows :

- (i) The Extra-Peninsular region of the north
- (ii) The Peninsular mass of the southwest
- (iii) The alluvial and deltaic plains of the south and east

The detailed geological set up of the above units have been given in a publication of GSI (1974). In general, the north Bengal region constitute a part of eastern Himalaya (the district of

Jalpaiguri and Darjiling) and the east-west strike, ridges are dissected by north-south river gorges. Geologically, the area is considered to be composed of an outer belt of autochthonous Damuda (alt. 750 m) and an inner range of allochthonous metamorphites (alt. upto c 1000-2500 m) of Buxas, Daling and Darjiling. Stratiographically the geological succession ranges from Permian to mid Pliocene.

The alluvial plains of the state is bordered in the northeast by an Archaean massif - the Shillong plateau. During Geological exploration, it has been recorded that below a relatively thin cover of Hologcene alluvium lie a thick section of Cretaceous and Tertiary sediments on a basement of basalt lava flow, presumably of upper Jurassic to lower Cretaceous period. An extension of eastern most Gondwana basin of Damodar valley (= Damuda) further east, below the alluvium, is also suggested. As such lithologically the succession can be traced from upper Jurassic to lower Cretaceous (near Jalangi) to Pliocene and Recent period. It is also suggested that marine transgression on the West Bengal shelf must have occurred locally during late Cretaceous and extensively during late Eocene. During Miocene, only the eastern part show evidence of such influence. It is suggested that possibly only very late in the Pliocene did the sea finally recede completely from Bengal basin area, followed by erosion, peneplanation and formation of alluvium.

4.0 CLIMATE

The state being located between 29°N and 27°N at the head of Bay of Bengal on one side with rampart of Himalayas only 500 km from the sea, the climatic condition exhibit a regional uniformity. It is stated that major climatic differences within the state are due to precipitation totals.

The temperature condition, excluding Himalayan region, show limited variation. The diurnal range between maximum and (Map 2) the minimum temperature in the coldest month of January remain nearly uniform at 13°C in the plains, (irrespective of latitudes) and mean January maxima, minima and absolute decrease with increasing latitudes. May is marked as the hottest month with temperature reaching between 35°C - 40°C and during monsoon, which normally starts in middle of June, the temperature varies between 28°C - 32°C. The state remains under the influence of Monsoon from June to September.

In the northern mountainous region, the temperature vary with the altitude. The highest observatory at Darjiling (c 2137 m) record a normal mean temperature of 26°C (summer) and 7°C (winter), absolutes below 0°C and snowfall occur occasionally.

Precipitation is derived from four sources viz, winter rain, pre-monsoon rainfall, cyclonic disturbances of varying intensity during monsoon and post-monsoon and lastly the monsoon current. The amount of rainfall varies between the deltaic plains and traditional drought prone area as also between the northern mountains and southern landmass, the highest being always in the Himalayan area reaching 800 mm in the month of July in a bar-graph.

Seasonally, the state experiences three distinct period viz. Hot Dry Season : March to early June; Hot Wet Season : Mid-June to September; Cold Season : October to February. During monsoon Cyclonic storms are frequent and only when a recurrence takes place, these cyclonic storms cross the state in a southwest-northeast direction and become associated with violent storms. Lata Chatterjee (*In Chatterjee et al.* 1970) divided West Bengal into four climatic regions as follows :

Climatic Regions : W.B.

- (i) Humid Subtropical : Region I : Extends over Himalayan tract, mean temperature in winter 6°C

- 10°C at different altitude. Rainfall 3060 mm. Winter drier than Region II; Norwester's occur rarely. Dominated by Westerly jet-stream in winter and early summer.

- (ii) Region II : Differ markedly from I with higher winter temperature (17°C), frequent norwesters, diurnal range of temperature exceeding annual range, more relative humidity and higher rainfall (3329 mm).
- (iii) Humid Tropical Climate : Region III : Temperature of this region differ from II by an average of 5°C in summer and 3°C in winter. Norwester and annual rainfall 50% less than in II.
- (iv) Region IV : Show continental characteristic, summer temperature is higher by 3°C and winter temperature is lower. Norwester much less in frequency as also annual and summer rainfall, Relative humidity 10% less than in III.

TABLE 2
Annual Rainfall in West Bengal

Sub Himalayan West Bengal	Normal Range (mm)
Darjiling	3212
Jalpaiguri	4136
Koch Behar	3193
Maldah	1498
West Dinajpur	1802
Gangetic West Bengal	
Bardhaman	1271
Birbhum	1234
Bankura	1271
Medinipur	1428
Haora	1676
Hugli	1516
24 Parganas	1579
Nadia	1401
Murshidabad	1338
Puriliya	1180

5.0 SOIL

The soil in West Bengal (Map 3 & 4) can be broadly grouped under six different groups, according to Department of Agriculture, Government of West Bengal. These can be represented in terms of area in acres and the districts of distribution (Table 3).

TABLE 3
Soil Groups in West Bengal

Soil Groups	Area in acres	Districts
1. Laterites	14,72,037	Birbhum, Bankura, Barddhaman, Medinipur. (Sal-Palash)
2. Red Soils	12,40,864	Birbhum, Bankura, Puruliya, Medinipur, West Dinajpur. (Sal)
3. Alluvial Soils	72,23,319	Large part of the state. (Mixed vegetation)
4. Coastal Soils	28,54,256	24 Parganas, Medinipur, Haora. (Mangrove and assoc).
5. Terai Soils	16,19,443	Jalpaiguri, Koch Behar.
6. Alluvial Soils	32,84,047	Puruliya, West Birbhum, Bankura, Asansol area of Barddhaman.

In general, soils in West Bengal are poor in organic matter as well as in nitrogen. The soil pH in general is satisfactory except in districts of Darjiling, Jalpaiguri and Koch Behar where liming in acidic soil is recommended for agriculture; this is partly true in areas of Birbhum, Hugli, Barddhaman, Puruliya and Medinipur districts. Salinity in soil is high in coastal areas of Medinipur, Haora and 24 Parganas; in general, soils in the state have low to medium level of nitrogen, phosphate and potassium.

6.0. RIVERS

The undivided province of erstwhile Bengal was called 'land of rivers'. Its network of surface water system used to cover the entire lowlands between Bhagirathi-Hugli on one side and Meghna-Bramhaputra on the other. Ganga is the only perennial snow fed river in the West Bengal delta; it extends from west to east across the country dividing the land of North Bengal on the left, extending from the foot hills of Himalayas, and the vast south and southwest Bengal projecting an undulating semi-hilly tracts adjacent to areas to Chotonagpur and Santhal Parganas in Bihar, slopping plains of Birbhum, Bankura, Barddhaman and Medinipur and finally deltaic – the low, marshy land in the district of Murshidabad, Nadia and 24 Parganas. (Map 5)

The Bhagirathi, takes off from Ganga in areas between Rajmahal Hills in the west and Lalgolaghat on the east, an area of about 60-70 km stretch. On its southwardly sojourn the Bhagirathi is joined by a number of tributeries on the right bank *e.g.* Pagla, Banslol, Brahmani, Dwaraka, Maurakshi and Ajoy etc; all these rain-fed tributeries originate from eastern hill slopes of Chotonagpur and Santhal Parganas, as tiny rivulets and transform into mighty rivers in the monsoon.

The other western tributary of Bhagirathy-Hooghly is the river Damodar, which joins Hooghly through the tidal basin of river Rupnarayan; at least six other rivers *e.g.* Dwarakeswar, Kunti, Silabati, Kangsabati, Haldi etc. join the same tidal basin.

TABLE 4
Bhagirathi System
Western Rivers

Pagla	Damodar
Bansloi	Sali
Brahmani	Dwarakeshwar
Dwaraka	Kunti
Maurakshi	Rupnarayan
Kopal	Salibati
Ajoy	Kangsabati
Khlaighai	Haldi

Subarnarekha System

The other river flowing through the plains of West Bengal is Subarnarekha, which originates in Bihar and meets the ocean near border area of W.B. and Orissa. Before the river Ganga enter West Bengal near Farakka, it flows by the foothills of Rajmahal and near Lalgolaghat and before it enters to Bangladesh, it receives a number of rainfed streams of which Mahanada is considered the major one. The other major river in North Bengal is the snow fed Tista; originating from Sikkim - Bhutan Himalaya, as its flows down, Tista receives water from a number of small hill-rivers of north Bengal viz. Raidak, Chukha, Dina, Torsa, Murali, Dudaya, Murti, Dhali, Gorumara, Koratoya, Jaldhaka etc. The Tista enters Bangladesh beyond Jalpaiguri and joins the Brahmaputra which in turn joins the right arm of Ganga *i.e.* Padma and flows to meet Bay of Bengal as Maghna.

TABLE 5
Northern rivers

Tista System	Mahanada System
Raidak	Murti
Chukha	Dhali
Dina	Koratia
Torsa	Gorumara
Murali	Jaldhaka
Dudaya	Rangit

Mahanada System

The entire riverine system in the state has been facing impact due to changing land use pattern.

The main problem however centers around Hugli which remains sensitive to any changes in the Ganga system (up stream) or its eastern or western tributaries. The tidal influx from Bay of Bengal also plays a vital role in maintaining the euryhaline regime.

The state of West Bengal is also well known, for numerous wetland in the form of 'ponds', 'Jheels', 'beels' and the natural/excavated drainage system of 'khals' (= canals) often add to the aquatic ecosystem of the state. These wetlands continued to play a vital role in drainage and irrigation besides in pisciculture and in recharging of groundwater aquifers but many of the lowlands swamps and marshes as also large beel area, have been reclaimed in recent years. This invariably leads to loss of biotic components and causes major disturbance in natural drainage and spill-areas.

7.0 AGRICULTURE

The major agriculture crop in the state is Paddy. Multiple cropping and double cropping are widely practised. West Bengal is also the prime state in Jute (Haora, Hugli, 24 Parganas), Tea (Darjiling) and Rice (widely distributed) occupying the second and third place. Pulses are cultivated widely (south & north Bengal); some amount of oilseeds e.g. mustard, 'oil', sunflower are grown; sugarcane, maize, cotton are grown depending on soil condition in various parts of the state, but nearly 90 percent of the cropped area is put to food grain. In recent time, cultivation of wheat has been taken up more seriously. West Bengal remains in a significant place among the first three potato growing state of the country. Amongst the horticultural crop, Mango occupies a place of prior importance. Jackfruit, Litchi, Guava, Lemon, Citrus, Black berry, Oranges, Banana are widely grown. Regional culture of Mulberry (Murshidabad, Maldah, Bankura etc.), Lac (Puruliya, Maldah, Mursidabad, Bankura), Cinchona and Cardamom (Darjiling District) are well known. A great variety of Bamboo is grown extensively upto 2000 m, except in Sundarban area. Tables 6 and 7 present the major crop growing region (districtwise) and the area under 5 major group of crops.

TABLE 6
10 selected crops and major area of cultivation

1.	Rice	:	Widely cultivated
2.	Jute	:	Haora, Hugli, 24 Parganas
3.	Tea	:	Jalpaiguri, Darjiling
4.	Pulses	:	Murshidabad, Nadia, Maldah, 24 Parganas, Medinipur, Hugli
5.	Mustard	:	West Dinajpur, Jalpaiguri, Koch Behar, Maldah, Murshidabad
6.	Potato	:	Hugli, Barddhaman, Medinipur, Birbhum, 24 Parganas.
7.	Sugarcane	:	Bankura, Barddhaman, Nadia, Murshidabad, Birbhum, (west), Maldah, West Dinajpur.
8.	Tobacco	:	Koch Behar, Jalpaiguri.
9.	Mango	:	Maldah, Murshidabad, Nadia, 24 Parganas, Barddhaman.
10.	Mulberry	:	Murshidabad, Maldah, Bankura, Birbhum, Medinipur.

TABLE 7
Areas in thousand hacteres under principal crops
in West Bengal (1978-79)

(in thousand hectares)

<p>A. Cereals</p> <p>1. Rice 4765.4</p> <p>2. Wheat 521.0</p> <p>3. Barley 35.5</p> <p>4. Maize 46.7</p> <p>5. Others 26.5</p> <p style="text-align: right;">Total <u>5.95.1</u></p>	<p>B. Pulse</p> <p>6. Gram 100.6</p> <p>7. Arhar 12.7</p> <p>8. Others 447.7</p> <p style="text-align: right;">Total <u>561.0</u></p>
<p>C.</p> <p>9. Rape & Mustard 110.0</p> <p>10. Linsed 68.3</p> <p>11. Others 59.9</p> <p style="text-align: right;">Total <u>238.2</u></p>	<p>D. Fibres</p> <p>12. Jute 59.9</p> <p>13. Mesta 44.8</p> <p>14. Others 2.2</p> <p style="text-align: right;">Total <u>584.9</u></p>
<p>E. Misc. Crops</p> <p>15. Sugarcane 32.1</p> <p>16. Potato 161.4</p> <p>17. Tobacco 13.2</p> <p>18. Tea 90.0</p> <p style="text-align: right;">Total <u>5395.1</u></p>	

8.0. FOREST AND VEGETATION

The forest area in West Bengal cover 11,880 sq. km. approximating 13.4% of the total geographical area. Of the total forest area 59% is designated as Reserved forests, 32% as Protected forests and 9% as unclaimed state forests and others.

The districtive geographical area, forest area and percentage of forests have been shown in Table 8.

The forest stand normally used for commercial forestry include "Kadam", "Simul", "Udal", "Pitali", "Jal", "Champ", "Gamar", "Sisso", "Mahagani", "Chikrassi", "Toon", "Tite champs" etc.

Prain in his excellent account of Bengal Plants (1908) precisely outlined the submontane forests succeeded by chain of swampy land, interspersed plants forest and village vegetation of bamboo, grass, palms and fruit orchards in between vast agricultural field and finally changing into typical mangrove vegetation in south Bengal. He (*op. cit.*) mentioned that Darjiling district contain a flora which is different more essentially from every other district in the lower provinces. Excluding Darjiling flora of typical Himalayan characteristics, Prain (*op. cit.*), listed 1159 genera and 2864 species from "Bengal" lying between 84° and 93° E lat. and 22° and 27° N. Present day West Bengal occupies a much smaller area but no complete account of the flora of the state, in the line of "Bengal Plants" is available. In general, the tropical evergreen forest are concentrated in the 'Duars' area. Deciduous and scrub vegetation covers the greater part of western region in the Lower Ganga plains in Medinipur, Bankura, Bardhaman and Birbhum. Scattered and isolated patches can be seen in Haora and Hugli district. The tropical moist deciduous forest include Sal (*Shorea robusta*) and the dry deciduous forest include teak, Shisum (*Dalbergia sossu*) and bamboo.

Kanai (1966) has given an excellent account of phytogeography of eastern Himalaya. The northern fringe of Gangetic plains and Himalayan foothills upto an altitude of 700-900 meters are covered with a canopy of tropical rain forest and Evergreen or Deciduous forest dominated by *Shorea robusta*, *Adinia*, *Dalbergia*, *Dillenia*, *Bauhania*, *Anogesissus*, *Litsea*, *Phoebe*, *Lagerstroemia*, *Terminalla* etc. *Shorea* does not occur in heavy rainfall area which is characterised by *Eugenia* Lauraceous forest. At elevations ranging between 1500-1700 m, mixed broad leaved forest with dominance of *Schima wallich* and *Castanopsis indica* can be noted, along with *Ficus*, *Engelhardtia*, *Euonymus*, *Michella* and *Quercus*. On steep rocky south faced slopes, forest of *Quercus indica* occur with Lauraceous species, *Rhododendron arboreum*, *Lyohia ovalifolia*, *Acer* and *Symplocos* species. A mixed rhododendron-conifer forest stretch from 2500 m to the timberline and *Betula utilis*, *Gaultheria* and *Sorbus* spp., are commonly seen in the entire *Rhododendron* zone (Rau, in Mani, M.S. 1974).

An account of the Mangrove forest in Sundarban (Map 6) has been recently presented by Naskar and Guha Bakshi (1987) wherein they have provided a list of 74 families, 90 genera and 126 species of natural angiosperms in an area of 2000 sq. km. Of these 30 species of tree, 20 species of shrubs and 20 species of herbs have been listed as common mangrove species and their associates. Of the common ones, species of *Thevetia*, *Phoenix*, *Hoya*, *Avicennia*, *Heliotropium*, *Sueada*, *Cyperus*, *Scripus*, *Derris*, *Viscum*, *Xylocarpus*, *Porferesa*, *Bruguiera*, *Rhizophora*, *Sonneratia*, *Tamarix*, etc., may be mentioned.

9.0. FISHERIES & WILDLIFE

The natural contour, vast wetland ecosystem and coastal region of the state offer an excellent opportunity for fishery development in West Bengal; out of country's total inland fish production of 1.3 million tonnes in 1987-88, West Bengal alone produced 0.5 mt.

The unique feature of sewage fed fishery in 4000 ha near Calcutta, brackish water fisheries in Medinipur and South 24 Parganas, Reservoir fisheries in Kangsabati and other river valley project, and possibility of extensive fishing of pelagic fish stock in the offshore water of Bay and Marine fishing upto 200 miles of Exclusive Economic Zone, offer tremendous potentiality of fishery resources development in West Bengal. At present, more than 15,000 fishermen from 303 fishing villages are engaged in marine fishing in West Bengal.

Details of the fresh water and brackish and marine fishes of West Bengal have been dealt with by specialists in respective areas of this series.

TABLE 8
Districtwise geographical area, forest area and percentage
of forests in West Bengal

District	Geographical area (Sq. km.)	Forest area (Sq. km.)	Percentage of forests
Darjiling	3,149	1,204	38.23%
Jalpaiguri	6,227	1,790	28.75%
Koch Behar	3,387	57	1.68%
Bankura	6,882	1,482	21.54%
Medinipur	14,081	1,709	12.14%
Bardhaman	7,024	277	3.94%
Hugli	3,149	3	0.10%
Puruliya	6,259	876	14.00%
Birbhum	4,545	159	3.50%
24 Parganas	14,136	4,263	30.16%
Maldah	3,733	20	0.54%
West Dinajpur	5,358	18	0.34%
Nadia	3,927	13	0.31%
Murshidabad	5,324	8	0.15%
Haora	1,467	—	—
Calcutta	104	—	—
Total	88,752	11,879	13.40%

The project to reclaim derelict wetland, utilisation of sewage fed fishery technology under Ganga Action Plan in the state and the awareness that in West Bengal brackish water culture fishery potential is largest in the country, amply demonstrate the future prospect of fishery in the state.

The Wildlife resources of West Bengal include a number of rare, endangered and vulnerable animal species. Commonly, the wildlife in the state include Moles and Shrews (Insectivores), a variety of bats (Chiroptera) Rhesus Macque, Asamese Macque, Hanuman Langur (Primates), Jackal, Indian Fox, Sloth Bear, Himalayan Black Bear, Common Otter, Yellow Throated Marten, Himalayan Weasel, Hog Badger, Mongoose, Civets, Jungle Cat, Fishing Cat, Leopard, Tiger (Carnivores), Elephant (Proboscidea), One Horned Rhinoceros, (Perissodactyla), Serow, Goral, Sambar, Chital, Barking Deer, Hog Deer, Wild Bear, (Artiodactyla) Indian Here, (Lagomorpha) Flying squarrels (Rodentia) and Dolphin (Cetacea) etc. amongst mammals; likewise a large number of bird species, reptiles, amphibians and fishes occur within the state; of the invertibrates the insects, molluscs, crustaceans and other genral non-chordates have been recorded to occur in wide diversity.

The wildlife resource of the state find required niches in the chain of conservation areas (Table 9) and remaining undisturbed patches of habitats. Recent account of wildlife of India including W.B., is available in Majpuria (1986) and Tikader (1983).

10.0 FAUNAL RESOURCES

The fauna of the state of West Bengal has attracted attention of naturalists and professional Zoologists alike for more than 100 years. However due to changing political divisions, it may be difficult to ascertain the exact locality of occurrence of many of the species recorded during pre-independence period.

When systematic exploration, collection and inventorisation was initiated with the establishment of Zoological Survey of India (July 1, 1916), one of the earliest programme of the survey was centered around Hugli-Matlah estuary in the state. Much of the earlier investigation remain restricted either to aquatic ecosystem (Freshwater, Brackishwater and Marine) or to the mountain ecosystem in the Darjiling Himalaya. The occurrence of rare Himalayan Newt (*Tylototriton verrucosus* Anderson), Gaviial (*Gavialis gangeticus* (Gmelis), Olive Ridley Turtle *Lepidochelys olivacea* (Eschscholtz), Bengal florican (*Eupodotis bengulensis* (Gmelin), gangetic Dolphin *Platanista gangetica* (Lepbeck), along with Royal Bengal Tiger, Rhinoceros, and Elephants have always lend a colourful spectrum of fauna in the state; add to this a host of interesting invertebrate meio and meso-fauna including king crabs and Hemichordates and terrestrial fauna many of which have been described as new to science, specially from foothills of North Bengal and localities of Darjiling districts.

During 1983-84 to 1988-89, systematic surveys have been under taken by the scientists of the headquarters of Zoological Survey of India, at Calcutta to all the districts of West Bengal (see list of localities in the appendix). The results of the recent surveys as well as the material and records of all the earlier survey/investigations have now been consolidated in the following papers of the current part and subsequent parts on "Fauna of West Bengal"

An attempt to analyse the vertebrate fauna reveal that as many as 1186 species comprising 217 mammals, 219 birds, 139 reptiles, 39 amphibian, 1272 freshwater fishes and 402 marine fishes occur within the geographical limit of West Bengal. Of the invertebrates, the lower groups (*viz.* Protozoa (609), Porifera (16), Bryozoa (9), Annelida (107), Coelenterata (7), Polychaeta (80), are represented by as many as 828 species; of the Crustaceans, 136 species of crabs and stomatopods and of the molluscans 81 species of land and freshwater molluscs have been recorded. Likewise nearly 300 species of arachnids (mites, scorpions, spiders) present an impressive account. Insects are represented by thousands of species covering every group. At least 20 species of Echinoderms occur within the coastal limit of the state.

TABLE 9 : List of protected areas in West Bengal

A. NATIONAL PARKS

Name of National Park	Name of District	Area (in sq. km.)
1.* Sundarban National Park	24 Parganas (N & S)	1330.10
2. Singalila National Park	Darjiling	78.60
3. Neora Valley National Park	Darjiling	86.90
Total		1495.59

B. WILD LIFE SANCTUARIES & TIGER RESERVES

1. Mahananda	Darjiling	127.220
2. Senchal	Darjiling	38.600
3. Jorepekhri Salamander	Darjiling	0.04
4. Jaldapara	Jalpaiguri	115.630
5. Gorumara	Jalpaiguri	8.610
6. Chapramari	Jalpaiguri	9.600
7.** Buxa Wild Life Sanctuary	Jalpaiguri	314.600
8. Raiganj Wild Life Sanctuary	West Dinajpur	1.300
9. Bethuadahari	Nadia	1.207
10. Parmadan	Nadia	0.640
11. Ballavpur	Birbhum	1.998
12. Lothian Island	24 Parganas	0.380
13. Haliday Island	24 Parganas	5.950
14. Narendrapur	24 Parganas	0.100
15.* Sajnakhali	24 Parganas	362.400
16. Ramnabagan	Barddhaman	0.1447
Total		988.3397

C. TIGER RESERVES

1.** Buxa Tiger Reserve	Jalpaiguri	758.82
2.* Sunderban Tiger Reserve	24 Parganas	2585.10
Total		3343.92

Total Protected area	3820.8297
Total Forest area	11,879.0000
Percentage of Protected area to total area	32.16%

<i>N.B.</i> : *	This area contains	Sundarban National Park	=	1330.100
		Sajnakhali Wild Life	=	362.400
		Sanctuary Buffer area	=	892.600
		(Now Biosphere Reserve)		
		Total		2585.100 sq. km.

** This area contains	Buxa Wild Life Sanctuary	314.52
	Buffer area Buxa Tiger Reserve	44.50

It will indeed be worthwhile to present a more detailed analysis of the fauna of West Bengal

from the point of view of origin, distribution and status, at the concluding chapter of the last volume at this series.

10.1. IMPACT OF HUMAN ACTIVITIES ON BIOTIC COMPONENTS

The index of growth of total and urban/population in India and West Bengal, taking 1901 as the base year (100) has been put at 283 and 610 for India and 322 and 698 for West Bengal, respectively (ILGUS, 1989). The rapid urbanisation with fast changing land use pattern can also be evidenced in the figure of urban population percentage in the state (26.49%) vis-a-vis India (23.72% in 1981). The decadal changes in the entire population also indicate the extent of demand on land and natural resources; between 1961-71, the population in W.B., increased + 26.78% (total) and + 28.40% (urban) and during 1971-81, the same figure stand at + 22.96% (total) and + 31.61% (urban). In most of the districts, decadal population change show a heavy tilt towards urbanisation; in the northern part of state while decadal change (1971-81) in total population has been recorded as + 26.11% for Jalpaiguri + 28.19% for West Dinajpur, the corresponding change in urban population show + 85.12%, + 55.56% and + 54.02% respectively. The present density of population in the state stands at 614 per sq. km. (total population) and 5462 per sq.km. (urban), the first figure being only second to Kerala and the second figure being highest in the country.

While the foregoing statement amply illustrate the increase in population density, the demand on natural resources viz. land, water, forest could be rationally calculated during the same decades. The effect of heavy pollution load on major drainage system have been affecting aquatic biota; the submergence of vast forest tracts for multipurpose river valley projects, the continuous degradation of land due to extensive mining operation, the ever expanding small and middle sector industries, the continuous filling up of natural wetlands and finally unprecedented pressure of population in the richest natural resource base in northern part of the state have resulted in quick depletion and changing status of well known biotic components.

No assessment report is however available even in vital sector like fisheries regarding species-wise fish landing data at selected landing sites and the changes that have occurred during last four decades. Wherever systematic records have been maintained on the any faunal group (e.g. Birds) before and after the changes of existing land use (e.g. Saltlake swamps), the contrast depicting degradation become all too apparent. ZSI records show that as many as 248 species of birds (including 113 resident species) and 22 species of mammals including new species of mongoose, used to inhabit Salt Lake, before the satellite township came into existence. Similar records for Durgapur Industrial belt or Raniganj Coalfield area, unfortunately, are not available. But vanishing marine fauna in Digha Coast in Medinipur district and small fishes in south Bengal estuary area need no statistical input to impress.

The surveys conducted during 1983-84 to 1988-89 as such, were aimed not only to present a consolidated account of faunal resources of the state but also to document as extensively as possible, occurrence of diverse faunal elements in every possible ecosystem (except in deep sea) undergoing fast changes.

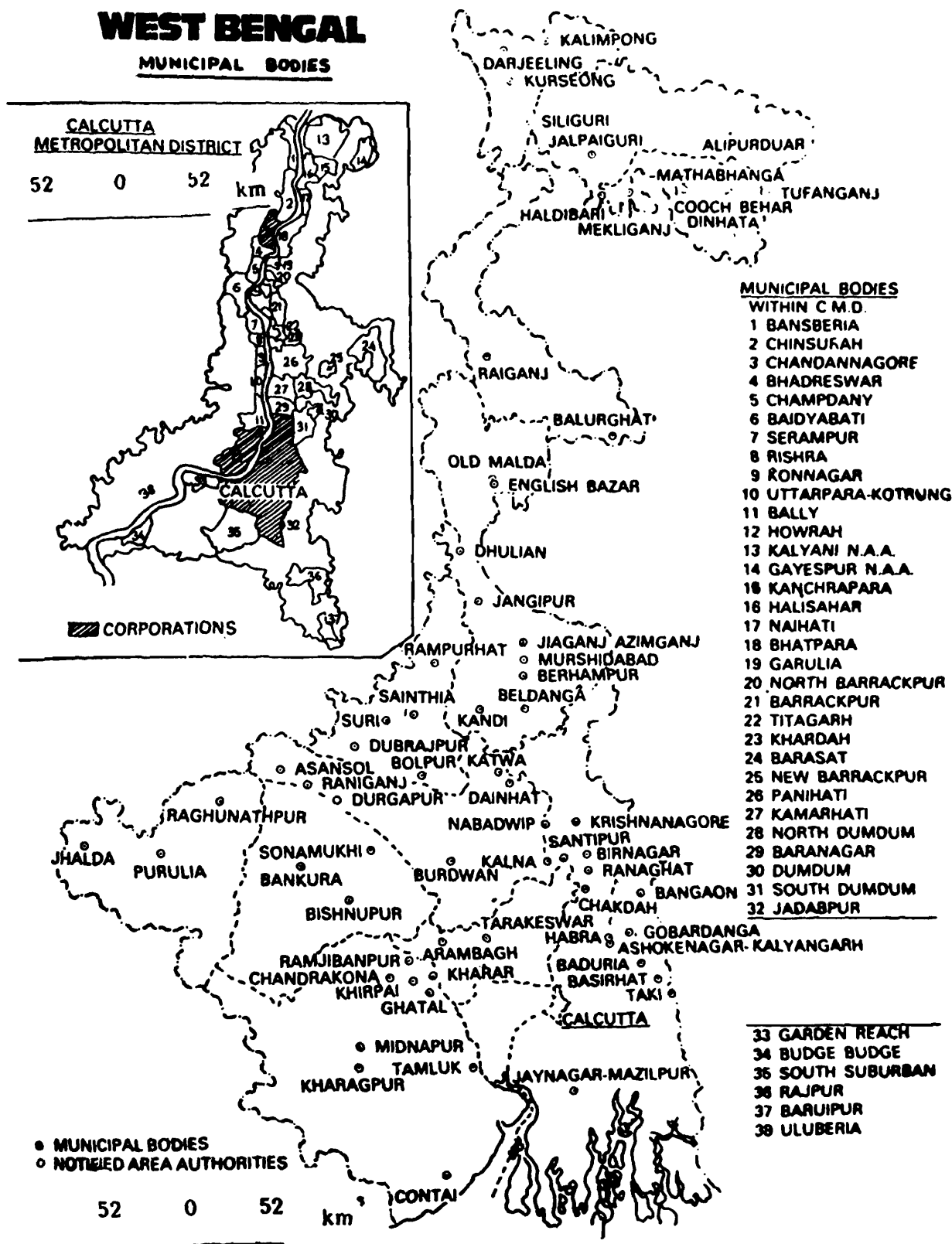
ACKNOWLEDGEMENTS

The author is thankful to the Director, Zoological Survey of India for the working facilities and continuous support for effective co-ordination of W.B. Survey programme. The author wishes to acknowledge the cooperation of all his colleagues at the Headquarters, in readily agreeing to

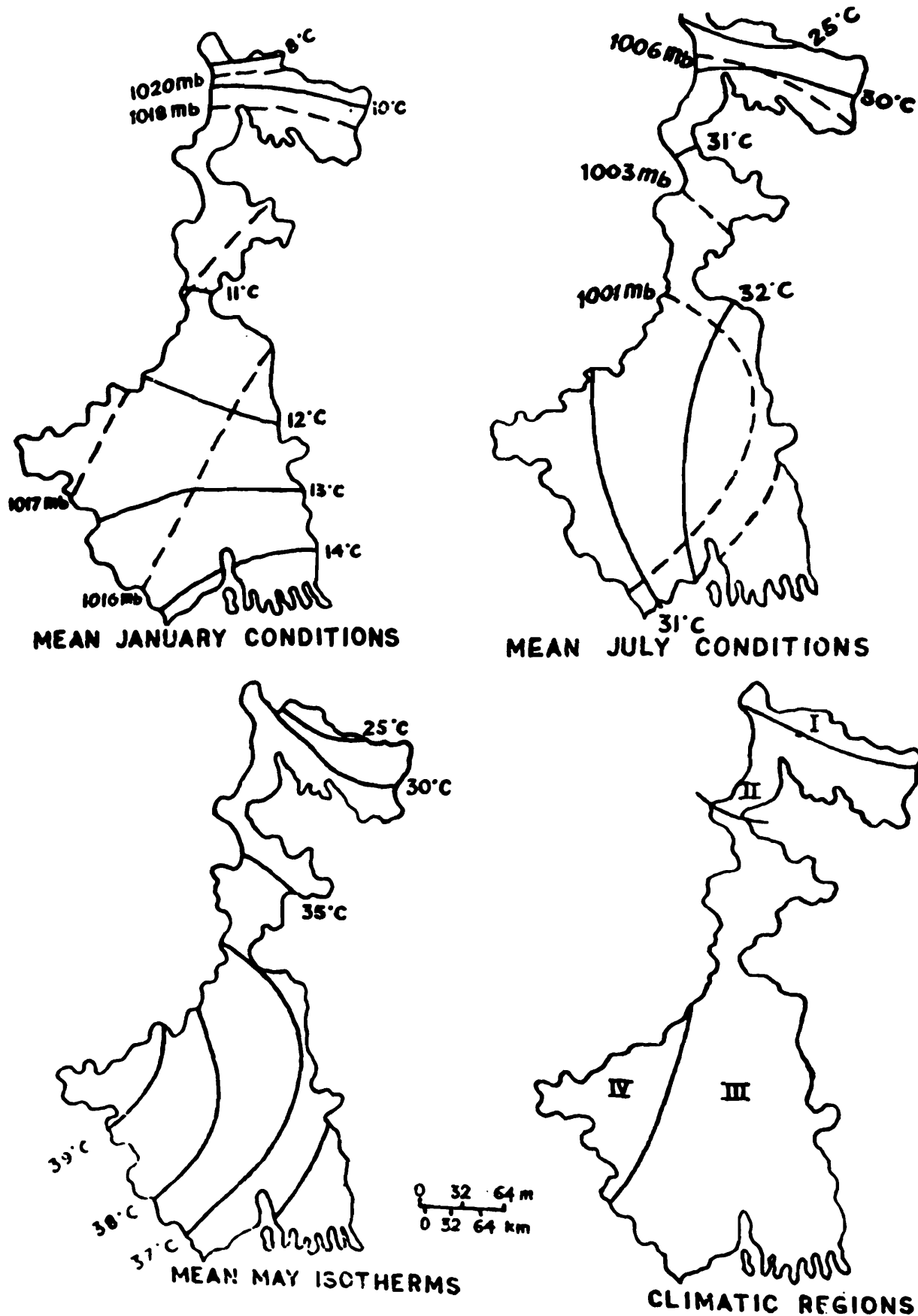
complete the survey and prepare the reports and for many helpful suggestion during the course of this programme. Special thanks are due to Sri P. K. Das, Scientist 'SE', Dr. D. R. K. Sastry, Assistant Zoologist and Sri Samar Mukherjee, Assistant Zoologist for the assistance received in preparation of map and locality list, and to Sri G. Sivagurunathan, Publication Production Officer, for his untiring effort in processing the manuscripts for the press.

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Map 1. Topography of West Bengal

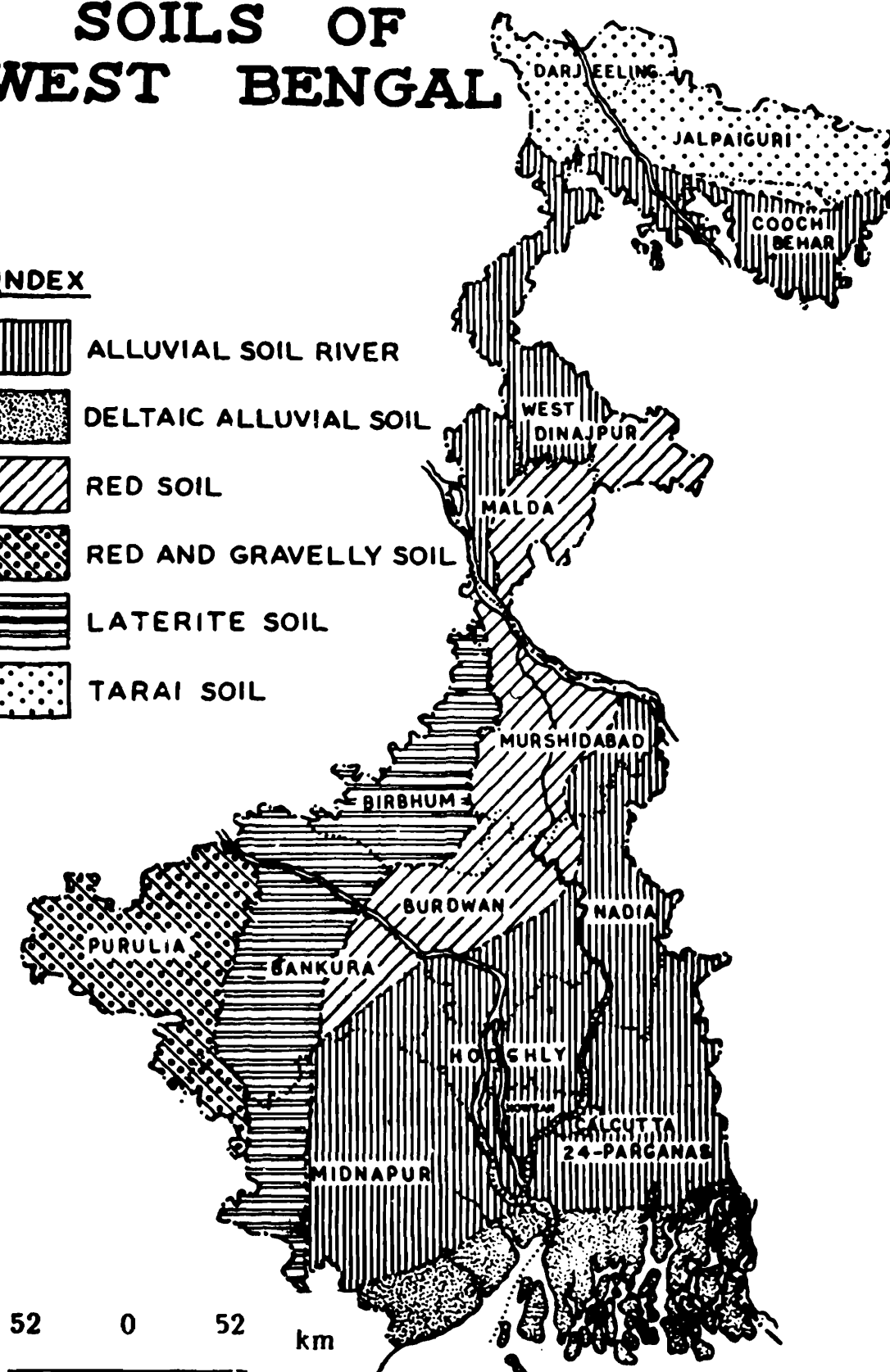


Map 2. Climate of West Bengal

SOILS OF WEST BENGAL

INDEX










-  ALLUVIAL SOIL RIVER
-  DELTAIC ALLUVIAL SOIL
-  RED SOIL
-  RED AND GRAVELLY SOIL
-  LATERITE SOIL
-  TARAI SOIL

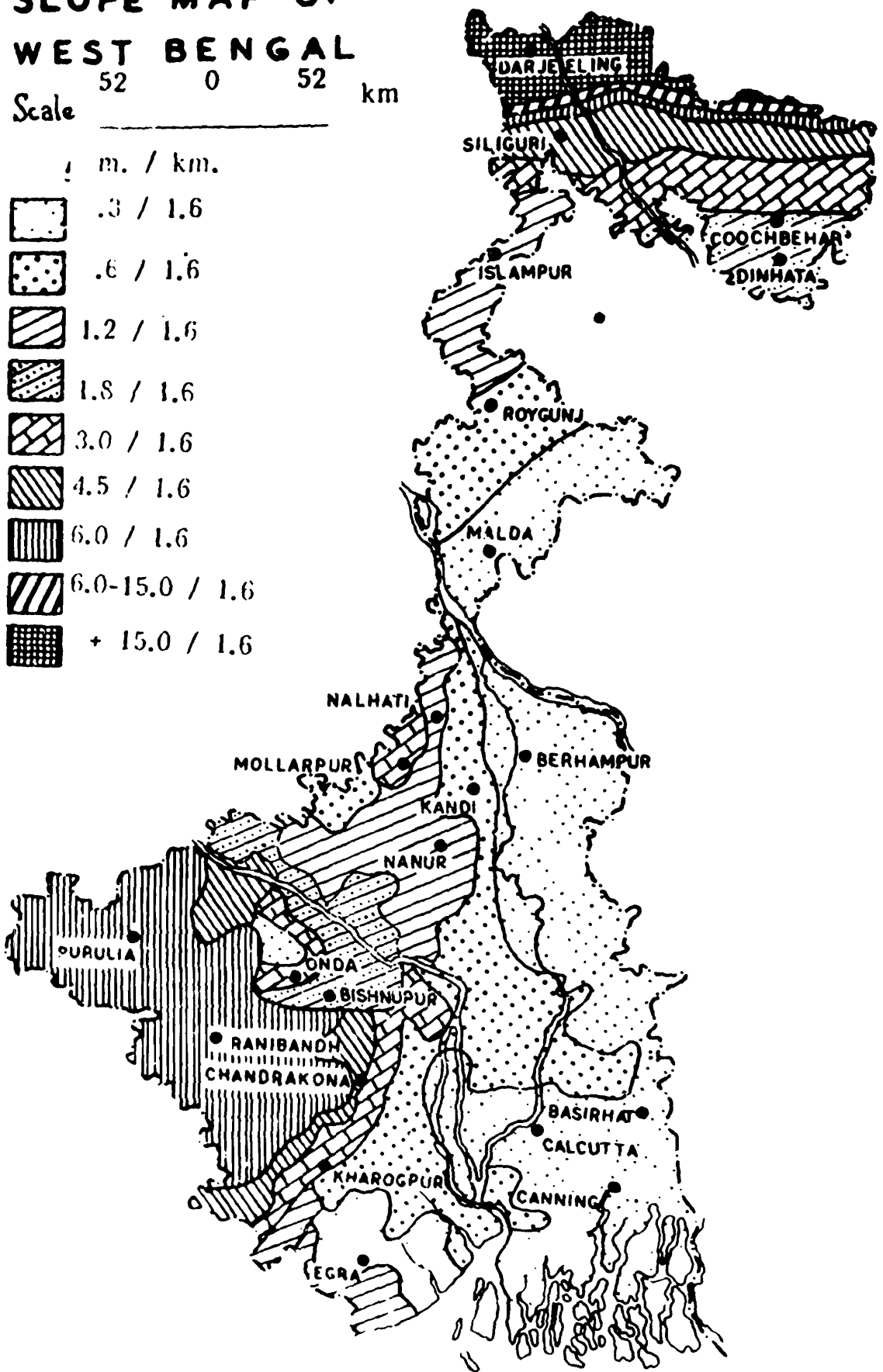


Map 3. Soils of West Bengal

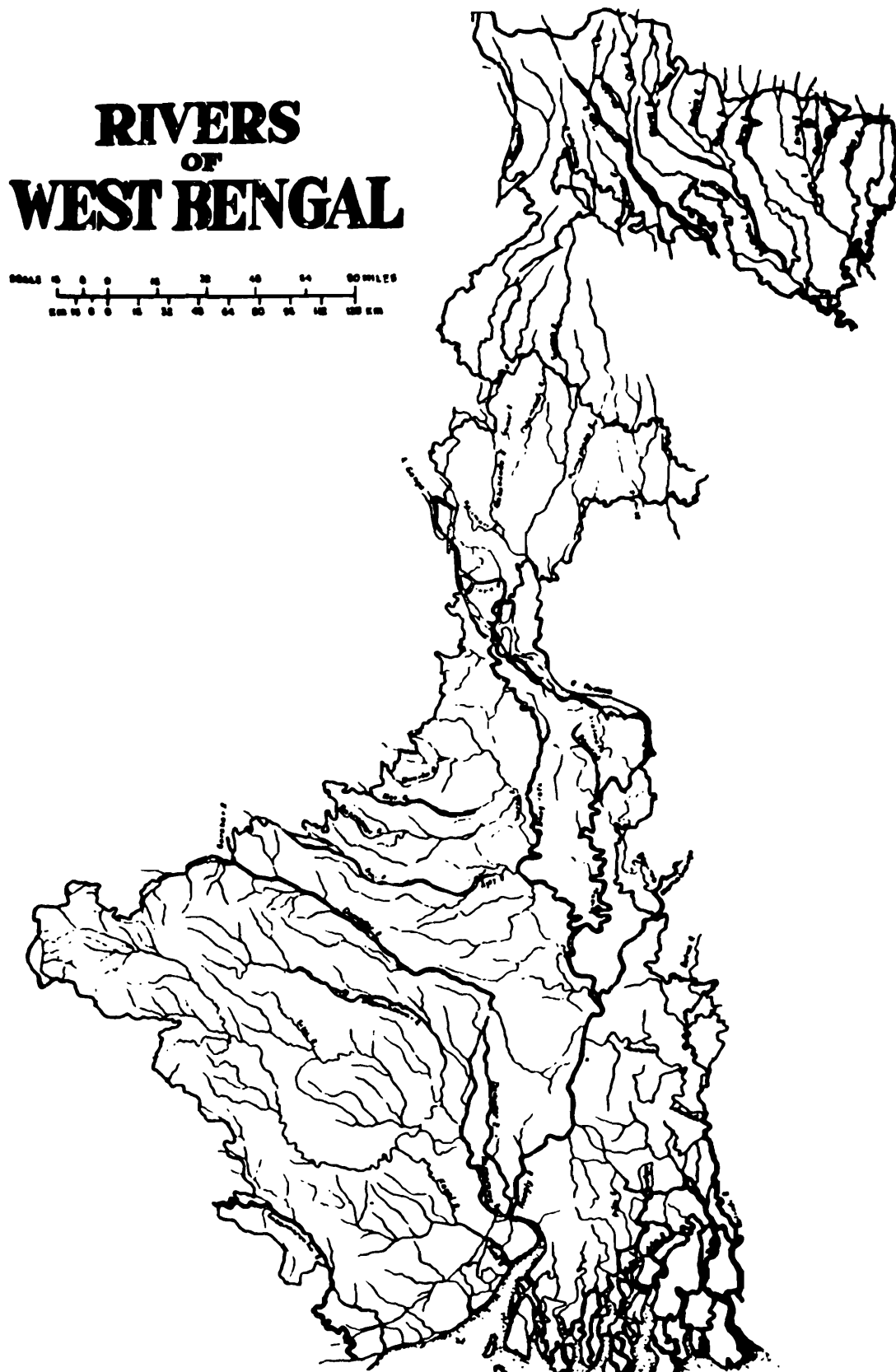
SLOPE MAP OF WEST BENGAL

Scale 52 0 52 km

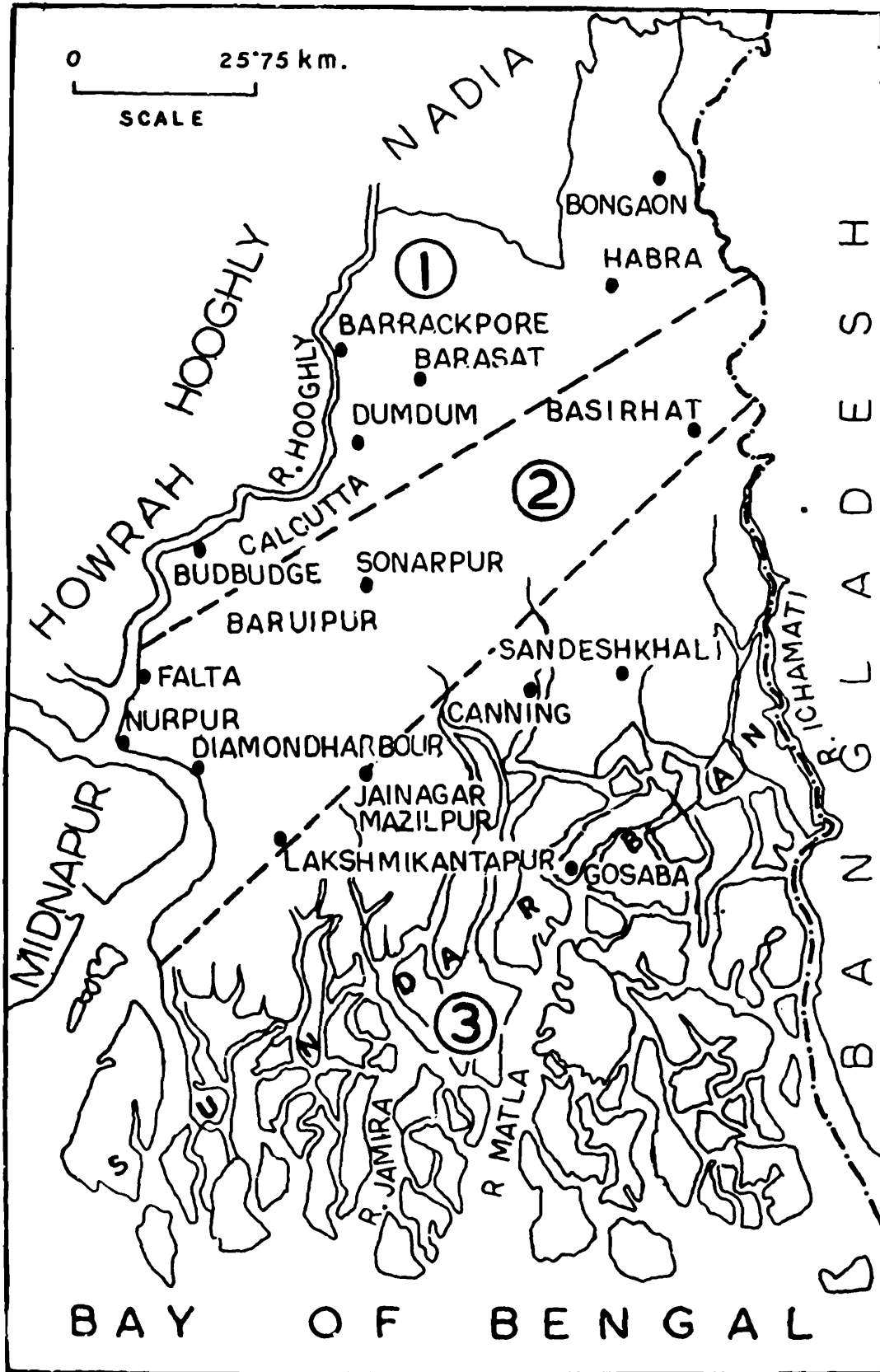
- m. / km.
-  .3 / 1.6
 -  .6 / 1.6
 -  1.2 / 1.6
 -  1.8 / 1.6
 -  3.0 / 1.6
 -  4.5 / 1.6
 -  6.0 / 1.6
 -  6.0-15.0 / 1.6
 -  + 15.0 / 1.6



Map 4. Slope of West Bengal



Map 5. Rivers of West Bengal



Map 6. Sundarban area in West Bengal

Appendix**WEST BENGAL**

	District	No. of Collection Localities
1.	Bankura	62
2.	Bardhaman	56
3.	Birbhum	40
4.	Calcutta	55
5.	Darjiling	141
6.	Haora	31
7.	Hugli	36
8.	Jalpaiguri	70
9.	Koch Behar	23
10.	Malda	47
11.	Medinipur	68
12.	Murshidabad	48
13.	Nadia	47
14.	North 24 Parganas	46
15.	Puruliya	41
16.	South 24 Parganas	123
17.	West Dinajpur	32
	TOTAL	966

Collection localities, listed districtwise (alphabetically arranged)

BANKURA DISTRICT

Aashma; Ahalyabai Road; Amdangra; Amtola; Aralbasti; Ballia; Baliha; Bankura; Banshi; Beliatore; Biraijheel; Bishnupur; Caochar; Chatma; Chatra; Chudamanipur; Dhaldanga; Dhankoda; Garhkotalpur; Garote; Gopalnagar; Hatirampur; Heeraparbat; Indos; Indrapur; Jhilimili; Jhatipahari; Joypur; Joyrambhati; Kanchanpur; Kanslemahal; Khatra; Kotalpur; Kumardanga; Kusumdanga; Meghia; Mukutmanipur; Noonjhar; Nutanchati; Onda; Paharpur; Panbarar; Panchmura; Patra; Patra sayar; Piardola; Pokarna; Radhanagar; Raipur; Rajgram; Ranibandh; Saltora; Sardardisa; Sareswar; Simlapal; Sonamukhi; Susnia; Taldanga; Tantipara; Tantipukur; Tejpal; Veduasole.

BIRBHUM DISTRICT

Ahmedpur; Alkambasar; Bahara; Bakreswar; Ballabhpur; Berul; Bhadrapur; Bhakashar; Bhaonapur; Bhatkara Forest; Bholaghat; Birbhumi; Birchandrapur; Bolpur; Bondi; (Bolesunda); Chandrapur; Deogori; Dorunda; Dubrajpur; Gamatia; Goadehi; Goapur; Godapiasal; Gonpur; Gopalpur; Hariapur; Ilambazar; Kacheyjursuri; Kanchanpur; Kanchipur; Kasimbazar; Kasipur; Lavpur; Madhaipur; Makranpur; Meloberia; Mattarpur; Mollarhat; Muradihi; Nalhati; Namur; Narayanpur; Nischintapur; Palitpur; Parui; Raichandrapur; Rampurhat; Sainthia; Santiniketan; Sriniketan; Suri; Tantipara; Tarapith; Tilpara; Tumbani.

BARDDHAMAN DISTRICT

Adra; Andal; Arrah; Asansol; Balagarg; Barakpur; Barsul; Bolgona; Barulhaman; Chirkumola; Chiltaranjan; Churparni; Dhatrigram; Durgapur; Garri; Gopalbag; Govindapur; Guskara; Kajoria; Kaksha; Kalna; Kalyanswari; Kana; Katoya; Ketugram; Khandakosh; Kulti; Memari; Mctedanga; Pallaghat; Pallaroad; Panagarh; Raina; Ranigunge; Ramnabagan; Rupnarayan; Salampur; Scharabazar; Tarbag; Ukhra.

CALCUTTA DISTRICT

Alipur; Baghajatin; Baghbazar; Ballygunge; Banskroni; Bantalla; Baranagar; Barisa; B.B.D. Bag; Beckbagan; Behala; Belgachia; Belgharia; Beliaghata; Bhwanipur; Bowbazar; Chanditala; Chetla; Cossipur; Dakshineswar; Dhakuria; Dhapa; Dum Dum; Dunlop Bridge; Durgapur; Eden Garden; Entally; Esplanade; Gaira; Gariahat; Gobra; Haltu; Haridebpur; Harinabhi; Jadavpur; Jodhpur Park; Kanakuragachi; Kasba; Kederpur; Kudghat; Lake Town; Maniktala; Minto Park; Moulali; Narkeldanga; Narendrapur; Outramghat; Paikpara; Park Circus; Rabindra Sarobar; Talapara; Thakurpukur; Tollygunge; Ultandanga; Wellington Square.

KOCH BIHAR DISTRICT

Atianmochar; Balabhat; Bania; Baxirhat; Bhetaguri; Bimaguri; Kochbihar; Dakhir; Dinjata; Duagiri; Falakata; Getaldaha; Ghungumari; Jari; Jayanti; Kodalbasti; Malishkuchi; Matabhanga; Mekhligunge; Nilpara; Sitalkuchi; Sonapur; Toofangunge.

DARJILING DISTRICT

Adalpur; Algharah; Audher-khola; Badekhasmahal; Bagdogra (127 m.); Barabatiabasti; Batashia (2079 m.); Bhadreswar; Bijanbari; Bogracote; Bomanpokhri; Buttabari (350 m.); Chalsa; Charanti Hills; Chatirhat; Chegra; Chengmari; Chinabari; Chitra; Chunabhati; Dalingcote; Dangra; Darge; Darjiling (2134 m.); Debrepani (1846 m.); Deoreli; Dhobighora; Dkyati (1524 m.); Duars; Duptin; Fansidewa (500 m.); Garubathan; Gayabari; Ghum (2256 m.; 2490 m.); Ghumbhanjan (2177 m.); Ghumati (1356 m.); Gish; Goke (750 m.); Gopaldhara (1439 m.); Himul; Jaldhaka (2448 m.); Jalpahar; Jarkhoala; Jhalung; Jolpokhri; Kakjhora; Kalijhora (240 m.); Kalimpong (1250 m.; 16505.); Kamdevpur; Karmakar; Karmati; Kharibari; Khumani; Kuapari; Kulbang; Kumari; Kurulong; Kurseong (1350 m.; 1524 m.); Labdah; Lamahat; Lawa (2364 m.); Lepchajagat (1846 m.); Longsong; Lopchu (800 m.; 1500 m.); Mahanadi (1100 m.; 1355 m.); Mahananda; Manibhanjan (1829 m.); Markalbari; Matigarh; Meora; Metali; Midwood; Mirik; Moinabari; Mongbul; Mongpoo (1260 m.); Mongpong; Mongsong; Mungphu (1384 m.); Naharkatia; Narbong (609 m.); Nazek; Neora Valley; Nimbong (1371 m.); Palmajua (2250 m.); Panchenai; Pandom; Panighata; Parikata; Panitanki; Paperkhati; Pedong (1432 m.); Permaguri; Peshoke (900 m.; 1067 m.; 1093 m.); Phalut; Plungdung; Pokhrialong; Rambh (1846 m.); Rangbang; Rangia; Rangirum (1846 m.); Rangpoo; Ranichera; Reang; Reli; Rohni; Rissum; Rongo; Sainbarihat; Sakiang; Samallong; Samsing (540 m.); Sandakphu (3000-3657 m.; 3636 m.); Sangser (1097 m.); Selimbhong; Senchal (2448 m.); Sepoydhara (914 m.); Sevoke; Siliguri (60 m.); Simulbari; Singla; Singtam; Sivakhola (1093 m.); Sonada; Sonapur; Soreng; Soureni; Sueirel; Sukiapokhri; Sukna (156 m.); Sungma (1372 m.); Takdah (1650 m.); Tarkhola (325 m.); Tashiding; Tenai; Tindharia; Tista; Tongh (2825 m.); Tongsong (970 m.); Tukrijhar; Tumthankhola.

HAORA DISTRICT

Abhirampur; Amta; Andul; Bagnan; Bally; Bauria; Belur; Birshibpur; Dankuni; Domjur; Haora; Jagatballabhpur; Jalpai; Kamina; Khantora; Laotala; Lillua; Maheshpur; Mantra; Mourigram; Nischindapur; Rajchandrapur; Salkia; Sankrail; Santraghachi; Shyampur; Sibpur; Srirampur; Ulberia; Unsani; Uttarpara.

HUGHLI DISTRICT

Adisaptagram; Andal; Arambagh; Bandel; Bandelghat; Belmuri; Bhadreswar; Champadanga; Chandannagar; Chinsura; Dankuni; Hooghly; Janai; Jhapandanga; Jorgram; Kamdevpur; Kamardingi; Kamarkundu; Kamarpukur; Konnagar; Kristrampur; Manikgunge; Mankundu; Mogra; Nalikul; Nawabgunge; Pandua; Radhanagar; Ratanpuri; Sheakhala; Sheoraphuli; Serampur; Singur; Tarekeswar; Tribeni; Uttarpara.

JALPAIGURI DISTRICT

Alipurduar; Ambari; Apalchang; Bagracote; Bamanpokhri; Baradabari; Baradighi; Baribhosa; Bharmabari; Bhutanghat; Bhutiabasti; Bhuttanga; Bijanbari; Binaguri; Buxa (708 m.); Buxadura; Chalsa; Chandrapakthan; Chaterhat; Chilpata; Chopraniari; Dalmathan; Dalsingapara; Dhupguri; Duars; Galdapara; Garumara; Gayerkata; Haldibari (45 m.); Hamiltongunge; Hamkhali; Hausimara (183 m.); Hatkhalia; Jaigaon; Jalpaiguri (83 m.); Jayanti; Kalchini; Kantalipur; Kartick; Kathambari; Kharibari; Khuntinmari;

Lalitpur; Lataguri; Madarihar; Mahabari; Mahitnagar; Malbazar; Mayanaguri; Mechbasti; Mendabari; Nagasuri; Nagrakala; New Alipurduar; New Jalpaiguri; Nisipara; Noorpore; Palasbari; Punghillong; Raidak; Raidula; Rajabhatkawa; Santalbari; Saraswatipur; Shalgara; Sipechu; Sonapur; Sulkapara; Udlabari.

MALDA DISTRICT

Adampur; Adina Forest; Alal; Baike; Baisalnagar; Baishmalnagar; Bamangola; Bhaluka; Birnagar; Bulbulchandi; Chanchali; Diulian; Gajal; Gangarampur, Ghosimood; Gour; Habibpur; Haldibari; Harishchandrapur; Jho; Kachuberia; Kaliachak; Khajuria; Malda; Manikchak; Mimla; Muchia; Nalagola; Narayanpur; Nimbari; Nishpur; Paglagh; Pakuahat; Palpoara; Pandua; Patachandi; Patua; Piasbari; Rajbari; Ramkeli; Ratua; Sahapur; Samchi; Totapur; Tripaldighi; Tulsibari; Tulsihata.

MEDINIPUR DISTRICT

Alampur; Alagora; Arabari; Balibhasa; Belda; Belpahari; Bholabheda; Brahmanmandi; Chaitamyapur; Chandra; Chandrakona; Chaulkhola; Chilkigarh; Chittimati; Chulia; Contai; Dantan; Dharma; Digha; Duttapur; Durgachak; Egra; Gadiyara; Garbeta; Geokhali; Ghatal; Gidni; Gop Forest; Gopiballabhpur; Gopigram; Haldia; Hizli; Jambani; Jhargram; Joshpur; Junput; Kalabari; Kalaghat; Kamaisole; Kanakrajhare; Kapra; Keranitola; Keriantola; Keyajharia; Kharagpur; Khirai; Laljal; Mandalpushkarani; Manikpara; Midnapur; Milabati; Matherpore; Naradari; Paddapukur; Panskura; Patipira; Polsondpur; Ramnagar; Salboni; Sankarpur; Sarsanka; Saotmile; Satydihi; Swetpur; Talpukur; Tamluk; Telkoro; Terapekha.

MURSHIDABAD DISTRICT

Ajimgunge; Amarpur; Bagdabra; Bahrapur; Beldanga; Beniagram; Berhampore; Bhabta; Bhagirathir char; Bhakri; Chandanmati; Chandur; Char Islan; Chotakallai; Dayanagar; Dhanpatnagar; Dhulian; Dumkal; Fajilpur; Farakka; Giagunge; Hariharpara; Jalangi; Jangipur; Jothkamar; Kalyanpur; Kandi; Karjadanga; Kasimbazar; Kharsa; Lalbag; Lalgoda; Manikchal; Morgram; Murshidabad; Narayanpur; Naumile; New Farakka; Nilgunge; Pakuria; Phulbari; Potapur; Pratappur; Raghunathgunge; Sagardighi; Shibnagar; Swarupnagunge; Titagarh.

NADIA DISTRICT

Bahadurpur; Balia; Baliura; Beldanga; Betai; Betuadahori; Bhatjunge; Birnagar; Boduira; Chakda; Chamka; Chandamari; Chandrapur; Debogram; Dhubulia; Fulia; Gharamipara; Ghurney; Goalpapara; Gopiabeel; Habibpur; Hanskhaliöeel; Haringhata; Hazrapota; Hizli; Tagulia; Kaligunge; Katagunge; Kalyani; Kalimpur; Kataganjur; Krishnanagar; Kumra; Kurri; Madanpur; Mayapur; Nabadwipdham; Nakasipara; Palpara; Paraz; Plassey; Profullanagar; Ramnagar; Ranaghat; Santipur; Simurali; Swarupgunge.

NORTH 24-PARGANAS DISTRICT

Baikunthapur; Barasat; Barrackpur; Basirhat; Bhajna; Bhatpara; Bhusinghata; Birati; Bishnupur; Bongaon; Dogachia; Duttabad; Duttaphulda; Duttapukur; Ghatpukur;

Gobardanga; Geema; Habra; Haliashahar; Hasnabad; Halencha; Ichapur; Jagulia; Kadampukur; Kanchanpara; Kharda; Khariberia; Kodalia; Lauhati; Mahisbathan; Naihati; Nalbari; New Barrackpur; Nimta; Palta; Parmadan; Parmadanpur; Petrapole; Rajarhat; Sodepur; Soladanarchar; Subhashgram; Sukchar; Taki; Titagarh.

PURULIYA DISTRICT

Ajodhya; Arsa; Bagmundi; Balarampur; Belmunda; Biramdih; Chandan Hill; Chasmore; Chatakidihi; Chitidih; Dhopaghat; Gangajalghati; Gorh Dhruveswar; Jhalda; Hattidohori; Hatwani; Hura; Israpur; Jampur; Joychandi Hill; Joypur; Kamalpur; Kejurdanga; Kenda; Korondi; Korri; Manbazar; Monacharpur; Motha; Nardwarahura; Palpola; Patra; Purulia; Quilapat; Raghunathpur; Sardardi; Saheebbandh; Sirkabandh; Tulin; Villadeli.

SOUTH 24-PARGANAS DISTRICT

Achipur; Amjhora; Amtala; Arapach; Baghbagan; Baghmari; Bakkhali; Balia; Baradanagar; Baruipur; Basanti; Basantipur; Basdhani; Batanagar; Bawali; Bhagabatpur; Bhangadhumi; Bhangonkhali; Bidyadhari; Birajmanichara; Boral; Budge Budge; Canning; Champhati; Chamta Block; Chani Block; Chaptalia; Chingrighata; Chota Mollakhali; Dakshin Barasat; Daria; Dayanagar; Deulia; Dhaniramchak; Diamond Harbour; Duttabad; Falta; Farsergaunge; Ganeshpur; Gharpur; Gochar; Gocharan; Gokarni; Gona; Gosaba; Govindapur; Harinbasi; Harinbhagachara; Hatbaria; Hemnagar; Jambi; Jhal; Jhingakhali; Joiria; Joka; Kachmberia; Kakdwip; Kalas; Kalikapur; Kamaklyapur; Kamalgachi; Kamdohori; Kedo Block; Khatowajhuri; Kishorimohanpur; Koikhali; Kumarsha; Kumirmari; Kumkumdighi; Kurebhanga; Lakhikantapur; Madhabpur; Magrahat; Mahisbathan; Majilpur; Malatipur; Marichjhapi; Masjidbari; Matla; Mayadeep; Mechuakhali; Mitpukur; Musicha; Namkhana; Narayangunge; Narayantala; Netidhopani; Noorpur; Noubankichar; Pakliralaya; Patla; Pargumti; Parsimari; Patharpratima; Pirkhali; Purandar; Purba Sridharpur; Raidighi; Rajarhat; Ramdharia; Ramnagar; Ranaghata; Rangabheria; Roychok; Sagar Island; Saimari; Sajnakhali; Sajmatalla; Sambhunagar; Sampar Mirzanagar; Sandheads; Santoshpur; Satjalia; Sharsan; Sherpur; Shusnichara; Sonarpur; South Pargumti; Srikrishnapur; Subhashgram; Taldi; Tentulberia; Uttarbagh;

WEST DINAJPUR DISTRICT

Balurghat; Bangar; Bansihari Barduari; Barsoi; Birnagar; Buniadpur; Chapra; Dalkhola; Dalsinagpur; Fatepur; Ganganagar; Gangarampur; Harirampur; Hemtabad; Hilli; Islampur; Jordighi; Kaliagunge; Karandighi; Karmijhora; Khestrapur; Kodegram; Kalik; Kumargunge; Kutubdighi; Patiram; Raigunge; Rampur; Sahapur; Subhaspalli; Surangapur.

Faunal Wealth of West Bengal : An Index

	<i>Species</i>	<i>Genera</i>		<i>Species</i>	<i>Genera</i>
Protozoa			Hemiptera		
Freeliving	248	124	Membracidae	29	7
Parasitic	596	131	Belastomidae	30	7
Symbiotic	127	21	Mesovillidae	25	15
Porifera	16	9	Cercopidae	40	15
Coelenterata	9	7	Pyrrochoridae	20	12
Platyhelminthes			Cicadellidae	34	21
Cestoda	91	49	Pentatomidae	97	61
Rotifera	148	47	Lygidae	19	12
Plant-Nematoda	52	126	Reduvidae	90	46
Sipuncula	3	3	Psyllidae	24	14
Echiura	3	1	Coresdae	52	27
Annelida			Aphididae	283	126
Oligochaeta	89	40	Aleyrodidae	13	6
Hirudinea	18	11	Coccidae	99	64
Polychaete	72	50	Thysanoptera	124	77
Arthropoda			Neuroptera	73	48
Crustacea			Coleoptera	+1071	282
Stomatopoda	22	7	Diptera	183	+17
Copepoda	22	10	Lepidoptera	+836	+406
Isopoda	9	6	Hymenoptera		
Gropsidae	24	9	Braconidae	22	11
Portunidae	15	4	Formicidae	124	47
Insecta			Ichneumonidae	79	86
Thysonura	7	5	Xiphosura	2	2
Diplura	N.A.	N.A.	Scorpionidae	14	8
Protrura	N.A.	N.A.	Acari		
Collembola	+16	-	Oribatidae	193	114
Ephemeroptera	17	9	Ixodidae	32	9
Odonata	185	95	Plant mite	194	74
Plecoptera	21	10	Aranae	213	70
Orthoptera			Mollusca		
Acrididae	69	46	Land & Freshwater	134	56
Tettigonidae	50	19	Marine	226	145
Grylloidae	70	39	Bryozoa	9	5
Mantodae	38	24	Hemichordate	1	1
Dermaptera	79	35	Fishes		
Isoptera	51	23	Freshwater	172	92
Psocoptera	39	24	Marine	402	232
Phthrioptera	21	7	Amphibia	39	14
			Reptilia	139	70
			Aves	219	210
			Mammalia	188	107

N.A. = not available

MAMMALIA

V. C. AGRAWAL, P. K. DAS, S. CHAKRABORTY, R. K. GHOSE,
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INTRODUCTION

Our knowledge about the mammalian fauna of West Bengal is rather patchy, in spite of the fact that the headquarters of the Royal Asiatic Society of Bengal, Indian Museum and the Zoological Survey of India are located at Calcutta. Unfortunately, the Mammal Survey of India, Burma and Ceylon, conducted by the Bombay Natural History Society during the year 1911 to 1930, which surveyed the major part of the British India, could only touch a small village in Medinipur district and two northern districts (Darjiling and Jalpaiguri) of West Bengal. The amateur naturalists, political and military officers, and scientists, listed below, posted at Calcutta and Darjiling during the 19th Century collected various species of mammals, but again from these two areas only. Most of the specimens were subsequently recorded by various workers (Hodgson 1847, Blyth 1852*a*, 1852*b*, 1863, Dobson 1876, Anderson 1881, Sclater 1891, etc.). Hence, the major part of the State remained unsurveyed.

<i>Name of collector</i>	<i>Period</i>	<i>Place of collection</i>
Anderson, J.	1866-69	Calcutta & Darjiling
Atkinson, W. S.	1872	Darjiling
Blyth, E.	—	Medinipur & Darjiling
Blanford, W. T.	—	Darjiling
Bonavia (Capt.)	—	Darjiling
Cakes (Mr.)	—	Darjiling
Caunter, J.	1908	Haora
Earle, W.	—	Darjiling
Elwes, H. J.	1870	Darjiling
Fraser, O. L.	1872	Calcutta
Frith, W. G.	1846	South 24-Parganas dist.
Gammie, J.	1872	Darjiling
Layard, E. L.	1841-1851	Calcutta
Mandelli, L.	1872	Darjiling
Masson, G.	—	Darjiling
King, G.	1877	Darjiling & Calcutta
Sherwill, W. S.	1852, 1853	Darjiling
Stoliczka, F.	1871	Darjiling & Calcutta
Tyler, (Major)	1852-60	North 24-Parganas dist.
Theobald, W.	1851	Darjiling & Puruliya dist.

The collection made from West Bengal during the 'Mammal Survey' were later worked out and published in the form of reports (Wroughton 1915, 1916*b*, 1916*c*, 1917*a*, 1917*b*). In addition, Inglis *et al.* (1919) recorded 92 species of mammals from Jalpaiguri district alone.

After the establishment of the Zoological Survey of India (ZSI), the first systematic collecting of mammals in West Bengal was done in collaboration with the Harvard-Yale Expedition which surveyed the higher reaches of Darjiling district during June-August, 1958. As a result of the interesting data yielded by this survey (Khajuria & Ghose 1970), several parties from ZSI surveyed that area between 1974 and 1981 for gathering further information on the fauna, and from 1981 to 1983 in connection with the status survey of the Lesser Cats funded by the WWF-India. Otherwise the surveys were mainly conducted in Calcutta and nearby districts, *viz.*, North and South 24-Parganas, Nadia and Hugli districts, under the programme of local faunistic surveys to augment the National Zoological Collections of India (NZCI), and for undertaking ecological and ethological studies on some species of bats and rodents, as detailed below.

<i>Place & district</i>	<i>Period</i>	<i>Leader of Party</i>
Barakar, Barddhaman dist., & Puruliya dist.	1948	B. Nath
Salt Lake, N. 24-Parganas dist.	1962-66	B. Biswas
Sajnakhali, S. 24-Parganas dist.	1967	A. K. Mondal
Taldih, S. 24-Parganas dist	1968	A. K. Mondal
Madanpur, Nadia dist.	1969	P. K. Das
Basirhat, S. 24-Parganas dist.	1972	P. K. Das
Jhapandanga, Hugli dist.	1974	S. Chakraborty
Singur, Hugli dist.	1974-79	Ajoy Kumar Mandal
Basanti, S. 24-Parganas dist.	1977	S. Chakraborty
Bakhrhat, Bawali & Amtala, S. 24-Pgs. dist.	1977-78	P. K. Das
Darjiling	1974-81	R. K. Ghose
Darjiling, Maldah & Murshidabad dists.	1979	P. K. Das
Darjiling dist.	1980	P. K. Das
Darjiling	1981-83	R. K. Ghose
Chuchura, Hugli dist.	1981-83	V. C. Agrawal & S. Chakraborty
Sagar I., S. 24-Parganas dist.	1982	S. Chakraborty
Sundarban, S. 24-Parganas dist.	1983	A. K. Mandal & S. S. Saha
Sundarban, S. 24-Parganas dist.	1989	Ajoy Kumar Mandal

The survey and ecological studies enumerated above resulted in three new species and subspecies of mammals from West Bengal (Ghose 1964, 1965; Mandal & Ghosh 1981), and a number of papers on the revision of taxa (Ghosh & Saha 1981, Ghose & Chakraborty 1984), distributional records

(Mukherjee 1972, Ghose & Chaturvedi 1973, Ghose 1976, Ghose & Ghosal 1985, Mandal 1976, 1981, 1986*a*, 1986*b*, 1990; Mandal & Ghosh 1980*a*, 1980*b*; Mukherjee and Mandal 1981, Mandal & Biswas 1982), morphometric variations (Ghosh and Ghosal 1969, Ghose & Guha Roy 1972) and ecological and ethological observations (Khajuria 1959, Mandal 1964, Mukherjee & Gupta 1965, Das & Sinha 1972, Mandal & Ghosh 1979, Mandal 1977, 1982, 1983, 1984; Ghose 1974, 1985, Chakraborty 1977, 1980; Chakraborty, R. 1985, Agrawal & Chakraborty 1985, Chakraborty & Chakraborty, in press, etc.).

Under the programme of systematic survey of the Indian States, the Zoological Survey of India sent out a series of survey parties to different districts of West Bengal, mentioned below, from 1983 to 1988, for the collection of different groups of animals, including mammals.

<i>District surveyed</i>	<i>Period</i>	<i>Leader of party</i>
Malda & Murshidabad	1983	V. C. Agrawal
Jalpaiguri	1983	S. Chakraborty
Medinipur	1984	P. K. Das
Bankura and Puruliya	1985	V. C. Agrawal
Jalpaiguri	1985	R. K. Ghose
Birbhum	1985	A. K. Poddar
Koch Bihar	1986	S. Chakraborty
West Dinajpur & Nadia	1987	S. Chakraborty
Bardhaman & N. 24-Parganas	1988	P. K. Das

Pending a full report, some interesting observations on the mammalian fauna were also published (Mandal & Dey Sarkar 1984, Mandal 1986*b*, Agrawal & Bhattacharya 1987, Agrawal *et al.* in press).

The present paper is based mainly on the collection of mammals brought by recent survey parties, as mentioned above, from different parts of West Bengal, as also on earlier specimens already present in the National Zoological Collections of India from that State, and partly on published literature.

All measurements are in millimetres and have been taken after Pocock (1939, 1941) for Primates and Carnivora, Khajuria (1953) for Chiroptera, and Ellerman (1961) for Rodentia. The figures in parentheses followed by the range of measurements indicate arithmetic means (for more than two specimens), and before the range of measurements indicate the number of specimens available for that particular measurement.

Following is a list of abbreviations used for various measurements :

- apf* = length of anterior palatal foramina;
b = length of bulla;
c¹-c¹ = distance between outer surfaces of upper canines;

<i>cb</i>	=	condylobasal length;
<i>cr</i>	=	cranial rostrum;
<i>cw</i>	=	cranial width;
<i>d</i>	=	length of diastema;
<i>E</i>	=	length of ear;
<i>Fa</i>	=	length of forearm;
<i>F & cl</i>	=	length of foot and claw;
<i>H & B</i>	=	length of head and body;
<i>Hf</i>	=	length of hindfoot.
<i>iw</i>	=	least interorbital width;
<i>l</i>	=	greatest length of skull;
<i>m¹</i>	=	length of first lower molar;
<i>m¹-m¹</i>	=	distance between outer surfaces of first upper molars;
<i>m²-m²</i>	=	distance between outer surfaces of second upper molars;
<i>m³-m³</i>	=	distance between outer surfaces of third upper molars;
<i>ml</i>	=	mandibular length;
<i>ms</i>	=	width of mesopterygoid space;
<i>mtr</i>	=	length of maxillary tooth-row;
<i>mw</i>	=	maxillary width;
<i>n</i>	=	nasal length;
<i>on</i>	=	occipitonasal length;
<i>orb</i>	=	length of orbit;
<i>pl</i>	=	palatal length;
<i>pm⁴</i>	=	length of fourth upper premolar;
<i>pow</i>	=	postorbital width;
<i>Tb</i>	=	length of tibia;
<i>Tl</i>	=	length of tail;
<i>Tr</i>	=	length of tragus;
<i>zw</i>	=	zygomatic width.

Systematic List of the Mammalian Species from West Bengal alongwith their districtwise distribution based on the specimens, extant literature and recent observations

Sl. No.	Systematic List	Bankura	Bardhaman	Birbhum	Calcutta	Darjiling	Haora	Hugli	Jalpaiguri	Koch Bihar	Maldah	Medinipur	Murshidabad	Nadia	North 24 Parganas	Puruliya	South 24 Parganas	West Dinajpur
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

ORDER SCANDENTIA

Family TUPAIIDAE

1. *Tupaia glis lepcha* (Thomas)
2. *Anathana ellioti pallida* Lyon

Order INSECTIVORA

Family TALPIDAE

3. *Talpa micrura* Hodgson

Family SORICIDAE

4. *Soriculus nigrescens nigrescens* (Gray)
5. *Soriculus caudatus caudatus* (Horsfield)
6. *Soriculus leucops* (Horsfield)
7. *Suncus murinus caerulescens* (Shaw)
8. *Suncus murinus soccatus* (Hodgson)
9. *Suncus murinus griffithi* (Horsfield)
10. *Suncus etruscus nitidofulvus* (Anderson)
11. *Suncus etruscus pygmaeoides* (Anderson)
12. *Suncus stoliczkanus stoliczkanus* (Anderson)

						+			+									
																		+
						+												
						+												
						+			+									
		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
						+			+									
						+			+									
		+																

	1	2	3	4	5	6	7	8	9	10	11	12.	13	14	15	16	17
13. <i>Crocidura attenuata rubricosa</i> Anderson					+			+									
14. <i>Chimmarogale platycephala himalayica</i> (Gray)					+												
15. <i>Nectogale elegans sikhimensis</i> de Winton & Styan						+											
Order CHIROPTERA																	
Family PTEROPODIDAE																	
16. <i>Rousettus leschenaulti leschenaulti</i> (Desmarest)	+				+		+	+			+					+	
17. <i>Pteropus giganteus giganteus</i> (Brünnich)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
18. <i>Cynopterus sphinx sphinx</i> (Vahl)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
19. <i>Magaerops niphanae</i> Yenbutra & Felten					+												
20. <i>Sphaerias blanfordi</i> (Thomas)					+												
21. <i>Macroglossus sobrinus sobrinus</i> Andersen					+				+								
Family RHINOPOMATIDAE																	
22. <i>Rhinopoma microphyllum kinneari</i> Wroughton				(?)	+												
23. <i>Rhinopoma hardwickei hardwickei</i> Gray				(?)	+												
Family EMBALLNURIDAE																	
24. <i>Taphozous longimanus longimanus</i> Hardwicke		+		+	+						+		+			+	
25. <i>Taphozous nudiventris kachhensis</i> Dobson				+	+												
26. <i>Taphozous saccolaimus crassus</i> Blyth		+									+						
Family MEGADERMATIDAE																	
27. <i>Megaderma spasma spasma</i> (Linnaeus)								+									
28. <i>Megaderma lyra lyra</i> Geoffroy	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Family RHINOLOPHIDAE																	
29. <i>Rhinolophus affinis himalayanus</i> Andersen					+			+									
30. <i>Rhinolophus rouxi rouxi</i> Temminck				+	+										+		
31. <i>Rhinolophus pusillus blythi</i> Andersen					+												
32. <i>Rhinolophus lepidus lepidus</i> Blyth			+	+	+						+		+			+	

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
33. <i>Rhinolophus trifolius trifolius</i> Temminck					+											
34. <i>Rhinolophus luctus perniger</i> Hodgson					+											
35. <i>Rhinolophus pearsoni</i> Horsfield					+											
36. <i>Hipposideros lankadiva</i> Kelaart					+			+								
37. <i>Hipposideros fulvus fulvus</i> Gray					+			+								
38. <i>Hipposideros pomona gentilis</i> Andersen					+											
39. <i>Hipposideros armiger armiger</i> (Hodgson)					+											
40. <i>Coelops frithi frithi</i> Blyth					+											
Family MOLOSSIDAE																
41. <i>Tadarida teniotis insignis</i> (Blyth)					+											
42. <i>Tadarida aegyptiaca thomasi</i> Wroughton				+												
43. <i>Tadarida plicata plicata</i> (Buchannan)				+												
Family VESPERTILIONIDAE																
44. <i>Myotis mystacinus nipalensis</i> (Dobson)					+			+								
45. <i>Myotis siligorensis siligorensis</i> (Horsfield)					+											
46. <i>Myotis annectans</i> (Dobson)					+											
47. <i>Myotis sicarius</i> Thomas					+											
48. <i>Myotis formosus formosus</i> (Hodgson)				+	+											
49. <i>Eptesicus talei</i> Ellerman & Morrison-Scott					+											
50. <i>Nyctalus noctula labiatus</i> (Hodgson)					+											
51. <i>Pipistrellus coromandra coromandra</i> (Gray)				+	+			+			+			+		
52. <i>Pipistrellus mimus</i> Wroughton		+		+	+	+	+	+	+	+	+	+	+	+	+	+
53. <i>Pipistrellus ceylonicus indicus</i> (Dobson)				+												
54. <i>Pipistrellus babu</i> Thomas					+			+								
55. <i>Pipistrellus cadornae</i> Thomas					+											
56. <i>Pipistrellus mordax</i> (Peters)				+	+											
57. <i>Pipistrellus peguensis</i> Sinha					+											

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
58. <i>Scotozous dormeri</i> Dobson		+	+	+			+	+		+	+			+			
59. <i>Hesperoptenus tickelli</i> (Blyth)								+									
60. <i>Tylonycteris pachypus pachypus</i> (Temminck)					+												
61. <i>Barbastella leucomelas darjelingensis</i> (Hodgson)					+												
62. <i>Scotoecus pallidus</i> (Dobson)				+													
63. <i>Scotomanes ornatus ornatus</i> (Blyth)					+			+									
64. <i>Scotophilus kuhli kuhli</i> Leach	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+
65. <i>Scotophilus heathi heathi</i> (Horsfield)		+						+	+	+	+		+				+
66. <i>Plecotus auritus homochrous</i> Hodgson					+												
67. <i>Murina leucogaster rubex</i> Thomas					+												
68. <i>Murina huttoni huttoni</i> Peters					+												
69. <i>Murina tubinaris</i> (Scully)					+												
70. <i>Murina cyclotis cyclotis</i> Dobson					+												
71. <i>Harpiocephalus harpia lasyurus</i> (Hodgson)					+			+									
72. <i>Kerivoula picta picta</i> Pallas				+	+			+									
73. <i>Kerivoula hardwickei depressa</i> Miller					+												
74. <i>Kerivoula papillosa lenis</i> Thomas				+													
75. <i>Miniopterus schreibersi fuliginosus</i> (Hodgson)				+													
Order PRIMATES																	
Family CERCOPITHECIDAE																	
76. <i>Macaca mulatta mulatta</i> (Zimmermann)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
77. <i>Macaca assamensis pelops</i> Hodgson					+												
78. <i>Presbytis entellus entellus</i> (Dufresne)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Order PHOLIDOTA																	
Family MANIDAE																	
79. <i>Manis crassicaudata</i> Gray			+	(?) +		+		+	+		+		+		+	+	

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Order CARNIVORA																	
Family CANIDAE																	
80. <i>Canis lupus pallipes</i> Sykes	+	+	+				+			+	+				+		
81. <i>Canis aureus indicus</i> Hodgson	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
82. <i>Vulpes bengalensis</i> (Shaw)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
83. <i>Cuon alpinus primaevus</i> (Hodgson)					+			+			(?) +						
Family URSIDAE																	
84. <i>Selenarctos thibetanus laniger</i> Pocock					+			+									
85. <i>Melursus ursinus ursinus</i> (Shaw)	+				+			+			+				+		
Family AILUROPODIDAE																	
86. <i>Ailurus fulgens fulgens</i> Cuvier					+												
Family MUSTELIDAE																	
87. <i>Martes foina intermedia</i> (Severtzov)					+												
88. <i>Martes flavigula flavigula</i> (Boddaert)					+			+									
89. <i>Mustela kathiah kathiah</i> Hodgson					+												
90. <i>Mustela sibirica subhemachalana</i> Hodgson					+												
91. <i>Mellivora capensis indica</i> (Kerr)								+									
92. <i>Melogale personata nipalensis</i> (Hodgson)								+									
93. <i>Arctonyx collaris collaris</i> Cuvier					+			+									
94. <i>Lutra lutra nair</i> Cuvier	+			+	+		+	+				+		+		+	
95. <i>Lutra perspicillata perspicillata</i> (Geoffroy)			+	+				+						+		+	
96. <i>Aonyx cinerea concolor</i> (Rafinesque)				+	+		+	+						+		+	
Family VIVERRIDAE																	
97. <i>Viverra zibetha zibetha</i> Linnaeus	+			+				+	+	+	+		+	+		+	+
98. <i>Viverricula indica indica</i> (Desmarest)	+			+		+	+	+	+	+	+	+	+	+	+	+	+
99. <i>Paradoxurus hermaphroditus</i> (Pallas)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
100. <i>Arctogalidia trivirgata</i> (Gray)					+												
101. <i>Paguma larvata grayi</i> (Bennett)					+												
Family HERPESTIDAE																	
102. <i>Herpestes auropunctatus auropunctatus</i> (Hodgson)	+	+	+	+	+	+	+	+			+		+			+	+
103. <i>Herpestes edwardsi nyula</i> (Hodgson)	+	+	+	+		+	+	+	+			+	+	+	+		
104. <i>Herpestes urva</i> (Hodgson)					+			+									
105. <i>Herpestes palustris</i> Ghose						+								+		+	
Family HYAENIDAE																	
106. <i>Hyaena hyaena hyaena</i> (Linnaeus)		+									+				+		+
Family FELIDAE																	
107. <i>Felis chaus kutas</i> Hodgson	+	+	+	+		+	+				+			+	+	+	
108. <i>Felis chaus affinis</i> Gray					+			+	+								
109. <i>Felis marmorata charltoni</i> Gray					+												
110. <i>Felis temmincki temmincki</i> Vigors & Horsfield					+												
111. <i>Felis bengalensis bengalensis</i> Kerr	+	+	+		+	+	+	+	+	+				+	+	+	+
112. <i>Felis viverrina</i> Bennett				+		+		+						+		+	
113. <i>Neofelis nebulosa macrosceloides</i> (Hodgson)					+			+									
114. <i>Panthera pardus fusca</i> (Meyer)	+	+	+		+		+	+	+	+	+	+	+		+		+
115. <i>Panthera tigris tigris</i> (Linnaeus)					+			+	+		+			+		+	
116. <i>Panthera uncia</i> (Schreber)					+												
Order PROBOSCIDEA																	
Family ELEPHANTIDAE																	
117. <i>Elephas maximus indicus</i> Cuvier					+			+			+						
Order PERISSODACTYLA																	
Family RHINOCEROTIDAE																	
118. <i>Rhinoceros unicornis</i> Linnaeus								+									

9

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Order ARTIODACTYLA																	
Family SUIDAE																	
119.				+				+					+	+	+	+	
120.					(?) +			(?) +									
Family CERVIDAE																	
121.					+			+			+				+		
122.								+									
123.			+										+	+	+	+	
124.					+			+			+						
125.								+									
Family BOVIDAE																	
126.					+			•									
127.								(?) +									
128.			+														
129.					+												
130.					+												
131.					+												
Order LAGOMORPHA																	
Family LEPORIDAE																	
132.	+		+		+		+	+	+		+		+		+		+
133.								+									
Family OCHOTONIDAE																	
134.					+												
Order RODENTIA																	
Family SCIURIDAE																	
135.					+												
136.					+												

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
164. <i>Niviventer niviventer monticola</i> (Ghose)					+												
165. <i>Niviventer fulvescens fulvescens</i> (Gray)					+												
166. <i>Niviventer eha eha</i> (Wroughton)					+												
167. <i>Leopoldamys edwardsi edwardsi</i> (Thomas)					+												
168. <i>Mus musculus castaneus</i> Waterhouse		+	+								+						
169. <i>Mus musculus homourus</i> Hodgson					+			+									
170. <i>Mus musculus urbanus</i> Hodgson		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+
171. <i>Mus booduga booduga</i> (Gray)				+	+	+	+	+	+		+	+		+		+	+
172. <i>Mus dunni</i> (Wroughton)	+																
173. <i>Mus cervicolor cervicolor</i> Hodgson							+	+			+			+		+	+
174. <i>Mus platythrix</i> Bennett															+		
175. <i>Mus saxicola</i> Elliot	+		+								+				+		
176. <i>Mus pahari pahari</i> Thomas					+												
177. <i>Golunda ellioti ellioti</i> Gray					+			+									
178. <i>Bandicota bengalensis bengalensis</i> Gray	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
179. <i>Bandicota indica nemorivaga</i> (Hodgson)		+		+		+	+				+			+		+	
180. <i>Nesokia indica indica</i> (Gray)													+				
181. <i>Tatera indica indica</i> (Hardwicke)	+						+				+	+	+				
182. <i>Pitimys sikimensis</i> (Hodgson)					+												
Order CETACEA																	
Family DELPHINIDAE																	
183. <i>Stenella malayana</i> (Lesson)																	+
184. <i>Sousa plumbea</i> (Cuvier)								(?)	+								+
185. <i>Orcaella brevirostris</i> (Owen)																	+
186. <i>Globicephala macrorhynchus</i> Gray											(?)	+				(?)	+
Family PHOCOENIDAE																	
187. <i>Neophocaena phocaenoides</i> (Cuvier)																	+
Family PLATANISTIDAE																	
188. <i>Platanista gangetica</i> (Roxburgh)				+		+	+					+	+				

SYSTEMATIC ACCOUNT

(Table 1)

Order SCANDENTIA

Squirrel-like in appearance, but with a long snout and devoid of long whiskers.

The order contains a single family Tupaiidae.

Family TUPAIIDAE

There are two genera, namely, *Tupaia* Raffles and *Anathana* Lyon, which occur in West Bengal.

Key to the genera of the family TUPAIIDAE

Lower lobe of ears smaller than the upper; inner side of ears scantily haired*Tupaia* (*T. glis*)

Lower lobe of ears larger than the upper; inner side of ears thickly haired.....*Anathana* (*A. ellioti*)

Genus *Tupaia* Raffles, 1821

The genus *Tupaia* is represented in West Bengal by one species, *Tupaia glis* (Diard), and one subspecies, *Tupaia glis lepcha* (Thomas).

1. *Tupaia glis lepcha* (Thomas)

1922. *Tupaia belangeri lepcha* Thomas, *J. Bombay nat. Hist. Soc.*, 28 : 428 (Narbong, c 629 m, Darjiling district, West Bengal, India).

Common name : Common Tree-Shrew (Eng.)

Material examined : Darjiling district : 1 ♂, Nimbong (c 1,371 m), coll. N. A. Baptista, 21.vi.1916; 1 ♀ : Sivok, coll. C. A. Crump, 20.iii.1915. Jalpaiguri district : 1 ♂, 1 ♀, Hasimara (c 182 m), coll. N. A. Baptista, 7.i.1916, 1.iv.1916.

Measurements : External : 2 ♂ : H & B 146.0, 158.0; Tl 160.0, –; Hf 40.0, 42.0; E 15.0, 17.0. 2 ♀ : H & B 150.0, 154.0; Tl 162.0, 172.0; Hf 39.0; 41.0; E 15.0, 16.0. Cranial : 2 ♂ : l 45.2, 47.1; cb 42.9, 45.0; pl 24.5, 24.7; n 16.1, 16.2; cw 17.5, 18.8. 1 ♀ : l 46.4; cb 43.4; pl 24.6; n 17.8; cw 18.4.

Diagnosis : Head and body length less than 160 mm and the tail always longer than that. Dorsal colour a fine grizzle of deep brown and Ochraceous-Buff, former dominating over mid-dorsal portion of hind quarter and base of tail; shoulder-streak diffuse.

Distribution : India : West Bengal : Darjiling district (Thomas 1922), Jalpaiguri district (Ellerman and Morrison-Scott 1951).

Remarks : Lives in trees or bushes. Though arboreal, frequently scampers on the ground in search of food.

Genus *Anathana* Lyon, 1913

Genus *Anathana* is represented by one species *Anathana ellioti* (Waterhouse). Out of the three subspecies of *A. ellioti*, one occurs in West Bengal.

2. *Anathana ellioti pallida* Lyon

1913. *Anathana pallida* Lyon, *Proc U. S. natn. Mus.*, 45 : 124 (Manbhum = Puruliya district, West Bengal, India).

Common name : Madras Tree-Shrew (Eng.).

Material examined : Nil.

Diagnosis : Dorsal colour of body reddish brown; tail darker than the back; feet and hind legs grizzled buffy.

Distribution : India : West Bengal : Puruliya district; Bihar; Madhya Pradesh; Orissa.

Remarks : A party of the Zoological Survey of India observed this animal in a bush at the peak of Ajodhya Hills, Puruliya district, during January, 1985.

Order INSECTIVORA

Usually small in size, with pointed snout projecting far beyond the lower jaw; ears and eyes small. limbs short and five-toed. Body covered with short, close-set fur; orbits open posteriorly; zygomatic arches may be present or absent.

The insectivores in West Bengal are represented by two families Soricidae and Talpidae.

Key to families of Order INSECTIVORA

Zygomatic arches present; bulla ossified.....TALPIDAE
Zygomatic arches absent; bulla imperfectSORICIDAE

Family TALPIDAE

One genus of the family Talpidae occurs in West Bengal.

Genus *Talpa* Linnaeus, 1758

Body covered with short, velvety fur; eyes minute; no external ears; forepaws broad, turned outward and with heavy claws; tail small and scantily haired.

One species occurs in West Bengal.

3. *Talpa micrura* Hodgson

1841. *Talpa micrurus* Hodgson, *Calcutta J. nat. Hist.*, 2 : 221 (Nepal).

Common name : Eastern Mole (Eng.).

Material examined : Darjiling district : 3 unsexed, exact locality not known, colls. T. C. Jerdon, Mrs. Oakes, 1854, -; 2 ♂, 2 ♀, Gopaldhara (c 1,438 m), colls. N. A. Baptista, H. Stevans, 5, 7.v.1915, 1.vi.1915, 26.iv.1921; 2 ♂, Pashok (c 1,066 m and 1,219 m), colls. N. A. Baptista, R. S. Lister, 26.xi.1914, 5.x.1915; 1 ♂, Selimbong (c 2,286 m), coll. R. K. Ghose, 24.iii.1975.

Measurements : External : 5 ♂ : H & B 110.0-149.0 (133.0); TI 2.6-11.0 (6.8); Hf 14.0-17.0 (15.5). 2 ♀ : H & B 132.0, 135.0; TI 6.0, 9.0; Hf 16.0, 16.0. Cranial : 2 ♂ : l 34.1, 34.3; cb 33.2, 33.3; pl 12.7, 13.0; n 12.3, 12.6; cw 15.4, 15.8. 2 ♀ : l 32.9, 34.3; cb 31.6, 33.0; pl 12.6, 13.0; n 12.0(2); cw 15.7, 16.1.

Diagnosis : Tail very small (less than 11 mm), almost concealed by fur; premolars 4/4 in number.

Distribution : India : West Bengal : Darjiling district (Blyth 1863); Arunachal Pradesh: Assam; Manipur; Meghalaya; Nagaland; Sikkim. Nepal.

Remarks : Wroughton (1918b) mentioned that the tail in this species is always less than 5 mm in length. But in our specimens it ranges from 3 to 11 mm.

Commonly found between 1,000 m and 1,500 m altitudes in Darjiling district where it lives in deep beds of vegetable mould.

Family SORICIDAE

Five genera of family Soricidae occur in West Bengal.

Key to genera of family SORICIDAE

1. Teeth tipped brown.....*Soriculus*
Teeth entirely white2
2. Tail without a fringe of white hairs.....3
Tail with a fringe of white hairs4
3. 18 teeth present in the upper jaw*Suncus*
16 teeth present in the upper jaw*Crocidura*
4. Ear-conch present.....*Chimmarogale*
Ear-conch absent.....*Nectogale*

Genus *Soriculus* Blyth, 1854

Three species of genus *Soriculus* are found in West Bengal.

Key to species of genus *Soriculus*

1. Tail small, less than 50 mm in length or less than three-fourth of head and body; foreclaws enlarged*S. nigrescens* (*S. n. nigrescens*)
Tail more than 50 mm in length or more than three-fourth of head and body; foreclaws small.....2
2. Tails less than 80 mm in length or less than 120% of head and body.... *S. caudatus* (*S. c. caudatus*)
Tail more than 80 mm or more than 120% of head and body.....*S. leucops*

4. *Soriculus nigrescens nigrescens* (Gray)

1842. *Corsira nigrescens* Gray, *Ann. Mag. nat. Hist.*, 10 : 261 (Darjiling, Darjiling district, West Bengal, India).

Common name : Sikkim Large-clawed Shrew (Eng.).

Material examined : Darjiling district : 1 ♂ , 5 ♀ , No exact locality, colls. W. S. Atkinson, W. T. Blanford, W. S. Sherwill, W. Thcobald, 1854, 1855, -.XI. 1869, 2.ix.1871; 1 ♂ , 1 ♀ , Ghoom (c 2,225 m), coll. C. A. Crump, 10.ii.1915; 1 ♀ , Gopaldhara (c 1,438 m), coll. N. A. Baptista, 7.v.1915; 4 unsexed, Palmajua (c 2,250 m), coll. H. Khajuria, 28.vi.1958, 1.vii.1958.

Measurements : External : 4 unsexed : H & B 83.0-86.5 (84.5); Tl 47.5-51.0 (49.0); Hf 14.5-15.0 (14.8); E 9.5-10.0 (9.9). 2 ♀ : H & B 70.0, 86.0; Tl 42.0 (2); Hf 14.0, 15.0; E 8.0 (2). Cranial : 3

unsexed : *l* 21.3-22.3 (21.6); *cb* 21.0-21.1 (21.0); *pl* 9.1-9.4 (9.3); *n* 7.0-7.3 (7.1); *cw* 11.2-11.4 (11.3).

Distribution : India : West Bengal : Darjiling District (Gray 1842).

Remarks : Common in Darjiling district at elevations above 1219 m. Specimens were trapped in deep forest, near old fallen trees.

5. *Soriculus caudatus caudatus* (Horsfield)

1851. *Sorex caudatus* Horsfield, *Cat. Mammal. Mus. E. India Co.*, : 135 (Darjiling, Darjiling district, West Bengal, India).

Common name : Hodgson's Brown-toothed Shrew (Eng.)

Material examined : Darjiling district : 1 ♂ , 1 ♀ , Mungpo, coll. J. L. Lister, 10.ii.1879. 2 ♂ , 3 ♀ , Sandakphu (c 3,600 m), coll. H. Khajuria, 18-20.vii.1958.

Measurements : External : 2 ♂ : H & B 55.5, 59.5; Tl 60.5, -; Hf 13.5, 14.0; E 6.5, 8.0; 3 ♀ : H & B 57.2-70.0 (63.1); Tl (2) 63.0. 65.0; Hf 13.5-14.0 (13.7); E 8.0-10.0 (8.7). Cranial : 1 ♂ : *l* 17.0; *cb* 16.8; *pl* 7.3; *n* 6.0; *cw* 8.6. 2 ♀ : *l* 17.2, 18.0; *cb* 17.0, 17.7; *pl* 7.6, 8.0; *n* 6.1, 6.2; *cw* 8.9, 9.0.

Distribution : India : West Bengal : Darjiling district (Horsfield 1851), Jalpaiguri district (Wroughton 1917a); Manipur; Sikkim; Uttar Pradesh. Nepal and Burma.

Remarks : Common in forests. Fur in specimens from Darjiling district are shorter and less dense than in specimens from Sikkim, Uttar Pradesh and Nepal.

6. *Soriculus leucops* (Horsfield)

1855. *Sorex leucops* Horsfield, *Ann. Mag. nat. Hist.*, 16 : 111 (Nepal).

Common name : Indian Long-tailed Shrew (Eng.)

Material examined : Nil.

Distribution : India : West Bengal : Darjiling district (Blanford 1888); Sikkim, Nepal, Burma and China.

Genus *Suncus* Ehrenberg, 1833

Three species of genus *Suncus* are found in West Bengal.

Key to species of genus *Suncus*

- Head and body length more than 93 mm.....*Suncus murinus*
- Head and body length from 60 to 80 mm.....*Suncus stoliczkanus*
- Head and body length less than 48 mm. *Suncus etruscus*

***Suncus murinus* (Linnaeus)**

Three subspecies of *Suncus murinus* occur in West Bengal.

Key to subspecies of *Suncus murinus*

- 1. Head and body length, on average, above 135 mm.....*S. m. caeruleascens*
- Head and body, on average, below 133 mm.....2

2. Tail compressed towards the tip, making it somewhat rectangular in cross-section, and interspersed with a few long hairs.....*S. m. soccatus*
- Tail gradually tapering towards the tip, making it circular in outline, and interspersed with many long hairs.....*S. m. griffithi*

7. *Suncus murinus caerulescens* (Shaw)

1800. *Sorex caerulescens* Shaw, *Genl. Zool. Mammal.*, 1 : 533 (India).

Common names : House Shrew (Eng.), Chhucho (Beng.), Chhuchundar (Hin.).

Material examined : Bankura district : 2 ♂ , 1 ♀ , Raniband, coll. V. C. Agrawal, 10, 12, 13.i.1985. Bardhaman district : 2 ♀ , Arrah, coll. P. K. Das, 21,25.iv.1988; 1 ♂ , 2 ♀ , Barakar, coll. B. Nath, 19,21.xi.1948; 1 ♀ , Durgapur, coll. B. Nath, 28.xi.1948; 1 ♀ , Katoya, coll. P. K. Das, 1.v.1988. Birbhum district : 2 ♂ , Haripur (near Chandrapur), coll. A. K. Poddar, 12.xii.1985. 3 ♀ , Tumboni (11 km NW of Rampurhat), coll. A. K. Poddar, 7, 10.xii.1985; 1 ♂ , Chandrapur, coll. A. K. Poddar, 11.xii.1985. Calcutta district : 16 ♂ , 3 ♀ , 6 juv, colls. J. Anderson, N. Annandale, S. R. Dey Sarkar, A. N. Fernandez, F. Finn, B. S. Lamba, A. K. Mukherjee, 1872, 1873, 1877, 6.vii.1910, 11.iii.1958, 31.vii.1959, 27.xi.1966, 29.viii.1967. Haora district : 1 ♂ , 1 ♀ , Botanical Garden, coll. S. S. Saha, 16.vi.1967. Hugli district : 40 ♂ , 8 subad. ♂ , 61 ♀ , 9 subad. ♀ , Singur, coll. Ajoy Kumar Mandal, 11.viii.1977 to 28.vii.1981. Jalpaiguri district : 2 ♀ , Chilapata, coll. S. Chakraborty, 17.ix.1983; 2 ♀ , Sulkapara, coll. S. Chakraborty, 6.ix.1983. Koch Bihar district : 3 ♀ , 2 subad. ♀ , Atiamochor, coll. S. Chakraborty, 4. 6.iv.1986; 2 ♂ , Mathabhanga, coll. S. Chakraborty, 17.iv.1986; 1 ♂ , 1 ♀ , Sitalkuchi, coll. S. Chakraborty, 9.iv.1986. Medinipur district : 2 ♀ , Balivasa (c 15 km SSE of Jhargram), coll. P. K. Das, 13.14.iv.1984; 1 ♂ , 1 ♀ , Kanaisole (c 15 km NW of Jhargram), coll. P. K. Das, 9.ix.1984; 2 ♀ , 1 newly born, Mandalpuskarini (c 5 km N of Garbeta), coll. P. K. Das, 21. 22.ix.1984; 1 ♀ , Salbani, coll. C. A. Crump, 14.ix.1914. Murshidabad district : 2 ♂ , 2 ♀ , Baharampur, coll. S. Chakraborty, 15.x.1987. Nadia district : 1 ♂ , 1 ♀ , Madanpur, coll. P. K. Das, 17.vii.1969. North 24-Parganas district : 2 ♂ , Barasat, -, -; 2 ♂ , 2 ♀ , Nalbani (Salt Lake), coll. B. Biswas, 1965, 1966. Puruliya district : 2 ♀ , Matha, coll. V. C. Agrawal, 18.i.1985. South 24-Parganas district : 1 ♂ , 3 ♀ , Kachuberia (Sagar Island), coll. S. Chakraborty, 17.18.x.1982, 1 ♂ , 2 ♀ , Muchisa, coll. J. P. Lal, Oct., Nov. 1982; 3 ♂ , Patharpratima (Sagar Island), coll. R. K. Ghose, S. S. Saha, -, -; 2 ♀ , Taldi, coll. A. K. Mandal, 27.xii.1968. West Dinajpur district : 1 ♀ , Kulik (c 1 km N of Raiganj), coll. S. Chakraborty, 10.x.1987; 1 ♀ , Surangapur (c 20 km from Raiganj towards Bishnupur), coll. S. Chakraborty, 12.x.1987.

Measurements : External : 26 ♂ : H & B 135.0-185.0 (156.0); Tl 74.0-120.0 (98.0); Hf 20.0-30.0 (23.0); E 11.0-18.0 (13.0). 28 ♀ : H & B 128.0-180.0 (154.0); Tl 63.0-130.0 (90.0); Hf 18.0-33.0 (24.0); E 10.0-16.0 (12.5). Cranial : 20 ♂ : l 33.4-43.3 (37.4); cb 32.5-42.3 (36.8); pl 15.4-19.1 (16.2); n 11.3-14.7 (12.1); cw 16.0-17.6 (16.5). 18 ♀ : l 32.7-37.5 (35.2); cb 31.6-37.0 (34.7); p 15.3-18.0 (16.1); n 8.8-13.3 (11.8); cw 12.7-17.8 (15.0).

Diagnosis : Largest of the Indian house shrews. Fur short, less than 5 mm in length. Tail thick on base and thinly clad with hairs.

Distribution : India : West Bengal : All districts; throughout India, particularly in cities. Nepal.

Remarks : Common; found in forests as well as near human habitation. Geographical range has apparently been modified due to human interference.

In the present series, colour of dorsum is highly variable, being bluish grey, pale grey, ferruginous or rufous; undersurface slightly paler.

Pregnant females, with 4 or 5 foetuses, were collected during April and September.

8. *Suncus murinus soccatus* (Hodgson)

1845. *Sorex soccatus* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 270 (Central region of Nepal).

Common names : House Shrew (Eng.), Chhucho (Beng.), Chhuchundar (Hin.).

Material examined : Darjiling district : 1 ♀, Ghoom (c 2,255 m), coll. C.A. Crump, 9.ii.1915; 1 ♂, 2 ♀, Kalimpong (c 1,249 m), coll. N. A. Baptista, 4.vi.1916, 8. 19.x.1916; 1 ♂, Kurseong (c 1,524 m), coll. N. Annandale, -v. 1966; 1 ♂, Manibhanjan (c 1,828 m), coll. R. K. Ghose, 18.vi.1974. 4 ♂, 3 ♀, Pashok (c 1,066 m), colls. N. A. Baptista, R. S. Listers, 10.x.1914, 1.i.1915, 9.ii.1915, 30.vi.1915, 16,17.viii.1915, 2.ix.1915, 7.x.1915; 1 ♀, Pedong (c 1,432 m), coll. N. A. Baptista, 2.viii.1916; 1 ♀, Rangiroom, coll. R. K. Ghose, 14.v.1980; 1 ♂, Sivok, coll. N. A. Baptista, 24.iii.1915; 2 ♂, 2 ♀, Tarkhola (c 325 m), coll. H. Khajuria, 17, 23.viii.1958. Jalpaiguri district : 4 ♂, 2 ♀ Hasimara (c 182 m), coll. N. A. Baptista, 18.x.1915, 2, 4.xii.1915, 8.iv.1916.

Measurements : External : 7 ♂ : H & B 105.0-137.0 (118.0); TI 69.0-95.0 (79.0); Hf 20.0-24.0 (21.5); E 11.0-13.5 (12.0). 5 ♀ : H & B 113.0-117.0 (115.0); TI 68.0-81.4 (76.0); Hf 17.5-20.0 (19.0); E 11.0-12.0 (11.5). Cranial : 3 ♂ : l 27.1-30.9 (28.7); cb 26.9-30.7 (28.4); pl 12.4-14.9 (13.4); n 9.0-10.0 (9.5); cw 11.9-13.8 (12.8). 3 ♀ : l 27.8-29.5 (28.4); cb 27.6-29.2 (28.2); pl 13.0-14.3 (13.5); n 9.0-10.2 (9.5); cw 11.2-12.0 (11.5).

Diagnosis : Dorsal colour uniform sorbid to brownish slaty. Fur long, usually more than 8 mm.

Distribution : India : West Bengal : Darjiling and Jalpaiguri districts (Lindsay 1929); Arunachal Pradesh; Assam; Meghalaya; Nagaland; Sikkim. Nepal and Bhutan (Chakraborty 1975).

Remarks : Commonly found in forests as well as near human habitation. The distribution of this subspecies is also greatly modified by human agency.

9. *Suncus murinus griffithi* (Horsfield)

1851. *Sorex griffithi* Horsfield, *Cat. Mammal. Mus. E. India Co.* : 134 (Assam, India).

Common name : House Shrew (Eng.), Chhucho (Beng.), Chhuchundar (Hin.).

Material examined : Darjiling district : 1 ♂, Ghoombhanjan (c 2,117 m), coll. R. K. Ghose, 27.iii.1975; 1 ♂, Tonglu (c 2,825 m), coll. R. K. Ghose, 4.iii.1975.

Measurements : External : 2 ♂ : H & B 130.0(2); TI 79.0, 93.0; Hf 12.0, 13.4; E. 12.0, 13.4. Cranial : 2 ♂ : l 33.2 (2); cb 32.5, 32.8; pl 14.8, 15.0, n 8.9, 9.5; cw 13.5, 14.6.

Diagnosis : Dorsum brown with rusty wash; ventral surface slightly lighter. Fur thick and long, over 8 mm in length.

Distribution : India : West Bengal : Darjiling district (Ghose 1976); Arunachal Pradesh; Assam; Manipur; Meghalaya; Nagaland; Uttar Pradesh. Bhutan.

Suncus etruscus Savi

Two subspecies of *Suncus etruscus* occur in West Bengal.

Key to subspecies of *Suncus etruscus*

- Limbs poorly developed; hindfoot short, less than 7 mm; tail rounded in cross-section.....
 *S. e. nitidofulvus*
- Limbs well developed; hindfoot long, more than 8 mm; tail somewhat tetragonal in cross-section
 *S. e. pygmaeoides*

10. *Suncus etruscus nitidofulvus* (Anderson)

1877. *Crocidura (Pachyura) nitidofulva* Anderson, *J. Asiat. Soc. Beng.*, 46 : 272 (Calcutta, West Bengal, India).

Common name : Pygmy Shrew (Eng.).

Material examined Calcutta district : 2 ♂ , no exact locality, 1855, 1857; Holotype of *Sorex melanodon* Blyth and of *Crocidura (Pachyura) nitidofulva* Anderson.

Diagnosis : Fur very short, silvery brown to dark brown above.

Distribution : India : West Bengal : Calcutta district, Haora district (Anderson 1881); Bihar; Orissa. Bangladesh.

Remarks : Very rare; in all probability now a days this subspecies does not occur in Calcutta.

11. *Suncus etruscus pygmaeoides* (Anderson)

1877. *Crocidura (Pachyura) pygmaeoides* Anderson, *J. Asiat. Soc. Beng.*, 46 : 279 (Himalayas).

Common name : Pygmy Shrew (Eng.).

Material examined : Darjiling district : 1 subad. ♀ , No exact locality, -, -. Jalpaiguri district : 1 ♀ , Bharnabari, coll. N. A. Baptista, 20.xii.1916; 2 ♂ , 1 ♀ , Hasimara (c 182 m), coll. N. A. Baptista, 29.x.1915, 30.iii.1916, 11.iv.1916.

Measurements : External : 2 ♂ : H & B 40.0, 44.0; Tl 22.0, 29.0; Hf 8.0, 9.0; E 5.0, 6.0. 2 ♀ : H & B 42.0 (2); Tl 29.0, 30.0; Hf 8.0, 9.0; E 6.0, 7.0. Cranial : 1 ♂ : l 13.3; cb 12.9; pl 5.5; n -; cw 5.7. 1 ♀ : l 13.8; cb 13.4; pl 5.7; n 4.1; cw 5.9.

Diagnosis : Dorsum deep rusty brown; ventral surface brownish.

Distribution : India : West Bengal : Darjiling district (Anderson 1881), Jalpaiguri district (Wroughton 1917a); Assam; Meghalaya; Sikkim. Bhutan.

Remarks : Found under litter in forests. Due to very small size and nocturnal habit it is rarely seen or trapped.

12. *Suncus stoliczkanus stoliczkanus* (Anderson)

1877. *Crocidura (Pachyura) stoliczkanus* Anderson, *J. Asiat. Soc. Beng.*, 46 : 270 (Bombay, Maharashtra, India).

Common name : Anderson's Shrew (Eng.).

Material examined : Bankura district : 1 ♂ , 1 ♀ , Raniband, coll. V. C. Agrawal, 10 & 11.i.1985.

Measurements : External : 1 ♂ : H & B 75.0; Tl 54.0; Hf 14.0; E 10.0. 1 ♀ : H & B 59.0; Tl 45.0; Hf 12.0; E 10.0. Cranial : 1 ♂ : l 20.7; cb 20.4; pl 9.6; n 6.8; cw 10.5. 1 ♀ : l 19.8; cb 19.2; pl 8.8; n 6.3; cw 8.3.

Diagnosis : Dorsum from dull brown to reddish brown; venter glossy grey.

Distribution : India : West Bengal : Bankura district (Agrawal et al. 1990); Madhya Pradesh; Maharashtra; Tamil Nadu. Bangladesh.

13. *Crocidura attenuata rubricosa* Anderson

1877. *Crocidura rubricosa* Anderson, *J. Asiat. Soc. Beng.*, 46 : 280 (Sibsagar district, Assam, India).

1877. *Crocidura kingiana* Anderson, *J. Asiat. Soc. Beng.*, 46 : 281 (Mungpo, Darjiling district, West Bengal, India).

Common name : Grey Shrew (Eng.).

Material examined : Darjiling district : 1 ♂, Gopaldhara (c 1,438 m), coll. N. A. Baptista, 14.vi.1915; 3 ♀, Mungpo, coll. G. King, 6.iii.1877; 2 ♂, 1 ♀, Pashok (c 1,066 m), coll. N. A. Baptista, 5. viii. 1915, 3.viii.1915, 7.x.1915; 1 ♂, Takdah (c 1,650 m), coll. H. Khajuria, 7.viii.1958. Jalpaiguri district : 2 ♀, Hasimara (c 182 m), coll. N. A. Baptista, 24.i.1915, 20.xii.1915.

Additional material examined : Assam : 4 ♂ : Sibsagar, coll S. E. Peal, 1867 (Syntype of *Crocidura rubricosa*).

Measurements : External : 4 ♂ : H & B 62.0-73.5 (66.0); Tl 55.0-73.0 (61.5); Hf 14.0-15.5 (14.8); E 9.0-10.0 (9.2). 3 ♀ : H & B 63.0-66.0 (64.8); Tl 53.0-64.0 (58.0); Hf 13.0-14.0 (13.7); E 8.0-9.0 (8.7). Cranial : 3 ♂ : l 20.2-21.3 (20.6); cb 19.0-20.0 (19.7); pl. 8.7-9.0 (8.9); n 6.7-6.8 (6.8); cw 8.7-9.0 (8.8); mtr 8.6-8.7 (8.7).

Diagnosis : A small shrew (condylobasal length less than 21.6 mm) having a long tail (more than 70% of head and body). Colour reddish brown or darker above; undersurface dark, with a silvery sheen.

Distribution : India : West Bengal : Darjiling district (Anderson 1877), Jalpaiguri district (Ellerman and Morrison-Scott 1951); Jammu & Kashmir (Hinton and Thomas 1926); Punjab; Uttar Pradesh. Bhutan (Jenkins 1976).

Remarks : Appears to be common. Due to small size and nocturnal habit, it is hardly seen.

Anderson (1877) described *Crocidura kingiana* from Mungpo on the basis of lateral glands being absent. Later, he (1881) could find the lateral glands in the type series and synonymised it with *C. rubricosa*. Ellerman and Morrison-Scott (1951) treated both *rubricosa* and *kingiana* as separate subspecies of *C. attenuata*, without assigning any definite reason. On an examination of the type series of *rubricosa* and *kingiana*, no difference in the external and cranial characters could be detected. Hence, *Crocidura kingiana* is treated here as a synonym of *crocidura attenuata rubricosa*.

Genus *Chimmarogale* Anderson, 1877

This genus is represented by a single species, *Chimmarogale platycephala*. Out of five subspecies, one occurs in West Bengal.

14. *Chimmarogale platycephala himalayica* (Gray)

1842. *Grossopus himalayicus* Gray, *Ann. Mag. nat. Hist.*, 10 : 261 (Chamba, Himachal Pradesh, India).

Common name : Himalayan Water-Shrew (Eng.).

Material examined : Darjiling district : 1 ♀ ; Pashok (c 1,066 m), coll. N. A. Baptista, 29.ix.1915.

Measurements : 1 ♀ : H & B 100.0; Tl 72.0; Hf 20.0; E 8.0. Cranial : 1 ♀ : l 24.3; pl 11.8; n 8.4.

Diagnosis : Large shrews, head and body 80-120 mm in length, and the tail 60-98 mm; body slaty grey or brownish above and paler below; tail bicolored, dark above and pale below, and thinly clad with short whitish hairs; ear-conch hairy and entirely concealed by fur.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916 b); Himachal Pradesh; Jammu & Kashmir; Punjab; Sikkim. Burma, China, Borneo, Taiwan and Japan.

Genus *Nectogale* Milne-Edwards, 1870

The genus *Nectogale* is represented by a single species, *Nectogale elegans*. Out of two subspecies, one occurs in West Bengal.

15. *Nectogale elegans sikhimensis* de Winton & Styan

1899. *Nectogale sikhimensis* de Winton and Styan, *Proc. zool.Soc. Lond.* : 573 (c 3,048 m, Sikkim, India).

Common name : Szechuan Water-Shrew (Eng.).

Material examined : Nil.

Diagnosis : Head and body 90-128 mm and the tail 89-110 mm; body slaty grey with silvery gloss; toes webbed; pads on the soles of the feet enlarged into broad disks; fringes of white hairs present on the sides, lower surface and on the terminal portion of tail.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b); Sikkim. Nepal and Bhutan (Honacki *et al.* 1982).

Order CHIROPTERA

Chiroptera is the only order of mammal which has wings and is capable of true flight.

Suborder MEGACHIROPTERA

Family PTEROPODIDAE

Suborder Megachiroptera consists of a single family Pteropodidae. Bats of this family are characterised by the absence of both nose-leaf and tragus; the tail is reduced, rod-like and often absent. Six genera of this family are found in West Bengal. These are-*Rousettus*, *Pteropus*, *Cynopterus*, *Megaerops*, *Sphaerias* and *Macroglossus*. Each of these is represented in West Bengal by a single species/species and subspecies.

Key to the genera, species and subspecies of the family Pteropodidae

1. Tongue moderate, usually the tip does not protrude out of the mouth in dead specimen; inner margin of the nostril projecting.....2
 Tongue very long, usually a portion of the tip protrudes out of the mouth in dead specimen; no projecting margin to nostril.....*Macroglossus sobrinus sobrinus*
2. Upper part of one colour throughout.....3
 Hind neck and shoulders paler than back.....*Pteropus giganteus giganteus*

3. Five upper and six lower cheek-teeth *Rousettus leschenaulti leschenaulti*
 Four upper and five lower cheek-teeth 4
4. Calcar present 5
 Calcar absent *Sphaerias blanfordi*
5. Two pairs of lower incisors *Cynopterus sphinx sphinx*
 One pair of lower incisors *Megaerops niphanae*

Genus *Rousettus* Gray, 1821

The genus *Rousettus* is represented by a single species and subspecies in West Bengal.

16. *Rousettus leschenaulti leschenaulti* (Desmarest)

1820. *Pteropus leschenaulti* Desmarest, *Encycl. Meth. Mammal.*, 1 : 110 (Environments of Pondicherry, India).

Common names : Indian Fulvous Fruit Bat (Eng.), Chalta Badur (Beng.).

Material examined : Bankura district : 1 ♂ , 1 ♀ , Susunia, coll. V.C. Agrawal, J.M. Dasgupta, 29.vi.1979, 7.i.1985. Darjiling district : 2 ♀ , Gorubathan, coll. R.K. Ghose, 29.iv.1981; 1 Juv. ♂ 1 ♀ , Tarkhola (c 325 m), coll. H. Khajuria, 17, 23.viii.1958. Hugli district : 1 ♂ , Barul (near Jhapandanga), coll. J.P. Lal, 1.ix.1979. Jalpaiguri district : 1 subad. ♂ , Khuntimari, coll. P.K. Das, 23.ii.1979; 2 ♀ , Sulka para, coll. S. Chakraborty, 4.ix.1983. Medinipur district : 1 ♂ , Balivasa (15 Km SSE of Jhargram), coll. P.K. Das, 10.ix.1984; 1 ♀ , Chandra (25 km N of Medinipur), coll. P.K. Das, 16.ix.1984; 2 ♂ , 3 ♀ , Mandalpuskarini (5 km N. of Garbeta), coll. P.K. Das, 20.ix.1984. South 24-Parganas district : 1 ♀ , Baruipur, coll. P.K. Das, 5.viii.1977; 1 ♂ , 5 ♀ , Bawali, coll. P.K. Das, 28.viii.1977, 11.xi.1977.

Measurements : External : 2 ♂ : Fa 78.5, 79.9; E 21.3, 23.2; Tb 35.7, 37.4; F & CI 22.7, 23.6. 6 ♀ : Fa 69.3-81.5(78.3); E 16.0-22.0(20.0); Tb 30.0-36.4(34.8); F & CI 18.6-22.7(20.3). Cranial : 3 ♂ : l 34.6-37.8(36.4); cr 11.5-12.6(12.2); mtr 14.2-14.9(14.4); c¹-c¹ 6.8-7.3(7.0); iw 7.3-7.5(7.4); cw 15.8-16.0(16.1); zw 21.4-21.7(21.5); m²-m² 11.2-11.4(11.3); ml 24.3-28.7(27.2). 2 ♀ : l 36.3, 37.0; cr 10.6, 11.8; mtr 13.7, 14.5; c¹-c¹ 7.4(2); iw 7.7, 8.7; cw 15.4, 15.5; zw 21.0, 22.2; ml 27.7, 29.0.

Diagnosis : A medium-sized (forearm around 80 mm) fruit bat with longish muzzle and large eyes; tail reduced and rod-like; ears with a notch at the lower edge; dorsal colour light brown with a rufescent tone, ventral colour a shade lighter; back of neck and shoulders sparsely haired; last lower molar elliptical.

Distribution : India : West Bengal : Bankura district, Darjiling district (Andersen 1912, Wroughton 1917b), Hugli district, Jalpaiguri district (Wroughton 1917a), Medinipur district, South 24-Parganas district; widely distributed throughout the Indian mainland. Pakistan (Mirza 1965), Sri Lanka (Sinha 1969a), Nepal, Bhutan (Chakraborty 1975), Burma, southern China (Wang et al. 1962) including Tibet (Cai & Zhang 1980), Hong Kong, Thailand, Laos (Phillips 1967), possibly Cambodia (Rookmaaker & Bergmans 1981) and Vietnam.

Remarks : A specimen from Mandalpuskarini had six cheek teeth in each side of the upper jaw instead of five. The Indian Fulvous Fruit Bat is a common bat of West Bengal.

Genus *Pteropus* Brisson, 1762

The genus *Pteropus* is represented by a single species and subspecies in West Bengal.

17. *Pteropus giganteus giganteus* (Brünnich)

1782. *Vespertilio gigantea* Brünnich, *Dyrenes Historie*, 1 : 45 (Bengal = West Bengal, India).

Common names : Indian Flying Fox (Eng.), Badur (Beng.).

Material examined : Bankura District : 2 ♀, Jhilimili, coll. V.C. Agarwal, 20.i.1985. Bardhaman district : 2 ♀, Barakar, coll. B. Nath, 17.ix.1949. Calcutta district : 2 ♂, 2 ♀, Calcutta, coll. —, —, 1842, 1843. Darjiling district : 1 ♂, Siliguri (c 62 m), coll. C.A. Crump, 1.iv.1915. Hugli district : 2 ♀, Barul (near Jhapandanga), coll. S. Chakraborty, 19.ii.1974. Jalpaiguri district : 1 ♀, Ambari, coll. R.K. Ghose, 23.iii.1985; 1 juv. ♂, Hasimara (Bhutan Duars), coll. N.A. Baptista, 23.x.1915; 2 ♂, Sulka para, coll. S. Chakraborty, 5.ix.1983. Koch Bihar district : 1 ♂, Sitalkuchi, coll. S. Chakraborty, 10.iv.1984. Nadia district : 1 ♀, Phulia, coll. D.K. Ghosal, 3.xi.1964. North 24-Parganas district : 1 ♂, Barrackpore, coll. C. Swaries, 2.ix.1897. West Dinajpur district : 1 ♀, Kulik (near Raiganj), coll. S. Chakraborty, 11.x.1987.

Measurements : External : 1 ♂ : Fa 172.0; E 31.0; F & Cl 58.0. 4 ♀ : Fa 161.0-194.0(178.0); E 28.0-38.0(35.0); F & Cl(1) 56.0. Cranial : 1 ♂ : l 64.3; cr 22.0; mtr 25.0; c¹-c¹ 11.5; iw 9.5; cw 23.8; zw 34.7; ml 52.6. 4 ♀ : l 67.0-72.3(70.1); cr 23.3-24.4(24.6); mtr (3) 24.5-27.8(26.6); c¹-c¹(3) 12.3-14.3(13.3); iw 8.5-10.2(9.6); cw 24.1-25.8(24.8); zw (2) 35.3, 38.3; ml 52.3-57.3(55.1).

Diagnosis : Largest bat of West Bengal; rufous-brown around head and neck; a conspicuous orange or honey-coloured band across upper back; lower back blackish brown; ventral parts dark chestnut brown; naked skin of wings, uropatagium, ears and muzzle jet black; no external tail; a narrow flap of skin inside each leg.

Distribution : India : West Bengal : Bankura district, Bardhaman district (Nath 1951), Birbhum district, Calcutta district (Blyth 1863), Darjiling district (Wroughton 1916b), Haora district (Anderson 1881), Hugli district, Jalpaiguri district (Wroughton 1916b), Koch Bihar district, Maldah district, Medinipur district (Wroughton 1915), Murshidabad district, Nadia district, North 24-Parganas district (Andersen 1912), Puruliya district (Dobson 1876), South 24-Parganas district, West Dinajpur district; widely distributed throughout the Indian Union, including Andaman Islands (Mason 1908). Pakistan (Blanford 1891), Sri Lanka, Nepal, Bangladesh (Andersen 1912) and Burma.

Remarks : Ellerman & Morrison-Scott (1951) considered the Nepal, Assam and Manipur populations as belonging to *Pteropus giganteus leucocephalus* Hodgson. Agrawal & Bhattacharyya (1977), however, questioned the validity of *leucocephalus* on the basis of overlapping characters between this and the nominate subspecies.

The Indian Flying Fox is the most conspicuous and a common bat of West Bengal and observed in all the districts in rural as well as urban areas. This is the only bat of this area which roost in the open—on branches of trees situated near some source of water.

Genus *Cynopterus* F. Cuvier

The genus *Cynopterus* is represented by a single species and subspecies in West Bengal.

18. *Cynopterus sphinx sphinx* (Vahl)

1797. *Vespertilio sphinx* Vahl, *Skr. Nat. Selsk Copenhagen*, 4(1) : 123 (Tranquebar, Tanjavur district, Tamil Nadu, India).

Common names : Short-nosed Fruit Bat (Eng.), Kala Badur (Beng.)

Material examined : Bankura district: 1 ♀, Susunia, coll. V. C. Agarwal, 7.i.1985; 16 ♂, 11 ♀, Ranibandh, coll. B.C. Saha, 6,7.ii.1979. Barddhaman district : 1 ♂, Arrah, coll. P.K. Das, 21,22.iv.1988; 1 ♀, Ranigunge, ---, ---. Birbhum district : 3 ♂, Santiniketan, ---. 28,29.iii.1971; 3 ♂, 1 ♀, Tumbani, coll. A. K. Poddar, 9,10.xii.1985. Calcutta district : 5 ♂, 10 ♀, Calcutta, coll. B. Prasad, R.C. Ram, B.C. Saha, S.S. Saha, purchased (one specimen), 27.xi.1914, 17.vii.1964, 10.xi.1964, 10.xi.1969, 16.xii.1969, 25.ii.1979. Darjiling district : 11 ♂, 8 ♀, Chunabhati (near Kalimpong), coll. R.L. Choudhury, R.K. Ghose, 20.viii.1978, 22-29.xi.1980; 1 ♂, 1 ♀, Darjiling, coll. J. Anderson, 1866; 1 ♂, 1 ♀, Gorubathan, coll. R.K. Ghose, 29.iv.1981; 4 ♂, 7 ♀, Kumani, coll. R.K. Ghose, 18-20.iii.1985; 1 ♀, Sukna (c 200 m), coll. P.K. Das, 22.v.1980. Haora district : 1 ♂, 1 ♀, Rajchandrapur, coll. D.K. Biswas, 7.viii.1979. Hugli district : 3 ♀, Barul (near Jhapandanga), coll. J.P. Lal, 1, 3.ix.1978; 2 ♂, 2 ♀, Kamardingi (near Jhapandanga), coll. S. Chakraborty, 20, 21.ii.1974; 13 ♂, 8 ♀, 1 subad. ♀, Singur, colls. P.K. Das, Ajoy Kumar Mandal, 27.ix.1967, 27,28.ix.1974, 3.x.1974, 17,18.x.1974, 30.x.1974, 7.xi.1975, 23.ii.1982. Jalpaiguri district : 3 ♂, 4 ♀, Ambari, coll. R.K. Ghose, 23.iii.1985, 2 ♂, 1 ♀, Chilapata, coll. R.K. Ghose, 7.10.iii.1985; 3 ♂, Hasimara (c 152 m), coll. N.A. Baptista, 15.xi.1915; 1 ♂, 1 ♀, 1 subad. ♀, Jalpaiguri Town, coll. P.K. Das, 23.ii.1979; 13 ♂, 6 ♀, 1 subad. ♀, Khuntimari, coll. S. Chakraborty, P.K. Das, R.K. Ghose, 23.ii.1979, 8,9.ix.1983, 13,14.iii.1985; 12 ♂, 1 subad. ♂, 5 ♀, Sulkapara, coll. S. Chakraborty, 4,5.ix.1983. Koch Bihar district : 6 ♂, 12 ♀, Atiamochar, coll. A.K. Mandal, S. Chakraborty, 1, 2.ix.1983, 3,5.iv.1986; 6 ♂, 4 ♀, Jaldapara, coll. A.K. Mandal, 26-28.viii.1983; 2 ♀, Koch Bihar, coll. S. Chakraborty, 17.ix.1986; 1 ♂, 2 ♀, Sitalkuchi, coll. S. Chakraborty, 10.iv.1986. Maldah district : 1 ♂; Maldah, coll. P.K. Das, 25.ii.1979. Medinipur district : 1 ♂, 1 ♀, Amlagora (near Garbeta), coll. P.K. Das, 21.ix.1984; 4 ♂, 9 ♀, Balivasa (15 km SSE of Jhargram), coll. P.K. Das, 10-15.ix.1984; 2 ♂, 1 ♀, Chanda (25 km NW of Medinipur), coll. P.K. Das, 16,17.ix.1984, 1 ♂, 2 ♀, Gidni, coll. P.K. Das, 9.ix.1984. Murshidabad district : 2 ♀, Baharampur, coll. S. Chakraborty, 15.x.1987; 2 ♂, Bhabta, coll. S. Chakraborty, P.K. Das, 2.iii.1979, 17.x.1987; 2 ♂, 2 ♀, Lalbagh, coll. S. Chakraborty, 18, 19.x.1987; 2 ♀, Na'mile (15 km from Baharampur), coll. S. Chakraborty, 16.x.1987. Nadia district : 3 ♂, 2 ♀, Kaliganj, coll. S. Chakraborty, 20, 22.x.1987; 14 ♂, 9 ♀, Madanpur, coll. P.K. Das, 15-18.vii.1969; 3 ♂, Muragacha, coll. S. Chakraborty, 21.x.1987; 3 ♂, Nakashipara, coll. S. Chakraborty, 21.x.1987; 4 ♂, Phulia, colls. D.K. Ghosal, S.S. Saha, 4.xi.1964, 13.viii.1969; 2 ♂, 1 ♀, Plassey, coll. S. Chakraborty, 21.x.1987; 3 ♂, 1 ♀, Ramnagar, coll. S. Chakraborty, 21.x.1987. North 24-Parganas district : 15 ♂, 3 subad. ♂, 12 ♀, 3 subad. ♀, Basirhat, coll. P.K. Das, 10-14.xi.1972; 3 ♂, 4 ♀, Hasnabad, coll. S. S. Saha, 22-24.vii.1973; 4 ♂, 3 ♀, 1 subad. ♀, Parmadan, colls. P.K. Das, S.S. Saha, 27.xii.1969, 3,4.v.1988. Puruliya district : 4 ♂, 3 ♀, Ajothya Hills, coll. A.K. Mukherjee, 22-24.ii.1982. South 24-Parganas district : 1 ♂, 1 ♀, Barisha, coll. Ajoy Kumar Mandal, 26.x.1976; 9 ♂, 9 ♀, Baruipur, coll. B. Biswas, P.K. Das, 7.iii.1965, 5,8,19, 20.viii.1977, 23.ix.1977; 4 ♂, 1 ♀, Bawali, coll. P.K. Das, 27.iv.1978, 5.vi.1978; 2 ♂, 2 ♀, Budge Budge, coll. S.S. Saha, 1.xi.1975; 1 ♀, Ganeshpur (near Kakdwip), coll. G.Topal, 10.i.1980; 2 ♂, Muchisa, coll. J.P. Lal, 2.xi.1985, 24.i.1986; 1 ♂, 4 ♀, Srikrishnapur (near Amtala), coll. P.K. Das, 20.iii.1982; 7 ♂, 1 subad. ♂, 7 ♀, 1 subad. ♀, Thakurpukur, coll. A.K. Nag. 3.iv.1978, 3.ix.1978, 26-31.iii.1979, 17, 24.iii.1980. West Dinajpur district : 1 ♂, Barsoi (25 km towards Siliguri from Raiganj), coll. S. Chakraborty, 14.x.1987; 1 ♂, 3 ♀, Hemtabad (12 km towards Balurghat from Raiganj), coll. S. Chakraborty, 12-14.x.1987, 1 ♂, Karnajora (2 km towards Balurghat from Raiganj), coll. S. Chakraborty, 10.x.1987; 1 ♀, Kshetrapur, coll. S. Chakraborty,

14.x.1987; 2 ♂, 1 ♀, Kulik (1 km W. of Raiganj), coll. S. Chakraborty, 11,14.x.1987; 1 ♀, Near Nagar River (10 km W of Raiganj), coll. S. Chakraborty, 11.x.1987; 1 ♂, Nagar Gandhar River (13 km towards Siliguri from Raiganj), coll. S. Chakraborty, 14.x.1987.

Measurements : External : 81 ♂ : Fa 63.0-76.1(70.5); E 15.3-24.9 (20.2); Tb 21.0-31.2 (26.1); F & Cl 13.0-18.6(16.0). 82 ♀ : Fa 61.8-76.7(74.7); E 15.1-25.3(20.7); Tb (76) 20.8-31.1(27.0); F & Cl 12.8-19.7 (15.9). Cranial : 40 ♂ : l 29.0-36.0(32.7); cr 7.6-11.0(9.3); mtr 9.7-12.5(10.7); c¹ c¹ 5.7-7.9(6.7); iw 11.4-16.0 (13.8); zw 17.4-24.1 (20.7); m¹ - m¹ 8.4-11.2(9.8); ml 22.0-27.1(24.7). 39 ♀ : 27.6-37.5 (32.5); cr 7.3-11.2(9.4); mtr 9.3-12.7(10.9); c¹ c¹ 5.6-8.0(6.7); iw 5.2-7.2(6.2); cw 11.5-15.6(13.7); zw 16.0-24.0 (20.7); m¹ m¹ 8.3-11.2(10.0); ml 20.3-27.2(24.4).

Diagnosis : Medium-sized (forearm around 70.0 mm) fruit bat with white margin to ears; metacarpals and phalanges whitish; nostrils divergent with deep inter-narial groove; dorsal colour grey or greyish-brown, paler ventrally (often with a broad rufescent or chestnut area around the shoulders and throat); naked skin of wings, muzzle, etc., blackish brown; tail reduced and rod-like.

Distribution : India : West Bengal : Bankura district, Bardhaman district, Birbhum district, Calcutta district, Darjiling district (Dobson 1876), Haora district, Hugli district, Jalpaiguri district, Koch Bihar district, Maldah district, Medinipur district (Wroughton 1915), Murshidabad district, Nadia district (Das & Sinha 1971), North 24-Parganas district (Andersen 1912), Puruliya district, South 24-Parganas district, West Dinajpur district; widely distributed throughout the mainland of Indian Union. Pakistan (Anderson 1881), Sri Lanka, Nepal (Fry 1925), Bangladesh and Burma.

Remarks : The Short-nosed Fruit Bat is one of the commonest bats of West Bengal.

Genus *Megaerops* Peters, 1865

The genus *Megaerops* is represented by one species in West Bengal.

19. *Megaerops niphanae* Yenbutra & Felten, 1983

1983. *Megaerops niphanae* Yenbutra & Felten, *Senckenberg. biol.*, 64 : 2 (Sakaerat Environmental Research Station (14°30' N - 101°56'E), Amphoe Pak Thong Chai, Prov. Nakhon Ratchasima, Thailand).

Common name : Niphan's Fruit Bat (Eng.).

Material examined : None

Measurements : Nil

Diagnosis : Looks much like *Cynopterus sphinx sphinx*, but nostrils are more subtubular; no external tail; ears without white edge; inter-femoral membrane well-developed along the tibia and very narrow in the centre; wing membrane attached to second phalanx of first toe; colour dusky brown above, light greyish brown below.

Distribution : India : West Bengal : Darjiling District (Hill 1983, Koopman 1989). Thailand and Vietnam (Koopman 1989).

Remarks : Hill (1983) identified a specimen collected from Pashok, Darjiling district, as belonging to *Megaerops ecaudatus* (Temminck), with some hesitation. Koopman (1989) considered obviously this specimen as belonging to *Megaerops niphanae*, and also referred specimens of *niphanae* in the American Museum of Natural History.

Genus *Sphaerias* Miller, 1906

The genus *Sphaerias* is represented in West Bengal by a single species.

20. *Sphaerias blanfordi* (Thomas)

1891. *Cynopterus blanfordi* Thomas, *Ann. Mus. civ. Stor. nat. Genova*, 2, 10 : 884, 921-922, pl. XI, figs. 1-2. (Leito, Cheba, Karen Hills, 1,000 m., Burma).

Common name : Blanford's Fruit Bat (Eng).

Material examined : Darjiling district 1 subad. ♀, Darjiling, coll. G. King, 6.iii.1877; 1 ♂, 1 ♀, Goomti (c 1,356 m), coll. P.K. Das, 22, 26.v.1980; 1 ♂, Palmajua (c 2,250 m), coll. R.K. Ghose, 4.vii. 1974.

Measurements : External 2 ♂ : Fa 53.0, 53.2; E 15.0, 18.5; Tb 17.9, 20.1; F & Cl 12.0, 14.2. 1 ♀ Fa 52.4; E 18.7; Tb 19.2; F & Cl 12.1 Cranial 2 ♂, *l* 27.2, 27.5; *cr* 6.3, 6.4; *mtr* 8.1, 8.2; *iw* 5.4, 5.6; *cw* 12.5, 12.6; *zw* 17.0, 17.3; *m^l m^l* 8.2, 8.3; *ml* 19.3, 19.5.

Diagnosis : A small (forearm slightly above 50.0 mm) fruit bat without external tail and calcar; anterior margin of ears white; dull greyish brown above, a shade paler below; inter-femoral membrane covered with soft, fine, dense hairs and extends along femur and upper part of tibia, as a narrow stripe.

Distribution : India : West Bengal : Darjiling : district (Chakraborty 1975); Arunachal Pradesh (Saha 1985); Uttar Pradesh (Bhat 1968). Nepal (Lekagul & McNeely 1977), Tibet and southwestern China (Honacki *et al.* 1982), Bhutan (Chakraborty 1975), Burma and Thailand.

Remarks : In West Bengal, Blanford's Fruit Bat is known only from the montane regions of Darjiling district.

Genus *Macroglossus* F. Cuvier, 1824

The genus *Macroglossus* is represented by a single species and subspecies in West Bengal.

21. *Macroglossus sobrinus sobrinus* Andersen

1911. *Macroglossus minimus sobrinus* Andersen, *Ann. Mag. nat. Hist.*, 7 : 642 (Gunong Igari, 2000' = c 610 m, Perak, peninsular Malaysia).

Common name : Greater Long-tongued Fruit Bat (Eng.)

Material examined : Darjiling district : 1 subad., Darjiling, coll. F. Stoliczka, 1871. Koch Bihar district : 1 ♂, 1 ♀, Atiamochor, coll. S. Chakraborty, 3.iv. 1986.

Measurements : External 1 ♂ : Fa 46.7; Tb 18.0; F & Cl 12.0. 1 ♀ : Fa 48.5; Tb 17.0; F & Cl 13.3. Cranial 1 ♂ : *l* 30.5; *cr* 11.6; *mtr* 10.0; *c¹ - c¹* 5.2; *cw* 11.7; *zw* 15.3. 1 ♀, *l* 30.3; *cr* 11.9; *mtr* 11.0; *c¹ - c¹* 5.0; *cw* 12.2; *zw* 15.5.

Diagnosis : A small (forearm around 50.0 mm) fruit bat (smallest of fruit bats of West Bengal) with very long head; pelage longish and light reddish brown, chest more brown; tail rod-like and short; inter-femoral membrane narrow; muzzle long and cylindrical; nostrils upward-pointing and separated by an ill-defined groove; tongue quite long with feathery tip.

Distribution : India : West Bengal : Darjiling district, Koch Bihar district Agarwal *et al.* (in press) Burma, Thailand to Sumatra, Nias Island, Krakatoa Island and Java (Hill 1983).

Remarks : Ellerman & Morrison-Scott (1951) maintained *sobrinus* as a subspecies of *Macroglossus minimus*. Most of recent authors (Legagul & McNeely 1977, Honacki *et al* 1982, Hill 1983, Corbet & Hill 1986, etc.), however, considered *minimus* and *sobrinus* as distinct species.

Suborder MICROCHIROPTERA

The suborder Microchiroptera in West Bengal consists of six families.

Key to the families of the suborder MICROCHIROPTERA

1. Both nose-leaf and tragus presentMegadermatidae
Either nose-leaf or tragus present, but not both.....2
2. A nose-leaf but no tragus present Rhinolophidae
No nose-leaf but a tragus present
3. Tail entirely enclosed in inter-femoral membrane Vespertilionidae
Distal portion of the tail free from inter-femoral membrane.....4
4. Tail emerging from the upper surface of the inter-femoral membraneEmballonuridae
Tail emerging from the end of the inter-femoral membrane5
5. Tail very long and slender.....Rhinopomatidae
Tail comparatively short and stoutMolossidae

Family RHINOPOMATIDAE

Family Rhinopomatidae consists of a single genus.

Genus *Rhinopoma* E. Geoffroy, 1818

Two species of the genus *Rhinopoma* occur in India. Either of these occurs in West Bengal (please see below). The possibility of occurrence of both the species in West Bengal cannot be ruled out entirely.

Key to the species and subspecies of *Rhinopoma*

- Larger, length of forearm more than 64.0 mm; tail usually shorter than forearm; sagittal crest prominent; rostrum with narial swellings not especially pronounced
.....*Rhinopoma microphyllum kinneari*
- Smaller, length of forearm less than 63.0 mm; tail usually longer than forearm; sagittal crest low; rostrum with prominent globose narial swellings.....*Rhinopoma hardwickei hardwickei*

22. *Rhinopoma microphyllum kinneari* Wroughton

1912. *Rhinopoma kinneari* Wroughton, *J. Bombay nat. Hist. Soc.*, 21 : 767 (Bhuj, Cutch = Bhuj, Kachchh district, Gujarat, India).

Common name : Larger Rat-tailed Bat (Eng).

Material examined : None

Measurements : Nil

Diagnosis : A medium-sized bat with long, mouse-like tail emerging from the edge of narrow uropatagium; muzzle with thick narial pad; tragus simple; length of forearm 64.5-75.0 mm; tail usually shorter than forearm.

Distribution : India : (?) West Bengal : Calcutta district ; Bihar (Wroughton 1915); Delhi (Brosset 1962a); Gujarat; Madhya Pradesh (Wroughton 1912a); Maharashtra (Khajuria 1953); Orissa (Khaparde

1980); Rajasthan (Prakash 1956); Uttar Pradesh (Brosset 1962a).

Remarks : Ellerman and Morisson-Scott (1951) included 'Bengal' within the distributional range of *Rhinopoma kinneari* which is now regarded as only a subspecies of *Rhinopoma microphyllum* by most recent authors (Aellen 1959, Felten 1962, Hill 1977). However, no specimen of *Rhinopoma* can be traced from West Bengal, excepting a specimen (skin of an unsexed adult) from Calcutta listed by Dobson (1878) under *Rhinopoma microphyllum*. Since this author considered *Rh. hardwickei* as a synonym of *Rh. microphyllum*, the said specimen could be of *Rhinopoma hardwickei* as well. Therefore, *Rhinopoma microphyllum kinneari* is here included in the fauna of West Bengal with some element of doubt.

23. *Rhinopoma hardwickei hardwickei* Gray

1831. *Rhinopoma hardwickii* Gray, *Zool. Misc.*, 37 (India).

Common name : Lesser Rat-tailed Bat (Eng.).

Material examined : None

Measurements : Nil

Diagnosis : Similar to *Rhinopoma microphyllum kinneari*, but smaller; length of forearm 53.3-62.7 mm; tail usually longer than forearm.

Distribution : India : (?)West Bengal : Calcutta district; Bihar (Wroughton 1915); Delhi (Brosset 1962a); Gujarat; Jammu & Kashmir (Dobson 1878); Karnataka; Kerala (Wroughton 1921b); Madhya Pradesh; Orissa (Das & Agrawal 1973); Rajasthan; Tamil Nadu (Jerdon 1867, Dobson 1876); Uttar Pradesh. Afghanistan (Gaisler 1970), Pakistan (Hill 1977), Burma (Blanford 1891) and Thailand.

Remarks : Hill (1977) in his revisionary study included both Afghanistan and Pakistan in the distributional range of *Rhinopoma h. hardwickei* and stated that record of *Rhinopoma* from Burma and Thailand were problematical. However, Corbet (1980) thought that the nominate subspecies extended to Thailand. Ellerman and Morrison Scott (1951) included 'Bengal' within the range of distribution of *Rhinopoma h. hardwickei*. But no specimen of *Rhinopoma* can be traced from West Bengal, excepting a specimen (skin of an unsexed adult) from Calcutta listed by Dobson (1878) under *Rhinopoma microphyllum*. Since this author considered *Rhinopoma hardwickei* as a synonym of *Rh. microphyllum*, the said specimen could be of *Rh. microphyllum* as well, though the possibility of its being an example of *Rh. h. hardwickei* is greater, as is evident from its range of distribution. Thus, *Rh. h. hardwickei* is included in the faunal list of West Bengal with some hesitation.

Family EMBALLONURIDAE

In West Bengal, only one genus of the family Emballonuridae occurs.

Genus *Taphozous* E. Geoffroy, 1818

Key to the species and subspecies of the genus *Taphozous*

- 1. Radio-metacarpal pouch present; lower lip scarcely grooved in front2
- Radio-metacarpal pouch absent; lower lip deeply divided in the centre of its upper surface and in front by a deep, narrow groove*Taphozous saccolaimus crassus*
- 2. Gular sac absent *Taphozous nudiventris kachhensis*
- Gular sac present, prominent in males, rudimentary in females
.....
.....*Taphozous longimanus longimanus*

24. *Taphozous longimanus longimanus* Hardwicke

1825. *Taphozous longimanus* Hardwicke, *Trans. Linn. Soc. Lond.*, 14 : 525 (Calcutta, Calcutta district, West Bengal, India).

Common name : Long-armed Sheath-tailed Bat (Eng.).

Material examined : Bardhaman district : 1 ♂, 8 ♀, Churpurni, coll. P.K. Das, 27-29.iv.1988. Calcutta district : 3 ♂, 1 subad. ♂, 2 ♀, Calcutta, coll. Major Alcock, T. Bentham, F. Finn, O.L. Fraser, F. Stoliczka, 15.xii.1875, 22.ii.1881. Nadia district : 1 ♀, Krishnanagar, coll. P.K. Das, 10.iv.1978. South 24-Parganas district : 1 ♂, 1 ♀, Canning, coll. N. Annandale, 21.vii.1907; 1 ♀, Kakdwip, coll. G. Topal, 10.i.1980; 1 ♂, Thakurpukur, coll. A.K. Nag, 31.i. 1975.

Measurements : External : 3 ♂, : Fa 58.8-61.2(60.0); E 11.2-13.1 (11.9); Tb 24.0-25.0(24.3); F & Cl 10.9-13.1(11.6). 10 ♀ : Fa 57.2-61.6(59.6); E 9.5-15.7(14); Tb 22.0-25.8(24.5); F & Cl 11.5-13.8(12.5). Cranial : 2 ♂ : l 20.8, 21.0; c^1-c^1 4.5, 4.8; iw 5.0, 5.3; cw 10.7; 11.0; zw 12.8(2); ml 15.3, 15.6. 5 ♀ : l 21.6-22.0(21.9); c^1-c^1 3.7-4.0(3.0) iw 4.8-5.0 (4.9); cw 10.0-10.4(10.2); zw 12.5-12.8(12.7); iw 4.8-5.0(4.9); mtr 8.6-9.2(9.0); m^3-m^3 8.6-8.8(8.7).

Diagnosis : A dark brown (adult males usually lighter brown), medium-sized bat with broad tragus; gular sac moderately developed in males, and in females represented by a rudimentary fold of naked skin; radio-metacarpal pouch moderately developed; inner margin of ear smooth (not papillate); lower lip scarcely grooved.

Distribution : India : West Bengal : Bardhaman district, Calcutta district, Darjiling district, Medinipur district (Wroughton 1915), Nadia district, South 24-Parganas district; widely distributed in the Indian Peninsula; northwards to Gujarat and Rajasthan (Sinha 1976) on the west, and West Bengal and Tripura (Agrawal & Bhattacharyya 1977) on the east. Sri Lanka, Nepal (Worth & Shah 1969), Bangladesh (Ahmed & Hussain 1982), Burma, possibly Thailand (Lekagul & McNelly 1977) and Cambodia (Hill & Thonglongya 1972).

Remarks : Of the three species of *Taphozous* in West Bengal, *T. longimanus* is easily met with.

25. *Taphozous nudiventris kachhenis* Dobson

1872. *Taphozous kachhensis* Dobson, *J. Asiat. Soc. Beng.*, 41 (Pt. 2): 221 (Kachh = Kachchh district, Gujarat, India).

Common name : Naked-bellied Tomb Bat (Eng.).

Material examined : Calcutta district : 1 unsexed, Calcutta, coll. H.A. Hafiz, 21.iv.1939. Darjiling district : 2 ♂, Sivok (c 152 m), coll. C.A. Crump, 10,20.iii.1915.

Measurements : External : 2 ♂, Fa 74.76, 78.5; Tl 35.0(2); E 22.0, 23.0; Tb 30.9, 32.7; F & Cl 18.1, 18.4. Cranial : 2 ♂, l 27.6, 28.2; mtr 11.2, 11.5; c^1-c^1 (1) 5.4; iw 5.3, 5.4; cw 12.4, 13.0; zw 16.8, 17.0; m^3-m^3 11.2, 11.3; ml 20.0, 20.2.

Diagnosis : Larger than *Taphozous longimanus*; blackish grey in colour; gular sac absent in both sexes, its position in male is indicated by a semicircular fold of skin; muzzle and throat naked; ear papillate along the margin; radio-metacarpal pouch very small; wings from the tibiae above the ankles.

Distribution : India : West Bengal : Calcutta district (Khajuria 1953), Darjiling district (Wroughton 1916b); Bihar (Wroughton 1915); Delhi (Brosset 1962a); Gujarat; Jammu & Kashmir (Sharma & Sharma 1976); Karnataka; Madhya Pradesh (Lindsay 1926a); Maharashtra; Rajasthan (Prakash 1956); Sikkim; Uttar Pradesh (Brosset 1962a). Afghanistan (Gaisler 1970) and Pakistan.

Remarks : Ellerman & Morrison-Scott (1951) considered *kachhensis* as a district species. Felten (1962) reviewed the group and concluded that *kachhensis* should be treated as a subspecies of the widely distributed species *Taphozous nudiventris*, a view held by most of recent authors (Gaisler 1970, Corbet 1980, Honacki et al. 1982, Corbet & Hill 1986, etc.). However, Sinha (1970, 1980, 1986) as also Khajuria (1979) still prefer to maintain *kachhensis* as a species distinct from *Taphozous nudiventris*.

26. *Taphozous saccolaimus crassus* Blyth

1844. *Taphozous crassus* Blyth, *J. Asiat. Soc. Beng.*, 13 : 491 (Mirzapur, Mirzapur district, Uttar Pradesh, India).

Common name : Pouch-bearing Bat (Eng.).

Material examined : Bardhaman district 1 ♂, Churpurni, coll. P.K. Das, 28.iv.1988. Medinipur district 3 ♂, 2 ♀, Chandra, coll. P.K. Das, 18.ix.1984.

Measurements : External : 4 ♂ : Fa 67.5-73.0(69.2); Tl 21.5-27.0 (24.4); E 18.4-19.5(19.0); Tb 25.9-29.6(27.1); F & Cl 14.5-18.4(16.6); Tr 6.5-8.8(7.4). 2 ♀ : Fa 67.7, 72.6; Tl 25.2, 32.0; E 20.0, 20.4; Tb 26.7, 28.6; F & Cl 15.,5, 18.4; Tr 6.8, 7.1. Cranial : 3 ♂ : l 22.8-23.7(23.3); mtr 9.6-10.0(9.8); c¹-c¹ 4.4-4.7(4.5); iw 5.1-5.2(5.1); cw 10.7-11.3(11.0); zw 15.0-16.1(15.5); m³ m³ 10.0-10.2(10.1); ml 16.8-17.9(17.2). 2 ♀ : l 23.0(2); mtr 9.5, 10.3; c¹-c¹ 4.5, 4.6; iw 5.0(2); cw 11.0(2); zw 15.7, 15.9; m³-m³ 10.4(2); ml 17.3, 18.0.

Diagnosis : A large, dark brown *Taphozous* with some small, irregular white blotches or spots on dorsal surface; lower lip divided by a deep, narrow groove; legs and feet naked; inter-fen.oral membrane naked except near the point of origin of tail; radio-metacarpal pouch absent; gular sac present, larger in males; margin of ear smooth.

Distribution : India : West Bengal : Bardhaman district, Medinipur district; Andaman & Nicobar Islands (Hill 1967); Gujarat (Brosset 1962a); Karnataka (Wroughton 1913); Maharashtra (Brosset 1962a); Orissa (Wroughton 1915); Tamil Nadu; Uttar Pradesh. Sri Lanka, Bangladesh (Dobson 1876), possibly Burma, Thailand (Lekagul & McNeely 1977), Malaya Peninsula and Islands and Sumatra.

Remarks : The Pouch-bearing Bat, though not really rare in West Bengal, is rather difficult to collect.

Family MEGADERMATIDAE

Family Megadermatidae is represented in West Bengal by a single genus *Megaderma*.

Genus *Megaderma* E. Geoffroy, 1810

The genus *Megaderma* consists of two species, both of which occur in West Bengal.

Key to the species and subspecies of the genus *Megaderma*

Posterior termination of nose-leaf rounded *Megaderma spasma spasma*
 Posterior termination of nose-leaf truncated.....*Megaderma lyra lyra*

27. *Megaderma spasma spasma* (Linnaeus)

1758. *Vespertilio spasma* Linnaeus, *Syst. Nat.* (ed. 10), 1 : 32 (Ternate, Molucca Islands, Indonesia).

Common name : Malay False Vampire (Eng.)

Material examined : South 24-Parganas district : 5 ♂, 7 ♀, Gosaba (Sundarban Tiger Reserve), coll. A.K. Mandal, C.K. Misra, S.S. Saha, 12-19.ix.1983.

Measurements : External : 4 ♂ : Fa 56.3-58.3(57.2); E 33.8-39.7(36.3); Tb 30.0-34.0(32.0); F & Cl 14.7-16.7(16.0); Tr 15.5-19.3(17.5). 3 ♀ : Fa 54.8-58.6(57.0); E 33.9-38.6(36.3); Tb 30.6-31.5(31.0); F & Cl 15.3-16.4(15.8); Tr 18.2-18.6(18.4). Cranial : 2 ♂ : *l* 25.2, 25.4, *mtr* 9.9(2); *c*¹-*c*¹ 4.8, 4.9; *iw* 3.8, 3.9; *cw* 10.7, 10.8; *zw* 14.1, 14.2; *m*³-*m*³ 8.5, 8.8; *ml* 16.4, 16.6. 2 ♀ : *l*, 24.8, 26.5; *mtr* 9.5, 10.2; *c*¹-*c*¹ 4.7, 4.9; *iw* 3.8, 3.9; *cw* 10.7, 10.9; *zw* (1) 14.4; *m*³-*m*³ 8.3, 8.8; *ml* 16.5, 17.5.

Diagnosis : A medium-sized bat, with large ears, nose-leaf and large tragus, but without externally visible tail; dorsal colour bluish slaty, ventral parts paler (dirty white); forearm 52.0-62.0 mm; ears conjoined for nearly half the length of inner margin; tragus bifid, the posterior portion long, narrow and acutely pointed; posterior termination of nose-leaf rounded.

Distribution : India : West Bengal : Jalpaiguri district (Bhat 1974), South 24-Parganas district; Andaman & Nicobar Islands (Hill 1967); Assam (Hinton & Lindsay 1926a); Goa (Agrawal 1973); Karnataka (Wroughton 1921b); Kerala (Blanford 1891, Lindsay 1926b); Tamil Nadu (Wroughton 1921a). Sri Lanka, Burma, Laos (Phillips 1967), Vietnam (Blanford 1891), Cambodia, Thailand, Malay Peninsula and Archipelago, Sumatra, Java, Borneo (except Kiau, Mount Kinabalu), and various small adjacent islands, Sulawesi, Philippine Islands and Moluccas.

Remarks : Ellerman and Morisson-Scott (1951) recognised a number of subspecies of *Megaderma spasma*. Sinha (1977) reviewed the species and considered only two subspecies valid, viz., *M. s. kinabalu* Chasen from Mount Kinabalu, Borneo and the nominate subspecies in the remaining parts of the distributional range of the species. Hill (1983), however, maintained *niasense*, *celebensis* and *trifolium* as subspecies of *Megaderma spasma*.

The distribution of *Megaderma spasma* in India is rather patchy. In West Bengal the species is rare.

28. *Megaderma lyra lyra* E. Geoffroy

1810. *Megaderma lyra* E. Geoffroy. *Ann. Mag. Hist. nat. Paris*, 15 : 190 (India, possibly Madras, Madras district, Tamil Nadu).

Common name : Indian False Vampire (Eng.)

Material examined : Bankura district : 3 ♂, 1 ♀, Susunia, coll. V.C. Agrawal, B.C. Saha, 7.ii.1979, 7.i.1985. Bardhaman district 1 ♂, 2 ♀, Katoya, coll. P.K. Das, 2.v.1988; 1 ♂, Palla Road, coll. J.P. Lal, 7.iv.1980; 1 ♂, 1 ♀, 1 Foetus, Ranigaunje, coll. F. Stoliczka, 15.xii.1875. Birbhum district : 1 ♂, 2 ♀, Chandrapur (10 km NW of Siuri), coll. A.K. Mukherjee, A.K. Poddar, 30.xii.1980, 12,14.xii.1985. Calcutta district : 1 ♂, Alipur (Calcutta), coll. J. Cockburn, 1877, 2 ♂, 1 ♀, Calcutta, coll. --, ---. Darjiling district : 1 unsexed, Ghyabari, coll. W. Patridge, 4.v.1982; 1 ♂, Lopchu (*c* 800 m), coll. P.K. Das, 2.vi.1980, 1 ♂, Siliguri (*c* 61 m), coll. C.A. Crump, 30.iii.1915; 1 ♀, Sukhna, coll. P.K. Das, 21.v.1980. Haora district : 2 ♂, 3 ♀, Birshibpur, coll. S.S. Saha, 13.i.1966; 3 ♂, 1 ♀, Shibpur (Botanical Gardens), coll. J.P. Lal, 28.xi.1978, 19.i.1979, 6.xi.1979; 1 ♂, 1 ♀, Kamardingi (near Jhapandanga), coll. S. Chakraborty, J.P. Lal, 22.ii.1974, 6.iv.1979; 4 ♂, 2 ♀, Singur, coll. P.K. Das, Ajoy Kumar Mandal, 28.ix.1974, 17.x.1974, 9.xi.1974, 7.xii.1974. Jalpaiguri district : 2 ♂, 2 ♀, Chilapata, coll. S. Chakraborty, 19,20.xi.1983; 2 ♀, Khuntimari, coll. P.K. Das, R. K. Ghose, 20.ii.1979, 13.iii.1985. Koch Bihar district : 6 ♂, 6 ♀, Atiamochor, coll. S. Chakraborty, A.K. Mandal, 31.viii.1983, 1. ix.1983, 2,3.iv.1986; 1 ♀, Mathabhanga, coll. S. Chakraborty, 17.iv.1986. Maldah district : 7 ♂, 1 ♀, Old Maldah, coll. V.C. Agrawal, 2.1.1983, Medinipur district : 1 ♀, Balivasa (15 km SSE of Jhargram), coll. P.K. Das,

13.ix.1984; 2 ♀, Kanaisole (15 km NW of Jhargram), coll. P.K. Das, 8.ix.1984; 1 ♂, Mandalpuskarini (5 km N of Garbeta), coll. P.K. Das, 20.ix.1984; 3 ♀, Medinipur, coll. C.A. Crump, 17.ix.1914; 1 ♂, Salbani, coll. C.A. Crump, 14.ix.1914. Nadia district : 1 ♂, Krishnanagar, coll. P.K. Das, 17.vii.1969; 1 ♀, Phulia, coll. D.K. Ghosal, 4.xi.1964. North 24-Parganas district : 2 ♂, 1 ♀, 1 young ♀, Barrackpore, coll. G. Topal, --; 3 ♂, 2 ♀, Basirhat, coll. P. K. Das, 10,14.xi.1972; 1 ♂, Falta, coll. G. Topal, 12.i.1980; 1 ♀, Parmadan, coll. S. S. Saha, 27.xii.1969; 1 ♂, Salt Lake (Duttabad), coll. B. Biswas, 9.i.1969. Puruliya district : 2 ♀, Ajodhya Hills, coll. A. K. Mukherjee, 25, 26.ii.1986. South 24-Parganas district : 1 ♀, Bawali, coll. P. K. Das, 5.vi.1978. West Dinajpur district : 1 ♀, Barduari (6 km W of Raiganj, towards Siliguri), coll. S. Chakraborty, 10.x.1987; 1 ♂, 1 ♀, Kulik (1 km W of Raiganj), coll. S. Chakraborty, S. S. Saha, 14.vii.1975, 9.x.1987.

Measurements : External : 22 ♂ : Fa 63.4-68.0(65.5); E 32.3-41.4(36.5); Tb 31.5-35.7(33.8); F & Cl 17.5-20.6(18.7); Tr 12.9-20.0(17.3). 23 ♀ : Fa 65.0-71.0 (67.1); E 32.2-44.6 (37.7); Tb 32.6-36.4(34.6); F & Cl 17.0-20.0(18.5). Cranial : 14 ♂ : *l* 26.7-28.8(28.1); *cr* 6.6-8.4(7.8) *mtr* 9.5-11.3(10.6); *c*¹-*c*¹ 5.2-5.8(5.6); *iw* 4.6-6.6(5.3); *cw* 11.9-12.7 (12.3); *zw* 16.3-16.5 (16.4); *m*³-*m*³ 9.4-10.0 (9.7); *ml* 18.5-20.2(19.4). 10 ♀ : *l* 27.7-29.6(28.6); *cr* 7.0-7.6(7.4); *mtr* 11.1-11.5(11.3); *c*¹-*c*¹ 5.3-6.0(5.6); *iw* 4.3-4.9(4.6); *cw* 12.1-12.7 (12.4); *zw* 16.6-17.0 (16.8); *m*³-*m*³ 10.2-11.2(10.7); *ml* 18.7-20.2(19.8).

Diagnosis : Similar to *Megaderma spasma spasma*, but larger; forearm (60-70 mm); posterior termination of nose-leaf truncated; dorsal colour slaty grey.

Distribution : India : West Bengal : Bankura district, Bardhaman district (Dobson 1876), Birbhum district, Calcutta district (Blyth 1863), Darjiling district (Hodgson 1847a), Haora district, Hugli district, Jalpaiguri district (Wroughton 1916b), Koch Bihar district, Maldah district, Medinipur district (Wroughton 1915), Murshidabad district, Nadia district, North 24-Parganas district, Puruliya district, South 24-Parganas district, West Dinajpur district; widely distributed throughout the Indian mainland from Jammu & Kashmir to Cape Comorin (Dobson 1876) and from Gujarat to Assam (Hinton & Lindsay 1926a). Afghanistan (Aellen 1959), Pakistan, Sri Lanka, Nepal (Anderson 1881) and Bangladesh (Dobson 1876).

Remarks : Females are slightly larger on average for certain external and cranial measurements. Ellerman and Morrison-Scott (1951) considered the western Indian population of the species as *Megaderma lyra caurina* Anderson and Wroughton, (type-locality — Surat district, Gujarat), but Sinha (1977) after reviewing the species, concluded that the entire Indian population belonged to the nominate subspecies. *Megaderma lyra* is one of the commonest bats in West Bengal.

Family RHINOLOPHIDAE

Small to rather large-sized bats with complicated nose-leaf, large ears, small eyes and tail almost entirely enclosed in the inter-femoral membrane (except *Coelops*). The nose-leaf essentially consists of three main portions, viz., anterior, rounded, horizontal portion, popularly called the horse-shoe, the central portion and the posterior vertical portion.

Ellerman & Morrison-Scott (1951) have divided family Rhinolophidae into two subfamilies, viz., subfamily Rhinolophinae and subfamily Hipposiderinae.

Subfamily RHINOLOPHINAE

The subfamily Rhinolophinae consists of a single genus *Rhinolophus*.

The anterior portion of nose-leaf or the horse-shoe has a median notch, and completely or partially covers the muzzle. The central portion of the nose-leaf is called the sella. Behind the sella rises the posterior portion or the posterior nose-leaf as a long, lancet-shaped point. The posterior nose-leaf is divided into cells by horizontal septa. A postero-dorsal connecting process connects the sella with the posterior nose-leaf. Basal portion of outer margin of ear deeply notched to form a distinct antitragus.

Genus *Rhinolophus* Lacepède, 1799

Key to the species and subspecies of the genus *Rhinolophus*

1. Base of sella expanded, making a trifolium-shaped structure; frontal depression very deep.....2
Base of sella not expanded and does not make a trifolium-shaped structure; frontal depression shallow.....3
2. Frontal sac present.....*Rhinolophus luctus perniger*
Frontal sac absent.....*Rhinolophus trifolius trifolius*
3. Connecting process beneath top of sella.....*Rhinolophus pearsoni*
Connecting process as high or higher than top of sella.....4
4. Connecting process level with top of sella forming a shallow notch between them.....5
Connecting process higher than top of sella forming a deep notch between them.....6
5. Sides of inter-narial expansion parallel.....*Rhinolophus rouxi rouxi*
Sides of inter-narial expansion arched.....*Rhinolophus affinis himalayanus*
6. Skull narrower, zygomatic width less than 8 mm, maxillary tooth-row shorter, less than 6 mm
.....*Rhinolophus pusillus blythi*
Skull broader, zygomatic width more than 8 mm, maxillary tooth-row longer, more than 6 mm.....
.....*Rhinolophus lepidus lepidus*

29. *Rhinolophus affinis himalayanus* Andersen

1905. *Rhinolophus affinis himalayanus* Andersen, *Proc. zool. Soc. Lond.*, 1905(2) : 103 (Mussoorie, Kumaon, North-Western India = Mussoorie, Dehra Dun district, Uttar Pradesh, India).

Common name : Intermediate Horse-shoe Bat (Eng.).

Material examined : Darjiling district : 1 ♂, 1 ♀, Pashok, coll. N.A. Baptista, i. & viii.1915.

Measurements : External : 1 ♂ : Fa 50.0; E 17.7; Tb 24.1; F & Cl 11.6. 1 ♀ : Fa 48.8; E 16.6; Tb 22.4; F & Cl 10.9. cranial : 1 ♀ : *l* 21.7; *mtr* 8.2; *c*¹-*c*¹ 6.2; *iw* 2.7; *cw* 9.7; *zw* 10.1; *m*³-*m*³ 8.1; *ml* 14.5.

Diagnosis : A medium-sized (forearm around 50.0 mm) horse-shoe bat with moderate ears (around 17 mm) and nose-leaf; frontal sac absent; lower lip with three prominent mental grooves.

Distribution : India : West Bengal : Darjiling district, Jalpaiguri district (Ellerman and Morrison-Scott 1951); Meghalaya (Hinton & Lindsay 1926a) ; Uttar Pradesh. Sri Lanka (Blyth 1863, Sinha 1973), Nepal, Bhutan (Saha 1980), Bangladesh (Dobson 1876), northern Burma and China.

Remarks : The Intermediate Horse-shoe Bat occurs only in the northern area of West Bengal.

30. *Rhinolophus rouxi rouxi* Temminck

1835. *Rhinolophus rouxi* Temminck, *Monogr. Mammal.*, 2 : 30 b (Pondicherry and Calcutta, India).

Common name : Rufous Horse-shoe Bat (Eng.).

Material examined : Darjiling district : 1 ♂, Kumani, coll. R. K. Ghose, 20.iii.1985; 2 ♂, Nimbong (c 1,372 m), coll. N. A. Baptista, 12.vi.1916, 9.vii.1916. Puruliya district : 1 ♂, Ajodhya Hills, coll. A. K. Mukherjee, 23.ii.1982.

Measurements : External : 4 ♂ : Fa 38.8-54.0 (46.6); E 13.9-20.0 (18.0); Tb(2) 16.6, 24.0; F & Cl(2) 6.6, 10.3. Cranial : 2 ♂ : l 21.5, 22.7; mtr 8.6, 8.8; c¹-c¹ 6.0, 6.2; iw 2.4, 2.5; cw 10.0, 10.2; zw 11.2, 11.5; m³-m³ 8.6, 8.7; ml 14.7, 15.0.

Diagnosis : Smaller than *Rhinolophus affinis himalayanus*, on average; margins of horizontal base of sella straight; colour varies from brown to orange-yellow.

Distribution : India : West Bengal : Calcutta district, Darjiling district, Puruliya district (Das 1986b); Andhra Pradesh (Sinha 1973); Arunachal Pradesh (Lal 1983); Goa (Agrawal 1973); Himachal Pradesh (Das 1986b); Karnataka; Kerala (Jerdon 1867); Maharashtra (Brosset 1962b); Orissa (Das & Agrawal 1973); Madhya Pradesh (Das 1986b); Pondicherry; Tamil Nadu; Uttar Pradesh (Hutton 1872). Nepal, Sri Lanka and Burma (Lal 1981).

Remarks : Lal (1983) reported a specimen of *Rhinolophus rouxi sinicus* Andersen from Arunachal Pradesh. The specimen is, in fact, an immature one of the nominate subspecies.

31. *Rhinolophus pusillus blythi* Anderson

1918. *Rhinolophus blythi* Andersen, *Ann. Mag. nat. Hist.*, 2 : 376, 377 [Almora, 5,500', Kumaon, Northern India = Almora (c 1,676 m), Almora district, Uttar Pradesh, India].

Common name : Least Horse-shoe Bat (Eng.).

Material examined : Darjiling district : 1 unsexed, Darjiling, don. W. T. Blanford, 1857; 2 ♂, 5 ♀, Nimbong (c 1,372 m), coll. N.A. Baptista, 1-14.vii.1916; 1 ♀, Pashok (c 1,067 m), coll. --, --, vii - viii.1915; 2 ♂, Sangser (c 1,097 m), coll. N.A. Baptista, 27, 31.viii.1916.

Measurements : External : 2 ♂ : Fa 36.9, 37.5; E 16.0, 17.0; Tb 13.5, 14.0; F & Cl 6.0, 7.0. 2 ♀ : Fa 36.8, 39.0; E 17.0(2); Tb 14.5, 15.6; F & Cl 7.0 (2). Cranial : 2 ♂ : l 15.0(2); mtr (l) 5.5; c¹-c¹ 3.3, 3.5; cw 6.2, 6.5; zw 7.5, 7.6; m³-m³ 6.0, 6.5; ml 9.5, 9.6. 2 ♀ : l 15.2, 15.3; mtr 5.7, 5.8; zw (1) 13.8; ml(1) 9.7.

Diagnosis : Small (forearm between 35.0 mm and 40.0 mm) horse-shoe bat with horizontal base of sella arched and equal in width to vertical part; connecting process triangular in lateral view; tibia shorter (less than 16 mm).

Distribution : India : West Bengal : Darjiling district; Assam (Hinton & Lindsay 1926a); Meghalaya (Sinha 1973). Nepal (Sinha 1973), Burma, Thailand and southern China, including Tibet (Cai & Zhang 1981).

Remarks : The specimen from Darjiling is the basis for Blyth's (1863) *Rhinolophus brevitarisus* (nomen nudum) which was placed under the synonymy of *Rhinolophus ferrumequinum tragatus* by Ellerman & Morrison-Scott (1951). The same authors considered *Rhinolophus blythi* Andersen and *Rhinolophus blythi szechwanus* Andersen as two distinct subspecies of *Rhinolophus cornutus* Temminck. Hill & Yoshiyuki (1980) have treated *Rhinolophus pusillus* Temminck as a species distinct from the Japanese species *Rhinolophus cornutus*. Sinha (1973) have synonymised *szechwanus* with *blythi*. However, authors like Lekagul & McNeely (1977) and Hill & Yoshiyuki (1980) still

prefer to maintain *szechwanus* as a separate subspecies. For specific limits, Hill & Yoshiyuki (*loc. cit.*) has been followed, while Sinha's (*loc. cit.*) view on subspecies recognition has been accepted here.

32. *Rhinolophus lepidus lepidus* Blyth

1844. *Rhinolophus lepidus* Blyth, *J. Asiat. Soc. Beng.*, 13 : 486 (Vicinity of Calcutta, West Bengal, India, according to Das 1986b).

Common name : Little Indian Horse-shoe Bat (Eng.).

Material examined : Birbhum district : 1 ♀, Chandrapur, coll. A. K. Podder, 11.xii.1985. Medinipur district : 1 ♂, 1 ♀, Salbani, coll. C. A. Crump, — South 24-Parganas district : 1 ♂, Falta, coll. G. Topal, 12.i.1980.

Measurements : External : 1 ♂ : Fa 40.2; E 16.0; Tb 17.8; F & Cl 9.0. 1 ♀ : Fa 40.1; E 15.0; Tb 17.2; F & Cl 9.2. Cranial : 1 ♀ : l 17.3; mtr 6.5; c¹-c¹ 4.6; iw 2.7; cw 8.4; zw 8.7; m³-m³ 7.0; ml 11.5.

Diagnosis : Very much similar to *Rhinolophus pusillus blythi*, but slightly larger (forearm around 40.0 mm, on average) with relatively longer ears and larger nose-leaf.

Distribution : India : West Bengal : Birbhum district, Calcutta district, Darjiling district (Wroughton 1917b), Medinipur district (Wroughton 1915), North 24-Parganas district (Blyth 1863), South 24-Parganas district; Andhra Pradesh (Das 1986b); Bihar (Blyth 1963, Wroughton 1915); Delhi (Brosset 1962c); Karnataka (Wroughton 1913); Kerala (Blanford 1891); Madhya Pradesh; Maharashtra (Wroughton 1916a); Meghalaya (Hinton & Lindsay (1926a); Orissa (Das & Agrawal 1973); Rajasthan (Prakash 1956); Tamil Nadu (Das 1986b); Uttar Pradesh (Wroughton 1914). Nepal (Mitchel 1980) and Thailand (Lekagul & McNeely 1977).

Remarks : In recent years, there has been much discussion on the limits and different subspecies of *Rhinolophus rouxi*. Das (1986b) has summarised relevant details on these aspects.

33. *Rhinolophus trifolius trifolius* Temminck

1834. *Rhinolophus trifolius* Temminck, *Tijdschr. Natuure Gesch.*, 1 : 24, pl. I, fig. 6 (Java).

Common name : Trefoil Horse-shoe Bat (Eng.).

Material examined : Nonc.

Measurements : Nil.

Diagnosis : Medium-sized (forearm around 50.0 mm) horse-shoe bat with broad horse-shoe and trifoliate sella; lower lip with one mental groove; frontal sac absent; tip of tail free from inter-femoral membrane.

Distribution : India : West Bengal : Darjiling district : Assam (Anderson 1881). Burma, Thailand, Malay Peninsula, Sumatra, Java, Borneo, and adjacent islands.

Remarks : The Trefoil Horse-shoe Bat is quite rare in West Bengal, and had been recorded from Darjiling district only.

34. *Rhinolophus luctus perniger* Hodgson

1843. *Rhinolophus perniger* Hodgson, *J. Asiat. Soc. Beng.*, 12 : 414 (Nepal).

Common name : Great Eastern Horse-shoe Bat (Eng.).

Material examined : 1 ♂ (material in the Darjiling Government College), 1 ♀, 1 unsexed, 1 foetus, Darjiling, coll. J. Gammie, W.S. Sherwill, ---, 1852, 1872, ---; 1 ♂, Nimbong (c 1,372 m), coll. N. A. Baptista, 23.v.1922.

Measurements : External : 1 ♂ : Fa 67.5; E 40.0; Tb 33.0; F & Cl 17.0. 1 ♀ : Fa 71.8; E 34.2; Tb 37.6; F & Cl 15.8. Cranial : 1 ♂ : l 30.8; mtr 12.0; c¹-c¹ 8.3; cw 11.8; zw 15.5; m³-m³ 10.8; ml 21.5. 1 ♀ : l 30.5; mtr 11.8; c¹-c¹ 8.1; iw 3.2; cw 12.5; zw 14.7; m³-m³ 10.6; ml 22.0.

Diagnosis : Largest (forearm upto 78.0 mm) horse-shoe bat of West Bengal; essentially similar to *Rhinolophus trifolius trifolius* in respect of nose-leaf, mental groove, etc., but much larger; frontal sac present, smaller in females; fur dense and woolly, usually blackish.

Distribution : India : West Bengal : Darjiling district (Blyth 1863); Assam (Sinha 1973); Madhya Pradesh (Sinha 1973); Meghalaya (Dobson 1874b); Nagaland (Sinha 1973); Sikkim; Uttar Pradesh. Nepal, Burma, and possibly Thailand (Lekagul & McNeely 1977).

Remarks : Like *Rhinolophus trifolius trifolius*, the present bat has been obtained from West Bengal only in the Darjiling district. However, this bat is not uncommon in that district, in suitable habitats.

35. *Rhinolophus pearsoni* Horsfield

1851. *Rhinolophus pearsoni* Horsfield, *Cat. Mammal. Mus. E. India Co.* : 33 (Darjiling, Darjiling district, West Bengal, India).

Common name : Pearson's Hores-shoe Bat (Eng.)

Material examined : Darjiling district : 1 ♀, Darjiling, coll. G. King, 6.iii.1878; 1 ♂, Mahanadi (c 355 m), coll. P. K. Das, 25.iii.1980; 2 ♂, Pashok (c 1,067 m), coll. --, 7.ix.1920.

Measurements : External : 2 ♂ : Fa 54.0, 54.6; E 23.5, 25.5; Tb 26.2, 28.0; F & Cl 11.4, 12.2. 1 ♀ : Fa 53.1; E 24.1; Tb 26.7; F & Cl 11.5. Cranial : 1 ♂ : l 23.0; mtr 9.9; c¹-c¹ 6.1; iw 2.8; cw 9.3; zw 11.8; m³-m³ 8.6.

Diagnosis : A medium-sized (forearm 50.0-55.0 mm) horse-shoe bat, with broad horse-shoe which completely covers the muzzle; sella not trifoliate; base of sella broader than the vertical part; lower lip with a single mental groove.

Distribution : India : West Bengal : Darjiling district; Meghalaya (Blanford 1891, Hinton & Lindsay 1926a); Sikkim (Hill 1987); Uttar Pradesh. Nepal (Hinton & Fry 1923), Bhutan (Saha 1980), Burma (Hill 1987), southern China (Corbet & Hill 1986), including Tibet (Cai & Zhang 1981), Thailand (Lekagul & McNeely 1977), Vietnam, and Malaya (Honacki et al. 1982).

Remarks : Hill (1987) considers the validity of *chinensis* Andersen as a subspecies of *Rhinolophus pearsoni* doubtful due to overlapping measurements of *pearsoni* and *chinensis*.

Subfamily HIPPOSIDERINAE

Usually the anterior nose-leaf does not have a median notch (except *Coelops*). Some species have lateral supplementary leaflets ventro-lateral to the anterior nose-leaf. The central portion of the nose-leaf or the intermediate nose-leaf is a cushion-like structure. The posterior nose-leaf is low and rounded, and usually divided into cells by vertical septa. No distinct antitragus present.

In West Bengal, two genera of the subfamily Hipposiderinae, viz., *Hipposideros* and *Coelops* are found.

Key to the genera, species and subspecies of the subfamily Hipposiderinae

1. Anterior nose-leaf not divided in the middle.....2
 Anterior nose-leaf divided into distinct lappets..... *Coelops frithi frithi*
2. Size large (forearm above 82.0 mm).....3
 Size small (forearm below 42.5 mm).....4
3. Posterior nose-leaf narrower than anterior nose-leaf; a large frontal sac present.....
 *Hipposideros armiger armiger*
 Posterior nose-leaf not narrower than anterior nose-leaf; frontal sac absent .. *Hipposideros lankadiva*
4. Posterior projecting portion of vomer blade-like *Hipposideros fulvus fulvus*
 Posterior projecting portion of vomer thickened..... *Hipposideros pomona gentilis*

Genus *Hipposideros* Gray, 183136. *Hipposideros lankadiva* Kelaart

1850. *Hipposideros lankadiva* Kelaart, *J. Ceylon Brch R. Asiat. Soc.*, 2 : 216 (Kandy, Ceylon = Sri Lanka).

Common name: Sri Lanka Gigantic Leaf-nosed Bat or Kelaart's Leaf-nosed Bat (Eng.).

Material examined: Darjiling district : 1 ♀, Darjiling, coll. J. Anderson, 1867. Jalpaiguri district : 5 ♂, 1 ♀, Khuntimari, coll. S. Chakraborty, S.S. Saha, 19. vii. 1975, 8, 9. ix. 1983.

Measurements: External : 3 ♂ : Fa 86.6-93.4(90.8); 18.0-26.7 (21.0); Tb 35.0-36.7(35.8); F & Cl (2) 15.8, 16.0(15.9). 1 ♀ Fa 87.0; E 18.0; Tb 32.2; F & Cl 16.1. Cranial : 2 ♂ : l 34.7, 35.3; mtr 14.3, 14.5; c¹-c¹ 8.7, 8.9; iw 3.5(2); cw 15.2, 15.7; zw 19.9, 20.6; m³-m³ 12.6, 13.4; ml 24.7, 25.4, 2 ♀ : l 33.0, 33.1; cr 8.2, 8.3; mtr 13.8, 13.3; c¹-c¹ 7.0, 9.8; iw 3.5, 3.9; cw 14.0, 15.0; zw(1) 19.8; m³-m³ 13.4, 12.8; ml (1) 24.5.

Diagnosis : Ears large and acutely pointed, their posterior margins slightly concave behind tip; nose-leaf has four lateral supplementary leaflets, the fourth much reduced, often absent; posterior nose-leaf high and broad, its upper margin semicircular and supported by three septa enclosing small cells.

Distribution : India : West Bengal : Darjiling district, Jalpaiguri district; Karnataka (Wroughton 1913); Madhya Pradesh (Wroughton & Ryley 1913); Maharashtra (Sapkal & Bhandarkar 1984); Meghalaya (Kemp 1924); Orissa (Das *et al.* in press). Sri Lanka.

Remarks : Ellerman & Morrison-Scott (1951) recognise three subspecies of *Hipposideros lankadiva* from the Indian mainland, viz., *H.l. indus*, *H. l. mixtus* and *H. l. unitus*. Brosset (1962b) does not consider the variation in colour in the present species as zoogeographically related. According to this author, this species is monotypic. Hill (1963) in his review of the genus *Hipposideros*, however, has maintained all the mainland subspecies of *lankadiva*, as mentioned above. Under the circumstances, further study of fresh material from the entire range of distribution of the species is very much necessary to reach to a definite conclusion.

37. *Hipposideros fulvus fulvus* Gray

1838. *Hipposideros fulvus* Gray, *Mag. Zool. Bot.*, 2 : 492 (Dharwar, India = Dharwad, Dharwad district, Karnataka, India).

Common name : Fulvous Leaf-nosed Bat (Eng.).

Material examined : Darjiling district : 1 ♂, 1 ♀, Tongsong, coll. --, -- (Bombay Natural History Society's Mammal Survey Collection). Medinipur district : 1 ♂, 3 ♀, Laljal, coll. V.C. Agrawal, 21.i.1985.

Measurements : External : 1 ♂ : Fa 40.2; E 17.7; Tb 17.8; E & Cl 7.4. 3 ♀ : Fa 40.0-41.8(40.9); E 17.7-19.0 (18.4); Tb 18.2-19.5 (18.9); F & Cl 7.7-8.2(8.0). Cranial : 1 ♂ : l 18.2; mtr 6.4; c^1-c^1 3.4; iw 2.6; zw 9.0; m^3-m^3 6.1; ml 11.0. 3 ♀ : l 18.1-18.3(18.1); mtr 6.1-6.3(6.2); c^1-c^1 3.4-3.6(3.4); iw 2.5-2.6(2.5); zw 9.0-9.5(9.3); m^3-m^3 (2) 6.2, 6.3; ml 10.6-10.8(10.7).

Diagnosis : Ears very large, rounded, longer than head, upper third of posterior margins very slightly flattened; internarial septum narrow, uninflated, broadened at base, narrowed between nostrils; narial margins of anterior nose-leaf not expanded.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b), Jalpaiguri district (Wroughton 1917a); Assam (Dobson 1876); Bihar (Wroughton 1915); Karnataka (Dobson 1876, Wroughton 1912b); Kerala (Anderson 1881); Madhya Pradesh (Dobson 1876, Wroughton & Ryley 1913); Maharashtra; Meghalaya (Dobson 1874b); Sikkim (Wroughton 1916b); Tamil Nadu (Dobson 1878); Uttar Pradesh (Anderson 1881). Nepal (Hinton & Fry 1923), Sri Lanka, Bangladesh (Dobson 1876), Burma, Thailand and Vietnam (Hill 1963).

Remarks : The distributional range of *Hipposideros fulvus fulvus*, as detailed above, is based primarily on Hill (1963). Hill et al. (1986) have, however, stated, 'it seems likely that *H. fulvus* is limited to Afghanistan, Pakistan, India except perhaps the northeast, and Sri Lanka'. A. detailed examination of the Indian material is, therefore, needed to support this view or otherwise.

38. *Hipposideros pomona gentilis* Andersen

1918. *Hipposideros gentilis* Andersen, *Ann. Mag. nat. Hist.*, 2 : 380, 381 (Thayetnyo, Burma).

Common name : None

Material examined : Darjiling district : 7 ♂, 12 ♀, 2 unsexed, Pashok (c 1,067 m), coll. N. A. Baptista, C. A. Crump, vi-viii.1915.

Measurements : External : 3 ♂ : Fa 40.0-41.3(40.8); E 22.0-25.0(23.0); Tb 18.0-19.3((18.6); F & Cl 6.9-7.0(7.0). 3 ♀ : Fa 40.2-42.3(41.4); E 17.8-21.0(19.3); Tb 18.5-19.6(19.1); F & Cl 7.3-8.5(7.8). Cranial : 3 ♂ : l(2) 17.7,17.9; mtr 6.0-6.3(6.1); c^1-c^1 3.1-3.6(3.3) ; iw 2.1-2.8(2.5); cw(2) 8.3, 9.0; zw (2) 8.7, 8.8; m^3-m^3 6.0-6.5(6.2); ml 10.1-10.9(10.4). 3 ♀ : l 17.6-17.7(17.6); mtr 6.2(3); c^1-c^1 2.5-3.2(2.9); iw 2.5-2.8(2.6); cw 8.2-8.5(8.3); zw (2) 8.2, 8.6; m^3-m^3 5.8-6.1(5.9); ml 10.1-10.3(10.2).

Diagnosis : Very much similar to *Hipposideros fulvus fulvus*; ears large and rounded, anterior margins strongly convex, posterior margins lacking any concavity just behind the tip; nose-leaf closely resembles that of *Hipposideros fulvus fulvus*, lacks lateral supplementary leaflets; internarial septum more or less triangular; posterior nose-leaf supported by three septa.

Distribution : India : West Bengal : Darjiling district; Arunachal Pradesh; Assam; Meghalaya; Sikkim. Burma, peninsular Malaysia, Thailand and Vietnam (Hill et al. 1986).

Remarks : The specimens listed above from Darjiling district were originally reported as *Hipposideros fulvus* (Wroughton 1916b, 1916c). Following Hill et al. (1986), these have been identified as *Hipposideros pomona gentilis*.

39. *Hipposideros armiger armiger* (Hodgson)

1835. *Rhinolophus armiger* Hodgson, *J. Asiat. Soc. Beng.*, 4 : 699 (Nepal).

Common name : Great Himalayan Leaf-nosed Bat (Eng.).

Material examined : Darjiling district : 1 ♂, Darjiling, coll. W.S. Sherwill, 1852; 1 ♀, Goomti (c 1,356 m), coll. P. K. Das, 25.v.1980; 1 ♂, 1 ♀, Gopaldhara (c 1,434 m), coll. N.A. Baptista, 9.v.1916; 1 ♂, Lopchu (c 800 m), coll. P. K. Das, 2.vi.1980; 2 ♂, 3 ♀, Mahanadi (c 1,350 m), coll. P. K. Das, 26, 27.v.1980; 1 ♀ Nimbong (c 1,462 m), coll. N. A. Baptista, 22.vi.1916; 7 ♂, 8 ♀, Pashok (c 610-1,067 m), coll. N. A. Baptista, 4.viii.1915, 5.ix.1915, 7.x.1915, 8, 10, 24, 25.vii.1916; 3 ♂, 1 ♀, Tongsong (c 970 m), coll. N. A. Baptista, 9, 12.vi.1916.

Measurements : External : 5 ♂ : Fa(4) 82.4-96.5(90.1); E 32.0-35.2(33.7); Tb 40.0-43.0(40.9); F & Cl 16.0-19.3(17.5). 5 ♀ : Fa 88.7-91.2(89.6); E 30.0-32.0(30.8); Tb 36.3-39.2(38.0); F & Cl 14.8-16.0(15.5). Cranial : 9 ♂ : I(7) 26.3-27.3(26.8); mtr 12.0-12.6(12.2); c¹-c¹ 6.5-8.3(7.5); iw 3.9-4.7(4.2); zw(7) 16.9-18.6(17.8); ml(5) 20.9-21.9(21.4). 5 ♀ : I 26.3-26.9(26.5); mtr(4) 12.0-12.1(12.1); c¹-c¹(3) 5.7-6.7(6.3); iw 4.0-4.5(4.3); zw(3) 17.5-17.8(17.6); ml(2) 20.6, 21.5.

Diagnosis : Largest (forearm may reach 96.0 mm or even above) leaf-nosed bat of West Bengal; ears large, broad and acutely pointed, posterior margins concave behind the tip, slight thickening at antitragal region; nose-leaf with four supplementary leaflets, the fourth rudimentary; the intermediate nose-leaf slightly inflated with a prominent median eminence; upper edge of posterior nose-leaf flattened, thickened and trilobate, and supported by one prominent median and two less evident lateral septa; frontal sac prominent in males, small in females.

Distribution : India : West Bengal : Darjiling district (Blyth 1863); Assam (Hinton & Lindsay 1926a); Meghalaya (Dobson 1874b); Sikkim (Blanford 1891); Uttar Pradesh. Nepal, Burma, southeastern China (Sichuan, Yunan, Fujian, etc.) Hong Kong (Phillips & Wilson 1968), Vietnam, Thailand (Lekagul & McNeely 1977), Malay Peninsula, and nearby islands (Anderson 1881).

Remarks : Ellerman & Morrison-Scott (1951) recognised a number of subspecies of *Hipposideros armiger* of which Hill (1963) has synonymised *swinhoii* Peters and *debilis* Andersen with the nominate subspecies. The distribution of *H. a. armiger*, as given above, is based on Hill's (*loc. cit.*) concept.

Genus *Coelops* Blyth, 1848

One species and subspecies of the genus *Coelops* had been recorded from West Bengal.

40. *Coelops frithii frithii* Blyth

1848. *Coelops frithii*, *J. Asiat. Soc. Beng.*, 17 : 251 (Sundarbans, Bengal, India = South 24-Parganas district, West Bengal, India).

Common name : Tailless Leaf-nosed Bat (Eng.).

Material examined : None.

Measurements : Nil.

Diagnosis : Ears funnel-shaped, whole surface hairy; supplementary lappets of anterior nose-leaf come forward beyond end of muzzle; face and sides of nose-leaf covered with long hairs; thumb included in wing almost to base of claw; wing from tarsus close to ankle; colour of fur shining brown above and below, bases of hairs much paler.

Distribution : India : West Bengal : Darjiling district (Blanford 1891), South 24-Parganas district; Meghalaya (Hinton & Lindsay 1926a). Burma (Hill 1962) and Thailand (Lekagul & McNeely 1977).

Remarks : The Tailless Leaf-nosed Bat is one of the rarest bats in West Bengal. It has been collected only on two occasions from this state, during the last century.

Family MOLOSSIDAE

Family Molossidae is represented in West Bengal by a single genus, *Tadarida*.

Genus *Tadarida* Rafinesque, 1814

Key to the species and subspecies of the genus *Tadarida*

1. Size larger (forearm above 57.0 mm)..... *Tadarida teniotis insignis*
 Size smaller (forearm below 54.0 mm)2
2. Inner margin of ears have a common point of origin on the forehead; tragus broadened.....
 *Tadarida aegyptiaca thomasi*
 Ears joined on the muzzle by a narrow band of skin; tragus small and quadrate.....
 *Tadarida plicata plicata*

41. *Tadarida teniotis insignis* (Blyth)

1861. *Nyctinomus insignis* Blyth, *J. Asiat. Soc. Beng.*, 30 : 90 [Amoy, Fukien (= Fujian), China].

Common name : None.

Material examined : Darjiling district : 1 ♂, Darjiling, coll. —, 1970.

Measurements : External : 1 ♂ : Fa 64.7; E 28.0; Tb 19.9; F & Cl 11.2. Cranial : 1 ♂; *l* 24.3; *c*¹-*c*¹ 5.5; *cw* 12.4; *m*³-*m*³ 10.2.

Diagnosis : Ears united at bases of inner margins at a short distance from tip of nose; tragus broad, rounded above, half concealed by large antitragus; upper lip with well-marked vertical wrinkles; males with well-developed gular sac; wing from lower third of tibia.

Distribution : India : West Bengal : Darjiling district (Hill 1964b). Eastern Asia from eastern Himalaya north to China, Ussuri region, North Korea and Japan (Corbet 1980).

Remarks : Ellerman & Morrison-Scott (1951) have recognised two subspecies for the eastern Asian populations of *Tadarida teniotis*. Corbet (*loc. cit.*), however, has considered all the described forms of this species from eastern Asia as synonymous with *insignis*.

42. *Tadarida aegyptiaca thomasi* Wroughton

1919. *Tadarida thomasi* Wroughton, *J. Bombay nat. Hist. Soc.*, 26 : 732 (Bhuj, Cutch = Bhuj, Kachchh district, Gujarat, India).

Common name : None.

Material examined : Calcutta district : 1 ♂, Calcutta, --, -- (Holotype of *Nyctinomus tragatus* Dobson).

Measurements : External : 1 ♂ : Fa 52.0; Tl 46.0; E 20.0. Cranial : 1 ♂ : *mtr* 8.0; *c*¹-*c*¹ 5.1; *iw* 4.8; *cw* 10.4; *m*³-*m*³ 8.8.

Diagnosis : Ears and tragus very much similar to those of *Tadarida teniotis insignis*, but not arising so near the extremity of muzzle as in that form; wing from ankles; calcaneum terminating in a lobule.

Distribution : India : West Bengal : Calcutta district (Dobson 1874a); Gujarat; Karnataka (Dobson 1878, Wroughton 1912b); Madhya Pradesh (Dobson 1876); Maharashtra (Wroughton 1919); Rajasthan (Dobson 1878). Sri Lanka (Phillips 1935).

Remarks : Ellerman & Morrison-Scott (1951) have treated *Tadarida tragata* (Dobson) as a species distinct from *Tadarida aegyptiaca*. Chaturvedi (1964) has, however, shown that *tragata* should be treated as a synonym of *aegyptiaca*. Ellerman & Morrison-Scott (1951) have recognised two subspecies of *Tadarida aegyptiaca* in India, viz., *T. ae. thomasi* Wroughton and *T. ae. gossei* Wroughton. Sinha (1970), on the other hand, has synonymised *gossei* with *thomasi*. The views of Chaturvedi (*loc. cit.*) and Sinha (*loc. cit.*) have been accepted here to compile the distributional range of *Tadarida aegyptiaca thomasi*.

43. *Tadarida plicata plicata* (Buchanan)

1800. *Vespertilio plicatus* Buchanan, *Trans. Linn. Soc. Lond.*, 5 : 261, pl. 13 (Bengal = West Bengal, India).

Common name : Wrinkle-lipped Bat (Eng.).

Material examined : Calcutta district : 3 ♂, 3 ♀, Calcutta, coll. J. Anderson, J. Caunter, H. Sharma, 28.vii.1909, 6.xii.1966, --.

Measurements : External : 1 ♂ : Fa 49.8; E 18.2; Tb 17.0; F & Cl 10.4. 3 ♀ : Fa 44.7–48.3 (46.3); E 18.0–19.2(18.5); Tb 16.0–18.0(16.8); F & Cl 9.1–12.0 (10.5). Cranial : 1 ♂ : l 19.9; mtr 7.6; c^1-c^1 4.8; cw 9.8; zw 11.9; m^3-m^3 9.6; ml 14.0. 3 ♀ : l 19.4–20.0 (19.6); mtr 7.2–7.7 (7.4); c^1-c^1 4.3–5.5 (4.9); cw 9.3–11.2 (10.0); zw 11.5–12.8 (12.3); m^3-m^3 9.0–10.2 (9.2); ml 13.0–14.4 (13.5).

Diagnosis : Muzzle broad and thick; upper lip overhanging the lower, marked by pronounced vertical wrinkles; ears large, thick and rounded, joined in front of orbits by a band of skin; antitragus well-defined; lower part of legs free from wing which is connected with ankle by a raphae.

Distribution : India : West Bengal : Calcutta district (Blyth 1863); Madhya Pradesh (Kashyap 1982); Meghalaya (Blyth 1852a); Punjab (Blyth 1863); Rajasthan; Tamil Nadu (Jerdon 1867); Uttar Pradesh (Dobson 1876). Tibet (Hill 1961), southern China (Honacki *et al.* 1982), including Hainan, Hong Kong (Romer 1960), Burma, Thailand (Hill & Thonglongya 1972), Vietnam (Honacki *et al.* 1982), Cambodia (Yoshiyuki 1966), Malay Peninsula, Singapore (Dobson 1878), Sumatra and Borneo.

Remarks : The Wrinkle-lipped Bat is tolerably common about Calcutta (Jerdon 1867).

Family VESPERTILIONIDAE

Bats of the family Vespertilionidae have tragus but no nose-leaf; the tail is approximately as long as the forearm and is enclosed in the interfemoral membrane from base to the tip or penultimate joint.

Four subfamilies of the family Vespertilionidae have been reported from West Bengal.

Key to subfamilies of the family VESPERTILIONIDAE

1. Nostrils laterally elongated and tubular.....MURININAE
- Nostrils not elongated.....2
2. Ears funnel-shaped KERIVOULINAE
- Ears not funnel-shaped3

- 3. Second phalanx of third finger much elongated, nearly three times as long as first..... MINIOPTERINAE
- Second phalanx of third finger not elongated VESPERTILIONINAE

Subfamily VESPERTILIONINAE

Key to the genera of the subfamily VESPERTILIONINAE

- 1. Cheek-teeth six on each side of upper and lower jaw *Myotis*
- Cheek-teeth less than six on each side of upper and lower jaw..... 2
- 2. Upper premolars 2-2..... 3
- Upper premolars 1-1 7
- 3. Lower premolars 3-3..... *Plecotus*
- Lower premolars 2-2..... 4
- 4. Outer upper incisor not extending beyond cingulum of inner *Scotozous*
- Outer upper incisor extending distinctly beyond cingulum of inner 5
- 5. Fifth finger only a little longer than metacarpal of fourth and third *Nyctalus*
- Fifth finger longer than metacarpal and first phalanx of fourth and third 6
- 6. Ears joined..... *Barbastella*
- Ears separate *Pipistrellus*
- 7. Upper incisors 2-2..... 8
- Upper incisors 1-1..... 10
- 8. Skull noticeably flattened; soles of feet expanded into fleshy pads..... *Tylonycteris*
- Skull not noticeably flattened; soles of feet normal..... 9
- 9. Outer upper incisor large, crowded inward between inner incisor and canine *Hesperoptenus*
- Outer upper incisor small, on outer side of inner incisor and separated from canine *Eptesicus*
- 10. First and second upper molars with 'W' pattern distorted or nearly absent *Scotophilus*
- First and second upper molars with 'W' pattern not distorted..... 11
- 11. Larger (forearm above 55.0 mm)..... *Scotomanes*
- Smaller (forearm below 40.0 mm)..... *Scotoecus*

Genus *Myotis* Kaup, 1829

Key to the species and subspecies of the genus *Myotis*

- 1. Forearm above 40.0 mm 2
- Forearm below 40.0 mm..... 4

2. Forearm below 50.0 mm.....*Myotis annectans*
Forearm may reach 50.0 mm or above.....3
3. Colour orange above and below*Myotis formosus formosus*
Colour dark brown above and below*Myotis sicarius*
4. Brownish above, silvery below.....*Myotis mystacinus nipalensis*
Dark brown above, paler (buff) below*Myotis siligorensis siligorensis*

44. *Myotis mystacinus nipalensis* (Dobson)

1871. *Vespertilio nipalensis* Dobson, *Proc. Asiat. Soc. Beng.* : 214 (Kathmandu, Nepal).

Common name : Nepal Bat (Eng.).

Material examined : Darjiling district : 1 unsexed, Darjiling, coll. J. H. Elwes, 1871. Jalpaiguri district : 2 ♂, 2 ♀, Hasimara (c 183 m), coll. N. A. Baptista, 17,19.iii.1916.

Measurements : External : 1 ♂ : Fa 34.0; E 12.0; Tb 13.0; F & Cl 9.0. 1 ♀ : Fa 35.5; E 13.0; Tb 12.4; F & Cl 8.0. Cranial : 2 ♂ : *l* 13.6, 14.0; *mtr* 5.0, 5.2; *c*¹-*c*¹ 3.3, 3.7; *iw* 3.5(2); *cw* 6.8, 7.0; *m*³-*m*³ 5.4, 5.5; *ml*(1) 9.5. 2 ♀ : *l* 12.9, 13.5; *mtr* 5.1(2); *c*¹-*c*¹ 3.3, 3.5; *iw* 3.4, 3.5; *cw* 6.5, 6.8; *zw*(1) 8.6; *m*³-*m*³ 5.6, 5.7.

Diagnosis : A small-sized *Myotis* with ears moderately long, narrow and pointed, outer margin below tip deeply emarginated, lower portion of outer margin slightly convex; tragus long, narrow and pointed with a lobule at base; dorsal hair blackish brown with shiny, paler ochraceous tip, ventral colour whitish, individual hairs blackish at base, tipped with silvery white or creamy white; wing from base of toes.

Distribution : India : West Bengal : Darjiling district, Jalpaiguri district; Himachal Pradesh; Jammu & Kashmir. Nepal.

Remarks : Ellerman & Morrison-Scott (1951) have treated *muricola* (Gray) and *nipalensis* (Dobson) as subspecies of *mystacinus*. Corbet (1980) has shown that *muricola* is not *mystacinus*. Hill (1983) has concluded that the specimens reported from Hasimara by Wroughton (1917a) and from Himachal Pradesh by Lindsay (1926c) as *muricola*, and also some specimens from Kashmir are to be regarded as *Myotis mystacinus nipalensis*.

45. *Myotis annectans* (Dobson)

1871. *Pipistrellus annectans* Dobson, *Proc. Asiat. Soc. Beng.* : 213 (Samoogooting, Nagaland, India).

Common name : Intermediate Bat or Hairy-faced Bat (Eng.)

Material examined : None.

Measurements : Nil.

Diagnosis : Face densely hairy; pelage long and woolly; ears pointed with rounded tips, outer margin deeply hollowed out below tip, then convex, again slightly concave, forming a small antitragal lobe; tragus long, subacutely pointed with rounded tip; no postcalcarial lobe; extreme tip of tail free; dorsal colour rich dark chestnut brown, individual hairs dark brown at base, paler brown at tip; ventral surface greyish, hairs dark brown at base, heavily tipped with greyish white; hair tips on belly ochraceous or orange, producing an orange yellow median patch.

Distribution : India : West Bengal : Darjiling district (Thomas 1920, Topal 1970); Nagaland. Thailand (Hill & Thonglongya 1972).

Remarks : Topal (1970) has shown that *Pipistrellus annectans* Dobson is nothing but an abnormal specimen of *Myotis* and that *Myotis primula* Thomas is synonymous with *Myotis annectans*.

46. *Myotis siligorensis siligorensis* (Horsfield)

1855. *Vespertilio siligorensis* Horsfield, *Ann. Mag. nat. Hist.*, 16 : 102 (Siligori, Nepal = Siliguri, Darjiling district, West Bengal, India)

Common name : None.

Material examined : None.

Measurements : Nil.

Diagnosis : Smallest *Myotis* of West Bengal; similar in many ways to *Myotis mystacinus nipalensis* but smaller and differs in coloration; upper parts dark brown, underparts paler, tinged with cinnamon, or buff; ears long with a distinct antitragal lobe; tragus long, narrow and pointed, and about half the length of ears; wing from base of toes; tip of tail free; lower canine about equal in height to posterior lower premolar.

Distribution : India : West Bengal : Darjiling district; Meghalaya (Hinton & Lindsay 1926a). Nepal (Hinton & Fry 1923).

Remarks : Opinions differ as to the exact location of 'Siligori' the type-locality of *Vespertilio siligorensis*. Most authors, including Tate (1941), think that this is in Nepal, while others, such as Wroughton (1918a) consider the place as a part of Darjiling. Hodgson (1847a), however, states, 'Siligori, on the verge of Sikkim Tarai' which clearly indicates that 'Siligori' (= Siliguri) is a town in the *Tarai* region of Darjiling district, West Bengal, and not any place in Nepal.

47. *Myotis sicarius* Thomas

1915. *Myotis sicarius* Thomas, *J. Bombay nat. Hist. Soc.*, 23 : 608 (Northern Sikkim).

Common name : None.

Material examined : None.

Measurements : Nil.

Diagnosis : Rather large-sized (forearm 53.0 mm or above) *Myotis*, dark brown above and below, extreme tips of hairs of belly whitish; inner margin of ear convex below, nearly straight above, tip of ear narrowly rounded off, outer margin slightly concave above, convex below, with a narrow basal lobe; tragus rather short, with a large, rounded basal lobule; wings from metatarsus near base of toes; narrow post-calcarial lobe present.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916c); Sikkim. Nepal (Fry 1925).

Remarks : *Myotis sicarius* appears to be one of the rarest bats of West Bengal. So far, only three specimens have been collected from Pashok, Darjiling district, in the year 1915.

48. *Myotis formosus formosus* (Hodgson)

1835. *Vespertilio formosa* Hodgson, *J. Asiat. Soc. Beng.*, 4 : 700 (Nepal).

Common name : Hodgson's Bat (Eng.).

Material examined : Darjiling district : 2 unsexed (skull of one not available, that of the other badly damaged), Darjiling, coll. J. H. Elwes, F. Stoliczka (Holotype of *Vespertilio auratus* Dobson, 1871), 1870, 1871.

Measurements : External : 2 unsexed : Fa 48.6, 50.5; Tb 22.6, 28.9; F & Cl 9.3, 11.3.

Diagnosis : Slightly smaller than *Myotis sicarius* (forearm may reach upto 53.0 mm); fur thick and woolly; dorsal colour fawn to golden brown (some specimens tinted with rusty red), ventral colour slightly paler; wing-membrane variegated with orange and blackish brown; wing from base of toes.

Distribution : India : West Bengal : Calcutta district (Blanford 1891), Darjiling district (Jerdon 1867); Assam (Blanford 1891, Sinha 1986); Bihar (Blyth 1863); Himachal Pradesh (Sinha 1986); Maharashtra CD'Abreu 1925); Meghalaya (Dobson 1876); Punjab (Sinha 1986); Sikkim (Jerdon 1867); Uttar Pradesh. Nepal.

Remarks : Blanford (1891) has included Calcutta in the range of distribution of this species. But no specimens of *M. formosus* can be located from Calcutta. Since then, it has also not been collected from Calcutta. Ellerman & Morrison-Scott (1951) regarded the Darjiling and Chaibassa (Bihar) populations as belonging to the nominate subspecies, while the Purnia (Bihar) population was regarded by them as *Myotis formosus andersoni* Trouessart. Blanford (1891) has stated that *V. dobsoni* Anderson (= *V. andersoni* = *Myotis formosus andersoni*) is founded on a very large individual of *V. formosus*. Sinha (*loc. cit.*), however, has used the name *M. f. andersoni* for the Darjiling and Purnia populations, and *M. f. andersoni* for other Indian populations. Sinha's sample-size, especially that of *andersoni*, is too small to accept his view with certainty.

Genus *Eptesicus* Rafinesque, 1820

The genus *Eptesicus* is represented in West Bengal by a single species.

49. *Eptesicus tatei* Ellerman & Morrison-Scott

1863. *Nycticejus atratus* Blyth, *Cat. Mammal. Mus. Asiat. Soc. Beng.*, 31 (Darjiling = Darjiling, Darjiling district West Bengal, India).

1951. *Eptesicus tatei* Ellerman & Morrison-Scott, new name, preoccupied by *atratus* Kolenati, 1858 (= *E. nilssonii*).

Common name : None

Material examined : Darjiling district : 2 ♀, Darjiling, coll. W.S. Sherwill, 1853 (Syntypes of *Nycticejus atratus*).

Measurements : External : 2 ♀ : Fa 39.4, 43.5; Tl 38.5, 41.5; E 8.7, 10.0; Tr 3.7, 4.0; Tb 15.0, 17.5; F & Cl 7.5(2). Cranial : 1 ♀ : l 15.8; mtr 5.8; c¹-c¹ 4.7; iw 4.3; m³-m³ 7.0; cw 8.1.

Diagnosis : Ears large, oval with rounded tips, inner margin convex, outer margin slightly hollowed out below tip; tragus with a small rounded lobe at base; wing from base of toes; last caudal vertebra free, fur long and dense, and black throughout; inner upper incisors very long and bifid, outer upper incisors minute, scarcely raised above the level of gum and close to inner incisors.

Distribution : India : West Bengal; Darjiling district (Blyth 1863).

Remarks : So far, only three specimens of the species, have been collected and all from Darjiling (Blyth 1863), of which the two listed above, are available now.

Genus *Nyctalus* Bowdich, 1825

Only one species and subspecies of the genus *Nyctalus* is found in West Bengal.

50. *Nyctalus noctula labiatus* (Hodgson)

1835. *Vespertilio labiata* Hodgson, *J. Asiat. Soc. Beng.*, 4 : 700 (Nepal).

Common name : Noctule (Eng.).

Material examined : Darjiling district : 1 ♂, Darjiling, coll. F. Stoliczka, 1871; 1 ♀, Sangser (c 1,097 m), coll. N.A. Baptista, 23.viii.1916.

Measurements : External : 1 ♂ : Fa 53.6; E 15.5; Tb 21.5, F & Cl 10.5. 1 ♀ : Fa 54.2; E 16.0; Tb 23.0; F & Cl 10.0. Cranial : 1 ♀ : *l* 27.4; *mtr* 6.9; *c*¹-*c*¹ 6.7; *iw* 5.0; *cw* 10.0; *zw* 12.3; *m*³-*m*³ 8.6; *ml* 12.9.

Diagnosis : Ears nearly as broad as long, tip broadly rounded, outer margin in front of tragus forms thickened convex lobe; tragus short and curved towards tip with a small triangular projection at base; nostrils rather wide apart; wing from ankle; large, semicircular post-calcarial lobe; dorsal fur bright yellowish brown (often chestnut or bright chocolate coloured), ventral fur slightly paler; outer incisor short, its summit directed inwards towards inner incisor.

Distribution : India : West Bengal : Darjiling district; Himachal Pradesh (Lindsay 1926c); Jammu (Sharma & Sharma 1976) & Kashmir; Nagaland (Mills 1923); Sikkim (Blanford 1881); Uttar Pradesh (Bhat 1974). Pakistan (Roberts 1977), Nepal, Burma, Singapore, (Dobson 1878).

Remarks : Medway (1978) doubts that the specimen from Singapore present in the British Museum (Natural History) was actually procured at Singapore.

Genus *Pipistrellus* Kaup, 1829Key to the species and subspecies of the genus *Pipistrellus*

1. Size larger (forearm 38 mm or more)2
Size smaller (forearm less than 38 mm).....3
2. Tragus very broad (about 4 mm), colour black and hoary*Pipistrellus mordax*
Tragus narrower (less than 4 mm), colour brown.....*Pipistrellus ceylonicus indicus*
3. Forearm less than 30 mm, on average.....*Pipistrellus mimus*
Forearm more than 30 mm, on average4
4. Tragus very broad (about 4 mm)*Pipistrellus cadornae*
Tragus narrower (less than 4 mm)5
5. Baculum more than 4 mm in length6
Baculum less than 4 mm in length.....*Pipistrellus coromandra coromandra*
6. Baculum 5.2 to 5.5 mm in length.....*Pipistrellus peguensis*
Baculum 5.8 to 7.0 mm in length.....*Pipistrellus babu*

51. *Pipistrellus coromandra coromandra* (Gray)

1838. *Scotophilus coromandra* Gray, *Mag. Zool. Bot.*, 2 : 498 (Pondicherry, Coromandel coast, India).

Common name : Indian Pipistrelle (Eng.).

Material examined : Darjiling district : 1 ♂, Darjiling, coll. ---, ----; 1 ♂, 1 ♀, Gopaldhara (c 1,439 m), coll. N.A. Baptista, 11.v.1915, 5.vi.1915; 1 ♂, Nimbong (c 1,372 m), coll. N.A. Baptista, 13.vii.1916; 2 ♂, 1 ♀, Pashok (c 1,067 m), coll. N.A. Baptista, 4, 5.vii.1915, 13.iv.1915; 4 ♂, 4 ♀, Pedang (c 1,433 m), coll. N.A. Baptista, 13-16.viii.1916, 9-13.ix.1916; 1 ♂, Ranichera (c 9 km S of Gorubathan), coll. R.L. Chowdhury, 5.xii.1980; 1 ♂, Takdah, purchased, 7.viii.1958. Jalpaiguri district : 4 ♀, Haldibari (c 46 m), coll. N.A. Baptista, 13.iv.1915; 2 ♂, 2 ♀, Hasimara (c, 183 m), coll. N.A. Baptista, 8, 22.xi.1915; 13, 14.ii.1916; 1 ♂, 1 ♀, Jalpaiguri, coll. C.A. Crump, 17, 18.iv.1915. Medinipur district : 5 ♂, 7 ♀, Salbani (c 61 m), coll. C.A. Crump, 18-23.ix.1914. North 24-Parganas district : 1 unsexed, Bhajna, coll. Y Chaturvedi, --.vii.1968; 1 ♂, 1 ♀, Salt Lake, coll. B. Biswas, 25.v.1963, 4.ii.1965.

Measurements : External : 18 ♂ : Fa 28.2-34.4(30.6); T1(10) 30.0-35.0(32.2); E(17) 9.5-13.0(10.5); Tb(15) 9.1-13.7(11.1); F & C1(17) 4.0-8.0(6.0); 18 ♀ : Fa 28.1-34.2(31.0); T1(10) 28.0-38.0 (32.0); E 10.0-11.0 (10.5); Tb (17) 9.9-13.6(11.3); F & C1 4.0-8.4(6.6). Cranial : 11 ♂ : I(10) 10.8-13.8(12.1); mtr (9) 4.0-4.6(4.3); c^1-c^1 (10) 3.6-4.5(4.0); iw(9) 3.1-3.6(3.3); cw 6.7-7.3(6.3); zw(1) 7.9; m^3-m^3 (9) 5.0-6.6(5.4); ml(1) 9.2; 10 ♀ : I 11.1-12.3(11.9); mtr 3.6-4.5(4.3); c^1-c^1 3.5-4.1(3.9); iw 3.2-3.6(3.4); cw 6.0-6.4(6.2); zw(2) 7.7, 7.9; m^3-m^3 4.5-5.5(5.3); ml(1) 7.8.

Diagnosis : Small-sized pipistrelle (forearm around 31.0 mm, on average) with dorsal fur blackish brown, tips of hairs slightly rufescent; belly fur slightly paler brown; tragus forward curving and bluntly rounded; a small calcarial lobe present.

Distribution : India : West Bengal : Calcutta district (Blyth 1863), Darjiling district (Wroughton 1916b), Medinipur district (Wroughton 1915), North 24-Parganas district (Sinha 1970); widely distributed in peninsular India; north to Jammu (Sharma & Sharma 1976) & Kashmir (Chakraborty 1983); east to northeastern states, including Tripura (Agrawal & Bhattacharyya 1977). Afghanistan (Meyer-Öehme 1965), Pakistan (Walton 1974), Sri Lanka, Nepal (Hinton & Fry 1923).

Remarks : The Indian Pipistrelle is a common bat in West Bengal, but is rather difficult to collect when in flight, as it efficiently avoids the mist net.

52. *Pipistrellus peguensis* Sinha

1969. *Pipistrellus peguensis* Sinha, *Proc. zool. Soc., Calcutta*, 22 : 83 (Pegu, Burma).

Common name : Pegu Pipistrelle (Eng.).

Measurements : External : 4 ♂ : Fa 32.6-34.0(33.2); E 9.6-12.2(11.3); Tb 10.0-13.0(11.6); F & C1 5.3-6.1(5.8). Cranial : 4 ♂ : I 12.8-13.4(13.1); mtr 4.8-5.0(4.9); c^1-c^1 4.0-4.5(4.4); iw 3.5-3.8(3.7); cw 6.4-7.3(7.0); zw 8.3-8.7(8.5); m^3-m^3 5.8-6.0(5.9); ml(3) 8.8-9.2(9.0).

Diagnosis : On average, slightly larger than *P. c. coromandra* (forearm around 33.0 mm, on average); fur dense and long; dorsal colour brown throughout; ventral colour dirty white, base of hairs brown; calcarial lobe well-developed; baculum straight, 5.2 mm to 6.0 mm in length.

Distribution : India : West Bengal : Darjiling district (Sinha 1990). Burma.

Remarks : The Pegu Pipistrelle, described by Sinha (1969b), has recently been reported from Darjiling district of West Bengal, by the same author (Sinha 1990), extending the distributional range of the species much westwards.

53. *Pipistrellus mimus* Wroughton

1899. *Pipistrellus mimus* Wroughton. *J. Bombay nat. Hist. Soc.*, 12 : 722 (Maheshkatri, Dangs district, Gujarat, India).

Common names : Indian Pygmy Pipistrelle (Eng.), Chamchika (Beng.).

Material examined : Barddhaman district : 2 ♂, 1 ♀, Arrah, coll. P. K. Das, 23, 24.iv.1988; 1 ♂, Churpurni, coll. P. K. Das, 27.iv.1988; 2 ♂, 1 subad. ♂, 1 ♀, 1 subad. ♀, Kayota, coll. P. K. Das, 30.iv.1988. Calcutta district : 16 ♂, 1 young ♂, 10 ♀, 1 unsexed, Calcutta (Beckbagan, Beliaghata, Bowbazar, Calcutta, Indian Museum, Lindsay Street, Park Circus, Tollygunge), coll. S. M. Ali, B. Biswas, T. K. Chakraborty, B. B. Dutta, Dillon, S. R. Dey Sarkar, D. K. Ghosal, F. H. Gravely, S. A. Hussain, A. P. Kapur, C. K. Misra, R. N. Mukherjee, B. Ram, Ramchandra, C. Routh, S. S. Saha, C. Sarkar, Y. P. Sinha, 1866, 1.xi.1915, 20.xi.1915, 19.iv.1951, 29.xi.1951, - .x.1952, 5.iii.1959, 25.vii.1962, 19.ix.1963, 17.xii.1966, 30.iii.1967, 11.vii.1967, 29.ix.1967, 9.viii.1969, 4.x.1969, 21.x.1974, 15.x.1977, 17.iv.1979, 14.x.1979, 20.x.1979, 2.xi.1979, 28.iv.1980. Darjiling district : 1 ♂, Kalijhora (c 240 m), coll. P. K. Das, 19.ii.1979. Hugli district : 1 ♀, Singur, coll. D. W. Parrack, 24.viii.1964; 1 ♂, Tarapur (near Jhapandanga), coll. S. Chakraborty, 22.ii.1974. Jalpaiguri district : 1 ♂, Bharnabhari (c 183 m), coll. N. A. Baptista, 13.ii.1916; 1 ♂, 1 ♀, Haldibari (c 46 m), coll. C. A. Crump, 13.iv.1915; 8 ♂, 7 ♀, Hasimara (c 183 m), coll. N. A. Baptista, 7.iv.1915, 26.x.1915, 2, 3, 10.xi.1915, 15.i.1916, 21.iii.1916; 2 ♂, 2 ♀, Khuntimari, coll. S. Chakraborty 8, 9.ix.1983; 1 ♂, 4 ♀, Sulkapara, coll. S. Chakraborty, 4.ix.1983. Koch Bihar district : 1 ♀, Sitalkuchi, coll. S. Chakraborty, 10.iv.1984. Maldah district : 2 ♂, 3 ♀, Maldah, coll. P. K. Das, 25, 26, 28.ii.1979. Medinipur district : 1 ♂, 1 ♀, Balivasa (15 km SSE of Jhargram), coll. P. K. Das, 10, 13.ix.1984; 1 ♂, 1 ♀, Chandra (25 km NW of Medinipur), coll. P. K. Das, 16, 18.ix.1984; 1 ♂, 5 ♀, Chilkigarh (12 km NW of Jhargram), coll. P. K. Das, 9.ix.1984; 3 ♀, Dhadika, coll. P. K. Das, 22.ix.1984; 2 ♂, 1 ♀, Mandalpuskarini, coll. P. K. Das, 22.ix.1984; 3 ♂, 3 ♀, Salbani (c 61 m), coll. C. A. Crump, 20, 22.ix.1914. Murshidabad district : 1 ♂, 'Na'mile, coll. S. Chakraborty, 17.x.1987; 1 ♂, Shibnagar, coll. S. Chakraborty, 17.x.1987. Nadia district : 3 ♂, 7 ♀, Madanpur, coll. P. K. Das, 16.vii.1969. North 24-Parganas district : 1 ♂, Barrackpur, coll. G. Topal, 7.v.1967; 1 ♂, Hasnabad, coll. S. S. Saha, 22.viii.1973; 1 ♂, Lake Town, coll. S. K. Chanda, 9.iv.1981; 7 ♂, 24 ♀, Salt Lake, coll. B. Biswas, S. S. Saha, G. Topal, 21, 24, 27.iv.1963, 25.v.1963, 19.iv.1964, 31.i.1965, 4.ii.1965, 14, 19.iii.1965, 26.iv.1966, 30.iii.1967, 16.viii.1967, 21.iv.1969, 28.vii.1969. Puruliya district : 1 ♂, Ajodhya Hills, coll. A. K. Mukherjee, 25.ii.1982; 6 ♂, 9 ♀, Kuilapal, coll. V. C. Agrawal, 6-19, i. 1985. South 24-Parganas district : 1 ♂, 3 unsexed, Behala, coll. S. S. Saha, C. B. Srivastava, --; 2 ♂, 2 ♀, Belgachi (near Taldi), coll. A. K. Mandal, 27.xii.1968; 1 ♂, 6 ♀, Dayapur (near Sajnekhali), coll. A. K. Mandal, 28, 29.ix.1969; 3 ♂, 2 ♀, Dhakuria, coll. P. K. Das, 5.i.1978, 28.xii.1978, 4.v.1979, 30.iii.1981, 12.vii.1982; 1 ♂, Patharpratima, coll. S. S. Saha, 10, vii. 1967; 5 ♂, 10 ♀, Sajnekhali, coll. S. K. Chatterjee, A. K. Mondal, 3.xi.1978, 2.ix.1982; 4 ♂, 12 ♀, Taldi, coll. A. K. Mandal, 27.xii.1968; 2 ♂, Thakurpurkur, coll. A. K. Nag, 13, 16.iv.1979. West Dinajpur district : 1 ♀, Kulik, coll. S. Chakraborty, 11.x.1987.

Measurements : External : 19 ♂ : Fa 25.0-31.2(27.3); E 8.5-11.8 (10.2); Tb 10.3-12.5(10.9); F & Cl 4.5-7.0(5.9). 26 ♀ : Fa 25.8-32.0(28.0); E 8.2-11.5(10.2); Tb 10.1-12.0(11.0); F & Cl 5.5-7.0(6.3). Cranial : 7 ♂ : *l* 10.4-12.4(11.2); *iw* 3.2-3.6(3.4); *cw* 5.5-6.9(6.1); *zw* 7.0-7.9(7.4); m^3 - m^3 4.8-5.4(5.2); *mtr* 3.5-4.2(3.9); *ml* 7.2-8.6(7.7). 8 ♀ : *l* 10.3-12.3(11.3); *iw* 3.3-3.8(3.5); *cw* 5.6-6.7(6.3); *zw* 7.2-7.8(7.5); m^3 - m^3 4.5-5.8(5.4); *mtr* 3.2-4.2 (3.7); *ml* 7.0-8.6 (7.9).

Diagnosis : Smallest (forearm 25.0 to 32.0 mm) pipistrelle of West Bengal; fur dense and short; dorsal coloration bistre brown, base of hairs almost black; ventral parts lighter; face, ears and wing-membranes almost black; ears small and scarcely triangular; tragus short and curved forward; post-calcarial lobe present; wings from base of toes.

Distribution : India : West Bengal : Barddhaman district, Calcutta district (Wroughton 1915), Darjiling district, Haora district, Hugli district, Jalpaiguri district (Wroughton 1916b), Koch Bihar

district, Maldah district, Medinipur district (Wroughton 1915), Murshidabad district, Nadia district, North 24-Parganas district, Puruliya district, South 24-Parganas district (Khajuria 1953), West Dinajpur district; widely distributed throughout the mainland of Indian Union. Afghanistan (Meyer-Öehme 1965), Pakistan, Sri Lanka, Nepal (Mitchell 1980), Burma, Thailand (Lekagul & McNeely 1977) and Vietnam.

Remarks : Sinha (1980) has synonymised *Pipistrellus mimus glaucillus* Wroughton, with *Pipistrellus mimus* Wroughton. Ellerman & Morrison-Scott (1951) have considered *Pipistrellus principulus* Thomas (type-locality : Gauhati = Guwahati, Assam) as a subspecies of *P. mimus*, with hesitation. Hill & Harrison (1987) have considered *principulus* conspecific with *mimus*. Specimens of *P. mimus* from Assam and adjoining areas do not differ from those of other parts of India.

54. *Pipistrellus ceylonicus indicus* (Dobson)

1878. *Vesperugo indicus* Dobson, *Cat. Chiroptera Br. Mus.* : 222 (Mangalore, Dakshina Kannada district, Karnataka, India).

Common name : Kelaart's Pipistrelle (Eng.).

Material examined : Calcutta district : 1 subad ♂, Calcutta, coll. G. E. Dobson, 1878.

Measurements : External : 1 subad ♂, Fa 35.1; E 9.8; Tb 15.3; F & Cl 7.7. Cranial : 1 subad ♂ : I 14.5; m^3 - m^3 6.7; ml 11.1.

Diagnosis : One of the larger pipistrelles of West Bengal (forearm may reach nearly 40.0 mm); ear short and triangular, outer margin straight; tragus with straight inner end, convex outer margin and a triangular lobe at base; wing from base of toes; post-calcariol lobe semicircular; extreme tip of tail free from membrane; dorsal colour brown, reddish brown or greyish brown, ventral parts slightly paler; ears and membranes blackish brown.

Distribution : India : West Bengal : Calcutta district (Lal 1984); Andhra Pradesh (Lal 1984); Bihar (Wroughton 1915); Gujarat; Karnataka; Kerala (Blanford 1891); Madhya Pradesh (Brosset 1962b); Maharashtra (Wroughton 1912a); Orissa (Das & Agrawal 1973); Rajasthan (Ryley 1914); Tamil Nadu (Dobson 1878); Uttar Pradesh (Lal 1984). Pakistan and Bangladesh (Siddiqi 1961a, Khan 1982).

Remarks : Ellerman & Morrison-Scott (1951) recognised three subspecies of *Pipistrellus ceylonicus*, viz., *indicus* Dobson, *chrysothrix* Wroughton and *subcanus* Thomas, from the Indian mainland. Lal (1984) has, however, synonymised both *chrysothrix* and *subcanus* with *indicus*. This view has been accepted here. *Pipistrellus ceylonicus*, which is very common in peninsular India, especially in the western parts, is rather less common in West Bengal. However, it is not that rare in the present area as is reflected by the list of material examined.

55. *Pipistrellus babu* Thomas

1915. *Pipistrellus babu* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 30 (Murree, c 2,438 m, Rawalpindi district, The Punjab, Pakistan).

Common name : Babu Pipistrelle (Eng.).

Material examined : Darjiling district : 1 ♀, Paperkheti (c 15 km N of Gorubathan), coll. R. L. Chowdhury, I.xii.1980; 4 ♀, 1 young ♀, Sukhna (c 200 m), coll. P. K. Das, 21.v.1980; 1 ♂, Takdah (c 1,650 m), purchased, 7.viii.1958.

Measurements : External : 1 ♂ : Fa 32.7; E 12.8; Tb 12.3; F & Cl 6.4. 4 ♀ : Fa 33.1-36.0(34.3); E 11.5-13.0(12.3); Tb 12.5-13.9(13.1); F & Cl 6.7-8.0(7.2). Cranial : 1 ♂ : I 13.3; mtr 4.7; c^1 - c^1 4.3; iw 3.5; cw 6.3; m^3 - m^3 5.4; ml 9.2. 2 ♀ : I 14.0, 14.1; mtr 5.0, 5.1; c^1 - c^1 (1) 4.6; iw 3.9, 4.2; cw 7.6, 8.4; m^3 - m^3 6.5, 6.7; ml 10.4, 10.6.

Diagnosis : A medium-sized (forearm around 34.0 mm, on average) pipistrelle, with dorsal colour sepia brown or olive brown; ventral colour only slightly-paler, inguinal region not whiter; wing from base of toe; a distinct post-calcarial lobule present.

Distribution : India : West Bengal : Darjiling district (Thomas 1915), Jalpaiguri district; Assam; Himachal Pradesh (Thomas 1915); Madhya Pradesh; Maharashtra (Khajuria 1953) Sikkim; Uttar Pradesh. Afghanistan (Meyer-Oehme 1965), Pakistan, Nepal, Bangladesh (Thomas 1915), Burma (Honacki et al. 1982) and China (Honacki et al. 1982).

Remarks : A montane species, migrates to lower altitudes in suitable season.

56. *Pipistrellus cadornae* Thomas

1916. *Pipistrellus cadornae* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 416 (Pashok, c 1,069 m, Darjiling district, West Bengal, India).

Common name : Thomas's Pipistrelle (Eng.).

Material examined : Nil.

Diagnosis : A rather small (forearm about 32.0 mm) pipistrelle with very broad tragus; ears broad and triangular; upperparts dark brown, underparts lighter, basal halves of hairs slaty, their tips brown.

Distribution : India : West Bengal : Darjiling district. Burma (Hill 1962) and Thailand (Hill & Thonglongya 1972).

Remarks : Ellerman & Morrison-Scott (1951) included *cadornae* as a subspecies of *Pipistrellus savii*, with some element of doubt. Hill (1962), however considered it as a distinct species.

57. *Pipistrellus mordax* (Peters)

1866. *Vesperugo mordax* Peters, *Monatsb. Preuss. Akad. Wiss. Berlin* : 402 (Java).

Common name : Grizzled Pipistrelle (Eng.).

Material examined : Nil.

Diagnosis : A large pipistrelle of the size of Kelaart's Pipistrelle; ears broad, moderately long, more or less triangular and rounded at tip, outer margin forming a small antitragal lobe; tragus with a small notch at base of outer margin; wings from base of toes; post-calcarial lobe small and rounded; last tail vertebra free; fur dense, soft and rather long; upperparts black or shooty brown, individual hairs tipped with light whitish grey; underparts shooty black, tips of hairs light brown; membranes blackish brown; naked parts of face and ears black.

Distribution : India : West Bengal : Calcutta district, Darjiling district; Maharashtra (Pathak & Sharma 1969); Uttar Pradesh, Sri Lanka, Java.

Remarks : The Grizzled Pipistrelle appears to be a rare bat in West Bengal.

Genus *Scotozous* Dobson, 1875

The genus *Scotozous* is represented by a single species.

58. *Scotozous dormeri* Dobson

1875. *Scotozous dormeri* Dobson. *Proc. zool. Soc. Lond.* : 373 (Bellary Hills, Bellary district, Karnataka, India).

Common name : Dormer's Bat (Eng.).

Material examined : Bardhaman district : 3 ♂, 2 ♀, Arrah, coll. P. K. Das, 22, 24.iv.1988; 2 ♀, Katoya, coll. P. K. Das, 30.iv.1988. Birbhum district : 1 ♀, Chandrapur, coll. A. K. Poddar,

11.xii.1985. Calcutta district : 1 ♂, Calcutta, coll. --, --; 1 ♀, Dhapa (near Calcutta), coll. G. E. Dobson, 1876. Hugli district : 1 ♂, Singur, coll. Ajoy Kumar Mandal, 26.ix.1975; 1 ♀, Tarapur (near Jhapandanga), coll. S. Chakraborty, 20.ii.1974. Jalpaiguri district : 1 ♂, Bharnabhari (c 183 m), coll. N. A. Baptista, 10.v.1916. Maldah district : 1 ♂, Adina (near Pandua), coll. P. K. Das, 26.11.1979. Medinipur district : 1 ♀, Balivasa (15 km SSE of Jhargram), coll. P. K. Das, 20, 21.ix.1984. North 24-Parganas district : 1 ♀, Mitpukur (c 30 km E of Calcutta), coll. B. Biswas, 22.v.1971; 1 ♀, Salt Lake, coll. B. Biswas, 25.v.1963.

Measurements : External : 6 ♂ : Fa 30.0-35.0(33.0); E 11.0-13.0 (11.7); Tb 11.6-14.0(12.4); F & Cl 6.0-8.5(7.3). 7 ♀ : Fa(6) 30.0-34.7 (32.9); E 9.2-12.5(11.0); Tb 11.2-12.5(11.7); F & Cl 5.5-8.0(7.0). Cranial : 2 ♂ : 1 14.5, 13.7; *mtr* 5.3, 5.5; c^1-c^1 4.9, 4.8; *iw* 4.2, 4.0; *cw* 8.1, 7.6; *zw*(1) 9.6; m^3-m^3 7.0, 6.5, *ml* 9.4, 10.7. 2 ♀ 1 14.0, 14.1; *mtr* 5.5, 5.6; c^1-c^1 4.7, 4.8; *iw* 4.0, 4.2; *cw* 7.5(2) : *zw* 10.0(2); m^3-m^3 7.2, -; *ml* 9.5, 10.5.

Diagnosis : Very much similar to Kelaart's *Pipistrelle*, but second upper incisor very small, not extending beyond cingulum of inner incisor; underparts whitish, often lemon yellow in live and freshly killed specimens.

Distribution : India : West Bengal : Bardhaman district, Birbhum district, Calcutta district, Hugli district, Jalpaiguri district (Wroughton 1917a), Maldah district, Medinipur district, North 24-Parganas district; widely distributed in the Indian mainland from Jammu & Kashmir (Chakraborty 1983), south at least to Karnataka, and from Gujarat east to West Bengal. Pakistan (Roberts 1977), and possibly Taiwan (Formosa).

Remarks : Ellerman & Morrison-Scott (1951) recognised two subspecies of *dormeri*. But Agrawal (1973) has synonymised *Pipistrellus dormeri caurinus* (Thomas, 1915) with the nominate subspecies.

Genus *Hesperoptenus* Peters, 1868

The genus *Hesperoptenus* is represented by a single species in India.

59. *Hesperoptenus tickelli* (Blyth)

1852. *Nycticejus tickelli* Blyth, *J. Asiat. Soc. Beng.*, 20 : 157 (Chaibasa, Singhbhum district, Bihar, India).

Common name : Tickell's Bat (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A rather large-sized (forearm about 60.0 mm) vesperlitionid bat; colour golden yellow, head greyish; ears oval; wing membrane blackish; wings from base of toes; small pad under thumb; second upper incisor small and located at base of first.

Distribution : India : West Bengal : Jalpaiguri district (Wroughton 1917a); Andaman Islands (Dobson 1876); Bihar; Karnataka (Wroughton 1912c); Madhya Pradesh (Dobson 1876); Maharashtra; Orissa; Rajasthan; Tamil Nadu. Sri Lanka, Nepal (Mitchell 1980), Bangladesh (Khan 1982), Burma (Anderson 1881), Thailand (Hill & Thonglongya 1972) and possibly southwestern China (Honacki *et al.* 1982).

Remarks : Tickell's Bat appears to be essentially a sub-montane species which may migrate to the plains in suitable season. This bat is rather uncommon in West Bengal.

Genus *Tylonycteris* Peters, 1872

Genus *Tylonycteris* is represented in West Bengal by a single species and subspecies.

60. *Tylonycteris pachypus fulvida* (Blyth)

1859. *Scotophilus fulvidus* Blyth, *J. Asiat. Soc. Beng.*, 28 : 293 (Schwegyin, Sittang River, southeastern Burma).

Common name : Club-footed Bat (Eng.).

Material examined : Darjiling district : 2 ♀, Darjiling, coll. F. Stoliczka, 1871; 1 ♂, 2 ♀, Kalimpong (c 1,250 m), coll. N. A. Baptista, 22.vii.1916, 29.x.1916; 3 ♂, Pashok (c 1,067 m), coll. N. A. Baptista, 24.vi.1915, 7,8.ix.1915; 1 ♀, Sivok (c 46 m), coll. C. A. Crump, 29.iii.1915.

Measurements : External : 4 ♂ : Fa 26.4-28.7(27.6); Tl 27.0-33.0(29.5); E 9.0(4); Tb 9.9-12.4(11.1); F & Cl 5.6-6.3(6.0). 5 ♀ : Fa 25.7-27.4(26.6); Tl(4) 27.7-30.0(28.5); E 7.5-9.2(8.8); Tb 9.5-11.3(10.3); F & Cl 5.5-7.3(6.1). Cranial : 4 ♂ : l 11.4-11.6(11.5); mtr 3.6-3.7(3.6); c^1-c^1 3.3-3.8(3.5); iw 3.3-3.7(3.5); cw 6.5-7.1(6.7); zw(1) 8.2; m^3-m^3 4.9-5.2(5.0); ml(3) 7.2-7.4(7.3). 5 ♀ : l(4) 10.9-11.6(11.3); mtr 3.4-3.7(3.5); c^1-c^1 (4) 3.4-3.6(3.5); iw(4) 3.5-3.7 (3.6); cw 6.3-6.7(6.5); zw(3) 8.1-8.5(8.3); m^3-m^3 (4) 4.9-5.1(5.0); ml(3) 6.7-7.2(7.0).

Diagnosis : One of the two smallest bats of West Bengal (the other is *Pipistrellus mimus*); reddish brown above and below; ear rather shorter, rounded at tip; tragus short and rounded at tip; fleshy pads at junction of thumb and second finger, and on soles; skull dorso-ventrally flattened, brain case and rostrum at same level.

Distribution : India : West Bengal : Darjiling district (Dobson 1876); Andaman Islands (Dobson 1876); Manipur; Sikkim. Bangladesh (Ahmed & Husain 1982), Burma, Thailand (Lekagul & McNeely 1977), Laos, Vietnam and southern China.

Remarks : In West Bengal, the Club-footed Bat is restricted to the montane and sub-montane areas of Darjiling district only.

Genus *Barbastella* Gray, 1821

The genus *Barbastella* is represented in West Bengal by a single species and subspecies.

61. *Barbastella leucomelas darjilingensis* (Hodgson)

1855. *Plecotus darjilingensis* Hodgson, in Horsfield, *Ann. Mag. nat. Hist.*, (2) 16 : 103 (Darjeeling, North-Eastern India = Darjiling, Darjiling district, West Bengal, India).

Common name : Eastern Barbastelle (Eng.).

Material examined : Darjiling district : 1 ♀, Darjiling, coll. J. Anderson, 1869; 1 ♂, 3 ♀, Nimbong (c 1,372 m), coll. N. A. Baptista, 22.vi.1916, 4-9.vii.1916.

Measurements : External : 1 ♂ : Fa 40.7; E 16.0; Tb 20.0; F & Cl 8.0. 2 ♀ : Fa 39.9, 40.8; E 17.0, 17.2; Tb 19.1, 21.1; F & Cl 7.2, 8.0. Cranial : 1 ♂ : l 16.0; mtr 5.0; c^1-c^1 3.8; iw 4.5; cw 8.8; m^3-m^3 6.0; ml 9.7. 1 ♀ : l 14.8; mtr 4.9; c^1-c^1 4.0; iw 3.9; cw 8.4; m^3-m^3 4.5; ml 9.5.

Diagnosis : A medium-sized (forearm around 40.0 mm) bat, with large, squarish forward slanting ears; tragus half the length of ear and triangular; posterior margin of ear lacks projections or notches; two dark lines on interfemoral membrane from heel to base of pelvis; dorsal fur long, silky with blackish grey base and pale golden brown tips, underparts paler greyish brown.

Distribution : India ; West Bengal : Darjiling district, Jalpaiguri district (Wroughton 1917a); Himachal Pradesh (Dobson 1876); Jammu (Sharma & Sharma 1976) & Kashmir (Scully 1888); Meghalaya (Dobson 1874b); Rajasthan; Sikkim; Uttar Pradesh (Blyth 1863). Southern Russia, Afghanistan (Meyer-Öehme 1965), Pakistan (Roberts 1977), western China, Nepal, possibly erstwhile Indo-China, and Japan.

Remarks : The subspecific limits of the Eastern Barbastelle is not quite clear. It is most likely that the populations western to the areas mentioned above, belong to the nominate subspecies, as has been suggested by Corbet (1980).

Genus *Scotoecus* Thomas, 1901

The genus *Scotoecus* is represented by a single species in West Bengal.

62. *Scotoecus pallidus* (Dobson)

1876. *Scotophilus pallidus* Dobson, *Monogr. Asiat. Chiroptera*, Appendix D : 186 (Mian Mir, near Lahore, India = Main Mir, near Lahore, the Punjab, Pakistan).

Common name : Yellow Desert Bat (Eng.).

Material examined : Calcutta district : 1 ♀, Calcutta, coll. —, —.

Measurements : External : 1 ♀ : Fa 36.7; E 11.9; Tb 13.9; F & Cl 7.4; Tr 5.1. Cranial : 1 ♀ : I 14.5; mtr 5.7; c^1-c^1 5.1; iw 4.5; cw 7.9; m^3-m^3 6.6.

Diagnosis : A rather small Vespertilionine bat with dorsal surface pale brown, tinged with fawn, ventral surface paler (greyish white); antitragal lobe of the ear thick and fleshy; tragus long and broad with rounded tip and a prominent triangular lobule near the base.

Distribution : India : West Bengal : Calcutta district; Bihar (Khajuria 1953); Uttar Pradesh (Khajuria 1953). Pakistan.

Remarks : Blyth (1863) listed (under his Catalogue Number 93B) a series of alcohol-preserved specimens of *Nycticejus temmincki* (= *Scotophilus kuhli*) from Calcutta. Dobson (1876) listed (under his Catalogue Numbers 386 to 388) three such specimens of *Scotophilus temmincki* (= *S. kuhli*) from Calcutta, which he referred to Blyth's (1863) No. 93B. Anderson (1881) mentioned six alcohol-preserved specimens of *Scotophilus temmincki* (under his Catalogue No. 159m to 159r) from Calcutta and referred them to Blyth's No. 93B. It is to be noted that Blyth (1863), Dobson (1876) and Anderson (1881) all had mentioned Calcutta as the locality of these specimens, but could not provide any further history as to the date(s) of collection, collector(s), etc. The specimen listed above bears metal tags containing Dobson's Catalogue No. 386 and Anderson's Catalogue No. 159m. The Zoological Survey of India has eight more spirit-preserved specimens of *Scotoecus pallidus* labelled as 'No History'. It is quite possible that at least some of these specimens may be the ones mentioned by Blyth (1863), Dobson (1876) and Anderson (1881) from Calcutta, but without any further history.

On the basis of the specimen listed above, *Scotoecus pallidus* (Dobson) is hereby recorded for the first time from West Bengal.

Genus *Scotomanes* Dobson, 1875

The genus *Scotomanes* is represented by only one species and subspecies in West Bengal.

63. *Scotomanes ornatus ornatus* (Blyth)

1851. *Nycticejus ornatus* Blyth, *J. Asiat. Soc. Beng.*, 20 : 517 (Cherrapunji, Khasi Hills, Assam = Cherra Punji, East Khasi Hills district, Meghalaya, India).

Common name : Harlequin Bat (Eng.).

Material examined : Darjiling district : 3 unsexed, 1 young unsexed, Darjiling, coll. W. S. Atkinson, J. H. Elwes, F. Stoliczka, 1870, 1872; 1 ♂, Pashok (c 1,067 m), coll. N. A. Baptista, 3.ix.1915; 3 ♀, Sivok (c 152 m), coll. C. A. Crump, 19, 23.iii.1915.

Measurements : External : 1 ♂ : Fa 55.3; E 22.0; Tb 35.6; F & Cl 15.0. 2 ♀ : Fa 57.3, 63.0; E 20.0, 22.0; Tb 27.0, 27.1; F & Cl 12.0(2). Cranial : 1 ♂ : *l* 21.5; *mtr* 8.0; *c*¹-*c*¹ 7.5; *iw* 4.5; *cw* 11.9; *zw* 16.8; *m*³-*m*³ 9.8; *ml* 17.8. 1 ♀ : *l* 21.3; *mtr* 8.3; *c*¹-*c*¹ 17.5; *iw* 4.5; *cw* 6.1; *zw* 17.0; *m*³-*m*³ 10.4; *ml* 17.1.

Diagnosis : A rather large-sized (forearm around 60.0 mm) vespertilionine bat, with characteristic colour; ears moderate, subtriangular with rounded tips; tragus bluntly pointed with a pointed projecting lobe at base; colour of fur orange-brown above, with some white spots and streaks; hairs dark brown at base, then isabelline, tips brownish yellow; a broad white V-shaped band extends to abdomen; a white collar commencing beneath each ear; rest of lower parts brown; tip of tail free.

Distribution : India : West Bengal : Darjiling district (Blyth 1863), Jalpaiguri district (Inglis *et al.* 1919); Meghalaya; Sikkim. Possibly Bangladesh (Khan 1982).

Remarks : Ellerman & Morrison-Scott (1951) have recognised three subspecies of *Scotomanes ornatus*. However, Dobson (1876, 1878), Blanford (1891), Wroughton (1918a), Hill (1962), among others, do not agree with this view.

Genus *Scotophilus* Leach, 1821

Key to the species and subspecies of the genus *Scotophilus*

Size smaller, forearm, on average, less than 55.0 mm.....*Scotophilus kuhli kuhli*

Size larger, forearm, on average, more than 55.0 mm.....*Scotophilus heathi heathi*

64. *Scotophilus kuhli kuhli* Leach

1822. *Scotophilus kuhli* Leach, *Trans. Linn. Soc. Lond.*, 13 : 72 (India, according to Hill & Thonglongya 1972).

Common name : Lesser Yellow Bat (Eng.).

Material examined : Bankura district : 1 ♂, 2 ♀, Susunia, coll. V. C. Agrawal, 6, 7.i.1985. Bardhaman district : 2 ♂, Arrah, coll. P. K. Das, 20, 24.iv.1988; 1 ♂, 1 ♀, Raniganj, purchased, 1869. Birbhum district : 1 ♀, Santiniketan, --, 28.iii.1971. Calcutta district : 22 ♂, 13 ♀, 13 unsexed, Calcutta (Bowbazar, Indian Museum compound, Subodh Mallick Square), coll. J. Anderson, V. Ball, B. Dasgupta, D. K. Ghosal, F. H. Gravely, S. W. Kemp, J. B. Richardson, F. Stoliczka, purchased (2 specimens), 1867, 1868, 1870, 1875, 1876, 18.i.1879, 1.xi.1915, 22.xi.1919, 14.i.1922, ix.1952, 6.xii.1976. Darjiling district : 1 ♂, Pashok (*c* 1,067 m), coll. N. A. Baptista, vi-viii. 1915. Haora district : 2 ♂, Botanical Garden (Shibpur), coll. S. S. Saha, 6.xii.1969. Hugli district : 1 ♀, Kamardingi (near Jhapandanga), coll. S. Chakraborty, 20.ii.1974; 1 ♂, 1 ♀, Singur, coll. P. K. Das, 27.ix.1974. Jalpaiguri district : 1 ♀, 1 unsexed, Hasimara (*c* 183 m), coll. N. A. Baptista, 20.i.1916; 6 ♂, Khuntimari, coll. P. K. Das, 21.ii.1979. Koch Bihar district : 2 ♂, 1 ♀, Sitalkuchi, coll. S. Chakraborty, 10.vi.1986. Maldah district : 1 ♂, 1 ♀, Adina Mosque, coll. P. K. Das, 26, 28.ii.1979. Medinipur district : 1 ♂, 1 ♀, Amlagora (near Garbeta), Coll. P. K. Das, 21.ix.1984; 2 ♂, 2 ♀, Balivasa (15 km SSE of Jhargram), coll. P. K. Das, 12, 13.ix.1984; 3 ♂, 4 ♀, Salbani (*c* 71 m), coll. C. A. Crump, 14, 15.ix.1914. Murshidabad district : 1 ♂, 1 ♀, Shibnagar, coll. S. Chakraborty, 17, 18.x.1987. Nadia district : 1 ♀, Madanpur, coll. P. K. Das, 17.vii.1969. North 24-Parganas district : 8 ♂, 4 ♀, Salt Lake, coll. B. Biswas, 25.v.1963, 25.iv.1964, 22.xi.1964, 28.i.1965, 23.ii.1965, 7.iii.1966, 31.i.1968, 7.iii.1968. Puruliya district : 1 ♀, Ajodhya Hills, coll. A. K. Mukherjee, 25.ii.1982. South 24-Parganas district : 1 ♂, Barabagan, coll. S.

Chattopadhyay, 27.i.1979; 6 ♀, Basantipur (near Sundarban), coll. --, ---; 1 ♂, Bawali, coll. P. K. Das, 17.iv.1978; 1 ♂, Canning, coll. N. Annandale, 21.vii.1907; 1 ♀, Kalikapur, coll. S. Chattopadhyay, 7.v.1980; 2 ♀, Sajnekhali, coll. S. Chattopadhyay, 9, 11.xi.1978. West Dinajpur district : 1 ♂, 1 ♀, Raiganj, coll. S. Chakraborty, 10.x.1987.

Measurements : External : 15 ♂ : Fa 45.5-55.0(49.5); E(14) 12.0-16.0(14.1); Tb 17.9-24.3(20.1); F & Cl(14) 9.5-11.8(10.7). 11 ♀ : Fa 48.5-54.9(51.0); E 9.9-15.5(13.0); Tb 18.6-22.2(20.3); F & Cl 9.8-11.8(10.8). Cranial : 10 ♂ : *l* 17.0-22.0(19.2); *mtr* 6.3-6.9(6.7); *c*¹-*c*¹ 5.7-7.1(6.5); *iw* 4.1-5.5(4.9); *cw* 8.7-10.2(9.3); *zw* (8) 12.8-14.4(13.5); *m*³-*m*³(7) 8.3-9.4(8.9); *ml* 12.5-15.3(13.5). 7 ♀ : *l*(5) 18.0-19.2(18.6); *mtr* 6.7-6.9(6.8); *c*¹-*c*¹ 6.1-6.5(6.4); *iw* 4.7-5.3(5.0); *cw* (5) 8.8-10.1 (9.2); *zw* 12.9-14.2(13.4); *m*³-*m*³ 8.7-9.2(8.9); *ml* 12.5-14.0(13.2).

Diagnosis : Ears small, rounded at tips; tragus semilunar, markedly convex on posterior border, concave anteriorly, tip slender and forward pointing; wing from side of foot near base of toe; tip of tail free; fur short, dense and sleek; dorsal colour olive-brown, ventral colour creamy white with a tinge of red.

Distribution : India : West Bengal : Bankura district, Bardhaman district (Dobson 1876), Calcutta district (Blyth 1863), Darjiling district, Haora district, Hugli district, Jalpaiguri district, Koch Bihar district, Maldah district, Medinipur district (Wroughton 1915), Murshidabad district, Nadia district, North 24-Parganas district (Dobson 1978), Puruliya district (Anderson 1881), South 24-Parganas district (Khajuria 1953), West Dinajpur district; widely distributed practically throughout the Indian Union, including Nicobar Islands (Hill 1967). Pakistan (Walton 1974), Sri Lanka, Bangladesh (Blyth 1863) and Burma.

Remarks : Ellerman & Morrison-Scott (1951) have used the name *Scotophilus temmincki wroughtoni* Thomas, 1897, for Lesser the Yellow Bat of India, Sri Lanka and Burma. Hill & Thonglongya (1972), however, have shown that *Scotophilus kuhli kuhli* Leach is the correct name for this bat.

Females collected during April-May were either lactating or with fetuses in advance stages of development.

65. *Scotophilus heathi heathi* (Horsfield)

1831. *Nycticejus heathi* Horsfield, *Proc. zool. Soc. Lond.* : 113 (Madras, Madras district, Tamil Nadu, India).

Common name : Greater Yellow Bat (Eng.).

Material examined : Bardhaman district : 5 ♀, Arrah, coll. P. K. Das, 21-25.iv.1988; 1 ♂, 3 ♀, Churpurni (near Kayota), coll. P. K. Das, 27, 29.iv.1988. Jalpaiguri district : 1 ♂, 2 ♀, Bharnabari (c. 183 m), coll. N. A. Baptista, 6.ii.1916, 2.iii.1916, 10.v.1916; 4 ♂, 1 ♀, Chilapata, coll. S. Chakraborty, R. K. Ghose, 16.ix.1983, 7.iii.1985; 2 ♂, 3 ♀, Hasimara (c 183 m), coll. N. A. Baptista, 21.i.1916, 4.iii.1916, 14.iii.1916, 18.iv.1916. Koch Bihar district : 1 ♂, Mathabhanga, coll. S. Chakraborty, 17.iv.1986; 1 ♂, 7 ♀, Sitalkuchi, coll. S. Chakraborty, 9, 18.iv.1986. Maldah district : 7 ♂, Adina Mosque, coll. P. K. Das, 26, 28.ii.1979; 5 ♂, Gour (Chicka Mosque), coll. P. K. Das, 27.ii.1979. Medinipur district : 1 ♂, Amlagora (near Garbeta), coll. P. K. Das, 21.ix.1984. Nadia district : 1 ♂, Kaliganj, coll. S. Chakraborty, 20.x.1987. West Dinajpur district : 1 ♂, Kulik (near Raiganj), coll. S. Chakraborty, 14.x.1987.

Measurements : External : 7 ♂ : Fa 56.0-60.0 (57.3); E 11.0-13.3 (12.0); Tb 22.8-25.5(23.9); F & Cl 10.0-12.7(11.3). 14 ♀ : Fa 56.4-64.0(60.1); E 11.9-15.3(13.5); Tb 21.8-28.0(24.4); F & Cl 9.9-13.8(11.7). Cranial : 2 ♂ : *l* 23.0-23.1; *mtr* 7.9, 8.0; *c*¹-*c*¹ 7.6, 7.8; *iw* 5.6, 5.9 *cw* 10.7, 10.8;

zw 16.0, 16.1; m^3-m^3 9.9, 10.0; ml 16.2, 16.4. 2 ♀ : l 22.9, 23.4; mtr 7.7, 8.2; c^1-c^1 7.4, 7.6; iw 5.8, 5.9; cw 10.3, 11.0; zw 15.6, 15.9; m^3-m^3 9.8, 10.4; ml 15.8, 16.0.

Diagnosis : Very much similar to the Lesser Yellow Bat, but larger; ventral parts lemon-yellow to orange-yellow.

Distribution : India : West Bengal : Bardhaman district, Jalpaiguri district, Koch Bihar district, Maldah district, Medinipur district, Nadia district, West Dinajpur district; widely distributed throughout the Indian subcontinent. Afghanistan (Meyer-Öehme 1965), Pakistan, Sri Lanka, Nepal (Agrawal & Chakraborty 1971), Bangladesh (Hutton 1872) and Burma.

Remarks : Ellerman & Morrison-Scott (1951) recognised two subspecies of the Greater Yellow Bat, viz., *S. h. heathi* and *S. h. belangeri* (I. Geoffroy, 1834), for the Indian populations. Siddiqi (1961b) has, however, synonymised *belangeri* with the nominate subspecies.

All the females collected during April were with two foetuses each in advanced stages of development.

At Chika Mosque (Gour, Maldah district), this species was found roosting along with *Megaderma lyra lyra*. Collection of only the male specimens from the roosts of Adina and Chika Mosque (Maldah) indicates sexual segregation of roosts at least during certain period of the year.

Genus *Plecotus* E. Geoffroy, 1818

Only one species and subspecies of the genus *Plecotus* occurs in West Bengal.

66. *Plecotus auritus homochrous* Hodgson

1847. *Plecotus homochrous* Hodgson, *J. Asiat. Soc. Beng.*, 16 : 895 (Nepal).

Common name : Long-eared Bat (Eng.).

Material examined : Darjiling district : 1 ♀ (skull damaged), coll. W. S. Sherwill, 1853.

Measurements : 1 ♀ : External : Fa 38.4; E 32.7 +; Tb 16.0; F & Cl 8.0.

Diagnosis : A rather medium-sized Vespertilionine bat with very large ears, nearly as long as forearm, joined by a low band across forehead at bases of their inner margins; tragus very long; upper parts greyish, lower parts dirty white.

Distribution : India : West Bengal : Darjiling district (Blyth 1863); Himachal Pradesh (Hutton 1872); Jammu & Kashmir (Sharma & Sharma 1976, Chakraborty 1983); Meghalaya (Dobson 1876); Uttar Pradesh. Pakistan (Dobson 1876) and Nepal (Hodgson 1847b).

Remarks : According to Corbet (1980) and many other recent authors, both *Plecotus auritus* and *P. austriacus* occur within Indian limits. But the Zoological Survey of India has only *P. auritus* from that area.

Subfamily MINIOPTERINAE

Subfamily Miniopterinae consists of a single genus *Miniopterus*.

Genus *Miniopterus* Bonaparte, 1837

One species and subspecies of the genus *Miniopterus* had been reported from West Bengal.

67. *Miniopterus schreibersi fuliginosus* (Hodgson)

1835. *Vespertilio fuliginosa* Hodgson, *J. Asiat. Soc. Beng.*, 4 : 700 (Nepal).

Common names : Schreiber's Long-fingered Bat, Long-winged Bat or Bent-winged Bat (Eng.).

Material examined : None.

Measurements : Nil.

Diagnosis : A medium-sized (forearm between 45.0 mm and 50.0 mm) vespertilionine bat with head greatly elevated above face-line; ears much shorter than head, inner margin much convex, outer margin emarginate opposite base of tragus; terminal phalanx of longest finger flexed forwards on under surface of metacarpal; wing from near the ankle; tail included within interfemoral membrane; colour of fur varies from blackish brown to reddish brown.

Distribution : India : West Bengal : Calcutta district (Allen 1908); Karnataka (Bhat & Sreenivasan 1981); Maharashtra (Wroughton 1916a); Uttar Pradesh (Hutton 1872). Sri Lanka and Nepal.

Remarks : Schreiber's Long-fingered Bat is one of the rarest bats in West Bengal. Hill's (1983) view has been accepted here to enumerate the geographical distribution of *Miniopterus schreibersi fuliginosus*.

Subfamily MURININAE

Two genera, viz., *Murina* and *Harpiocephalus* constitute this subfamily in West Bengal.

Key to the genera of the subfamily MURININAE

- Last upper molar normal*Murina*
 Last upper molar much reduced, often deciduous.....*Harpiocephalus*

Genus *Murina* Gray, 1842

Key to the species and subspecies of the genus *Murina*

1. Size small, forearm 30.0 mm-35.0 mm.....2
 Size large, forearm 40.0 mm or above.....*Murina leucogaster rubex*
2. Upper half of outer margin of ear concave..... *Murina tubinaris*
 Upper half of upper margin of ear convex or straight.....3
3. Dorsal colour ferruginous *Murina cyclotis cyclotis*
 Dorsal colour brown.....*Murina huttoni huttoni*

68. *Murina leucogaster rubex* Thomas

1916. *Murina rubex* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 639 (Pashok, 3,500' = Pashok, 1,067 m, Darjiling district, West Bengal, India).

Common name : White-bellied Tube-nosed Bat (Eng.).

Material examined : Darjiling district : 1 ♂ (skull missing), Sangser, coll. N. A. Baptista, 20.viii.1916.

Measurements : External : 1 ♂ : Fa 40.0 (from study skin); E 14.0; Tl 36.0; F & Cl 9.0.

Diagnosis : Largest of the tube-nosed bats of West Bengal (forearm 40.0 mm or above); fur thick, close and woolly; colour above greyish russet, below dull buffy; ears without pointed projection at their inner base; outer margin of ear with a well-defined notch at its upper third region.

Distribution : India : West Bengal : Darjiling district (Thomas 1916c).

Remarks : The White-bellied Tube-nosed Bat is one of the rarest bats of West Bengal and is restricted to the montane regions of the Darjiling district. Besides the type-locality, it has also been collected from Sangser of the same district (Wroughton 1917b, who identified three males as *Murina huttoni*, but one of these, present in NZCI, has been identified as *Murina leucogaster rubex*).

69. *Murina huttoni huttoni* Peters

1872. *Harpyiocephalus huttoni* Peters, *Mber. pressus. Acad. Wiss. Berl.* : 257; *Proc. zool. Soc. Lond.* : 711 (Jeripanee, below Mussoorie, Dehra Dun district, Uttar Pradesh, India).

Common name : Peters' Tube-nosed Bat (Eng.).

Material examined : None.

Measurements : Nil.

Diagnosis : Very much like *Murina tubinaris* (see below), but smaller; dorsal surface greyish brown and ventral surface greyish white, with a slight brownish tinge, more evident along the flanks.

Distribution : India : West Bengal : Darjiling district (including 'Sikkim district' of Ellerman & Morrison-Scott 1951, also Hill 1964a); Assam (Kurup 1968); Jammu & Kashmir (Sharma & Sharma 1976, Chakraborty 1983); ? Rajasthan (Hill 1964a); Uttar Pradesh. Pakistan (Roberts 1977) and Tibet (Hill 1964a).

Remarks : According to Hill (1964 a), the specimen from Rajasthan approaches the eastern subspecies, *M. h. rubella* Thomas, in size and colour. Hinton & Fry (1923) reported a specimen of *Murina huttoni* from Nepal, which was collected and reported by Scully (1888) as *Harpyiocephalus leucogaster*. But this specimen is neither *leucogaster* nor *huttoni*.

70. *Murina tubinaris* (Scully)

1881. *Harpyiocephalus tubinaris* Scully, *Proc. zool. Soc. Lond.* : 200, fig. 1 (Gilgit, Gilgit district, Jammu & Kashmir, India).

Common name : Scully's Tube-nosed Bat (Eng.).

Material examined : None.

Measurements : Nil.

Diagnosis : Very much similar to *Murina cyclotis cyclotis* (see below) in structure, but differs from the same in the presence of a slight emargination in the posterior margin of the ear, in its dorsal greyish and ventral greyish white coloration. It is also slightly smaller than *M. c. cyclotis*, on average.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916c); Arunachal Pradesh (Hinton & Lindsay 1926a); Jammu & Kashmir; Meghalaya (Hinton & Lindsay 1926a). Pakistan (Koopman & Danforth 1989), Burma, Thailand (Hill 1983), Laos and Vietnam.

Remarks : Ellerman & Morrison-Scott (1951) listed *tubinaris* as a tentative subspecies of *Murina huttoni* (Peters), but Hill (1962, 1964a) has shown that *tubinaris* should be treated as a species distinct from *huttoni*.

71. *Murina cyclotis cyclotis* Dobson

1872. *Murina cyclotis* Dobson, *Proc. Asiat. Soc. Beng.* : 210 (Darjiling, Darjiling district, West Bengal, India).

Common name : Round-eared Tube-nosed Bat (Eng.).

Material examined : Darjiling district : 1 ♀, Darjiling, don. F. Stoliczka; 1 ♂, Pashok (c 1,067 m), coll. N. A. Baptista, 3.viii.1915; 1 ♂, Takdah (c 1,605 m), purchased, 8.viii.1958.

Measurements : External : 2 ♂ : Fa 30.7, 31.0; Tl(1) 31.0; E 9.4, 15.0; Tb 14.0; 14.8; F & Cl 7.0, 8.2. 1 ♀ : Fa 34.1; Tl 32.5; E 14.5; Tb 16.8; F & Cl 7.8; Tr 7.4. Cranial : 2 ♂ : I 15.0 +, 15.6; mtr 5.0, 5.1; c¹-c¹ 3.5, 3.8; iw 3.9, 4.3; cw 7.2, 7.6; zw (1) 9.0; m³-m³ 5.2(2); ml(1) 10.0. 1 ♀ : I 16.0; mtr 5.5; iw 4.2; cw 7.3; m³-m³ 5.4; ml 10.3.

Diagnosis : A small bat with diverging tubular nostrils opening laterally, circular ear and long tragus; dorsal surface warm rufous brown to ferruginous, ventral surface greyish white with a brownish tinge, individual hairs on both surfaces dark brown at base; forearm, tail, leg, foot and upper surface of interfemoral membrane clothed with golden brown hairs; wing from tip of outer toe.

Distribution : India : West Bengal : Darjiling district; Andhra Pradesh (Ghosh 1989); Meghalaya (Hinton & Lindsay 1926a); Sikkim. Western and northern Burma, Laos, northern Thailand (Hill & Thonglongya 1972), Vietnam, southern China (Honacki *et al.* 1982), including Hainan Island, and Philippine Islands.

Remarks : Within the Indian Union, *Murina cyclotis cyclotis* was known only from northeastern India. But Ghosh (1989) has recently recorded it from the Eastern Ghats of Andhra Pradesh, a substantial extension of range of distribution further south.

Genus *Harpiocephalus* Gray, 1842

Genus *Harpiocephalus* is represented in West Bengal by a single species and subspecies.

72. *Harpiocephalus harpia lasyurus* (Hodgson)

1847. *Noctulinia lasyura* Hodgson, *J. Asiat. soc. Beng.*, 16 : 896 (Central Hills, sub-Himalayas = Darjiling, Darjiling district, West Bengal, India).

Common name : Hairy-winged Bat (Eng.).

Material examined : Darjiling district : 2 ♂ (one badly damaged), Darjiling, coll. W. S. Atkinson, purchased, 1871, 1872; 1 ♂, 1 ♀, Karsiyang, purchased, --.

Measurements : External : 2 ♂ : Fa 46.0, 47.6; E 12.5, 13.7; Tb 22.5, 23.2; F & Cl 8.4, 9.4. 1 ♀ : Fa 51.1; E 13.8; Tb 23.7; F & Cl 10.6. Cranial : 2 ♂ : I 21.5, 21.7; mtr 6.4, 6.5, c¹-c¹ 6.4, 6.6; iw 5.5(2); cw 9.7, 10.0; zw 13.4, 13.6; m³-m³ 7.3, 7.5; ml 15.2, 15.3. 1 ♀ : I 22.5; mtr 7.0; c¹-c¹ 6.9; iw 5.5; cw 9.8; zw 14.4; m³-m³ 8.0; ml 15.8.

Diagnosis : Very much like a tube-nosed bat, but larger; fur thick and woolly, extending to legs, tail, feet and interfemoral membrane; both sides of wing covered with hairs which become thinner towards tip; colour generally bright rusty or bright rufous above, greyish buff below.

Distribution : India : West Bengal : Darjiling district, Jalpaiguri district (Wroughton 1917a); Kerala (Thomas 1923, Das 1986a); Meghalaya (Dobson 1876); Sikkim (Das 1986a); Tamil Nadu.

Remarks : Das (1986a) has synonymised *Harpiocephalus harpia madrassius* Thomas, with *Harpiocephalus harpia lasyurus* (Hodgson).

Subfamily KERIVOULINAE

Subfamily Kerivoulinae is represented in West Bengal by a single genus *Kerivoula*.

Genus *Kerivoula* Gray, 1842Key to the species of the genus *Kerivoula*

1. Wing-membrane coloured orange and black *K. picta picta*
Wing-membrane of same colour throughout 2
2. Size larger, forearm more than 40.0 mm *K. papillosa lenis*
Size smaller, forearm 35.0 mm or less *K. hardwickei depressa*

73. *Kerivoula picta picta* Pallas

1767. *Vespertilio picta* Pallas, *Spicil. Zool.*, 3 : 7 (Ternate Island, Molucca Islands, Indonesia).

Common name : Painted Bat (Eng.).

Material examined : Calcutta district : 1 ♀ (Badly damaged), Calcutta, coll. J. Anderson, 1869.

Measurements : Nil.

Diagnosis : A rather medium-sized (forearm around 35.0 mm) kerivouline bat with characteristic colour-pattern; ears large, bluntly pointed and of bright orange colour, posterior margin with shallow concavity below tip; tragus long and slender; fur soft and silky; dorsal colour light orange, ventral colour slightly paler; wing-membrane orange-coloured with prominent black markings between fingers; a distinct fringe of short, white hairs along posterior margin of interfemoral membrane.

Distribution : India : West Bengal : Calcutta district (Dobson 1876), Darjiling district (Anderson 1881), Jalpaiguri district (Inglis *et al.* 1919); Assam (Chaturvedi 1969); Bihar (Inglis 1916); Goa (Agrawal 1973); Karnataka (Jerdon 1867, Wroughton 1912 *b*); Maharashtra (Wroughton 1916 *a*); Orissa (Blyth 1863); Rajasthan (Sharma 1987); Sikkim (Blanford 1891); Tamil Nadu (Jerdon 1867). Sri Lanka, Bangladesh (Jerdon 1867, Dobson 1976), Burma (Jerdon 1867), Vietnam (Chasen 1940), Thailand (Chasen 1940), Malaya, Sumatra, Java, Bali, Lombok (Hill 1965), Borneo and Molucca Islands.

Remarks : The Painted Bat has a wide distribution in India, especially in southern and western parts, but is rather sparsely distributed in West Bengal.

74. *Kerivoula hardwickei depressa* Miller

1906. *Kerivoula depressa* Miller, *Proc. biol. Soc. Wash.*, 19 : 64 (Biapo, Carin = Karen Hills, Burma).

Common name : Hardwicke's Bat (Eng.).

Material examined : None.

Measurements : Nil.

Diagnosis : Structurally more or less similar to the Painted Bat, but distinctly different in colour; ears a little longer than those in *Kerivoula p. picta*, tip rounded, inner margin convex, outer margin deeply concave below tip; tragus long and slender; wing from base of toe; posterior margin of interfemoral membrane fringed with very few hairs; colour of fur greyish brown above and below, basal half of hairs dark brown.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916 *c*); Assam (Dobson 1876); Jammu & Kashmir (Chakraborty 1983); Meghalaya (Dobson 1876); Nagaland (Khajuria 1953). Burma, southern China, Vietnam (Osgood 1932), Cambodia (Dobson 1878) and western Thailand (Lckagul & McNeely 1977).

Remarks : Ellerman & Morrison-Scott (1951) regarded the specimens from Darjiling as belonging to the nominate subspecies. Hill (1965) has, however, shown that the northern India population should belong to *depressa*.

75. *Kerivoula papillosa lenis* Thomas

1916. *Kerivoula lenis* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 416 (Calcutta, West Bengal, India).

Common name : Papillose Bat (Eng.).

Material examined : None.

Measurements : Nil.

Diagnosis : A large (forearm more than 40.0 mm) kerivouline bat, externally much like *Kerivoula hardwickei*, but with a shallow emargination on posterior margin of ear just below tip; no indication of fringe along posterior margin of interfemoral membrane; dorsal colour glossy brown, head whitish buff; ventral colour paler and greyer; hairs of back with basal three-fifths dark slaty or blackish.

Distribution : India : West Bengal : Calcutta district. (?) Sri Lanka (Jerdon 1867, Blanford 1891) and possibly Bangladesh (Khan 1982).

Remarks : Compared to the Malayan form, *Kerivoula papillosa malayana* Chasen, *lenis* appears to be a valid subspecies. But it is not certain whether the holotype sent to London from Calcutta, was actually procured in or around Calcutta, because Calcutta port, at that period, had a substantial portion of northeastern India as its hinterland. Blanford (1891) doubted the identification of the specimen from Sri Lanka. The record from Bangladesh is not based on specimen(s), though it may very well occur there.

Order PRIMATES

Primates, having evolved from arboreal ancestors, retain this characteristic in form of prehensile hands and feet, the thumb and big toe opposable to other digits, and each digit usually tipped with a flat nail. Other characters include an increase in the size and complexity of the brain, complete bony rim around the orbits and reduced dentition.

Three families of Primates, viz., Lorisidae, Cercopithecidae and Hylobatidae occur in India. Out of these, only one, namely Cercopithecidae is found in West Bengal.

Family CERCOPITHECIDAE

Two genera, namely, *Macaca* Lacepede and *Presbytis* Eschscholtz occur in West Bengal.

Key to Indian genera of family CERCOPITHECIDAE

Face red; cheek pouches present; tail generally smaller than head and body*Macaca*

Face black; cheek pouches absent; tail always longer than head and body*Presbytis*

Genus *Macaca* Lacepede, 1799

Two species of genus *Macaca* occur in West Bengal.

Key to species of the genus *Macaca*

Hindquarter of the body brighter (of orange red hue) than the forequarter; buttocks naked around callosities.....*Macaca mulatta* (*M. m. mulatta*)

Hindquarter of body not more brightly coloured than the forequarter; buttocks clad up to the edge of callosities *Macaca assamensis* (*M. a. pelops*)

76. *Macaca mulatta mulatta* (Zimmermann)

1780. *Cercopithecus mulatta* Zimmermann, *Geogr. Gesch. Mensch.*, 2 : 195 (India).

Common names : Rhesus Macaque (Eng.), Markat (Beng.), Bandar (Hin.).

Material examined : Calcutta district : 1 ♂, Indian Museum Compound, coll. B. S. Lamba, 25.vii.1962. Darjiling district : 1 ♂, no exact locality, coll. W. Partridge, 25.iv.1892; 1 ♂, Sepoydhara (c 914 m), coll. W. Partridge, 6.vi.1892; 1 ♂, Sukhna, coll. W. Partridge, 25.iv.1892. Jalpaiguri district : 1 ♂, Hasimara (c 182 m), coll. N. A. Baptista, 10.i.1916. Sundarban (no exact locality or district) : 5 ♂, 1 ♀, coll. Museum collector, 26.iv.1870.

Measurements : External : 1 ♂, H & B 508.0; TI 203.0; Hf 127.0. 1 ♀ : H & B 491.0; TI 193.0; Hf 120.0. Cranial : 4 ♂ : I 103.7-127.5 (115.0); cb 78.7-92.1(83.8); mw 29.2-37.0(31.5); mtr 36.9-43.8(39.3); orb 22.6-28.0(24.7); zw 76.8-90.2(81.3).

Diagnosis : Medium-sized, with a rather short tail (about half of the head and body length). Crown hairs grow back from brows. Face light pink. Upper back olive in colour; loins, rump and base of tail of orange red hue.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Bardhaman district (Peterson 1910), Birbhum district, Calcutta district (Saha 1972), Darjiling district (Wroughton 1916a), Haora district, Hugli district (Banerjee 1972), Jalpaiguri district (Gruning 1911), Koch Bihar district, Maldah district (Lambourn 1918), Medinipur district, Murshidabad district, Nadia district (Garrett 1910), North 24-Parganas district (O'Malley 1914), Puruliya district (Bhattacharya 1985), South 24-Parganas district (O'Malley 1914), West Dinajpur district; Andhra Pradesh; Arunachal Pradesh; Assam; Bihar; Delhi; Gujarat; Himachal Pradesh; Jammu & Kashmir; Madhya Pradesh; Meghalaya; Orissa; Punjab; Rajasthan; Sikkim; Tripura (Agrawal & Bhattacharyya 1977); Uttar Pradesh. Bhutan, Bangladesh, Burma, China, Thailand and Vietnam.

Remarks : Variation in the coat-colour and nature of pelage was observed in the specimens examined. In two specimens from Sundarban, the orange-red hue extends to almost entire dorsum, whereas in the third it is limited to extreme posterior part. Further, in winter specimen, the coat is thick and soft, whereas in summer ones it is decidedly harsh and shaggy.

Though this species is found in all the districts of West Bengal, it is negligible in number in the plains (Tiwari 1982). A number of troops were observed during recent surveys in Darjiling, Jalpaiguri, Nadia (Das-Choudhury and Roy 1989) and South 24-Parganas districts. In sixties and early seventies of the present century, a large troop existed in the Hastings House area and a smaller one in the Indian Museum complex of Calcutta. The former troop now is restricted to a few individuals and the latter has totally extirpated. Southwick *et al.* (1974) reported a group of 62 of these monkeys living successfully in an area of less than 4 ha within urban Calcutta, among large buildings, motor vehicles, and crowds of people. That group is also not found, at present.

77. *Macaca assamensis pelops* Hodgson

1840. *Macacus* (*Pithecus*) *pelops* Hodgson, *J. Asiat. Soc. Beng.*, 9 : 1213 (Kachar region of Nepal).

Common name : Assamese Macaque (Eng.).

Material examined : Darjiling district : 1 ♂, Pashok (c 914 m), coll. C. A. Crump, 13.xii.1915; 2 ♂, Sukiapokri (c 1,066 m), coll. C. A. Crump, 18, 22.ii.1915; 1 ♂, Takdah (c 1,650 m), coll. H. Khajuria, 7.viii.1958; 1 juv. ♂, 2 ♀, Tarkhola (c 325 m), coll. R. L. Fernandez, 17, 22.viii.1958.

Measurements : External : 3 ♂ : H & B 458.0-600.0(556.0); Tl 280.0-323.0(305.0); Hf 148.0-180.0(167.0); E 38.0-42.0(40.0). 2 ♀ : H & B 533.4, 586.7; Tl 236.0; 259.0; Hf 147.3, 154.9; E 29.2, 35.5. Cranial : 2 ♀ : l 116.0, 127.0; cb 90.0, 99.0; mw 28.2, 33.6; mtr 39.3, 39.8; orb 59.0, 69.3; zw 73.5, 84.0.

Diagnosis : The subspecies *pelops* differs from the nominate subspecies in the tail being relatively longer, from one-half to more than one-half of the head and body length.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916a); Sikkim; Uttar Pradesh; probably Arunachal Pradesh as far east as the great bend of Brahmaputra (Fooden 1982). Nepal, Bhutan and Bangladesh.

Remarks : The Assamese macaque is common in Darjiling district. Tiwari (1982) reported 156 monkeys in 12 troops from this district. Based on a captive specimen, said to have been collected locally, Inglis *et al.* (1919) reported it from Jalpaiguri. However, a number of troops were observed by the Zoological Survey of India party in Jaldapara Wildlife Sanctuary in February, 1974.

Unweaned infants were observed during August, and juveniles almost throughout the year in Darjiling district (Khajuria 1966).

Macaca mulatta and *Macaca assamensis* though sympatric in distribution, the former is restricted to lower elevations (100-1100 m) and the latter to a relatively higher one, 250-2700 m (Fooden 1982). However, Khajuria (1966) reported the occurrence of both the species side by side at Tarkhola.

In both the female specimens collected from Tarkhola, a well-defined whorl on the vertex is present, which normally is not found in the Assamese macaque.

Genus *Presbytis* Eschscholtz, 1821

Out of five species of the genus *Presbytis* reported from India, only one, namely, *Presbytis entellus* (Dufresne) occurs in West Bengal. This species is represented here by the nominate subspecies.

78. *Presbytis entellus entellus* (Dufresne)

1797. *Simia entellus* Dufresne, *Bull. Soc. Philom. Paris*, 1(7) : 49 (Bengal).

Common names : Hanuman Langur (Eng.), Hanuman (Beng.), Langur (Hin.).

Material examined : Calcutta district : 1 ♂, 1 ♀, Indian Museum Compound, coll. R. Hodgant, --. Haora district : 1 juv. ♀, 1 unsexed (skulls only), Botanical Garden (Sibpur), coll. J. Anderson, 2.ix.1865. Medinipur district : 1 ♂, 1 ♀, Medinipur town, coll. C.A. Crump, 4.ix.1914. Nadia district : 2 ♀, Madanpur, coll. P.K. Das, 15, 17.vii.1969.

Measurements : External : 1 ♂ : H & B 615.0; Tl 955.0; Hf 195.0; E 45.0. 3 ♀ : H & B 560.0-700.0(627.0); Tl 900.0-1000.0(943.0); Hf 175.0-195.0(190.0); E 45.0-52.0(47.0). Cranial : ♂ : l 116.0; cb 90.0; mw 41.2; mtr 41.0; orb 30.3; zw 90.2.

Diagnosis : A large black faced, grey bodied langur with long limbs, and tail longer than head and body; whiskers short, only partly covering the ears; crown of head a little paler than the nape and shoulders; crown hairs radiate from a frontal whorl; hands and feet black or brown and strongly contrasted with that of arms and legs.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Birbhum district (O'Malley 1910), Calcutta district, Haora district (Anderson 1881), Hugli district (Banerjee 1972), Medinipur district (Wroughton 1915), Murshidabad district (Anderson 1881), Nadia district (Garrett 1910), Puruliya district (Bhattacharya *et al.* 1985); Bihar; Delhi; Gujarat; Haryana; Madhya Pradesh; Orissa; Punjab; Rajasthan; Uttar Pradesh. Bangladesh.

Remarks : In addition to the above-mentioned localities, parties of the Zoological Survey of India have also observed this species in Bardhaman, Darjiling, Jalpaiguri, Koch Bihar, Maldah, North 24-Parganas and South 24-Parganas districts. Hence, this langur is found in almost all the districts of West Bengal except in the mangrove forests of Sundarban and high altitude areas of Darjiling district.

Sometimes this langur does considerable damage to orchards, gardens and cultivated fields. A troop of six adults and three infants was observed at Baharampur Railway Station during 1983 which regularly invaded the mulberry plantation of the Sericulture Institute.

Both the females collected from Madanpur, Nadia district, during July 1969 had well-developed teats, and one of them was lactating.

Order PHOLIDOTA

Body long and tapering, covered above with large overlapping scales; undersurface clothed with coarse, bristle-like hairs; head small and pointed; jaws devoid of teeth.

This order contains only a single family Manidae, with a single genus *Manis*.

Family MANIDAE

Genus *Manis* Linnaeus, 1758

Out of the two species found in India, only one, namely, *M. crassicaudata* occurs in West Bengal.

79. *Manis crassicaudata* Gray

1827. *Manis crassicaudatus* Gray, in *Griffith's Cuvier Anim. Kingd.*, 5 : 282 (India).

Common names : Indian Pangolin (Eng.); Bajra-Kit, Bon-rui, Kat-pohu (Beng.); Bajra-kit, Bajra-kapta, Silu, Sal, Sala (Hin.).

Material examined : South 24-Parganas district : 1 ♀, Behala, --, 10.xi.1969.

Measurements : External : H & B 383.0; Tl 345.0; Hf 76.0.

Diagnosis : Body covered with 11-13 longitudinal rows of overlapping horny scales; tip of tail without any naked glandular area.

Distribution : India : West Bengal : Birbhum district, Haora district (Mitra 1957), Jalpaiguri district (Inglis *et al.* 1919), Koch Bihar district, Medinipur district, Nadia district, Puruliya district (Bhattacharya *et al.* 1985), south 24-Parganas district (Mandal & Nandi 1989); Andhra Pradesh; Bihar; Gujarat; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Orissa; Punjab; Rajasthan; Uttar Pradesh. Pakistan, Sri Lanka and China.

Remarks : Very rare; a forest animal, lives in burrows. Though the present specimen was collected from Behala, there is least possibility of its occurrence now-a-days due to rapid urbanisation of the area.

Order CARNIVORA

Six small, equal-sized incisors, a pair of large, conical canines, and last upper premolar and first lower molar having sharp-edged lobes for shearing the flesh.

Seven families of the order Carnivora occur in West Bengal.

Key to families of the order CARNIVORA

1. Ethmo-turbinals very large, covering the greater part of nasal chambers, extending anteriorly to the anterior orifice; auditory bulla composed of two bones; Cowper's gland absent.....2

- Ethmo-turbinals excluded from the anterior orifice of nasal chamber by large maxillo-turbinals; auditory bulla composed of a single tympanic bone; Cowper's gland present.....5
2. Posterior palatal foramina set far back on the maxillo-palatine suture; teeth reduced in number and highly sectorial; dental formula 3,1,3 or 2,1/3,1,2,1; inter-ramal tuft of vibrissae absent..... FELIDAE
- Posterior palatal foramina located in front of the maxillo-palatine suture; teeth not so specialised or reduced in number; dental formula 3,1,4, or 2,1/3,1,4, or 3,2 or 1; inter-ramal tuft of vibrissae present.....3
3. Four toes in fore and hindfeet, dog-like in structure; ears lacking any marginal bursa; auditory bulla without oblique groove; massive jaws and teeth.HYAENIDAE
- Four or five toes in fore and hindfeet, not dog-like in structure; ears having a bursa on the margin; auditory bulla distinctly grooved; jaws and teeth not powerful.4
4. Ears moderate in size, with well-developed bursa and simple supratragus, but devoid of a valvular flap over it; feet compact, with short claws; anus not enclosed in a glandular sac; no bony tube to auditory orifice.....VIVERRIDAE
- Ears small and rounded, with vestigial bursa, valvular supratragus and a valvular flap over it; feet with free digits and fossorial claws; anus enclosed in a glandular pouch; a well-developed bony tube to the auditory orifice. HERPESTIDAE
5. Legs long, slender and digitigrade; fourth digit of forefoot raised above the plantar pad; hindfoot with only 4 toes; baculum deeply channelled below..... CANIDAE
- Legs relatively short and thick, plantigrade or semi-plantigrade; first digit of the forefoot present close to second, and not raised above the plantar pad; baculum not deeply channelled below.....6
6. Large-sized animals, with a short tail; pads of digits forming a weak curved line; plantar pads very wide; three lower molars on each side..... URSIDAE
- Small-sized animals, with a moderately long tail; pads of digits forming a strongly curved line; two lower molars present on each side.....7
7. Penis with a small baculum, and prepuce close to scrotum; soles of feet completely covered by hairs; alisphenoid canal present. All UROPODIDAE
- Penis with a long baculum, and prepuce distant from the scrotum; soles of feet not entirely covered with hairs; alisphenoid canal absent.MUSTELIDAE

Family CANIDAE

Family Canidae is represented by three genera in West Bengal.

Key to genera of the family CANIDAE

1. A frontal sinus present; post-orbital process smooth and convex above; tail less than half the length of head and body.....2
- No frontal sinus; postorbital process concave above; tail more than one-half the length of head and body..... *Vulpes (V. bengalensis)*
2. Seven teeth in lower molar series..... *Canis*
- Six teeth in lower molar series. *Cuon (C. alpinus)*

Genus *Canis* Linnaeus, 1758

Two species of the genus *Canis* occur in West Bengal, each represented by one subspecies.

Key to species of the genus *Canis*

Large-sized, males 65-75 cm high at the shoulders; greatest length of skull 18-24 cm; first upper molar with indistinct outer cingulum..... *C. lupus* (*C. l. pallipes*)

Medium-sized, males 38-43 cm high at the shoulders; greatest length of skull 13.0-16.5 cm; first upper molar with a prominent outer cingulum..... *C. aureus* (*C. a. indicus*)

80. *Canis lupus pallipes* Sykes

1831. *Canis pallipes* Sykes, *Proc. zool. Soc. Lond.*, : 101 (Deccan, India).

Common names : Wolf (Eng.), Nekre bagh (Beng.), Bheriya (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : About the size of an Alsatian dog. Dorsum greyish fulvous or reddish, with a brownish tinge, sometimes mixed with black. Face and limbs reddish. Forehead elevated and brows arched.

Distribution : India : West Bengal : Bankura district (Banerjee 1968), Birbhum district (O'Malley 1910), Bardhaman district (Peterson 1910), Hugli district (Banerjee 1968), Maldah district (Sengupta 1969), Medinipur district (Mitra 1957), Puruliya district (Bhattacharya et al. 1985); Andhra Pradesh; Assam; Bihar; Gujarat; Karnataka; Madhya Pradesh; Maharashtra; Orissa; Rajasthan; Uttar Pradesh. Arabian Peninsula, Iran and Pakistan.

Remarks : This species, though reported from various parts of West Bengal, we failed to see any animal during the recent surveys.

81. *Canis aureus indicus* Hodgson

1833. *Canis aureus indicus* Hodgson, *Asiat. Res.*, 18, 2 : 237 (Nepal).

Common names : Asiatic Jackal (Eng.), Shiyal, Srigal (Beng.), Gidar, Shial (Hin.).

Material examined : Darjiling district : 1 juv. ♂, 1 juv. ♀, Dkyati (c 1,524 m), coll. H. Stevans, 20.iv.1921; 1 ♀, Ghoombhanjan, (c 2,117 m), coll. R.K. Ghose, 15.vi.1974; 1 ♂, Pedong (c 1,432 m), coll. N.A. Baptista, 9.ix.1916. Haora district : 1 ♂, Botanical Garden (Shubpur), coll. V.G. Gogate, 21.vi.1967. North 24-Parganas district : 1 ♂, Nalbani (Salt Lake), coll. S.S. Saha, 29.vi.1967.

Measurements : External : 3 ♂ : H & B 710.0-805.0(745.0); TI 240.0-270.0(253.0); Hf 160.0-165.0(162.0); E 75.0-80.0(78.0). 1 ♀ : H & B 730.0; TI 185.0; Hf 120.0; E 67.5. Cranial : 2 ♂ : I 162.0, 164.0; cb 156.0, 157.0; mw 50.8, 51.0; iw 24.5, 27.2; pow 31.3(2), b 24.0, 25.5; cw 51.8, 54.1; pm⁴ 16.0, 16.7; m 18.0, 19.0; zw 81.5, 83.8.

Diagnosis : Smaller than the wolf, and lacks the arching brows and elevated forehead. Dorsal colour typically a mixture of black and white, washed with buff about the shoulders, ears and legs.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Bardhaman district, Birbhum district (O'Malley 1910), Calcutta district (Sclater 1891), Darjiling district (Wroughton 1916a), Haora district (Sclater 1891), Hugli district (Banerjee 1972); Jalpaiguri district (Gruning

1911), Koch Bihar district, Maldah district (Lambourn 1918), Medinipur district (O'Malley 1911), Murshidabad district (Bhattacharya 1979), Nadia district (Majumder 1978), North 24-Parganas district (O'Malley 1914), Puruliya district (Bhattacharya *et al.* 1985), South 24-Parganas district (O'Malley 1914), West Dinajpur district (Sengupta 1965); Arunachal Pradesh; Assam; Bihar; Manipur; Meghalaya; Nagaland; Sikkim; Tripura (Agrawal & Bhattacharyya 1977). Bhutan, Burma and Thailand.

Remarks : Corbet (1980), however, does not recognise any subspecies of *Canis aureus*.

Specimens from Darjiling are much darker than those of plains. Limbs of specimens from Haora district are much paler than those from other localities. Only a few decades ago, call of the Asiatic Jackal was very familiar in the rural as well urban areas of West Bengal. However, its number has now drastically reduced and only scattered individuals are seen. Though there is some amount of hunting pressure from the tribal people for its pelt, but decline in the population is mainly due to loss of habitat. It is also being killed for its habit of raiding melon and sugarcane crops.

Genus *Vulpes* Oken, 1816

One species of the genus *Vulpes* occurs in West Bengal.

82. *Vulpes bengalensis* (Shaw)

1800. *Canis bengalensis* Shaw, *Genl. Zool.*, 1, 2 : 300 (Bengal).

Common names : Bengal Fox (Eng.), Khek-siyal (Beng.), Lomri (Hin.).

Material examined : Koch Bihar district : 2 ♂, Sitalkuchi, coll. S. Chakraborty, 11, 14.iv.1986. West Dinajpur district : 1 ♀, Surangapur (c 20 km from Raiganj towards Bishnupur), coll. S. Chakraborty, 12.x.1988.

Measurements : External : 2 ♂ : H & B 480.0, 520.0; Tl 260.0, 274.0; Hf 115.0, 116.0; E 72.0, 82.0. 1 ♀ : H & B 490.0; Tl 250.0; Hf 110.0; E 80.0. Cranial : 2 ♂ : l 104.5, 113.0; cb 100.0, 107.8; mw 15.0, 19.0; iw 17.7, 22.0; pow 19.9, 21.5; b 18.5, 19.0; cw 40.3, 40.8; pm⁴ 8.9; 10.0; m₁ 6.4, 10.0; zw 55.0 1 ♀ : l 106.0; cb 103.2; mw 17.5; iw 19.5; pow 20.0; b 18.6; cw 40.5; pm⁴ 8.8; m₁ 10.0; zw 61.5.

Diagnosis : A grey-coloured fox, having slender limbs, back of ears sandy brown and tail-tip black.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Bardhaman district, Birbhum district (O'Malley 1910), Darjiling district (Dash 1947), Haora district, Hugli district (Banerjee 1972), Jalpaiguri district (Gruning 1911), Koch Bihar district, Maldah district, Medinipur district (O' Malley 1911), Murshidabad district, Nadia district (Garrett 1910), North 24-Parganas district (Mukherjee 1975), Puruliya district (Bhattacharya *et al.* 1985), South 24-Parganas district (Mukherjee 1975), West Dinajpur district (Sengupta 1965). Occurs throughout India, Pakistan (Roberts 1977), Nepal and Bangladesh.

Remarks : Coat-colour of specimens examined are rufous grey above, grey on the sides and creamy white below, with rufous tinge near the vent.

The Bengal Fox is still common in West Bengal, but exterminated from many areas of its range due to the destruction of habitat. Use of insecticides and rodenticides in the agricultural fields has also resulted in the decline of its population as these are directly or indirectly consumed by the foxes along with their food. Moreover, in many areas such as Puruliya, Koch Bihar, etc., this species is killed in good numbers by the local people during certain festival days as a part of their rituals. From earlier records it is obvious that the Bengal Fox was common in Calcutta city, but now-a-days it is rare. However, a colony still survives near the Yuva Bharati Krirangan at Salt Lake near Calcutta.

Stomach analysis of two specimens revealed remains of *Mus* sp., lizard and unidentified plant material.

Specimens have been observed living in burrows in the cultivated fields adjacent to the localities.

Genus *Cuon* Hodgson, 1838

Genus *Cuon* is represented by only one species, *Cuon alpinus* (Pallas). Out of nine subspecies, one occurs in West Bengal.

83. *Cuon alpinus primaevus* (Hodgson)

1833. *Canis primaevus* Hodgson, *Asiat. Res.*, 18, 2 : 221 (Nepal).

Common names : Dhole or Indian Wild Dog (Eng.), Bannya Lal Kukur (Beng.), Dhole, Jangli Kutta (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Domestic dog-like in appearance, with long, lanky body, and short in legs and muzzle. Ears rounded and tail-tip bushy. Body deep red in colour.

Distribution : India : West Bengal : Darjiling district (Sclater 1891), Jalpaiguri district (Gruning 1911); Sikkim; Uttar Pradesh. Nepal and Bhutan.

Remarks : No specimen of this species could be seen during the recent surveys of West Bengal, hence appears to be rare. However, occurrence of this species has been reported in Medinipur district by the local people.

Family URSIDAE

Two genera of the family Ursidae occur in West Bengal.

Key to the genera of the family URSIDAE

Forefoot with a single external cordate-shaped carpal pad, and at most a small internal pad or area of naked skin representing it; no distinct postcanine space; last upper molar subequal to the first.....*Melursus*

Forefoot with a single large pyriform carpal pad, as wide as the planter pad; a distinct postcanine space present; last upper molar larger than the first.....*Selenarctos*

Genus *Selenarctos* Heude, 1901

This genus is represented by one species, *Selenarctos thibetanus*. Out of eight subspecies, one occurs in West Bengal.

84. *Selenarctos thibetanus laniger* Pocock

1932. *Selenarctos thibetanus laniger* Pocock, *J. Bombay nat. Hist Soc.*, 36 : 115 (Aru, upper Lidder Valley, Jammu & Kashmir, India).

Common names : Asiatic Black Bear (Eng.), Bhalluk (Beng.), Richh, Bhalu (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A large-sized bear, 140-190 cm in head and body length; coat short, smooth and black; claws black; a V-shaped breast patch present, white or buff in colour.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b), Jalpaiguri district (Gruning 1911); Jammu & Kashmir; Mizoram; Sikkim; Uttar Pradesh. Pakistan and Bangladesh.

Remarks : Not common. In recent times, Ghose (1985) reported this species from Neora Valley, Darjiling district. O'Malley (1908), however, reported Black Bear from Bankura district but this, in all probability, was a specimen of sloth bear.

Genus *Melursus* Meyer, 1793

Genus *Melursus* is represented by a single species, *M. ursinus*, occurring in India and Sri Lanka. Out of two subspecies, the nominate one occurs in India including West Bengal.

85. *Melursus ursinus ursinus* (Shaw)

1791. *Bradypus ursinus* Shaw, *Nat. Misc.*, 2 (unpaged), pls. 58-59 (Patna, Bihar, India).

Common names : Sloth Bear (Eng.), Bhaluk (Beng.), Richh, Bhalu (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A large-sized bear, 140-170 cm in head and body length, having ivory white claws; coat rough and black, with or without a V-shaped breast patch.

Distribution : India : West Bengal : Bankura district (Pocock 1941), Darjiling district (Dash 1947), Jalpaiguri district (Gruning 1911), Medinipur district, Puruliya district; Arunachal Pradesh; Assam; Bihar; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Meghalaya; Orissa; Uttar Pradesh. Bangladesh.

Remarks : Endangered. In the last century and during first quarter of the present century this species was fairly common in northern West Bengal (Blanford 1888-91, Mitra 1957) but now it has become rare. Destruction of forest for cultivation and tea plantation is the main reason of its decline.

Family AILUROPODIDAE

Out of two genera, one, namely, *Ailurus* occurs in the Himalaya.

Genus *Ailurus* Cuvier, 1825

The genus *Ailurus* is represented by only one species, *Ailurus fulgens*.

86. *Ailurus fulgens fulgens* Cuvier

1825. *Ailurus fulgens* Cuvier, in Geoffroy and Cuvier, *Hist. Nat. Mamm.*, 5(50) : 3 (Southeast Himalayas, India).

Common name : Red Panda (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Rounded head, stumpy muzzle, large, pointed ears, and hairy sole characterise this animal. Dorsum bright chestnut; face and lower lip white; a red stripe runs from above the eye to the gape; tail ringed.

Distribution : India : West Bengal : Darjiling district (Sclater 1891); Arunachal Pradesh (Chakraborty & Sen, in Press); Sikkim. Nepal.

Remarks : Red Panda is an endangered species, rarely seen in the high reaches of Darjiling district, West Bengal. Its population has declined considerably due to shrinkage of its habitat, and also for being hunted for its beautiful pelt. According to Tikader (1983), a few decades ago, it was fairly common in Darjiling district, but now it has almost been exterminated, except for its sporadic occurrence in the Neora Valley in Kalimpong Division and eastern slope of the Singalila Ridge.

Family MUSTELIDAE

Seven genera belonging to family Mustelidae occur in West Bengal.

Key to the genera of the family MUSTELIDAE

1. Adapted to semiaquatic life; tail thick and muscular, hindfoot wider than forefoot; vibrissae thick.....2
Adapted to terrestrial life, without the above-mentioned modifications.....3
2. Paws relatively larger, digits extensively webbed, with well-developed claws.....*Lutra*
Paws relatively small, digits less extensively webbed and with minute claws.....*Aonyx*
3. Feet adapted for running and climbing; claws short, sharp and partially retractile; metatarsal pads, absent.....4
Feet adapted for digging; claws strong, long and non-retractile; metatarsal pads present.....5
4. Muzzle, limbs and tail relatively longer; body less elongated and cylindrical; ears larger...*Martes*
Muzzle, limbs and tail shorter; body more elongated and cylindrical; ears smaller.*Mustela*
5. Feet narrower; plantar pads strongly arched; ears with bursa.....*Melogale*
Feet broader and plantigrade; plantar pads not arched; ears without a bursa.....6
6. Snout hog-like; carpal and meta-tarsal pads small, separated from each other and from the plantar pads; ears with well-developed pinna; a sub-caudal glandular pouch present.....*Arctonyx*
Snout not hog-like; carpal and metatarsal pads confluent and in contact with the plantar pads; pinna reduced to a thickened rim; no glandular pouch.*Mellivora*

Genus *Martes* Pinel, 1792

Two species of the genus *Martes* are found in West Bengal.

Key to the species of the genus *Martes*

- Pale hue of the throat, when present, not sharply set off above by a dark stripe running along the sides of the neck from behind the ears; general colour of the upper side of body including the limbs and tail uniform.*Martes foina* (*M. f. intermedia*)
- Pale hue of the throat emphasised by a dark band running along the sides of the neck from behind the ears or by the wholly or mainly dark nape; general colour of the upper side of body more varied.....*Martes flavigula* (*M. f. flavigula*)

87. *Martes foina intermedia* (Severtzov)

1873. *Mustela intermedia* Severtzov, *Mem. Soc. Amis. Sci. Nat. Moscow*, 8, 2 : 61.1876. *Ann. Mag. nat. Hist.*, 18 : 45 (Basin of the Chu, Tallas, and Naryn, from 1,219 m to 2,743 m, Eastern Turkestan).

Common name : Stone Marten (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Head and body length 40-45 cm, and the tail roughly half as long. Body dark reddish chestnut.

Distribution : India : West Bengal : Darjiling district (Ghose 1985); Jammu & Kashmir; Sikkim; Uttar Pradesh. Afghanistan, Iran, Pakistan, China and U.S.S.R.

Remarks : Endangered. Hunted for its valuable pelt. Ghose (1985) observed this species feeding on a young barking deer at Neora Valley, Darjiling district, West Bengal.

88. *Martes flavigula flavigula* (Boddaert)

1785. *Mustela flavigula* Boddaert, *Elench. Anim.*, 88 (Locality unknown, traditionally fixed as Nepal).

Common name : Yellow-throated Marten (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Head and body length 40-63 cm, with an equally long tail. Fur black on top of head, neck, outer part of limbs and the tail; sides of neck bright creamy yellow, sharply contrasting from upper side of it.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b), Jalpaiguri district (Inglis *et al.* 1919); Arunachal Pradesh; Assam; Himachal Pradesh; Jammu & Kashmir; Nagaland; Sikkim; Uttar Pradesh. Afghanistan, Pakistan, Nepal, Bhutan, Burma and China.

Remarks : Common in Darjiling district, but very rare in Jalpaiguri district. This animal also is killed for its pelt.

Genus *Mustela* Linnaeus, 1758

Two species of the genus *Mustela* occur in West Bengal.

Key to species of the genus *Mustela*

Sharp contrast in colour between the upper and under sides; soles of feet nearly naked round the pads in summer; two pairs of mammae present.....*Mustela kathiah* (*M. k. kathiah*)

Upper and undersides not sharply contrasted in colour; soles of feet hairy round the pads in all seasons; four pairs of mammae present.....*Mustela sibirica* (*M. s. subhemachalana*)

89. *Mustela kathiah kathiah* Hodgson

1835. *Mustela* (*Putorius*) *kathiah* Hodgson, *J. Asiat. Soc. Beng.*, 4 : 702 (The Kachar, northern region of Nepal).

Common name : Yellow-bellied Weasel (Eng.).

Material examined : Darjiling district : 1 unsexed skin, no exact locality, coll. G. King, 1871.

Measurements : Nil.

Diagnosis : Coat dark chocolate brown above, and rich yellow below.

Distribution : India : West Bengal : Darjiling district (Sclater 1891); Arunachal Pradesh; Assam; Meghalaya; Nagaland; Sikkim; Uttar Pradesh. Bhutan, Burma and China.

Remarks : Yellow-bellied Weasel is fairly common in the hills of Darjiling district and could be seen during the day time.

90. *Mustela sibirica subhemachalana* Hodgson

1837. *Mustela (Putorius) subhemachalanus* Hodgson, *J. Asiat. Soc. Beng.*, 6 : 563 (Nepal).

Common name : Siberian Weasel (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Coat colour varies from bright foxy red to dark chocolate above, and slightly paler below.

Distribution : India : West Bengal : Darjiling district (Blyth 1863); Sikkim. Nepal and Bhutan.

Genus *Mellivora* Storr, 1780

Genus *Mellivora* is represented by only one species, *M. capensis*. Out of six subspecies, one occurs in West Bengal.

91. *Mellivora capensis indica* (Kerr)

1792. *Ursus indicus* Kerr, *Anim. Kingd.* : 188 (India).

Common names : Ratel or Honey Badger (Eng.)

Material examined : Nil.

Measurements : Nil.

Diagnosis : Body squat and bear-like; stumpy legs; tail small; snout not projecting as in the hog. Coat grey above and black below.

Distribution : India : West Bengal : Upper parts (Burton 1835, quoted by Ellerman & Morrison-Scott 1951, Blanford 1888-91); Bihar; Gujarat; Madhya Pradesh; Orissa; Punjab; Uttar Pradesh; also peninsular India except Malabar coast (Blanford 1888-91). Iran, Afghanistan and Pakistan.

Remarks : A Ratel was noticed at midnight, about 5 km from Chilapata towards Hasimara, Jalpaiguri district by a party of the Zoological Survey of India in September, 1983.

Genus *Melogale* I. Geoffroy, 1831

One species of this genus, namely, *Melogale personata* occurs in West Bengal.

92. *Melogale personata nipalensis* (Hodgson)

1836. *Gulo nipalensis* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 237 (Nepal).

Common name : Burmese Ferret-Badger (Eng.).

Material examined : Jalpaiguri district : 1 ♂, 3 ♀, Hasimara (c 182 m), coll. H. V. O'Donel, 16.iv.1913, 5.vi.1916, 30.iii.1917.

Measurements : External : 1 ♂: H & B 357.0; TI 165.0; Hf 57.0; E 27.0.

Diagnosis : Coat deep purplish grey to brown; a narrow whitish stripe runs from the crown of the head down the middle of the back to the rump. Molar teeth massive and broad. Baculum ending in two asymmetrical processes.

Distribution : India : West Bengal : Jalpaiguri district (Inglis *et al.* 1919); Sikkim. Nepal.

Remarks : Rare. A single specimen of the Burmese Ferret-Badger was observed in Jaldapara Wildlife Sanctuary in the first week of February, 1974, by a party of the Zoological Survey of India.

Genus *Arctonyx* Cuvier, 1825

Genus *Arctonyx* is represented by only one species, *A. collaris*.

93. *Arctonyx collaris collaris* Cuvier

1825. *Arctonyx collaris collaris* Cuvier, *Hist. nat. Mam.*, 3 : 51 (Bhutan Duars, Jalpaiguri district, West Bengal, India).

Common names : Hog-Badger (Eng.), Balasur (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Size small, head and body length 55-70 cm; squat bear-like body, stumpy legs and long powerful claws. Snout long like that of a hog, mobile and naked towards the end.

Distribution : India : West Bengal : Darjiling district (Sclater 1891). Jalpaiguri district (Cuvier 1825, quoted by Pocock 1941); Arunachal Pradesh; Assam; Manipur; Nagaland; Sikkim. Nepal and Bangladesh

Remarks : No specimen of this species could be seen during the recent surveys.

Genus *Lutra* Brisson, 1762

Two species of this genus, namely, *Lutra lutra* and *Lutra perspicillata* occur in West Bengal.

Key to the species of the genus *Lutra*

Frontal bones behind post-orbital processes decreasing in width up to constriction in front of the brain case; fur long and loose; hindfoot long.*L. lutra* (*L. l. nair*)

Sides of frontal bones behind post-orbital processes more or less parallel up to constriction in front of brain case; fur short and adpressed; hindfoot short.*L. perspicillata* (*L. p. perspicillata*)

94. *Lutra lutra nair* Cuvier

1823. *Lutra nair* Cuvier, *Dict. Sci. Nat. Paris*, 27 : 247 (Pondicherry, India).

Common names : Common Otter (Eng.), Ud, Bhondar (Beng.), Udbilao (Hin.).

Material examined : Calcutta district 1 ♂, 1 ♀ (skull only), no exact locality, coll. W. H. Greenfield, 1848, 4.iv.1870; 1 ♀, Ballygaunge, 8.vii.1886. 1 unsexed (skull only), Gariahat, 11.vii.1924; 1 ♀ (skin only), Tollygaunge, coll. E. V. Redenberd, 27.iv.1918.

Measurements : Cranial : *l* 117.1; *cb* 115.7; *mw* 29.0; *iw* 21.0; *pow* 13.9; *c*¹-*c*¹ 26.8; *cw* 51.0; *pm*₄ 12.1; *m*₁ -, *zw* 69.1. 3 ♀ : *l* 110.5-111.0(110.7); *cb* 108.9-111.4 (110.4); *mw* 26.0-30.0(28.3); *iw* 18.2-20.8(19.8); *pow* 13.7-17.2(15.1); *c*¹-*c*¹ 24.5-25.5(24.8); *cw* 48.6-49.7(49.2); *pm*₄ 10.7-11.0(10.9); *m*₁ 11.5-14.4(13.0); *zw* 63.7-67.0(64.8).

Distribution : India : West Bengal : Bankura district (Banerjee 1968), Calcutta district (Blanford 1888-91), Darjiling district (Sclater 1891), Hugli district (Banerjee 1972), Jalpaiguri district (Gruning 1911), Murshidabad district, North 24-Parganas district, South 24-Parganas district (Sclater 1891); Karnataka; Kerala; Pondicherry; Tamil Nadu. Sri Lanka.

Remarks : Body in specimens from Ballygaunge Mars Brown to Broccoli Brown in colour, and the postorbital portion of frontals not much constricted as in *perspicillata*.

This species was once common in West Bengal, but due to reclamation of wetlands, its number has drastically reduced. During recent surveys, it was observed in Jalpaiguri, Murshidabad and South 24-Parganas districts.

Pocock (1941) stated that the northward range of distribution of *L. l. nair* is unknown. Ellerman & Morrison-Scott (1951) also did not include West Bengal in its range. Though Mandal & Nandi (1989) have recorded *Lutra lutra* from Sundarban, West Bengal, the subspecific status is not known.

95. *Lutra perspicillata perspicillata* I. Geoffroy

1826. *Lutra perspicillata* I. Geoffroy, *Dict. Class Hist. Nat.*, 9 : 519 (Sumatra, Indonesia).

Common names : Smooth-coated Indian Otter (Eng.), Ud, Bhondar (Beng.), Udbilao (Hin.).

Material examined : Calcutta district : 1 ♂ (skull only), 1 ♀ (skull only), 1 ♀ (Juv., skull only), no exact locality, coll. E. Blyth, A. L. Fraser, The ♂ was collected during 1842. North 24-Parganas district : 1 ♂ (skull only), Salt Lake, coll. O. L. Fraser --; 2 skulls, Sundarban, --, ---.

Measurements : Cranial : 2 ♂ : 1 114.5, 115.3; *cb* 110.4, 112.0; *mw* 27.0; 29.0; *iw* 19.1, *pow* 18.7, 18.9; *c*¹-*c*¹ 24.3, 24.7; *cw* 55.0, 56.9; *pm*₄ 13.8; *m*₁ 13.9; 14.7; *zw* 70.0(2).

Distribution : India : West Bengal : Calcutta district (Sclater 1891), Birbhum district, Jalpaiguri district (Inglis *et al.*, 1919), North 24-Parganas and South 24-Parganas districts (Sclater 1891); Andhra Pradesh; Arunachal Pradesh; Assam; Bihar; Karnataka; Kerala; Madhya Pradesh; Meghalaya; Nagaland; Orissa; Pondicherry; Tamil Nadu; Uttar Pradesh. Bangladesh, Burma, China, Vietnam, Malaysia and Indonesia.

Remarks : Once very common in and around Calcutta, but now its population has greatly reduced due to destruction of its habitat (Agrawal *et al.*, in press).

Genus *Aonyx* Lesson, 1827

This genus is represented by one species, namely, *Aonyx cinerea*.

96. *Aonyx cinerea concolor* (Rafinesque)

1832. *Amblyonyx concolor* Rafinesque, *Atlantic J.*, 1 : 60 (Garo Hills, Meghalaya, India).

Common names : Oriental Small-clawed Otter (Eng.), Chhota Ud or Bhondar (Beng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Small-sized otter, head and body length 56-61 cm; tail not more than half of the length of head and body.

Distribution : India : West Bengal : Calcutta district (Blanford 1888-91), Darjiling district (Sclater 1891), Hugli district (Banerjee 1972), Jalpaiguri district (Inglis *et al.* 1991), North 24-Parganas district, South 24-Parganas district; Assam; Himachal Pradesh; Meghalaya; Mizoram; Nagaland; Sikkim; Uttar Pradesh China.

Remarks : During recent surveys, a number of groups of this otter have been observed along the Torsa river, Jalpaiguri district.

Family VIVERRIDAE

Five genera of the family Viverridae occur in West Bengal.

Key to the genera of the family VIVERRIDAE

1. Scent gland present in both sexes, in male perinacal, between scrotum and prepuce; in female behind or encircling vulva.....2
Scent gland absent in male; in female present in front of vulva.....*Arctogalidia*
2. Feet terrestrial and digitigrade; carpal pad single; metatarsal pads absent; scent glands opening into highly specialised pouches.....3
Feet scansorial and semi-plantigrade; carpal and metatarsal pads double; glandular pouches less specialised4
3. Anterior edge of ears widely separated due to broad forehead; a dorsal crest of hairs present, extending posteriorly at least from the shoulders*Viverra*
Anterior edge of the ears set close together due to narrow forehead; no dorsal crest of long hairs ...
..... *Viverricula*
4. A definite pattern of dorsal stripes and lateral spots present at least in new coat.....*Paradoxurus*
No pattern of stripes or spots present.....*Paguma*

Genus *Viverra* Linnaeus, 1758

One species of the genus *Viverra* occurs in West Bengal.

97. *Viverra zibetha zibetha* Linnaeus

1758. *Viverra zibetha* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 44 (India).

Common names : Large Indian Civet (Eng.), Mach-bhondar, Bagdasa (Beng.), Khatas (Hin.).

Material examined : Calcutta district : 1 ♀, Ballygunge, purchased, 24.iii.1922; 2 ♂, 1 ♀, no exact locality, purchased, 31.v.1870, 31.ii.1871, one undated; 1 ♀; Jadavpur, purchased, 30.i.1920. Darjiling district : 3 ♂, 2 ♀, Narbong (c 609 m), coll. C. A. Crump, 9-13.iii.1915; 1 ♂, Sivok (c 152 m), coll. C. A. Crump, 22.iii.1915; 1 ♀, Sungma (c 1,372 m), coll. N. A. Baptista, 18.v.1918. Jalpaiguri district : 1 ♂, 1 ♀, Bharnabari (c 183 m), coll. N. A. Baptista, 14.ii.1914, 23.ii.1916; 1 ♂, 1 ♀, 1 unsexed, Hasimara (c 182 m), coll. H. V. O'Doncl, N. A. Baptista, 22.ii.1913, 17.i.1915, 16.vii.1915. Maldah district : 1 ♂ (damaged), no exact locality, coll. Museum Collector, 1870.

Measurements : External : 3 ♂ : H & B 660.0-780.0 (733.0); T1 353.0-420.0 (385.0); Hf 115.0-127.0 (122.0); E 50.0-55.0 (53.0). 3 ♀ : H & B 770.0-787.0 (776.0); T1 381.0-430.0 (410.0); Hf 114.0-125.0 (119.0); E 53.0-57.0 (55.0). Cranial : 2 ♂ : l 133.0, 141.0; cb 132.0, 139.8; mw 42.9, -; iw 22.0, 24.1; pow 13.1, -; c¹-c¹ 23.8, ; cw 40.6, -; pm4 13.1; -; m₁ 13.5, -; zw 64.0, 70.7. 2 ♀ : l 136.5, 139.2; cb 132.9, 138.4; mw 42.5, 45.0; iw 21.4, 23.6; pow 17.4, 20.2; c¹-c¹ 22.8, 23.5; cw 39.6) 40.4; pm4 13.8, 14.5; m₁ 13.6, 13.7; zw 67.4, 68.0.

Diagnosis : Body markings indistinct and cloudy; tail with complete dark and light rings; crest of long, black, erectile hairs present on the back; anterior upper molars distinctly triangular.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Calcutta district (Sclater 1891), Jalpaiguri district (Gruning 1911), Koch Bihar district, Maldah district (Sclater 1891), Medinipur district, Nadia district, North 24-Parganas district, South 24-Parganas district, West Dinajpur district; Arunachal Pradesh; Assam; Bihar; Madhya Pradesh; Meghalaya; Mizoram; Nagaland; Sikkim. Bangladesh, Burma, Thailand, Vietnam, Malaysia and Singapore.

Remarks : Mitra (1957) mentioned this species as common throughout West Bengal. However, in recent surveys, it was noticed that the Large Indian Civet had lost its range from many districts of West Bengal.

Based on the nature of fur and colour variation, a good number of subspecies of the Large Indian Civet have been maintained (Ellerman & Morrison-Scott 1951). However, the examination of the present series as well as material from different parts of its range, revealed a lot of variation in the nature and colour of fur, irrespective of localities, sex or season.

Genus *Viverricula* Hodgson, 1838

Genus *Viverricula* is represented by only one species, namely, *V. indica*.

98. *Viverricula indica indica* (Desmarest)

1817. *Viverra indica* Desmarest, *Nouv. Dict. Hist. Nat.*, Paris, 7 : 170 (India).

Common names : Small Indian Civet (Eng.), Gandhagokul, Gango gaula (Beng.), Khatas (Hin).

Material examined : Calcutta district : 3 ♂, 2 ♀, no exact localities, 8.viii.1870, 30.i.1919, 17.ii.1920, 19.iii.1920.

Measurements : Cranial : 2 ♂ : 1 96.2, 97.0, *cb* 93.0, 93.4, *iw* 11.4, 11.8; *pow* 12.0, 13.0; *zw* 44.0, 44.6.

Diagnosis : Body pattern consists of small spots on the fore-quarters, larger spots tending to run into longitudinal lines on the flanks, and form six to eight stripes down the back. Muzzle short and weak. No dorsal crest of long hairs on the back. Claws unprotected by sheaths of skin.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Calcutta district (Sclater 1891), Haora district, Hugli district (Banerjee 1972), Jalpaiguri district (Wroughton 1916a), Koch Bihar district, Maldah district, Medinipur district, Murshidabad district, Nadia district; Puruliya district (Nath 1951), North 24-Parganas district (Mukherjee 1975), South 24-Parganas district (Mukherjee 1975), West Dinajpur district; Andhra Pradesh; Arunachal Pradesh; Assam; Bihar; Goa; Gujarat, Himachal Pradesh; Jammu & Kashmir; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Manipur; Meghalaya; Orissa; Sikkim; Tamil Nadu; Tripura; Uttar Pradesh. Sri Lanka, Bhutan and Bangladesh.

Remarks : Population of *Viverricula indica* from West Bengal was previously regarded as a distinct subspecies, viz., *V. i. bengalensis* (Gray). However, Chakraborty (1983) has synonymised *V. i. bengalensis* with the nominate subspecies.

Only a few decades ago, this species was common in West Bengal and could be seen even in and around Calcutta city. However, due to destruction of habitat, now a days, it has become rare in most parts of its range in West Bengal.

Genus *Paradoxurus* Cuvier, 1821

One species of the genus *Paradoxurus*, namely, *P. hermaphroditus* occurs in West Bengal.

99. *Paradoxurus hermaphroditus* (Pallas)

1777. *Viverra hermaphrodita* Pallas, *In Schreber, Die Säugethiere*, 3 : 426 (India).

Common names : Common Palm Civet or Toddy Cat (Eng.), Baghdankh, Bham (Beng.), Khatas (Hin).

Material examined : Calcutta district : 2 ♂ 3 ♀, 1 unsexed, no exact locality, no history; 1 ♂, 1 ♀, Alipur, - r, 1.ii.1957, 12.iii.1979.

Measurements : External : 1 ♂ : H & B 513.0; TI 437.0; Hf 39.0; E 54.0. 1 ♀ : H B 553.0; TI 450.0; Hf 80.0; E 45.0. Cranial : 1 ♂ : I 105.7; cb 103.9; mw 20.0; iw 18.6; pow 14.0; c¹-c¹ 17.4; pm₄ 7.0; m₁ 8.5; zw 55.3. 1 ♀ : I 111.0; cb 107.5; mw 21.0; iw 19.3; pow 13.1; c¹-c¹ 19.3; pm₄ 9.0; m₁ 9.3; zw 58.5.

Distribution : India : West Bengal : Bankura district (Banerjee 1968), Bardhaman district, Birbhum district, Calcutta district (Sclater 1891), Darjiling district (Wroughton 1916a), Haora district, Hugli district (Banerjee 1972), Jalpaiguri district (Wroughton 1916a), Koch Bihar district, Maldah district, Medinipur district (Sclater 1891), Murshidabad district, Nadia district, North 24-Parganas district (Mandal & Nandi 1989), Puruliya district (Bhattacharya *et al.* 1985), South 24-Parganas district (Mandal & Nandi 1989), West Dinajpur district; throughout India. Sri Lanka, China, Malaysia, Indonesia and Philippines.

Remarks : Based on the size, coloration and cranial and dental features, a good number of subspecies have been described from India. On an examination of the present series as well as specimens from other parts of India, it appears that most of the differences are either individual or seasonal. Hence, pending the revision of its subspecies, the specimens from West Bengal have been identified only up to specific level.

Commonly seen near human habitation, sometimes inside residential complexes. The specimens were collected twice from the National Library, Calcutta. Two specimens were observed near Mathabhanga Forest Rest House, Koch Bihar, where they used to cover the distance from their den to the feeding ground along the overhead electric wire.

Genus *Arctogalidia* Merriam, 1897

Genus *Arctogalidia* is represented by one species, viz., *A. trivirgata*.

100. *Arctogalidia trivirgata* (Gray)

1832. *Paradoxurus trivirgatus* Gray, *Proc. zool. Soc. Lond.*, : 69 (Buitenzorg, Java, Indonesia).

Common name : Three-banded Palm Civet (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Body-pattern, when present, consists of three dark stripes on dorsum, and a white streak on the nose; ears with poorly developed bursa; area between plantar and digital pads naked.

Distribution : India : West Bengal : Darjiling district (Sclater 1891); Nagaland. Burma, China, Thailand, Malaysia and Indonesia.

Remarks : There is no recent record of this species from West Bengal.

Genus *Paguma* Gray, 1831

Genus *Paguma* is represented by only one species, viz., *P. larvata*. Out of eleven subspecies of *P. larvata*, one occurs in West Bengal.

101. *Paguma larvata grayi* (Bennett)

1835. *Paradoxurus grayi* Bennett, *Proc. zool. Soc. Lond.*, : 118 (India).

Common names : Masked-Palm Civet, Himalayan Palm Civet (Eng.), Pahari Bham (Beng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Body grey through out, under parts whitish; pale broad band present beneath each ear, a narrower line down the nose, and a blotch below each eye. Tail more than two-thirds the length of head and body; palate extending over 127 mm behind last upper molars.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916a); Arunachal Pradesh; Uttar Pradesh. Nepal.

Remarks : Now, rare in West Bengal. Wroughton (1916b) mentioned about a party of four from Narbong, Darjiling district. Pocock (1939) also recorded a skin from Gopaldhara, Darjiling district, without assigning any subspecific status to it.

Family HERPESTIDAE

The Ethiopian family Herpestidae is represented in India by one genus, *Herpestes*

Genus *Herpestes* Illiger, 1811

This genus is characterised by longish body, short, rounded ears, mostly concealed by hairs; contour hairs banded with pale and darker annulations giving a speckled appearance; post-dental portion of palate extending far back half way over the mesopterygoid fossa.

Four species of this genus occur in West Bengal.

Key to the species of the genus *Herpestes*

1. No stripe on the sides of neck.....2
A conspicuous white stripe present on the sides of neck.*H. urva*
2. Contour hairs, when fully grown, long, many banded and usually coarse; legs darker than body.
.....
.....
.....*H. edwardsi* (*H. e. nyula*)
- Contour hairs short, soft, with a few bands; legs not darker than body.....3
3. Muzzle dark brown; cranium gradually narrows from the orbit
.....
.....*H. auropunctatus* (*H. a. auropunctatus*)
- Muzzle black; cranium narrows abruptly behind the orbit so that postorbital region appears as a constriction between frontals and cranium.....*H. palustris*

102. *Herpestes auropunctatus auropunctatus* (Hodgson)

1836. *Mangusta auropunctata* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 235 (Nepal).

Common names : Small Indian Mongoose (Eng.), Beji, Neul (Beng.), Neula (Hin.).

Material examined : Calcutta district : 1 unsexed, 1 juv. unsexed, no exact locality, 1843. Jalpaiguri district : 1 juv. ♀, Chilapata, coll. S. Chakraborty, 21.ix.1983; 1 ♂, Hasimara (c 182 m), coll. N. A. Baptista, 8.iii.1916. West Dinajpur district : 1 juv. ♂, Raiganj, coll. S. Chakraborty, 9.x.1987.

Measurements : External : 1 ♂ : H & B 250.0; Tl 256.0; Hf 48.0; E 8.5. Cranial : 1 ♂ : I 58.4; cb 57.2; mw 10.7; iw 11.6; pow 17.0; pm4 5.5; m₁ 3.2; zw 29.0.

Distribution : India : West Bengal : Bankura district (Bancrjee 1968), Bardhaman district,

Birbhum district, Calcutta district (Sclater 1891), Darjiling district, Haora district (Sclater 1891), Hugli district (Banerjee 1972), Jalpaiguri district (Wroughton 1917a), Medinipur district (Sclater 1891), Nadia district, South 24-Parganas district (Mandal & Nandi 1989), West Dinajpur district; Arunachal Pradesh; Assam; Bihar; Himachal Pradesh; Jammu & Kashmir; Manipur; Meghalaya; Nagaland; Orissa; Sikkim; Uttar Pradesh. Nepal and Bhutan.

Remarks : Common; found near the human habitations, particularly adjacent to paddy or sugar cane fields and burial grounds.

103. *Herpestes edwardsi nyula* (Hodgson)

1836. *Mangusta (Herpestes) nyula* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 236 (Nepal).

Common names : Indian Grey Mongoose (Eng.), Ncul, Beji (Beng.), Newala (Hin.).

Material examined : Koch Bihar district : 1 ♀, Mathabhanga, coll. S. Chakraborty, 18.iv.1986. Jalpaiguri district : 1 ♀, Haldibari, coll. C. A. Crump, 20.iv.1915. North 24-Parganas district : 2 ♀, Basirhat, coll. P.K. Das, R.K. Ghose, 24.i.1965, 11.xi.1972.

Measurements : External : 4 ♀ : H & B 335.0-358.0(346.0); TI 332.0-342.0(334.0), Hf 66.0-69.0(68.0); E 15.0-28.0(22.0). Cranial : 2 ♀ : *l* 72.7, 73.4; *cb* 71.4, 72.5; *mw* 12.5, 13.7; *iw* 12.5, 13.8; *pow* 11.2, 12.8; *pm4* 6.4, 7.2; *m1* 6.2, 6.3; *zw* 34.8, 38.0.

Distribution : India : West Bengal : Bankura district (Banerjee 1968), Bardhaman district, Birbhum district, Calcutta district (Sclater 1891), Haora district, Hugli district (Banerjee 1972), Jalpaiguri district (Wroughton 1916a), Koch Bihar district, Murshidabad district, Nadia district, North 24-Parganas district, Puruliya district (Bhattacharya *et al.* 1985), South 24-Parganas district (Mandal & Nandi 1989); Assam; Bihar; Gujarat; Madhya Pradesh; Orissa; Sikkim; Uttar Pradesh. Nepal and Bangladesh.

Remarks : Common. Lives in groups of various sizes near human habitations. A specimen collected from Mathabhanga in April was pregnant, carrying two foetuses in advance stage of development (Agrawal *et al.* in press). A number of colonies have been established in the different gardens in Alipore area of Calcutta.

104. *Herpestes urva* (Hodgson)

1836. *Gulo urva* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 238 (Nepal).

Common name : Crab-eating Mongoose (Eng.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b), Jalpaiguri district (Wroughton 1917a); Arunachal Pradesh; Assam, Meghalaya; Nagaland; Tripura. Bangladesh, Burma, Thailand, China, Taiwan and Vietnam.

Remarks : Rare.

105. *Herpestes palustris* Ghose

1965. *Herpestes palustris* Ghose, *Proc. zool. Soc., Calcutta*, 18 : 174 (Salt Lake, North 24-Parganas district, West Bengal, India).

Common name : Marsh Mongoose (Eng.).

Material examined : Haora district : 1 ♂, Botanical Garden (Shibpur), coll. B. Biswas, 25.xi.1964; 1 ♂, 1 ♀, Nazimganj (south of Botanical Garden, Shibpur). coll. R.K. Ghose, 26.i.1965, North 24-Parganas district : 19 ♂, 8 ♀ (including type series), Salt Lake, Bantala, Duttabad, Hederhat, Nalbani,

coll. B. Biswas, 21.i.1964, 27.iv.1964, 7, 21.vi.1964, 11, 26.vii.1964, 21, 27.xii.1964, 21.ii.1965, 21.iii.1965, 28, 31.vi.1965, 28.xi.1965, 5.xii.1965; 1 ♂, Sukchar (c 16 km north of Calcutta), coll. B. Biswas, 2.viii.1964.

Measurements : External : 15 ♂ : H & B 284.5-365.0(335.0); Tl 224.0-235.0(263.0); Hf 54.5-63.5(58.0); E. 17.7-26.5(24.0). 4 ♀ : H & B 303.0-315.0(309.0); Tl 240.0-258.0(249.0); Hf 51.0-54.0(52.7); E 21.1-24.0(22.5). Cranial : 14 ♂ : *l* 62.7-72.3(68.0); *cb* 62.3-71.5(67.1); *mw* 10.4-12.9(11.5); *iw* 10.3-12.1(11.2); *pow* 8.6-13.8(10.3); *pm4* 5.7-6.3(6.0); *m1* 4.8-5.8(5.5); *zw* 29.8-34.6(32.2). 4 ♀ : *l* 61.8-63.5(62.9); *cb* 60.9-63.2(62.0); *mw* 10.1-10.9(10.6); *iw* 9.8-11.0(10.5); *pow* 9.6-13.1(11.1); *pm4* 5.6-6.1(5.8); *m1* 5.0-5.8(5.4); *zw* 29.5-32.6(30.6).

Distribution : India : West Bengal : Haora district, North 24-Parganas district (Ghose 1965a), South 24-Parganas district (Ghose & Chaturvedi 1973).

Remarks : Prior to reclamation of the Salt Lake, North 24-Parganas district, it was very common in that area. However, at present it is rarely seen there due to habitat destruction.

Honacki et al. (1982) treated *Herpestes palustris* as synonym of *H. auro punctatus* (Hodgson). As the distinguishing characters mentioned by Ghose (1965a) hold good in the present series, it is maintained here as a distinct species.

Family HYAENIDAE

Family Hyaenidae is represented in India by only one genus, viz., *Ihyaena*.

Genus *Hyaena* Brisson, 1762

Out of two species of this genus, one, namely, *Ihyaena hyaena* occurs in India.

106. *Hyaena hyaena hyaena* (Linnaeus)

1758. *Canis hyaena* Linnaeus, *Syst. Nat.*, 10th ed., 1 : 40. (Benna Mountains, Laristan, Iran).

Common names : Striped Hyaena (Eng.), Hyaena (Beng.), Lakar baggha (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : vertical dark stripes on the body and transverse bars on the upper portion of legs; a long crest of mane extending from the head to the root of tail.

Distribution : India : West Bengal : Bardhaman district (Peterson 1910), Medinipur district (Sclater 1891), Puruliya district (Bhattacharya et al. 1985), West Dinajpur district (Sengupta 1965); found almost throughout India, the eastern limit being West Bengal. North Africa, through Arabia, Iraq, Iran, Afghanistan, to Pakistan, also Transcaucasia, and Turkestan in Russia and Nepal.

Remarks : Very rare in West Bengal. During recent surveys, except for some stray reports, no other information about the occurrence of this species could be obtained.

Family FELIDAE

Three genera of the family Felidae occur in West Bengal.

Key to the genera of the family FELIDAE

1. Large-sized animals; hyoid apparatus modified by the conversion of median part of suspensor into a long elastic tendon.....*Panthera*

- Small to medium-sized animals; hyoidean apparatus of normal mammalian type; the suspensor consisting of a chain of bones, jointed end to end.....2
2. Skull long and low, with short, blunt, widely separated frontal and zygomatic-postorbital processes; canines long and post-canine space large.....*Neofelis*
- Skull having long and well-developed postorbital processes; canines relatively short and post-canine space normal.....*Felis*

Genus *Felis* Linnaeus, 1758

Five species of the genus *Felis* occur in West Bengal.

Key to the species of the genus *Felis*

1. Outer chamber of auditory bulla small, partition arising close to orifice; facial portion of skull shorter, tip of postorbital process in front of middle of skull2
- Outer chamber of auditory bulla relatively large, the portion arising from some distance of orifice; tip of postorbital process about the middle of skull; nasal branch of premaxilla broad.
.....*F. chaus*
2. Skull short, wide and high; mastoid width more than half of condylobasal length; posterior edge of palate deeply notched laterally; mesopterygoid fossa lanceolate or ovate in front
.....*F. marmorata (F. m. charltoni)*
- Skull long, narrow and low; mastoid width less than half the condylobasal length; shallow emargination on each side of hinder edge of palate; mesopterygoid fossa truncated, with median notch in front.....3
3. Nasal branch of premaxilla slender; maxilla not expanded above; nasals not compressed.....
.....*F. temmincki (F. t. temmincki)*
- Nasal branch of premaxilla broad; maxilla expanded above; nasals compressed.4
4. Small-sized, slender build, head and body length, on average, 54 mm or less; tail more than half of head and body.*F. bengalensis (F. b. bengalensis)*
- Medium-sized, thick-set body, head and body length, on average, 74 cm or more; tail less than one-half of head and body.....*F. viverrina*

Felis chaus Gldenstaedt

Two subspecies of *Felis chaus* occur in West Bengal.

107. *Felis chaus kutas* Pearson

1832. *Felis kutas* Pearson, *J. Asiat. Soc. Beng.*, 1: 75 (Medinipur, West Bengal, India).

Common names : Jungle Cat (Eng.), Ban beral (Beng.), Jangli billi (Hin.).

Material examined : Calcutta district : 1 unsexed, no history; 1 subad unsexed, Garia,--,--; 1 ♂, Entally, coll. H. Fornaro, 15.iii.1892. South 24-Parganas district : 1 ♀; Sajnekhali Reserve Forest (Sundarban), coll. A.K. Mukherjee, 10.iii.1957.

Measurements : External : 1 ♀ : H & B 640.0; TI 280.0; Hf 142.0; E 78.0.

Diagnosis : Medium-sized, head and body 64-72 cm in length; tail terminating in a black tip; pelage unspotted except on lower flanks and elbow; black horizontal stripes on the innerside of forelegs; back of ears reddish chestnut with inconspicuous hair tuft.

Distribution : India : West Bengal : Bankura district (Banerjee 1968), Bardhaman district (Sclater 1891), Birbhum district, Calcutta district (Sclater 1891), Haora district, Hugli district (Banerjee 1972), Medinipur district, North 24-Parganas district (O'Malley 1914), Puruliya district (Bhattacharya *et al.* 1985, South 24-Parganas district (O'Malley 1914); Bihar; Gujarat; Madhya Pradesh; Orissa; Rajasthan; Uttar Pradesh.

Remarks : Rare due to destruction of habitat.

108. *Felis chaus affinis* Gray

1830. *Felis affinis* Gray, *Illustr. Ind. Zool.*, 1, Pl. 3 (Gangotri in Tehri Garhwal, Uttar Pradesh, India).

Common names : Same as in the previous subspecies.

Material examined : Darjiling district : 1 unsexed, Kalimpong (c 1,524 m), coll. A Linogreen, 1.vii.1938. Koch Bihar district : 1 ♂, Sitalkuchi, coll. S. Chakraborty, 13.iv.1986.

Measurements : External : 1 ♂ : H & B 680.0; Tl 220.0; Hf 160.0; E 88.0. Cranial : 1 ♂ : I 125.2; cb 112.2; mw 28.3; iw 20.7; pow 33.6; pm4 12.9, m₁ 8.8; zw 81.0.

Diagnosis : On average a little larger than *kutas*, and having a long and luxuriant winter coat.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b), Jalpaiguri district (Wroughton 1917a), Koch Bihar district; Assam; Arunachal Pradesh; Himachal Pradesh; Jammu & Kashmir; Manipur; Nagaland; Sikkim; Uttar Pradesh. Nepal.

Remarks : Common. Lives in the neighbourhood of towns and villages taking shelter in the bushes, crevices of trees, deserted houses or godowns. A good number of them have been observed at Sitalkuchi, Mathabhanga and Koch Bihar town of the Koch Bihar district.

109. *Felis marmorata charltoni* Gray

1846. *Felis charltoni* Gray, *Ann. Mag. nat. Hist.*, 18 : 211 (Darjiling, West Bengal, India).

Common names : Himalayan Marbled Cat (Eng.), Marble biral (Beng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A small-sized cat, head and body length 45-58 cm; body covered with irregular blotches; black spots present on outer side of limbs, upper surface of tail, and frequently on the under surface. Ears rounded.

Distribution : India : West Bengal : Darjiling district (Gray 1846); Arunachal Pradesh; Assam; Nagaland; Sikkim. Nepal, Bhutan and Burma.

Remarks : Very rare. No specimen could be seen or indirect evidence could be obtained during the recent surveys of Darjiling district.

110. *Felis temmincki temmincki* Vigors & Horsfield

1827. *Felis temmincki* Vigors & Horsfield, *Zool. J.*, 3 : 451 (Sumatra).

Common name : Golden Cat (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A medium to large-sized cat, head and body 76-84 cm; ears black or brownish black on outside with an ill-defined pale central spot; round dusky spots on the breast, between and behind the axils; imperfect bands on the throat, and a horizontal white or buff cheek-stripe from below the eyes to behind the gape.

Distribution : India : West Bengal : Darjiling district (Gray 1863); Arunachal Pradesh; Assam; Mizoram; Nagaland; Sikkim; Tripura. Nepal, Bangladesh, Burma, China, Malaysia, Vietnam, Borneo and Indonesia.

Remarks : Very rare. No specimen could be seen or report obtained during the recent surveys of Darjiling district.

111. *Felis bengalensis bengalensis* Kerr

1792. *Felis bengalensis* Kerr, *Anim. Kingd.*, 151 (Southern Bengal).

Common names : Leopard Cat (Eng.), Ban Biral (Beng.), Chita Billi (Hin.)

Material examined : Darjiling district : 1 ♀, no exact locality, -, 5.v.1919.

Measurements : Nil.

Diagnosis : A small-sized cat, head and body length 61-66 cm; back of ears black, with round whitish spot in the centre. Pelage ornamented throughout with blackish brown spots; four longitudinal black bands commence on the forehead, continue over the head to the neck, then break up into short bands or elongated spots on the shoulders.

Distribution : India : West Bengal : Bankura district (Banerjee 1968), Bardhaman district, Birbhum district, Darjiling district (Wroughton 1916a), Haora district, Hugli district (Banerjee 1972), Jalpaiguri district (Gruning 1911), Koch Bihar district, Maldah district, North 24-Parganas district (Sclater (1891), Puruliya district (Bhattacharya *et al.* 1985), South 24-Parganas district (Sclater 1891), West Dinajpur district; Andhra Pradesh; Arunachal Pradesh; Assam; Maharashtra; Manipur; Meghalaya; Nagaland; Orissa; Karnataka; Kerala; Tamil Nadu; Tripura. Bangladesh, Burma, Thailand, Yunan and erstwhile Indo-China.

Remarks : Common in the forested region of West Bengal.

112. *Felis viverrina* Bennett

1833. *Felis viverrinus* Bennett, *Proc. zool. Soc. Lond.* : 68 (India, probably Malabar Coast).

Common names : Fishing Cat (Eng.), Mach-bagrol (Beng.).

Material examined : Calcutta district : 1 ♂, Ballygaunge, -, 30.vi.1921; 1 ♂, Tollygaunge,--, 3.vi.1919.

Measurements : External : 1 ♂ : H & B 707.0; TI 295.0; Hf 165.0; E 50.0.

Diagnosis : A medium-sized cat, head and body length 66-70 cm; back of ears black, with round whitish spot in the centre; body covered with black or brown spots throughout, spots always longer than broad; six to eight black lines run from the forehead to the nape, breaking up into shorter lines and spots on the shoulders. Several cross bands present on the forehead and throat.

Distribution : India : West Bengal : Calcutta district (Sclater 1891), Haora district, Jalpaiguri district (Inglis *et al.* 1919), North 24-Parganas and South 24-Parganas districts (O'Malley 1914); Assam; Andhra Pradesh; Karnataka; Kerala; Maharashtra; Orissa; Tamil Nadu; Uttar Pradesh. Pakistan, Sri Lanka, Nepal, Bangladesh, Thailand, Indonesia, Vietnam and Taiwan.

Remarks : Common in the Sundarban, South 24-Parganas district (Sanyal 1989), but rare in other parts of the state, due to destruction of habitat.

Genus *Neofelis* Gray, 1867

A medium to large-sized cat, head and body length 66-117 cm; body covered with large, subovate, trapezoidal or irregularly-shaped darker patches; tail with numerous dusky rings.

This genus is represented by only one species, viz., *Neofelis nebulosa*.

113. *Neofelis nebulosa macrosceloides* (Hodgson)

1853. *Felis macrosceloides* Hodgson, *Proc. zool. Soc. Lond.*, : 192, pl. 38 (Nepal).

Common name : Clouded Leopard (Eng.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Darjiling district (Inglis *et al.* 1919), Jalpaiguri district (Gruning 1919); Arunachal Pradesh; Assam; Mizoram; Sikkim. Nepal, Bhutan, Burma, Thailand, China and Malaysia.

Remarks : Rare. However, in recent times, Ghose (1985), and Biswas *et al.* (1985) observed this species in the forested areas of Jalpaiguri and Darjiling districts.

Genus *Panthera* Oken, 1816

Three species of the genus *Panthera* occur in West Bengal.

Key to the species of the genus *Panthera*

1. Ground colour white; spots on body not well-developed except on the head; fur thick and bushy...
.....*P. uncia*
- Ground colour not white; spots or stripes well-defined; fur not bushy.....2
2. Ground colour of body yellow, with distinct black spots arranged in rosettes. *P. pardus*
- Ground colour of body Orange-Tawny, with vertical black stripes.....*P. tigris*

114. *Panthera pardus fusca* (Meyer)

1794. *Felis fusca* Meyer, *Zool. Ann.*, 1 : 394 (Bengal).

Common names : Common Indian Leopard or Panther (Eng.), Chitabagh (Beng.), Tenduwa (Hin.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Barddhaman district (Peterson 1910), Birbhum district (O'Malley 1910), Darjiling district (Wroughton 1916b), Hugli district (Banerjee 1972), Jalpaiguri district (Gruning 1911), Koch Bihar district, Maldah district (Lambourn 1918), Medinipur district (O'Malley 1911), Murshidabad district (Bhattacharyya *et al.* 1979), Nadia district (Garrett 1910), Puruliya district (Bhattacharyya *et al.* 1985), West Dinajpur district (Sengupta 1965); throughout India in suitable habitats. Sri Lanka, Bangladesh, Burma and China.

Remarks : Endangered due to habitat destruction. The leopard, though widely distributed in West Bengal is only a casual visitor in most parts except northern districts of West Bengal, Purulia and Medinipur districts. Recently, an animal from Chilapata Forest of Jalpaiguri entered Koch Bihar, and molested a man (Anon. 1990a).

115. *Panthera tigris tigris* (Linnaeus)

1758. *Felis tigris* Linnaeus, *Syst. nat.*, 10th. ed., 1 : 41 (Bengal).

Common names : Tiger (Eng.), Bagh (Beng), Bagh (Hin.).

Material examined : 1 ♂, Sundarbans (no exact locality), -, 10.v.1982.

Measurements : Nil.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916a), Jalpaiguri district (Gruning 1911), Koch Bihar district (V. N. Narayan, quoted by Pocock 1939), Medinipur district (O'Malley 1911), North 24-Parganas and South 24-Parganas districts (Sclater 1891); Found throughout India except in deserts of Rajasthan; Punjab and Gujarat. Nepal, Bangladesh and Burma.

Remarks : Endangered due to loss of habitat. However, it is flourishing in the Sundarban Tiger Reserve where its number has been estimated to be around 350. In the beginning of the present century, tigers used to occur in Nadia (Garrett 1910), Maldah (Lambourn 1910), Hugli (Banerjee 1972), Barddhaman (Peterson 1910) and Bankura districts, but now it is no more seen in these areas.

116. *Panthera uncia* (Schreber)

1776. *Felis uncia* Schreber, *Saugethiere*, 3 : pl. 100, text 3 : 386, 1777 (Altai Mountains, U.S.S.R. or Mongolia).

Common names : Ounce, Snow Leopard (Eng.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Darjiling district (Mitra 1957); Arunachal Pradesh; Himachal Pradesh; Jammu & Kashmir; Sikkim. Afghanistan, Pakistan, Nepal, Bhutan, mountains of Central Asia from Altai through the Tien Shan and Pamir to China.

Remarks : Within West Bengal, Snow Leopard is occasionally seen in the Singalila range of Darjiling district.

Order PROBOSCIDEA

Massive build, with long, flexible proboscis; generally males possess large tusks which are nothing but enlarged incisor teeth; molars large and transversely ridged.

The order Proboscidea contains a single family Elephantidae.

Family ELEPHANTIDAE

In India, this family is represented by a single genus, viz., *Elephas*.

Genus *Elephas* Linnaeus, 1758

Only one species and subspecies of the genus *Elephas* occurs in West Bengal.

117. *Elephas maximus indicus* Cuvier

1797. *Elephas indicus* Cuvier, *Fabl. Elem. Hist. Nat.*, : 148 (India).

Common names : Indian Elephant (Eng.), Hasti, Hathi (Beng.), Hathi (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Height at the shoulder up to 335 cm or a little more. Body blackish grey throughout; proboscis ends in a single lip; four nails on each hindfoot; ears large but not enormous.

Distribution : India : West Bengal : Darjiling district (Dash 1947), Jalpaiguri district (Gruning 1911) and Medinipur district (O'Malley 1911); Arunachal Pradesh; Assam; Bihar; Karnataka; Kerala; Meghalaya; Mizoram; Nagaland; Orissa; Tamil Nadu; Tripura; Uttar Pradesh. Bangladesh, Bhutan, Burma, Thailand, Vietnam, Malaysia, Sumatra and Borneo.

Remarks : In addition to the districts mentioned above, elephant has also been observed in Koch Bihar by one of the present authors (S. Chakraborty). It also sometimes enters into Bardhaman district (Anon. 1990b). However, except in Jalpaiguri and Darjiling districts, at the moment it is only a casual visitor to other districts of West Bengal.

The species is endangered due to loss of prestine forests.

Loss of natural habitat and shortage of food are forcing the elephants to invade agricultural fields. As a result, considerable loss of cultivation, house-hold properties as well as human lives are now regularly reported from various parts of West Bengal.

Order PERISSODACTYLA

Perissodactyls are characterised by the number of toes in each foot, being usually odd, the third or middle toe being most prominent; molars and premolars in one unbroken series.

In West Bengal, this order is represented by one family Rhinocerotidae.

Family RHINOCEROTIDAE

Three toes on each foot, terminating in a small hoof-like nail. Skin thinly clad with hairs or naked.

The family Rhinocerotidae, in India, is represented by one genus, viz., *Rhinoceros*.

Genus *Rhinoceros* Linnaeus, 1758

One species of this genus occurs in West Bengal.

118. *Rhinoceros unicornis* Linnaeus

1758. *Rhinoceros unicornis* Linnaeus, *Syst. Nat.*, 10th. ed., 1 : 56 (Assam, India).

Common names : Great Indian One-horned Rhinoceros (Eng.), Gandar (Beng.), Gainda (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Large-sized, height at the shoulders 170 cm or more. Skin of body divided into great shields by heavy folds; the fold in front of the shoulders does not continue right across the back. A single horn present on the tip of snout.

Distribution : India : West Bengal : Jalpaiguri district (Gruning 1911); Assam; Uttar Pradesh (recently introduced). Nepal.

Remarks : Endangered. In the beginning of the present century, one-horned rhinoceros used to occur in Koch Bihar district, Murshidabad district and Maldah district (Maharaja of Koch Bihar 1908, Sengupta 1969). However, due to destruction of habitat and persecution of this animal in West

Bengal, it is now restricted to Jaldapara and Gorumara sanctuaries. The estimated population in these two sanctuaries is less than 15 individuals.

Order ARTIODACTYLA

Even-toed ungulates; axis of the foot passes between third and fourth toes; toes enclosed in horny hooves of roughly equal size and giving the appearance of a single hoof, split down in the middle.

Order Artiodactyla is represented by three families in West Bengal.

Key to the families of the Order ARTIODACTYLA

1. Upper incisors absent; horns or antlers present, at least in males.....2
Upper incisors present; animals devoid of horns or antlers.....SUIDAE
2. Horns consist of a hollow outer sheath and an inner bony core, unbranched and permanent.....
..... BOVIDAE
Antlers solid, branched, ornamented with knots and ridges, and periodically shed. CERVIDAE

Family SUIDAE

Represented in India by a single genus, *Sus* Linnaeus, 1758. Two species of this genus occur in West Bengal.

Key to the species of the genus *Sus*

1. Large, height at shoulders 76-102 cm; a crest of black bristles present from nape to the back; tail long, extending nearly to hocks.*Sus scrofa* (*S. s. cristatus*)
2. Small, height at shoulders about 25 cm; no distinct crest on the nape; tail very short.....
..... *Sus salvanius*

119. *Sus scrofa cristatus* Wagner

1839. *Sus cristatus* Wagner, *Munch. Gelehr. Anz.*, 9 : 435 (Probably Malabar Coast, India).

Common names : Indian Wild Boar (Eng.), Buno Suor (Beng.), Suor (Hin.).

Material examined : 1 unsexed skull, Sundarban (no exact locality), coll. A. M. Nicholettus, 1866.

Measurements : Nil.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Bardhaman district (Peterson 1910), Birbhum district (O'Malley 1910), Darjiling district (Wroughton 1916b), Jalpaiguri district (Gruning 1911), Koch Bihar district (Maharaja of Koch Bihar 1908), Maldah district (Lambourn 1918), Murshidabad district (Bhattacharya 1979), Nadia district (Garrett 1910), North 24-Parganas district (O'Malley 1914), Puruliya district (Bhattacharya *et al.* 1985), South 24-Parganas district (O'Malley 1914); forested tracts throughout India. Pakistan, Sri Lanka, Nepal, Bangladesh, Burma, Indonesia, Malaysia and Vietnam.

Remarks : As mentioned above, the wild boar is recorded from almost all the districts of West Bengal. But now it is restricted to Darjiling, Jalpaiguri, Puruliya, West Dinajpur and North and South 24-Parganas districts. Main reasons of its decline are habitat destruction and poaching for flesh.

120. *Sus salvanius* (Hodgson)

1847. *Porcula salvania* Hodgson, *J. Asiat. Soc. Beng.*, 16 : 423, pls. 12, 13 (Sikkim, India).

Common name : Pygmy Hog (Eng.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Darjiling district, Jalpaiguri district (Sclater 1891); Assam; Sikkim. Nepal and Bhutan.

Remarks : The Pygmy Hog was collected from Darjiling and Jalpaiguri districts (Sclater 1891) during the 19th century. However, there is no recent record of this species from West Bengal (Mallinson 1971, 1978, Oliver 1979a, 1979b, 1980).

Family CERVIDAE

Three genera of the family Cervidae occur in West Bengal.

Key to the genera of the family CERVIDAE

1. Upper canines tusk-like, in males; antlers short, consisting of a short brow-tine and an unbranched beam.....*Muntiacus*
Upper canines, when present, not tusk-like; antlers long and branched; bony phalanges present in lateral digits.....2
2. Body, in adults, distinctly spotted; brow-tine set at right angles to the beam of antlers.*Axis*
Body unspotted; brow-tine form an acute angle with the beam of antlers.....*Cervus*

Genus *Muntiacus* Rafinesque, 1815

This genus is represented in India by one species, *Muntiacus muntjak*. Out of three subspecies, one occurs in West Bengal.

121. *Muntiacus muntjak vaginalis* (Boddaert)

1785. *Cervus vaginalis* Boddaert, *Elench. Anim.*, 1 : 136 (Bengal).

Common names : Indian Muntjac or Barking Deer (Eng.), Kakar or Kukoo Harin (Beng.), Kakar (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Height at shoulders, in males, 50-75 cm, females a little smaller; antlers placed on bony pedicles, which extend down on either side of the face as bony ridges. Coat-colour deep chestnut, becoming darker on the back, and paler and duller below.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b), Jalpaiguri district (Gruning 1911), Medinipur district (O'Malley 1911), Puruliya district (Bhattacharyya *et al.* 1985); Arunachal Pradesh; Assam; Bihar; Meghalaya; Sikkim; Tripura (Agrawal & Bhattacharyya 1977); Uttar Pradesh. Bhutan, Bangladesh, northern Burma, Yunan and northern Vietnam.

Remarks : Mandal & Nandi (1989) reported this species to occur in Sundarban at the fag end of the 19th century, but now extinct from this part of the country.

Genus *Axis* Smith, 1827

Two species of the genus *Axis* occur in West Bengal.

Key to the species of the genus *Axis*

- Small in size, height at shoulders less than 76 cm; generally not spotted.....*A. porcinus*
 Large in size, height at shoulders more than 76 cm; adults always spotted.....*A. axis*

122. *Axis porcinus porcinus* (Zimmermann)

1777. *Cervus porcinus* Zimmermann, *Spec. Zool. Geogr.* : 532. (Bengal).

Common names : Hog Deer (Eng.), Para (Beng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Squat, pig-like in movement. Colour of body brown to dark brown with yellowish or reddish tinge. Tip of individual hairs white, giving the coat a speckled appearance. Adults not spotted with white, except sometimes in summer. Beam of antlers after giving a short brow tine almost straight, till it divides into a longer fore and shorter hind tine.

Distribution : India : West Bengal : Jalpaiguri district (Gruning 1911); Arunachal Pradesh; Assam; Bihar; Meghalaya; Punjab; Tripura; Uttar Pradesh. Nepal and Sri Lanka (introduced).

Remarks : Honacki *et al.* (1982) kept this species under the genus *Cervus*.

Though Hog Deer is still common in Jaldapara sanctuary, yet its population is gradually declining due to shrinkage of natural habitat and hunting pressure.

Lambourn (1918) reported it from Maldah district, but now it is not found there.

123. *Axis axis axis* (Erxleben)

1777 *Cervus axis* Erxleben, *Syst. Regn. Anim.* : 312 (Bank of Ganges, Bihar, India).

Common names : Spotted Deer (Eng.), Chital (Beng.), Chital (Hin.).

Material examined : 2 ♂ (Skull only), Sundarban (no exact locality), coll. J. Wood-Mason, --.

Measurements : Nil.

Diagnosis : Coat bright rufous-fawn, profusely spotted with white, at all ages and seasons. Antlers with three tines, a long brow-tine set nearly at right angles to the beam; latter divides into two branches.

Distribution : India : West Bengal : Birbhum and Nadia districts (Tikader 1983), North 24-Parganas district (Sclater 1891), Puruliya district (Bhattacharyya *et al.* 1985), South 24-Parganas district (Sclater 1891); peninsular India, northwards to Kumaon in Uttar Pradesh and Sikkim, and eastwards to Assam and Meghalaya. Sri Lanka, Nepal and Bangladesh.

Remarks : Except in the Sundarban region of South 24-Parganas district it is scarce in other parts of West Bengal. However, it is thriving well in the sanctuaries in Nadia and Birbhum districts. This species was once found in Jalpaiguri (Gruning, 1911), Medinipur (O'Malley 1911) and Bankura districts (Mitra 1957), but is now extinct from these areas.

Genus *Cervus* Linnaeus, 1758

Two species of the genus *Cervus* occur in West Bengal.

Key to the species of the genus *Cervus*

- Each antler, in adults, normally with more than 3 tines; brow antler forming an angle of 90° with the beam.*C. duvauceli*

Each antler, in adults, normally with 3 tines; brow antler forming an acute angle with the beam: latter bifurcates to give rise to two strong tines only..... *C. unicolor*

124. *Cervus unicolor niger* Blainville

1816. *Cervus niger* Blainville, *Bull. Soc. Philom. Paris* : 76. (Probably somewhere in North India, according to Ellerman & Morrison-Scott 1951).

Common name : Sambar (Eng., Beng. and Hin.).

Material examined : Jalpaiguri district : 1 ♂ (mounted), Buxa Duar, coll. A. R. S. Anderson, --.

Measurements : Nil.

Diagnosis : Largest of the Indian deer, height at shoulders about 150 cm; coat coarse and shaggy; a mane present, in stags, about neck and throat; general colour brown with yellowish or greyish tinge, venter paler; females lighter in tone.

Distribution : India : West Bengal : Darjiling district (Dash 1947), Jalpaiguri district (Gruning 1911), Medinipur district (O'Malley 1911); Andhra Pradesh; Bihar; Goa; Gujarat; Himachal Pradesh; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Orissa; Rajasthan; Tamil Nadu; Uttar Pradesh. Nepal and Bangladesh.

Remarks : Mitra (1957) reported Sambar from Bankura district, but, in all probability, it is now not found there. This species is rare in West Bengal.

125. *Cervus duvauceli duvauceli* Cuvier

1823. *Cervus duvaucelii* Cuvier, *Oss. Foss.*, 2nd ed., 4 : 505 (North India).

Common names : Swamp Deer (Eng.), Barasingha (Beng. and Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Large in size, height at shoulders 105-130 cm; coat almost woolly in texture, brown to yellowish brown; summer-coat paler. A mane present, in stags, over neck.

Distribution : India : West Bengal : Jalpaiguri district (Gruning 1911); Assam; Meghalaya; Uttar Pradesh. Nepal.

Remarks : Sclater (1891) included Medinipur and 'Sundarbunds' in its range. According to Mitra (1957), Swamp Deer was previously found in almost all the Sal forest areas of West Bengal. However, now-a-days, it is found only in Jalpaiguri district, that too in Torsa and Buxa forest ranges.

Family BOVIDAE

Six genera of the family *Bovidae* occur in West Bengal.

Key to the genera of the family BOVIDAE

1. Horns smooth or closely, irregularly and transversely ridged.....2
 Horns with prominent ridges at regular intervals and spiral in shape..... *Antelope*
2. Horns inserted far apart, at the extremities of vertex.....3
 Horns closely-set.4
3. Horns triangular in cross-section and transversely ridged, exceeding 92 cm in length. *Bubalus*
 Horns oval in cross-section and smooth, less than 92 cm in length..... *Bos*

4. Horns compressed, wrinkled transversely and keeled in front; neck and shoulders having a shaggy mane.....*Hemitragus*
Horns conical, backwardly curved and ringed; no shaggy mane but a crest on neck.....5
5. Skull with a distinct ridge across the cheek in front of the eyes; no anteorbital depression.....
.....*Nemorhaedus*
Skull with a shallow depression in front of the eyes for the reception of anteorbital gland.....
.....*Capricornis*

Genus *Bos* Linnacus, 1758

One species of the genus *Bos* occurs in West Bengal.

126. *Bos gaurus* Smith

1827. *Bos gaurus* Smith, Griffith's *Cuvier Anim. Kingd.*, 4 : 399 (Mainpat, Sarguja, Madhya Pradesh, India).

Common names : Indian Bison (Eng.), Gaur (Beng.), Gaur or Jungali Gai (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Height at shoulders, in males, 175-196 cm, females a little smaller. A muscular ridge present on the shoulders which slopes down to the middle of the back where it ends in an abrupt dip. General colour of body coffee or reddish brown, jet black in old bulls; ashy forehead; yellowish or white stockings.

Distribution : India : West Bengal : Darjiling district (Dash 1947), Jalpaiguri district (Gruning 1911); Arunachal Pradesh; Andhra Pradesh; Assam; Bihar; Goa; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Mizoram; Nagaland; Orissa; Rajasthan; Tamil Nadu; Uttar Pradesh. Nepal and Bangladesh.

Remarks : Honacki *et al.* (1982) treated *Bos gaurus* as a synonym of *Bos frontalis* Lambert.

Gaur was once found in plenty in the forests of Sukhna, Darjiling district, but now a few could be seen there (Dutt-Majumder 1955). They are now found in the dense forests of the Terai and Duars of northern West Bengal (Mitra 1957), and in Gorumara sanctuary, Jalpaiguri district (Biswas & Ghose 1982).

Genus *Bubalus* H. Smith, 1827

One species of the genus *Bubalus* occurs in India.

127. *Bubalus bubalis bubalis* (Linnacus)

1758. *Bos bubalis* Linnacus, *Syst. Nat.*, 10th ed. 1 : 72 (Rome, Italy).

Common names : Wild Buffalo (Eng.), Buno Mosh (Beng.), Jungali Bhaisa (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A robust animal, height at the shoulders, in males, 150-280 cm, females a little shorter. Body-colour slaty black, with dirty white feet. Horns triangular in cross section and transversely ridged.

Distribution : India : West Bengal : Jalpaiguri district (Gruning 1911); Assam; Madhya Pradesh; Maharashtra; Orissa. Sri Lanka (probably feral).

Remarks : Blanford (1891) recorded this species from the coastal region of Medinipur district. At present it is restricted to Jalpaiguri district by the side of rivers Sankosh, Torsa and Raidak. However, Daniel and Grubh (1966) have opined that it has totally lost its ground in West Bengal.

Genus *Antilope* Pallas, 1766

One species of genus *Antilope* occurs in West Bengal.

128. *Antilope cervicapra rupicapra* Müller

1776. *Antilope rupicapra* Müller, *Natursyst. Suppl.* : 56 (Bengal).

Common names : Blackbuck (Eng.), Krishnasar (Beng.), Kala Mriga (Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Height at the shoulders about 80 cm in males, a little shorter in females. Body-colour blackish in male, yellowish fawn in female on the upper surface, and white on the under surface. Male possesses a pair of spirally twisted, closely ringed horns; female hornless.

Distribution : India : West Bengal : Medinipur district (Blanford 1888-91), Birbhum district; Bihar; Orissa; Uttar Pradesh.

Remarks : The Blackbuck was once common in Murshidabad and Medinipur districts of West Bengal (Bhattacharyya 1979, Mitra 1957), but now it is restricted (introduced) to Ballavpur sanctuary, Birbhum district (Tikader 1983).

Genus *Capricornis* Ogilby, 1837

The genus *Capricornis* is represented by one species, *Capricornis sumatraensis*.

129. *Capricornis sumatraensis jamrachi* Pocock

1908. *Capricornis sumatraensis jamrachi* Pocock, *Proc. zool. Soc. Lond.* : 183 (Kalimpong, Darjiling district, West Bengal, India).

Common name : Serow (Eng. and Beng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Males 100-110 cm high at the shoulders, with a large head, thick neck, and ears like those of donkeys. Coat coarse, grizzled black on the back, rusty red on the shoulders, flanks and lower thigh; limbs chestnut above, dirty white below.

Distribution : India : West Bengal : Darjiling district (Pocock 1908), Arunachal Pradesh and Meghalaya (Kurup 1968).

Remarks : Rare; occurs at elevations ranging from 1828 m to 3048 m, near Ghoom and Sandakphu, Darjiling district (Mitra 1957).

Genus *Nemorhaedus* H. Smith, 1827

The genus *Nemorhaedus* is represented by one species, *Nemorhaedus goral*.

130. *Nemorhaedus goral hodgsoni* Pocock

1908. *Nemorhaedus hodgsoni* Pocock, *Proc. zool. Soc. Lond.*, :195 (Sikkim).

Common name : Goral (Eng., Beng. and Hin.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Height at the shoulders 65-75 cm. Coat golden or rufous brown, speckled with black; black spinal stripe reaches to the root of tail, but indistinct on the rump; tail black above. Both the sexes have conical, backwardly curved horns, 12-15 cm in length.

Distribution : India : West Bengal : Darjiling district (Dash 1947); Sikkim.

Remarks : Once Goral used to occur in Jalpaiguri district (Inglis 1919, Mitra 1957), but now it is rare and restricted to Darjiling district, at elevations from 914 m to 2743 m.

Genus *Hemitragus* Hodgson, 1821

Out of the two Indian species of the genus *Hemitragus*, one, namely, *H. jemlahicus* occurs in West Bengal.

131. *Hemitragus jemlahicus schaeferi* Pohle

1944. *Hemitragus jemlahicus schaeferi* Pohle, *Zool. Anz.*, 144 : 184 (10 km NW of Chuntang, Sikkim, India).

Common name : Himalayan Tahr (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Males 90-100 cm high at the shoulders; females a little smaller. Body covered with tangled mass of long hairs, growing into a long mane on the neck and shoulders. Coat deep reddish brown, with a dark mid-dorsal streak which may not be always distinct. Ears narrow and erect.

Distribution : India : West Bengal : Darjiling district (Mitra 1957); Sikkim.

Remarks : Rare. This species was recently observed in Neora Valley, Darjiling district (Ghose 1985).

Coughley (1970) did not recognise *schaeferi* as a separate subspecies and opined that the differentiating pelage characters as mentioned by Pohle (1944) are only seasonal.

Order LAGOMORPHA

Two pairs of incisors in the upper jaw, placed one behind the other; cheek-teeth adapted for grinding fibrous food, and separated from incisors by a wide diastema. Tail very short or absent. Ears short or very long.

Two families of the order Lagomorpha occur in West Bengal.

Key to the families of the order LAGOMORPHA

Ears very long and narrow; a tail present..... LEPORIDAE

Ears short and rounded; devoid of a tail..... OCHOTONIDAE

Family LEPORIDAE

Key to the genera of the family LEPORIDAE

Fur soft; ears as long as the head or longer; tail white beneath.....*Lepus* (*L. nigricollis*)

Fur markedly bristly; ears shorter than head; tail brown throughout. *Caprolagus* (*C. hispidus*)

Genus *Lepus* Linnaeus, 1758

One species of the genus *Lepus* occurs in West Bengal.

132. *Lepus nigricollis ruficaudatus* Geoffroy

1826. *Lepus ruficaudatus* Geoffroy, *Dict. Class. Hist. Nat.*, 9 : 381 (Bengal).

Common names : Rufous-tailed Hare (Eng.), Khargosh (Beng., Hin.).

Material examined : Darjiling district : 1 ♀, no exact locality, coll. N.A. Baptista. 29.v.1915; 1 ♂, Tonglu (c 2,825 m), coll. R.K. Ghose, 1.vi.1980. Jalpaiguri district : 2 ♂, Hasimara (c 182 m), coll. C.A. Crump, 9.xii.1915, 20.iii.1916; 2 ♂, 2 ♀, Khuntimari, coll. R.K. Ghose, S. Chakraborty, 11.ix.1983, 13 & 14.iii.1985; 1 ♂, Jalpaiguri, coll. C.A. Crump, 14.iv.1915. Medinipur district : 1 ♀, Salbani, coll. C.A. Crump, 19.ix.1914.

Measurements : External : 4 ♂ : H & B 406.0-450.0(434.5); Tl 66.0-90.0(75.0); Hf 101.0-108.0(105.0); E 89.0-91.0(90.0). 2 ♀ : H & B 398.0, 430.0; Tl 77.0, 79.0; Hf 97.0, 99.0; E 85.0, 87.0. Cranial : 2 ♂ : *on* 85.0, 90.0; *n* 34.6, 40.4; *pl* 34.7, 35.2; *apf* 22.3, 22.6; *orb* 24.9, 25.8; *iw* 15.3, 15.7; *pow* 12.0, 15.2; *ms* 8.6, 8.9; *ml* 64.1, --. 1 ♀ : *on* 91.7; *n* 40.6; *pl* 37.0; *apf* 23.2; *orb* 26.0; *iw* 17.5; *pow* 11.9; *ms* 9.6; *ml* 63.6.

Diagnosis : Head and body 40 - 50 cm in length; grey patch on the nape; upper surface of tail rufous-brown.

Distribution : India : West Bengal : Bankura district (Banerjee 1968), Birbhum district (O'Malley 1910), Darjiling district (Wroughton 1916b), Hugli district (Banerjee 1972), Jalpaiguri district (Gruning 1911), Koch Bihar district, Medinipur district (Wroughton 1915), Nadia district (Garrett 1910), Puruliya district (Bhattacharyya et al. 1985); Assam; Madhya Pradesh; Meghalaya; Nagaland; Orissa; Rajasthan; Sikkim; Tripura (Agrawal & Bhattacharyya 1977); Uttar Pradesh. Nepal and Bangladesh.

Remarks : Specimen from Salbani has the margin of ears brownish instead of whitish.

In addition to the above-mentioned districts of West Bengal, this species was observed during recent surveys by the parties of the Zoological Survey of India at Bardhaman district, Koch Bihar district, Murshidabad district and West Dinajpur district. Though Sclater (1891) recorded it from Alipur, Calcutta, at present there is least possibility of its occurrence there.

In spite of tremendous hunting pressure, hazards of insecticides, habitat destruction, etc., this species is fairly common in many of the districts due to its small size, great tenacity under trying conditions and amazing power of concealment.

Genus *Caprolagus* Blyth, 1845

The genus *Caprolagus* is represented by one species, namely, *C. hispidus*.

133. *Caprolagus hispidus* (Pearson)

1839. *Lepus hispidus* Pearson, in M'Clelland. *Proc. zool. Soc. Lond.* : 152 (Northern Assam, foothills of Himalaya).

Common name : Hispid Hare (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Body-size like that of the previous species; colour above dark brown, chest brownish, and rest of the underparts white; tail brown throughout; ears short, about 7 cm in length.

Distribution : India : West Bengal : Jalpaiguri district (Gruning 1911); Assam; Sikkim; Tripura; Uttar Pradesh. Nepal and Bangladesh.

Remarks : Very rare. Recent reports of its occurrence from West Bengal are from Jaldapara Wildlife Sanctuary (Ghose & Ghosal 1985) and Buxa Tiger Reserve (Oliver 1984), both in Jalpaiguri district. It is, however, certain that this species is endangered not only in West Bengal, but throughout its range of distribution (Oliver 1979a, 1979b).

Family OCHOTONIDAE

The family Ochotonidae is represented in India by one genus *Ochotona*.

Genus *Ochotona* Link, 1795

One species of this genus occurs in West Bengal.

134. *Ochotona thibetana sikimaria* Thomas

1922. *Ochotona sikimaria* Thomas, *Ann. Mag. nat. Hist.*, 9 : 191 (Lacheng, c 2,682 m, Sikkim).

Common name : Moupin Pika (Eng.).

Material examined : Darjiling district : 3 ♂ subad., 1 ♀ subad; Sandakphu (c 1,097 m), coll. H. Khajuria, R.K. Ghose, 16.vii.1958, 25, 27.vi.1974.

Measurements : External : 3 ♂ subad : H & B 112.2-124.5(116.9); Hf 22.5-25.1(24.1); E 15.9-16.4(16.1). 1 ♀ subad : H & B 101.1; Hf 19.8; E 13.0. Cranial : 1 ♂ subad : *on* 31.9; *pl* 11.4; *iw* 4.1; *ml* 9.3.

Diagnosis : Palatal and incisive foramina confluent; length of palate, on average, 14 mm.

Distribution : India : West Bengal : Darjiling district (Khajuria & Ghose 1970); Sikkim.

Remarks : Very common at higher altitudes of Darjiling district. It can easily be observed by patient waiting near its burrow during the morning hours.

Order RODENTIA

Rodents are worldwide in distribution. They are characterized by the presence of a pair of chisel-shaped incisors in each jaw, and a distinct diastema between incisors and cheekteeth.

Three families of rodents, namely, Sciuridae, Muridae and Hystricidae occur in West Bengal.

Key to the families of the order RODENTIA

1. Fur modified into quills or long stiff hairs; cheekteeth 4/4 in number.....HYSTRICIDAE
Fur not modified into quills; cheekteeth, except in genus *Ratufa*, never 4/4 in number.2
2. Infraorbital foramen not or scarcely open for muscle transmission; cheekteeth, except in genus *Ratufa*, 5/4 in number.....SCIURIDAE

Infraorbital foramen clearly open for muscle transmission; cheekteeth 3/3 in number
 MURIDAE

Family SCIURIDAE

Eight genera of the family Sciuridae are found in West Bengal.

Key to the genera of the family SCIURIDAE

1. Flying membrane present on both sides of body.....2
 Flying membrane absent.4
2. Surface-pattern of lower molar teeth simple and possesses a central depression..... *Hylopetes*
 Surface pattern of lower molar teeth excessively wrinkled, and lacks a central depression.....3
3. Interfemoral membrane absent; ear-tufts present; size small, less than 200 mm in head and body length.....*Belomys*
 Interfemoral membrane present; ear-tufts absent; size large, more than 300 mm in head and body length..... *Petaurista*
4. Body size large, over 280 mm in head and body length; maxillary teeth 4 in number.....*Ratufa*
 Body size small, less than 280 mm in head and body length; maxillary teeth 5 in number.....5
5. Dorsal surface of body prominently striped; stripes more than one in number.6
 Dorsal surface of body unstriped or with a faint black stripe.7
6. Median stripe of body white or buff.....*Funambulus*
 Median stripe of body black*Tamiops*
7. Length of nasal exceeds interorbital width of skull.....*Dremomys*
 Length of nasal does not exceed interorbital width of skull.....*Callosciurus*

Genus *Belomys* Thomas, 1905

The genus *Belomys* is represented by one species, viz., *B. pearsoni*.

135. *Belomys pearsoni pearsoni* (Gray)

1842. *Sciuropterus pearsonii* Gray, *Ann. Mag. nat. Hist.*, 10 : 263 (Darjiling, Darjiling district, West Bengal, India).

Common name : Hairy-footed Flying Squirrel (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A small-sized squirrel, head and body length about 20 cm; fur rufous brown, with pale tips on the upper surface of body, and fulvous white on the undersurface; a pencil of hair, exceeding the ear length, present on the base of ear-conch.

Distribution : India : West Bengal : Darjiling district (Gray 1842); Arunachal Pradesh; Assam; Nagaland; Sikkim. Bhutan.

Remarks : Recently, a party of the Zoological Survey of India observed this squirrel at Neora Valley (Ghose 1985), which confirms its occurrence in Darjiling district of West Bengal.

Genus *Petaurista* Link, 1795

Four species of this genus occur in West Bengal.

Key to the species of the genus *Petaurista*

1. Size small, occipitonasal length of skull 65 mm or less.....*P. elegans*
Size large, occipitonasal length of skull more than 65 mm.2
2. Shoulder patch indistinct, more or less concolorous with the back.....*P. petaurista*
Shoulder patch distinct.....3
3. Shoulder patch confined to pectorals; remaining dorsal surface uniformly coloured.....
.....
.....*P. magnificus*
Shoulder patch extends beyond pectorals, isolating a maroon saddle. *P. nobilis*

136. *Petaurista elegans caniceps* (Gray)

1842. *Sciuropterus caniceps* Gray, *Ann. Mag. nat. Hist.*, 10 : 262 (Nepal).

Common name : Lesser Giant Flying Squirrel (Eng.).

Material examined : Darjiling district : 1 ♀, Ghoombhanjan (c 2,117 m), coll. R.K. Ghose, 8.vii.1974; 1 ♂ (skin only), Phalut, Singalila Range, coll. B. Biswas, 28.xii.1952; 1 ♀, Tonglu (c 2,825 m), coll. R.K. Ghose, 4.iii.1975.

Measurements : External : 1 ♂ : H & B 318.0; Tl 372.0; Hf 65.0; E 40.0; 2 ♀ : H & B 310.0; 359.0; Tl 331.0, 350.0; Hf 61.5, 67.5; E 42.0(2). Cranial : 2 ♀ : *on* 63.5, 64.5; *n* 19.1, 20.3; *pl* 32.1, 33.5; *iw* 13.6, 16.0; *orb* 23.8, 24.2; *b* 11.0, 12.1.

Diagnosis : Body uniform rufous brown above; head throughout ashy grey, finely speckled; undersurface rufous; ears almost naked.

Distribution : India : West Bengal : Darjiling district (Sclater 1891); Sikkim. Nepal.

Remarks : Out of the three specimens of *P. elegans*, one from Phalut resembles *P. e. gorkhali* in colour, but in the absence of skull, nothing definite can be said as to the status of this specimen, hence, provisionally kept here.

The specimen from Tonglu was having an embryo (6 X 4 cm in size) in the right horn of the uterus.

137. *Petaurista petaurista philippensis* (Elliot)

1839. *Pteromys philippensis* Elliot, *Madras J. Litt. Sci.*, 10 : 217 (Near Madras, Tamil Nadu, India.).

Common name : Common Giant Flying Squirrel (Eng.).

Material examined : Puruliya district : 1 juv. (unsexed), no exact locality, coll. W. Theobald, --

Measurements : Nil.

Diagnosis : Body dark brown above, with greater part of the tail black; underparts whitish grey.

Distribution : India : West Bengal : Medinipur and Puruliya districts (Sclater 1891); Andhra Pradesh; Bihar; Gujarat; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Orissa; Tamil Nadu.

Remarks : Lives in the hollows of old trees, often within the villages.

138. *Petaurista magnificus hodgsoni* Ghose & Saha

1981. *Petaurista magnificus hodgsoni* Ghose & Saha, *J. Bombay nat. Hist. soc.*, 78 : 99 (Ghoombhanjan, c 2,117m, Darjiling district, West Bengal, India).

Common name : Hodgson's Giant Flying Squirrel (Eng.).

Material examined : Darjiling district : 1 ♂ (Holotype), Ghoombhanjan (c 2,117 m), coll. R.K. Ghose, 30.iii.1975.

Measurements : External : 1 ♂ : H & B 395.0; TI 415.0; Hf 72.0; E 41.5. Cranial : 1 ♂ : *on* 65.0; *n* 19.5; *pl* 34.1; *iw* 14.8; *mtr* 15.0; *b* 11.2.

Diagnosis : Body chestnut above, and Apricot Buff below; shoulder patch Cream Buff.

Distribution : India : West Bengal : Darjiling district (Ghose & Saha 1981).

139. *Petaurista nobilis nobilis* (Gray)

1842. *Sciuropterus nobilis* Gray, *Ann. Mag. nat. Hist.*, 10 : 263 (Darjiling, Darjiling district, West Bengal, India).

Common names : Gray's Giant Flying Squirrel (Eng.).

Material examined : Darjiling district : 7 ♂, 4 ♀, Ghoombhanjan (c 2,117 m), coll. R.K. Ghose, 15 & 16.vi.1974, 25 & 26.ii.1975; 27-29.iii.1975; 1 ♂, coll. T.D. Soota, 9.v.1978; 2 ♂, 2 ♀, Selimbong, (c 2,250 m), coll. R.K. Ghose, 20 & 24.iii.1975.

Measurements : External : 9 ♂ : H & B 347.0-420.0(389.0); TI 378.0-490.0(449.0); Hf 70.5-77.5(73.0); E 40.0-45.0(43.0). 6 ♀ : H & B 368.0-410.0(383.0); TI 439.0-510.0(453.0); Hf 72.0-80.0(74.0); E 39.0-46.0(42.5). Cranial : 8 ♂ : *on* 67.9-72.8(70.3); *n* 20.5-22.6(21.8); *pl* 34.5-38.0(35.7); *iw* 14.6-18.0(15.8); *mtr*. 15.0-16.5(15.8); *b* 11.8-13.1(12.2). 4 ♀ : *on* 71.1-74.5(73.1); *n* 21.6-23.5(22.4); *pl* 36.0-37.7(37.0); *iw* 14.5-16.3(15.4); *mtr*. 15.6-16.6(16.1); *b* 12.2-13.0(12.5).

Diagnosis : Saddle maroon, usually with a middorsal stripe; undersurface salmon-buff to flesh-ochre; shoulder patch and sides of body yellow to orange-buff.

Distribution : India : West Bengal : Darjiling district (Gray 1842); Sikkim. Nepal and Bhutan.

Remarks : Details of taxonomy and distribution of this species has been discussed by Ghose & Saha (1981).

Most common among the flying squirrels of Darjiling and could be seen flying from one tree to another in the heart of the town.

Two females, one collected in June and another in February, were pregnant, each containing one embryo in the right horn of the uterus.

Genus *Hylopetes* Thomas, 1908

One species of the genus *Hylopetes*, namely, *H. alboniger* occurs in West Bengal.

140. *Hylopetes alboniger alboniger* (Hodgson)

1836. *Sciuropterus alboniger* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 231 (Nepal).

Common name : Parti-coloured Flying Squirrel (Eng.).

Material examined : Darjiling district : 1 ♀ (skin) : Kurseong (c 1,447 m), coll. C. Primrose, 25.xi.1915; 1 ♂ (skin) : Pashok (c 1,066 m), coll. C. A. Crump, 4.ii.1915. 1 ♀ (skin) : Selimbong (c 2,250 m), coll. R.K. Ghose, 3.xii.1977.

Measurements : Nil.

Diagnosis : Colour above varying from greyish to reddish brown; white or light patches present or suffused in the region of shoulder; under surface greyish, but throat, and sometime chest, tends to be whitish. Occipitonasal length over 45 mm.

Distribution : India : West Bengal : Darjiling district (Sclater 1891), Jalpaiguri district (Wroughton 1917b); Arunachal Pradesh; Manipur (Roonwal 1950); Meghalaya; Nagaland. Nepal, Bangladesh, Burma and China.

Genus *Callosciurus* Gray, 1867

One species of the genus *Callosciurus*, namely, *C. pygerythrus* occurs in West Bengal.

141. *Callosciurus pygerythrus lokroides* (Hodgson)

1836. *Sciurus lokroides* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 232 (Nepal).

Common name : Hoary-bellied Himalayan Squirrel (Eng.).

Material examined : Darjiling district : 6 unsexed, 1 juv. ♀, no exact locality, coll. J. Anderson, W.T. Blanford, E. Blyth, G. Mason, 2 ♂, 1 ♀, Gopaldhara (c 1,520 m), coll. N.A. Baptista, 28.v.1915, 15.vi.1915; 2 ♂, 5 ♀, Mungpo (c 1,260 m), coll. H. Stevans, 1, 6, 9, 26 & 28.v.1921; 1 ♂, Narbong (c 625 m), coll. C. A. Crump, 10.iii.1915; 1 ♂, Pashok (c 1,066 m), coll. N. A. Baptista, 12.vii.1917; 1 ♂, 1 ♀, 1 unsexed, Samsing, coll. R. L. Chowdhury, 16 & 18.xii.1980; 1 ♀, Sangser (c 1,097 m), coll. N.A. Baptista, 18.viii.1916; 1 ♂, Sivok (c 152 m), coll. C. A. Crump, 22.iii.1915; 1 ♂, 3 ♀, Tarkhola, (c 325 m), coll. R.L. Fernandez, 17,22.viii.1958; 1 ♂, Tindharia (c 914 m), coll. W. Partridge, 15.iv.1892.

Measurements : External : 6 ♂ : H & B 170.0-210.0(189.0); TI 182.0-205.0(191.0); Hf 40.0-44.0(42.0); E 18.0-20.0(19.0). 6 ♀ : H & B 158.0-220.0(194.0); TI 170.0-190.0(177.0); Hf 37.0-43.0(41.5); E 16.0-19.0(18.0). Cranial : 4 ♂ : *on* 48.0-49.3(48.6); *n* 14.6-15.3(14.9); *pl* 23.4-24.0(23.8); *iw* 14.6-18.1(15.9); *orb* 15.8-17.0(16.4); *b* 8.3-8.7(8.5); *mtr* 8.9-9.4(9.2). 1 ♀ : *on* 46.9; *n* 14.4; *pl* 22.8; *iw* 15.0; *orb* 15.3; *b* 8.1; *mtr* 8.8.

Diagnosis : Body above speckled brownish or dark greyish, undersurface variable, dull, greyish or with light reddish tinge; tail concolorous throughout, lacking a black tip; seasonal thigh patch bright red; frontal width less than one-third of occipitonasal length.

Distribution : India : West Bengal : Darjiling district (Blyth 1863), Jalpaiguri district (Gruning 1911); Sikkim. Bangladesh (Posamentier 1989), Nepal and Bhutan.

Remarks : Common. Moore & Tate (1965), Khajuria & Ghose (1970), Chakraborty (1985), Chakraborty & Chakraborty (in press) have discussed the taxonomy, distribution and population of this subspecies. Based on a specimen from Machi, Ellerman (1961) included Manipur in the range of distribution of this subspecies. Without examining that specimen, nothing definite can be said about the subspecific identity, but probably the specimen belongs to *C. p blythi*.

Genus *Tamiops* J. Allen, 1906

One species of the genus *Tamiops*, namely, *T. macclellandi* occurs in India.

142. *Tamiops macclellandi macclellandi* (Horsfield)1839. *Sciurus macclellandi* Horsfield, *Proc. zool. Soc. Lond.* : 152 (Assam, India).*Common name* : Himalayan Striped Squirrel (Eng.).*Material examined* : Darjiling district : 1 ♀, 2 unsexed, no exact locality, coll. W. T. Blanford, Cakes; 1 ♂, Gopaldhara, (c 1,438 m), coll. N. A. Baptista, 4.v.1915; 1 ♂ 3 ♀, 1 juv. ♀, 1 unsexed Juv., Palmajua (c 2,250 m), coll. R.L. Fernandez, R.K. Ghose, H. Khajuria, R. Paynter; 1 ♀, Selimbong (c 2,250 m), coll. R.K. Ghose, 5.xii.1977.*Measurements* : External : 2 ♂; H & B 117.0, 125.0; Tl 94.0, --; Hf 25.0, 29.0; E 12.0, 15.0. 4 ♀ : H & B 117.0-126.0(122.5); Tl 87.0-110.0(101.0); Hf 22.5-29.0(25.5); E. 11.0-14.0(12.5). Cranial : 1 ♂ : *on* 34.4; *n* 10.1; *pl* 15.6; *iw* 12.0; *orb* 11.0; *b* 6.4; *mtr* 5.5. 3 ♀ : *on* 33.0-34.4(33.8); *n* 10.0-10.2(10.1); *pl* 14.9-15.9(15.5); *iw* 10.9-12.1(11.6); *orb* 10.8-11.0(10.9); *b* 6.3-6.6(6.5); *mtr* 5.5-5.7(5.6).*Diagnosis* : Dorsal surface of body varies from greyish to brownish and striped, median stripe being black; ventral surface greyish white; ear tufts black, with conspicuous white tip.*Distribution* : India : West Bengal : Darjiling district (Blyth 1863); Arunachal Pradesh; Assam; Manipur; Meghalaya; Mizoram; Nagaland; Sikkim. Nepal, Bhutan and Burma.*Remarks* : Khajuria (1959) gave an account of the habits of this species in Darjiling district. Moore & Tate (1965), and Agrawal & Chakraborty (1979b) have dealt with the taxonomic variation.

Common in Darjiling district.

Genus *Dremomys* Heude, 1898One species of the genus *Dremomys*, namely, *D. lokriah* occurs in West Bengal.143. *Dremomys lokriah lokriah* (Hodgson)1836. *Sciurus lokriah* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 232 (Nepal).*Common name* : Orange-bellied Himalayan Squirrel (Eng.).*Material examined* : Darjiling district : 1 unsexed, no exact locality, coll. J. Anderson, --; 2 ♂, 3 ♀, Palmajua (c 2,259 m), coll. R.L. Fernandez, H. Khajuria, 24 & 25.vi.1958, vii 1958; 6 ♂, 1 ♀, 1 unsexed, Selimbong (c 2,250 m), coll. R.K. Ghose, 20, 23.iii.1975, 29,30.xi.1977, 1, 4.xii.1977, 17.v.1980.*Measurements* : External : 6 ♂ : H & B 179.0-193.0(186.0); Tl 120.0-153.0(135.0); Hf 43.0-46.0(43.5); E 20.0-26.0(21.5). 4 ♀ : H & B 183.0-188.0(185.0); Tl 137.0-159.0(149.0); Hf 40.5-46.0(43.5); E 19.0-21.0(20.0). Cranial : 3 ♂ : *on* 48.7-50.6(49.6); *n* 14.6-15.8(15.4); *pl* 23.2-23.8(23.6); *iw* 13.9-14.6(14.2); *orb* 15.0-15.9(15.6); *b* 8.4-8.8(8.6); *mtr* 8.0-8.8(8.5). 2 ♀ : *on* 50.3, 50.4; *n* 15.1, 15.3, *pl* 22.6, 24.0; *iw* 13.9, 15.3; *orb* 14.2, 14.3; *b* 7.9, 8.3; *mtr* 8.1(2).*Diagnosis* : More or less like the Hoary-bellied Himalayan Squirrel in appearance, except that a mid-dorsal black stripe occasionally present, and the tail shorter than head and body.*Distribution* : India : West Bengal : Darjiling district (Sclater 1891); Arunachal Pradesh; Assam; Meghalaya; Nagaland; Tripura. Nepal and Burma.*Remarks* : Commonly seen around 1800 m elevation in Darjiling district, scampering on the ground in search of food.Genus *Funambulus* Lesson, 1835Two species of the genus *Funambulus* occur in West Bengal.

Key to the species of the genus *Funambulus*

- Dorsal surface of body having 5 buff stripes..... *F. pennanti*
 Dorsal surface of body having 3 buff stripes..... *F. palmarum*

144. *Funambulus palmarum palmarum* (Linnaeus)

1766. *Sciurus palmarum* Linnaeus, *Syst. Nat.*, 12th ed., 1 : 86 (Madras, Tamil Nadu, India).

Common names : Indian Palm Squirrel (Eng.), Kat Berali (Beng.); Gilchri (Hin.).

Material examined : Medinipur district : 1 unsexed, Medinipur, coll. E. Blyth,-- Puruliya district : 1 ♀, Ajodhya Hills, coll. V. C. Agrawal, 17.i.1985; 1 ♀, Matha, coll. V. C. Agrawal, 15.i.1985.

Measurements : External : 2 ♀ : H & B 145.0, 151.0; TI 126.0, 131.0; Hf 27.0, 38.0; E 15.0, 17.0. Cranial : 2 ♀ : *on* 37.6, 38.4; *n* 13.5, 15.0; *pl* 18.9, 19.6; *iw* 10.7, -; *orb* 11.5, 12.1; *b* 7.2, 7.8; *mtr* 6.6 +, 7.3.

Distribution : India : West Bengal : Medinipur district (Agrawal & Chakraborty 1979b), Puruliya district (Agrawal & Bhattacharyya 1987); Andhra Pradesh; Bihar; Karnataka; Kerala; Orissa; Tamil Nadu. Sri Lanka.

Remarks : The specimen from Ajodhya Hills is an erythristic one. The tail is usually longer than the head and body in the nominate subspecies, but in the above specimens, it is smaller.

Based on a specimen, Blyth (1863) recorded this species from Calcutta, but on examination, the same was found to be a specimen of *Funambulus pennanti*.

145. *Funambulus pennanti* Wroughton

1905. *Funambulus pennanti* Wroughton, *J. Bombay nat. Hist. Soc.*, 16 : 411. (Mandvi Taluka, Surat district, Gujarat, India).

Common names : Northern Palm Squirrel, Five-striped Squirrel (Eng.); Kat Berafi (Beng.), Gilehri (Hin.).

Material examined : Bankura district : 1 ♀, Susunia, coll. V. C. Agrawal, 7.i.1985. Calcutta district : 8 ♂, 1 ♀, no exact locality, coll. J. Anderson, B. S. Lamba, Mus. collector, xii. 1968, i. 1869, 1870, 7.iii.1960. Haora district : 1 ♂, Bally, coll. S. S. Saha, 16.vi.1963; 2 ♂, 1 unsexed, Belur, coll. J. Caunter, 23.x.1868; 1 unsexed, Haora, coll. J. Anderson, 1870. Hugli district : 1 ♂, 1 ♀, Barul (near Jhapandanga), coll. S. Chakraborty, 19.ii.1974; 1 ♀, Chandannagar, coll. B. Biswas, 30.vii.1950; 4 ♂, 1 ♀, Kamardingi (near Jhapandanga), coll. S. Chakraborty, 18-20.ii.1974; 1 ♀, Singur, coll. Ajoy Mandal, 6.xi.1975. Medinipur district : 1 ♀, Amlagora (near Garbeta), coll. P. K. Das, 21.ix.1984. Murshidabad district : 1 ♂, Baharampur, coll. S. Chakraborty, 18.x.1987. Nadia district : 1 ♂, 1 ♀, Madanpur, coll. P. K. Das, 17,19.vii.1969; 3 ♂, 1 ♀, Plassey, coll. S. Chakraborty, 20,21.x.1987; 1 ♂, 1 ♀, Ramnagar, coll. S. Chakraborty, 21.x.1987. North 24-Parganas district : 1 ♂, Parmadan, coll. P. K. Das, 8.v.1988. Puruliya district : 1 ♂, Inampur, coll. Mus. collector, -; 1 ♂, 1 ♀, Puruliya, coll. B. Nath, T. R. Sinha, 26.xi.1948, 8.xii.1948. South 24-Parganas district : 1 juv ♀, Taldi, coll. A. K. Mandal, 25.xii.1968.

Measurements : External : 14 ♂, H & B 131.0-160.0(147.0); TI 127.0-180.0(149.5); Hf 34.0-40.0(37.0); E 11.4-17.0(14.5). 7 ♀, : H & B 140.0-165.0(152.5); TI 130.0-176.0(149.5); Hf 36.0-41.0(37.5); E 12.0-16.5(14.5). Cranial : 3 ♂ : *on* 36.4-38.7(37.7); *n* 11.5-13.3(12.4); *pl* 18.0-19.0(18.6); *iw* 9.5-11.5(10.6); *orb* 10.7-12.2(11.6); *b* 6.2-8.2(7.4); *mtr* 6.3-7.8(7.0). 2 ♀ : *on* 36.3, 38.9; *n* 14.0, 14.4; *pl* 18.1, 19.0; *iw* 9.5, 10.0; *orb* 11.9, 12.2; *b* 7.5, 7.8; *mtr* 7.8, 8.0.

Distribution : India : West Bengal : Bankura district, Bardhaman district, Birbhum district, Calcutta, Haora and Hugli districts (Agrawal & Chakraborty 1979b), Jalpaiguri district, Koch Bihar district (Ellerman 1961), Maldah district, Medinipur district (Wroughton 1915), Murshidabad district, Nadia district, North 24-Parganas district, Puruliya district, South 24-Parganas district; Andaman Islands; Bihar; Gujarat; Jammu & Kashmir; Madhya Pradesh; Maharashtra; Meghalaya; Orissa; Punjab; Rajasthan; Sikkim; Uttar Pradesh. Iran, Pakistan, Nepal, and Bangladesh (Posamentier 1989).

Remarks : Taxonomy of this species has been reviewed by Moore & Tate (1965) and Agrawal & Chakraborty (1979a).

Common in the cities, villages and near human settlements. A study of breeding behaviour of this species in Calcutta (Louch *et al.* 1965) showed that male sexual activity remained at peak in March, and that of female in April and May, with mean litter size 3.2 young.

In addition to the above mentioned districts, this squirrel has been observed in Bardhaman, Birbhum, Jalpaiguri, Maldah and North 24-Parganas districts.

Genus *Ratufa* Gray, 1867

One species of the genus *Ratufa*, namely, *R. bicolor* occurs in West Bengal.

146. *Ratufa bicolor gigantea* (M'Clelland)

1839. *Sciurus giganteus* M'Clelland, *Proc. zool. Soc. Lond.* : 150 (Assam, India).

Common names : Malayan Giant Squirrel (Eng.), Baro Kat Birali (Beng.).

Material examined : Darjiling district : 1 ♂, 1 unsexed, no exact locality, coll. Capt. Bonavia, G. Massam, 1844, other undated; 1 ♂, Narbong (c 609 m), coll. C. A. Crump, 15.iii.1915; 1 unsexed, Rungbee, coll. J. Munro, -; 1 ♂, Sangser (c 1,097 m), coll. -, 19.viii.1916; 1 ♀, Sivok (c 152 m), coll. C. A. Crump, 18.iii.1915; 1 ♂, 2 ♀, Tarkhola (c 325 m), coll. H. Khajuria, 15, 18 & 19.viii.1958. Jalpaiguri district : 1 ♂, Chilapata, coll. S. Chakraborty, 17.ix.1983; 2 ♂, 2 ♀, Khuntimari, coll. S. Chakraborty, 8, 10, 13, 14.ix.1983.

Measurements : External : 4 ♂ : H & B 325.0-395.0(353.0); TI 450.0-470.0(457.0); Hf 84.0-95.5(90.0); E 28.0-32.5(31.0). 3 ♀ : H & B 375.0-385.0(380.0); TI 450.0-470.0(460.0); Hf 87.5-90.0(88.5); E 24.0-30.0(26.0). Cranial : 4 ♂ : *on* 68.2-75.0(73.0); *n* 21.8-23.0(22.5); *pl* 30.0-33.1(31.9); *iw* 26.5-30.3(28.8); *orb* 23.5-25.7(24.7); *mtr* 12.5-13.5(13.1). 3 ♀ : *on* 73.3-76.1(74.5); *n* 22.0-23.0(22.4); *pl* (2) 32.5, 33.1; *iw* 29.0-31.5(30.3); *orb* 25.2-25.7(25.4); *mtr* 13.0-14.0(13.6).

Diagnosis : A large diurnal squirrel. Dorsum varies from brown to black, venter buff.

Distribution : India : West Bengal : Darjiling district (Sclater 1891), Jalpaiguri district (Gruning 1911); Arunachal Pradesh; Assam; Meghalaya; Mizoram (Kurup 1968); Nagaland (Kurup 1968); Sikkim; Tripura (Agrawal & Bhattacharya 1977). Bhutan (Chakraborty 1975), Burma and China.

Remarks : Lives in high trees in dense forests, and never comes to the ground.

Common, but due to destruction of forests and killing for flesh, its population has much declined.

Family HYSTRICIDAE

Fur more or less modified into long spines or quills; angular portion of mandible arises from the bony socket of lower incisor.

Two genera, namely, *Hystrix* and *Atherurus* occur in India, of which only the former genus is found in West Bengal.

Genus *Hystrix* Linnaeus, 1755

Two species, namely, *Hystrix indica* and *Hystrix hodgsoni* occur in West Bengal.

Key to the species of the genus *Hystrix*

A crest of bristles, 15-30 cm long, present on the crown; quills bear several alternating bands of white and blackish brown. *H. indica*

No crest of bristles present on the crown; quills bear only one dark band in the middle, rest white. *H. hodgsoni*

147. *Hystrix hodgsoni hodgsoni* (Gray)

1847. *Acanthion hodgsoni* Gray, *Proc. zool. Soc. Lond.* : 101 (Nepal).

Common names : Crestless Himalayan Porcupine (Eng.), Sajaru (Beng.), Sahi (Hin.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Darjiling district (Sclater 1891), Jalpaiguri district (Wroughton 1917a); Arunachal Pradesh (Chakraborty & Sen, in press); Assam; Meghalaya; Nagaland; Sikkim. Nepal and Bangladesh.

Remarks : Van Weers (1979) kept this species under *H. brachyura* Linnaeus. Lekagal & McNeely (1977) stated that "*H. hodgsoni* is very similar to *H. brachyura*, though the crest is said to be lower (an age-linked character) and the quills often have a wider black band than in *brachyura* (though this may be an individually variable character). The nasals are comparatively large, averaging 55.6% of the occipitonasal length (Ellerman 1940). The sagittal crest rather well-developed." At present due to lack of specimens we maintain *H. hodgsoni*.

Lekagal & McNeely (1977) included lower Bengal within the range of this species, but it appears to be not correct.

Dash (1947) stated that this porcupine was found in large numbers in Darjiling, but during recent surveys it was never seen.

148. *Hystrix indica indica* Kerr

1792. *Hytrix cristata* var. *indica* Kerr, *Anim. Kingd.* : 213 (India).

Common names : Indian Crested Porcupine (Eng.), Dumsi, Chotia-dumsi, Sajaru (Beng.); Sahi (Hin.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Bankura district (O'Malley 1908), Puruliya district (Bhattacharyya *et al.* 1985), South 24-Parganas district (Mandal & Nandi 1989). Occurs throughout India except in northeastern portion. Syria, Iraq, S. Arabia, Iran, Russian Turkestan, Pakistan, Sri Lanka and China.

Remarks : Nocturnal. Though none could be seen during recent surveys, yet its quills and burrows were observed in Bardhaman, Birbhum, Medinipur and South 24-Parganas districts. It is said to be a serious pest of agriculture (Prakash 1976), but its population appears to be very thin in West Bengal, and hence, this species is not responsible for any considerable damage to crops.

Family MURIDAE

Family Muridae consists of gerbils, hamsters, voles, rats, mice, dormice and bamboo rats. They are grouped into fifteen subfamilies. Out of these, six subfamilies occur in India, and four, namely, Rhizomyinae, Murinae, Gerbillinae and Microtinae in West Bengal.

Family Muridae is characterized by the presence of three pairs of molars in each jaw. The premolar and canine are absent. The molar teeth may be cuspidate, laminate, prismatic or flat crowned in surface pattern.

Key to the subfamilies of the family MURIDAE

1. Cusps on maxillary teeth arranged in three longitudinal rows..... MURINAE
Cusps on maxillary teeth arranged in two longitudinal rows.....2
2. Cheekteeth prismatic in surface pattern..... MICROTINAE
Cheekteeth cuspidate or flat crowned.....3
3. Upper incisors directed backwards and grooved on front surface..... GERBILLINAE
Upper incisors directed forwards and not grooved on front surface.....RHIZOMYINAE

Subfamily RHIZOMYINAE

Subfamily Rhizomyinae is represented in India by two genera, *Rhizomys* and *Cannomys*. Out of the two, only the latter genus occurs in West Bengal.

Genus *Cannomys* Thomas, 1915

Bamboo rats are adapted to subterranean mode of life. They have large proodont incisors, small eyes and ears, short limbs armed with strong claws, and a vestigial tail.

One species and subspecies of the genus *Cannomys* occurs in West Bengal.

149. *Cannomys badius badius* (Hodgson)

1841. *Rhizomys badius* Hodgson, *Calcutta. J. nat. Hist.*, 2 : 410 (Nepal).

Common name : Bay Bamboo Rat (Eng.).

Material examined : Jalpaiguri district : 2 ♂ (one without skin), 1 subad. ♀, Hasimara (c 182 m), coll. N.A. Baptista, 20.xi.1915, 11.21.i.1916.

Measurements : External : 1 ♂ : H & B 166.0; Tl 59.0; Hf 29.0; E 9.0. Cranial : 2 ♀ : on 39.6, 40.6; cb 43.3, 44.0; n 13.9, 16.8; pl 26.6, 27.6; apf 4.7, 5.3; d 15.6, 16.0; b 9.2, 10.5; mtr 9.8, 11.2.

Diagnosis : Body colour chestnut bay or ashy brown; condylobasal length less than 55 mm; diastema exceeds 40% of occipitonasal length.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b), Jalpaiguri district (Ellerman 1961); Arunachal Pradesh; Assam; Meghalaya; Nagaland. Nepal and Burma.

Remarks : The subadult specimen is darker than the adults.

Subfamily MURINAE

Eleven genera of this subfamily occur in West Bengal.

Key to the genera of the subfamily MURINAE

1. Hallux opposable; hallux and fifth toe having a flat nail.....*Vandeleuria*
Hallux not opposable; hallux and fifth toe provided with a claw.....2
2. Upper incisors grooved on front surface.....*Golunda*
Upper incisors not grooved on front surface.....3
3. Condylbasal length exceeds or equal to occipitonasal length; upper incisors proodont.4
Condylbasal length less than occipitonasal length; upper incisors opisthodont or orthodont....5
4. Anterior palatal foramina short, less than 6 mm in length, and not extending between maxillary tooth rows.....*Nesokia*
Anterior palatal foramina elongated, more than 7 mm in length, and extending between maxillary tooth rows.*Bandicota*
5. First upper molar more than half the length of cheektooth row, and its antero-internal cusp distorted inwards to reach the level of second lamina; third molar extremely reduced*Mus*
First upper molar less than half the length of cheektooth row, and its antero-internal cusp not distorted inwards to reach the second lamina; third molar not so reduced.....6
6. Maxillary tooth row long, more than one-fifth of occipitonasal length*Dacnomys*
Maxillary tooth row short, less than one-fifth of occipitonasal length.7
7. Palate and anterior palatal foramina long, more than one-half and one-fifth of occipitonasal length respectively.*Millardia*
Never combining the characters of long palate and long anterior palatal foramina.....8
8. Palate short, less than one-half of occipitonasal length.....9
Palate long, more than one-half of occipitonasal length..... 10
9. Anterior palatal foramina long, more than one-fifth of occipitonasal length.....*Cremnomys*
Anterior palatal foramina short, less than one-fifth of occipitonasal length.....*Niviventer*
10. Bulla short, about one-tenth of occipitonasal length.....*Leopoldamys*
Bulla long, more than 15% of occipitonasal length.....*Rattus*

Genus *Vandeleuria* Gray, 1842

Genus *Vandeleuria* is represented by one species, viz., *Vandeleuria oleracea*. Out of five subspecies (Agrawal & Chakraborty 1980), one occurs in West Bengal.

150. *Vandeleuria oleracea dumeticola* (Hodgson)

1845. *Mus. dumeticola* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 268 (Nepal).

Common name : Indian Long-tailed Tree Mouse (Eng.).

Material examined : Darjiling district : 1 ♂, 1 ♀, Pashok (c 1,066 m), coll. N.A. Baptista, 22.viii.1915, 12.x.1915. Jalpaiguri district : 1 ♂, 1 ♀, Bharnabari (c 182 m), coll. N.A. Baptista,

18.xii.1915, 12.ii.1916; 2 ♂, 2 ♀, Hasimara (c 182 m), coll. N.A. Baptista, 3.i.1916, 12.iii.1916, 6.iv.1916. Puruliya district : 1 ♀, Ajodhya Hills, coll. V.C. Agrawal, 18.i.1985.

Measurements : External : 4 ♂ : H & B 57.0-71.0(63.0); TI 102.0-129.0(111.5); Hf 16.0-18.0(17.0); E 14.0-15.0(14.5). 5 ♀ : Hb 58.0-77.0(65.0); TI 96.0-123.0(115.0); Hf 14.5-18.0(16.5); E 12.0-16.0(14.0). Cranial : 3 ♂ : *on* 20.7-22.5(21.4); *m* 7.3-8.3(7.7); *pl* 10.3-11.4(10.7); *apf* 3.0-4.3(3.6); *d* 5.1-5.7(5.3); *b* (2) 4.0, 4.2; *mtr* 3.1-3.3(3.2). 2 ♀ : *on* 19.7, 22.1; *n* 7.0, 7.6; *pl* 10.4, 10.9; *apf* 4.3, 4.5; *d* 5.3, 5.7; *b* 3.1, 5.1; *mtr* 3.2, 3.3.

Diagnosis : Colour of back generally bright red; tail very long, over 150% of head and body length; occipitonasal length not reaching 23 mm.

Distribution : India : West Bengal : Darjiling district (Sclater 1891), Jalpaiguri district (Wroughton 1917a), Puruliya district; Arunachal Pradesh; Assam; Bihar; Manipur; Meghalaya; Nagaland; Orissa; Sikkim; Uttar Pradesh. Nepal and Burma.

Remarks : In one specimen from Darjiling district and two from Jalpaiguri district, colour of dorsum is pale brown and not typical of the present subspecies.

The specimen from Puruliya district indicates that its range is continuous from Orissa to northern West Bengal through Bihar.

Genus *Millardia* Thomas, 1911

One species of the genus *Millardia* occurs in West Bengal.

151. *Millardia meltada singuri* Mandal & Ghosh

1981. *Millardia meltada singuri* Mandal & Ghosh, *Bull. zool. Surv. India*, 4 : 235 (Singur, Hugli district, West Bengal, India).

Common name : Soft-furred Field Rat (Eng.).

Material examined : Hugli district : 3 ♂, 3 ♀ (Holotype and Paratypes), Singur, coll. S. Ghosh and Ajoy Kumar Mandai, 17.ii.1978, 16, 17.i.1980.

Measurements : External : 3 ♂ : H & B 107.0-152.0(129.7); TI (2) 110.0, 126.0; Hf 24.0-26.0(25.0); E 18.0-21.0(19.7). 3 ♀ : H & B 111.0-119.0(115.7); TI, (1)104.0; Hf 22.0-26.0(23.7); E 20.0(3). Cranial : 3 ♂ : *on* 29.5-35.6(32.6); *n* 11.1-13.5(12.4); *pl* 15.2-18.7(16.9); *apf* 7.3-8.5(8.0); *d* 8.1-10.3(9.2); *b* 5.9-6.3(6.0); *mtr* 5.4-5.7(5.5). 3 ♀ : *on* 29.9-31.4(30.7); *n* 11.2-11.6(11.4); *pl* 15.2-16.4(15.8); *apf* 7.1-7.4(7.3); *d* 8.2-8.8(8.6); *b* 5.7-6.1(5.9); *mtr* 5.0-5.6(5.3).

Diagnosis : Body dark grey above, a little paler below; tail bicolor; sole with five plantar pads.

Distribution : India : West Bengal : Hugli district (Mandal & Ghosh 1981).

Remarks : Lives in extensive burrow system made in cultivated fields. Poche *et al.* (1982) have recorded *Millardia meltada* from Bangladesh, without mentioning its subspecific identity.

Genus *Dacnomys* Thomas, 1916

The genus *Dacnomys* is represented by only one species, *Dacnomys millardi*.

152. *Dacnomys millardi millardi* Thomas

1816. *Dacnomys millardi millardi* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 405 (Gopaldhara, c 1,048 m, Darjiling district, West Bengal, India).

Common names : Millard's Rat or Large-toothed Rat (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Large, heavily built rat, with rather harsh fur; dark greyish above, silvery grey below; occipitonasal length below 60 mm, maxillary toothrow more than one-fifth of occipitonasal length.

Distribution : India : West Bengal : Darjiling district (Thomas 1916); Assam; Nagaland. Nepal.

Genus *Cremnomys* Wroughton, 1912

One species of the genus *Cremnomys* occurs in West Bengal.

153. *Cremnomys blanfordi* (Thomas)

1881. *Mus blanfordi* Thomas, *Ann. Mag. nat. Hist.*, 7 : 24 (Madras, Tamil Nadu, India).

Common name : Blanford's Rat (Eng.).

Material examined : Puruliya district : 1 ♂, 2 ♀, Ajodhya Hills, coll. V.C. Agrawal, 17, 18.i.1985; 6 ♂, 2 ♀, Matha, coll. V.C. Agrawal, 15, 16, 19.i.1985.

Measurements : External : 6 ♂ : H & B 151.0-182.0(165.0); tl 185.0-208.0(194.5); Hf 33.0-36.5(33.5); E 25.0-27.0(25.5). 4 ♀ : H & B 153.0-170.0(162.0); TI 190.0-202.0(195.0); Hf 32.0-35.0(34.0); E 16.5-27.0(23.0). Cranial : 6 ♂ : *on* 40.6-43.9(41.6); *n* 15.0-17.2(15.7); *pl* 19.8-21.6(20.5); *apf* 7.8-9.5(8.6); *d* 10.3-11.4(10.8); *mtr* 6.0-7.0(6.3). 4 ♀ : *on* 41.6-43.1(42.1); *n* 15.2-16.8(16.0); *pl* 20.3-21.0(20.6); *apf* 8.3-8.7(8.5); *d* 10.4-10.9(10.6); *b* 8.0-8.3(8.1); *mtr* 6.6-6.8(6.7).

Diagnosis : Body grey to reddish brown above, white below; terminal half of tail wholly white; tail tends to be slightly tufted terminally.

Distribution : India : West Bengal : Puruliya district (Agrawal & Bhattacharyya 1987); Andhra Pradesh; Bihar; Goa; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Orissa; Tamil Nadu. Sri Lanka.

Remarks : All the specimens were collected from forested rocky areas by Sherman traps and appear to be quite common.

Genus *Rattus* Fischer, 1803

Four species of the genus *Rattus* occur in West Bengal.

Key to the species of the genus *Rattus*

1. Large size, occipitonasal length, on average, above 50 mm; narrowed brain case, about 25 % of occipitonasal length; shortened tail, obscurely bicolored*R. norvegicus*
Not combining the above characters.....2
2. Nasals long, usually exceeding 38% of occipitonasal length.....*R. nitidus*
Nasals short, usually less than 38% of occipitonasal length.3
3. Tail unicolored.*R. rattus*
Tail bicolored, dark above, pale below.....*R. turkestanicus*

Rattus rattus Linnaeus

This species is represented in West Bengal by a good number of subspecies, often with overlapping distribution. Some live even in the same ecological conditions due to human introduction.

Commonly found in houses, fields, forests and other habitats. This species is one of the serious pests of crops and household goods.

Four subspecies occur in West Bengal.

Key to the subspecies of *Rattus rattus*

1. Underparts of body white or dirty white.....2
Underparts of body dull or dark5
2. Maxillary toothrow less than 6.6 mm in length or less than 16% of occipitonasal length.
.....
.....*R. r. arboreus*
Maxillary toothrow usually more than 6.6 mm in length or more than 16% of occipitonasal length.....3
3. Tail usually less than 120% of head and body length.....*R. r. khyensis*
Tail usually exceeds 120% of head and body length.....4
4. Bulla, in adults, more than the length of maxillary toothrow.*R. r. bhotia*
Bulla always less than the length of maxillary toothrow.....*R. r. brunneusculus*
5. Maxillary tooth row rarely reaches 6.6 mm in length.....*R. r. rufescens*
Maxillary tooth row 6.6 mm or more in length or more than 16% of occipitonasal length.....
.....
.....*R. r. tistae*

154. *Rattus rattus rufescens* (Gray)

1837. *Mus rufescens* Gray, *Ann. Mag. nat. Hist.*, 1 : 35 (Dharwar, Karnataka, India).

Common names : House Rat (Eng.), Indur (Beng).

Material examined : Calcutta district : 3 ♂, 2 ♀, no exact locality, coll. E Blyth, B. Ram, - i.1881, 16.iii.1955, 2 undated. Haora district : 3 unsexed, Shibpur Botanical Garden, coll. J. Anderson, undated. Murshidabad district : 1 subad. ♂, F.C.I. Godown, Baharampur, coll. S. Chakraborty, 20.x.1987. North 24-Parganas district : 1 ♀, Dhappa, coll. R. Decruz,-.

Measurements : Cranial 1 ♂ : *on* 38.4; *n* 14.0; *pl* 20.2; *apf* 7.5, *d* 9.9; *b* 6.9; *mtr* 5.7. 1 ♀ : *on* 39.3; *n* 14.0; *pl* 20.1; *apf* 7.0; *d* 9.2; *b* 7.3; *mtr* 6.1.

Distribution : India : West Bengal : Calcutta district (Blyth 1863), Darjiling district (Wroughton 1916b), Haora district (Sclater 1891), Jalpaiguri district (Wroughton 1917a), Murshidabad district, North 24-Parganas district (Sclater 1891); now found in all major cites of India. Pakistan, Thailand and Malaysia.

Remarks : A common commensal form; found in godowns, shops and residential complexes.

155. *Rattus rattus brunneusculus* (Hodgson)

1845. *Mus brunneusculus* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 276 (Nepal).

Common names : House Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 2 ♂, 1 ♀, Kalimpong, (c 1,249 m), coll. N.A. Baptista, 1, 15.iv.1916, 19.x.1916; 2 ♂, 2 ♀, Nimbong (c 1,371 m), coll. N.A. Baptista, 16.vi.1916, 8,

17.vii.1916, 19. viii.1920; 2 ♂, 1 subad. ♂, 1 ♀, Palmajua (c 2,250 m), coll. H. Khajuria, 25, 30.vi.1958, 1, 7.vii.1958; 2 ♂, 2 ♀; Pashok (c 1,066 m), coll. N.A. Baptista, 22.viii.1915, 4, 9, 16.xi.1915; 1 ♂, Pedong, (c 1,432 m), coll. N.A. Baptista, 30.ix.1916; 3 ♂, 1 ♀, Sangser (c 1,097 m), coll. N.A. Baptista, 22, 30, 31.viii.1916; 1 subad ♂, Takdah (c 1,650 m), coll. H. Khajuria, 8.viii.1958; 4 subad ♂, Tarkhela (c 325 m), coll. H. Khajuria, 21, 23.viii.1958. Jalpaiguri district : 1 ♂, Gorumara, coll. S. Banerjee, 29.xi.1982.

Measurements : External : 5 ♂ : H & B 129.0-160.0(152.0); Tl 150.0-223.0(189.0); Hf 32.0-34.0(33.0); E 20.0-24.0(23.0). 4 ♀ : H & B 130.0-170.0(148.0); Tl 175.0-213.0(151.5); Hf 30.0-34.0(32.0); E 18.0-24.0(22.0). Cranial : 4 ♂ : *on* 41.5-43.8(42.4); *n* 15.5-16.1(15.8); *pl* 22.6-24.5(23.6); *apf* 7.1-8.7(7.8); *d* 11.6-12.2(11.8); *b* 6.5-7.5(7.0); *mtr* 6.9-7.6(7.2). 4 ♀ : *on* 38.5-42.5(40.8); *n* 14.4-17.5(15.4); *pl* 20.8-23.8(22.2); *apf* 7.0-7.5(7.2); *d* 10.0-11.7(11.1); *b* 5.8-7.0(6.5); *mtr* 6.5-7.1(6.8).

Distribution : India : West Bengal : Darjiling and Jalpaiguri districts (Hinton 1919); Arunachal Pradesh; Assam; Jammu & Kashmir (Chakraborty 1983); Manipur; Meghalaya; Nagaland; Sikkim. Nepal and Bhutan.

Remarks : Hinton (1919) included the specimens from Hasimara, Jalpaiguri district under *R. r. sikkimensis* (= *R. r. brunneusculus*). But specimens of the same series present in the National Zoological Collections resemble *R. r. bhotia* Hinton. Ellerman (1961) is also of the same opinion. Hence, we have treated them under *R. r. bhotia*.

It is quite common in the forests, fields, and residential complexes in Darjiling district.

156. *Rattus rattus arboreus* (Horsfield)

1851. *Mus arboreus* (Buchanan Hamilton) Horsfield, *Cat. E. India Co. Mus.* : 141 (Bengal).

Common names : House Rat (Eng.), Indur (Beng.).

Material examined : Bankura district : 2 ♂, 2 ♀, Susunia, coll. V.C. Agrawal, 6, 8.i.1985. Bardhaman district : 1 ♂, 1 ♀, Arrah, coll. P.K. Das, 20, 25.iv.1988; 9 ♂, 6 ♀, Begunia, (near Barakar), coll. B. Nath, 5-19.xi.1948; 1 ♀, 1 subad. ♀, Churpurni, coll. P.K. Das, 28, 29.iv.1988; 3 ♂, 1 ♀, 1 juv. ♀, Katoya, coll. P.K. Das, 2.v.1988. Birbhum district : 1 ♂, 5 juv. ♂, Chandrapur, coll. A.K. Poddar, 12-15.xii.1983. Calcutta district : 1 ♂, 1 ♀, Lindsay Street, coll. B. Ram, 5.v.1969. Haora district : 1 ♂, Shibpur, coll. S.S. Saha, 2.v.1969. Hugli district : 9 ♂, 7 ♀, Chinsurah, coll. V.C. Agrawal, S. Chakraborty, 17, 18.xi.1981, 23.iii.1982, 23.xi.1982, 26.ii.1983; 140 ♂, 25 juv. ♂, 132 ♀, 29 juv. ♀, Singur, coll. Ajoy Kumar Mandal, 8.ix.1974 to 26.vii.1982. Koch Bihar district : 2 ♀, Atiamochor, coll. S. Chakraborty, 3, 4.iv.1985; 1 ♂, 3 ♀, 1 juv. ♀, Mathabhanga, coll. S. Chakraborty, 17.iv.1986; 2 ♂, 1 juv. ♂, 1 ♀, 2 juv. ♀, Sitalkhuchi, coll. S. Chakraborty, 9.x.1986. Maldah district : 1 ♀, Old Maldah, coll. S. Chakraborty, 9.x.1987. Medinipur district : 4 ♂, 2 subad ♂, 4 ♀, 1 juv. ♀, Balivasa (c 15 SSE of Jhargram), coll. P.K. Das, 12-14.ix.1984; 1 ♂, Chandra (c 25 km NW of Medinipur), coll. P. K. Das, 19.ix.1984; 4 ♂, 3 ♀, 1 subad. ♀, Gidni (c 16.5 km NW of Jhargram), coll. P.K. Das, 9, 10.ix.1984; 1 ♂, 3 ♀, Māndalpuskarani (c 5 km N of Garbeta), coll. P.K. Das, 21.ix.1984. Murshiqabad district : 1 ♀, Baharampur, coll. S. Chakraborty, 17.x.1987; 1 ♂, 1 ♀, Jiaganj, coll. S. Chakraborty, 17.x.1987; 1 ♂, 2 ♀, Namile (c 15 km E of Baharampur), coll. S. Chakraborty, 17.x.1987. Nadia district : 1 ♂, 1 subad ♂, 1 ♀, Plassey, coll. S. Chakraborty, 21, 22.x.1987. North 24-Parganas district : 2 ♂, Nalbani (Salt Lake), coll. B. Biswas, 27.xii.1964. Puruliya district : 1 ♂, Kuilapal, coll. V. C. Agrawal, 20.i.1985. South 24-Parganas district : 2 ♂, Basanti, coll. S. Chakraborty, 23, 24.vi.1977; 1 ♂, 1 ♀, Gangasagar (Sagar Island), coll. S. Chakraborty, 14.xii.1982; 1 ♂, 2 ♀, Kachuberia (Sagar

Island), coll. S. Chakraborty, 17, 20.x.1982; 1 ♂, 1 ♀, Pathar Pratima, coll. R.K. Ghose, 10, 16.xi.1968; 1 subad ♀, Thakurpukur, coll. Ajoy Kumar Mandal, 1981. West Dinajpur district : 1 juv. ♀, Kaliaganj, coll. S. Chakraborty, 12.x.1987.

Measurements : External : 25 ♂ : H & B 135.0-204.0(164.0); TI 140.0-234.0(191.0); Hf 30.0-38.0(33.0); E 19.0-23.5(21.0). 28 ♀ : H & B 140.0-182.0(160.0); TI 170.0-230.0(197.0); Hf 29.0-35.0(32.0); E 18.0-23.0(21.0). Cranial : 20 ♂ : *on* 37.0-42.5(39.3); *n* 12.5-16.0(14.4); *pl* 19.9-22.5(21.2); *apf* 6.4-7.6(7.2); *d* 9.8-11.6(10.6); *b* 6.5-7.8(7.1); *mtr* 6.1-7.4(6.4). 23 ♀ : *on* 35.4-41.2(38.6); *n* 12.2-14.8(13.8); *pl* 18.5-21.9(20.6); *apf* 6.5-7.6(6.9); *d* 9.9-11.6(10.4); *b* 6.5-7.7(6.9); *mtr* 6.1-7.8(6.5).

Distribution : India : West Bengal : Bankura district, Bardhaman district (Nath 1951), Birbhum district, Calcutta district, Haora district, Hugli district (Mandal & Ghosh 1980b), Jalpaiguri district (Ellerman 1961), Koch Bihar district, Maldah district, Medinipur district, Murshidabad district, Nadia district, North 24-Parganas district, Puruliya district, South 24-Parganas district, West Dinajpur district; Bihar; Orissa; Uttar Pradesh. Nepal.

Remarks : Belly is perfectly white in most of the specimens, but in 22 specimens ventral hairs having slaty bases, and in another 16 slaty patches present on the chest. Both variations are irrespective of sex, season or locality. Occasionally, individuals with tail shorter than head and body are also met with.

Very common, found throughout the state, particularly in the rural areas. Usually lives in coconut and palm trees and also in huts. Pregnant females were obtained throughout the year; litter-size varied from 3 to 11. It is a serious pest of crop, household goods and also of poultry.

157. *Rattus rattus bhotia* Hinton

1918. *Rattus rattus bhotia* Hinton, *J. Bombay. nat. Hist. Soc.*, 26 : 72 (Hasimara, Jalpaiguri district, West Bengal, India).

Common names : House Rat (Eng.), Indur (Beng.).

Material examined : Jalpaiguri district : 9 ♂, 8 ♀, Hasimara, (c 182 m), coll. N. A. Baptista, 6, 7.i.1916.

Measurements : External : 9 ♂; H & B 131.0-155.0(141.0); TI 172.0-199.0(187.0); Hf 31.0-32.0(31.5); E 18.0-22.0(20.5). 7 ♀ : H & B 120.0-147.0(130.5); TI 164.0-196.0(175.0); Hf 28.0-33.0(30.5); E 19.0-22.0(20.5). Cranial : 7 ♂ : *on* 38.4-42.5(39.8); *n* 13.8-15.3(14.6); *pl* 20.6-22.7(21.4); *apf* 6.7-7.3(7.0); *d* 10.0-11.5(10.6); *b* 6.8-7.6(7.2); *mtr* 6.5-7.2(6.8). 5 ♀ : *on* 38.1-40.9(39.4); *n* 14.0-15.5(14.8); *pl* 22.0-22.6(21.4); *apf* 6.3-7.5(7.0); *d* 10.3-11.7 (10.8); *b* 6.8-7.1(6.9); *mtr* 6.5-7.0(6.7).

Distribution : India : West Bengal : Jalpaiguri district (Hinton 1918).

Remarks : Dorsum slightly brown. Venter shows similar trend of variation as in *R. r. arboreus*.

Common in the grass jungles.

158. *Rattus rattus tistae* Hinton

1918. *Rattus rattus tistae* Hinton, *J. Bombay nat. Hist. Soc.*, 26 : 68 (Pashok, Darjiling district, West Bengal, India).

Common names : House Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 3 ♂, 5 ♀, Gopaldhara, (c 1,438 m), coll. H. Stevens, 26, 29, 30.iv.1921, 5-7, 11.v.1921; 3 ♂, 2 ♀, Kalimpong (c 1,249 m), coll. N. A. Baptista, 2,

5.vi.1916, 18, 31.x.1916; 1 ♂, 2 ♀, Narbong (c 609 m), coll. C. A. Crump, 10, 14.iii.1915; 5 ♂, 1 ♀, Nimbong (c 1,371 m), coll. N. A. Baptista, 18, 20, 26.vi.1916, 10, 11.vii.1916; 5 ♂, 4 ♀, Pashok (c 1,066 m), coll. N. A. Baptista, 26, 28.vi.1915; 1, 25.ix.1915, 5.x.1915, 1.vi.1916; 2 ♂, 4 ♀, Pedong (c 1,432 m), coll. N. A. Baptista, 5, 7.viii.1916, 7, 27.ix.1916, 4.x.1916; 1 ♂, Sangser (c 1,097 m), coll. N. A. Baptista, 31.viii.1918.

Measurements : External : 14 ♂ : H B 124.0-180.0(149.0); Tl 170.0-195.0(180.0); Hf 31.0-33.0(32.0); E 20.0-23.0(22.0). 12 ♀ : H & B 130.0-180.0(155.0); Tl 170.0-198.0(184.0); Hf 31.0-34.0(32.5); E 20.0-24.0(22.0). Cranial : 8 ♂ : *on* 39.2-46.9(41.5); *n* 13.6-18.5(15.3); *pl* 20.8-24.0(22.1); *apf* 6.6-8.0(7.2); *d* 10.7-13.0(11.3); *b* 6.6-7.7(7.1); *mtr* 6.5-7.4(6.9). 7 ♀ : *on* 38.4-41.5(40.1); *n* 14.0-16.0(14.5); *pl* 20.2-22.4(21.4); *apf* 6.7-7.2(6.9); *d* 10.2-11.2(10.7); *b* 6.7-7.6(7.1); *mtr* 6.6-7.5(7.0).

Distribution : India : West Bengal : Darjiling district (Hinton 1918); Arunachal Pradesh; Assam; Manipur; Meghalaya; Nagaland; Sikkim. Bhutan (Chakraborty 1975).

Remarks : Dorsum varies from brown to dark brown, but mostly grizzled brown; venter white, with or without slaty bases or dark streak. Maximum occipitonasal length for this subspecies has been recorded as 42 mm (Ellerman 1961), but in an individual of the present series it reaches 46.9 mm.

Very common in forests as well as houses and is a serious pest of crops.

159. *Rattus rattus khyensis* Hinton

1919. *Rattus rattus khyensis* Hinton, *J. Bombay nat. Hist. Soc.*, 26 : 398 (40 km W of Kindat, c 182 m, Chin Hills, western Burma).

Common names : House Rat (Eng.), Indur (Beng.).

Material examined : Jalpaiguri district : 1 ♂, 2 ♀, Khuntimari, coll. S. Chakraborty, 12, 14.ix.1983.

Measurements : External : 1 ♂ : H & B 150.0; Tl 121.0; Hf 25.0; E 20.0. 2 ♀ : H & B 145.0, 150.0; Tl 145.0, 146.0; Hf 31.0(2); E 16.0(2). Cranial : 1 ♂ : *on* 35.1; *n* 14.0; *pl* 18.4; *apf* 7.0; *d* 10.1; *b* 6.0; *mtr* 6.0. 1 ♀ : *on* 35.0; *n* 13.0; *pl* 19.4; *apf* 6.2; *d* 8.7; *b* 6.5; *mtr* 6.9.

Distribution : India : West Bengal : Jalpaiguri district; Mizoram (Ghose 1965b). Burma.

Remarks : Present specimens constitute the first record of this subspecies from West Bengal.

All the specimens were trapped in a jack fruit garden.

160. *Rattus nitidus nitidus* (Hodgson)

1845. *Mus nitidus* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 267 (Nepal).

Common names : Himalayan Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 1 ♂, Batasia (c 1,829 m), coll. C. A. Crump, 27.ii.1915; 2 ♂, 1 ♀, Ghoom (c 2,255 m), coll. C. A. Crump, 12, 13.ii.1915; 1 ♂, 1 ♀, Ghombhanjan (c 2,117 m), coll. R. K. Ghose, 16.iv.1974, 27.ii.1975; 10 ♂, 6 ♀, Gopaldhara (c 1,438 m), colls. N. A. Baptista, H. Stevens, H. W. Wells, 27, 28.iv.1915, 3, 4, 18, 19.v.1915, 2, 5.vi.1915, 17, 18, 27, 29.iv.1921, 9.v.1921; 1 ♂, 1 ♀, Mongpu (c 1,260 m), coll. H. Stevens, 29.iv.1921; 2 ♂, 2 ♀, Nimbong, (c 1,371 m), coll. N. A. Baptista, 4, 26, 29.iv.1916; 1 ♂, 1 ♀, Palmajua, (c 2,250 m), coll. H. Khajuria, 25, 30.vi.1958; 5 ♂, 5 ♀, Pashok (c 914 m - 1066 m), coll. N. A. Baptista, 25, 30.vi.1915, 1, 29.vii.1915, 13, 19.viii.1915, 17.ix.1915; 1 ♂, 1 ♀, Pedong (c 1,432 m), coll. N. A. Baptista, 3, 4.ix.1916; 1 ♂, 1 ♀, Sangser (c 1,097 m), coll. N. A. Baptista, 20.viii.1915, 1.ix.1916;

1 ♂, 1 ♀, Sukiapokhari (c 2,133 m), coll. C. A. Crump, 17, 18.ii.1915; 5 subad ♂, 3 ♀, Takdah (c 1,650 m), coll. H. Khajuria, 3, 9.viii.1958.

Measurements : External : 16 ♂, H & B 128.0-194.0(166.0); TI 133.0-215.0(181.0); Hf 30.0-37.0(34.5); E 19.5-24.0(23.0). 14 ♀ : H & B 136.0-190.0(159.0); TI 157.0-190.0(174.0); Hf 30.0-35.5(33.0); E 19.5-23.0(22.5). Cranial : 14 ♂ : *on* 39.7-43.8(42.1); *n* 15.3-18.4(16.8); *pl* 21.0-23.5(22.8); *apf* 6.4-8.3(7.4); *d* 10.3-12.3(11.6); *b* 6.5-7.4(7.1); *mtr* 6.3-7.4(6.8). 12 ♀ : *on* 38.5-46.0(41.8); *n* 14.0-17.8 (16.3); *pl* 20.6-24.3(22.2); *apf* 5.6-8.3(7.3); *d* 10.1-12.9(11.3); *b* 6.7-7.1(6.9); *mtr* 6.5-7.3(6.9).

Distribution : India : West Bengal : Darjiling district (Blyth 1863); Arunachal Pradesh; Assam; Meghalaya; Sikkim; Uttar Pradesh. Bhutan (Chakraborty 1975), Nepal and China.

Remarks : Dorsum brown to dark brown, subadults darker; colour of venter varies widely as stated by Ellerman (1961), from dirty white to dull grey. Fur in specimens collected during August-September shorter than those of other months. Tail, in five specimens, a little shorter than head and body length.

Based on a few specimens from Murree in the collection of the British Museum, Ellerman (1961) and Siddiqi (1969) included Pakistan within the range of distribution of this species. However, Roberts (1977) opined that those specimens are of *R. rattus*, and excluded Pakistan from the range of the present species.

Common in the houses and fields.

161. *Rattus turkestanicus rattoides* (Hodgson)

1845. *Mus rattoides* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 267 (Nepal).

Common names : Turkestan Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 1 ♀, Ghoom (c 2,225 m), coll. N. A. Baptista, 17.ii.1915.

Additional material examined : Sikkim : 1 ♂, 1 ♀, Chuntang (c 1,630 m), coll. C. A. Crump, 16, 17.xii.1914.

Nepal : 1 ♀, Changoo, coll. N. A. Baptista, 8.vi.1921; 1 ♀, Hathiban, coll. N. A. Baptista, 22.iv.1921; 2 ♂, 1 ♀, Nagarcot (c 2,438 m), coll. R. H. Kannion, 15, 23.x.1920.

Measurements : External : 1 ♀ : H & B 145.0; TI 167.0; Hf 35.0; E 21.0. Cranial : 1 ♀ : *on* 40.2; *n* 15.2; *pl* 21.6; *apf* 7.2; *d* 11.3; *b* 6.7; *mtr* 7.2.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b); Sikkim; Uttar Pradesh. Nepal.

Remarks : The specimen from Ghoom (Darjiling district) is much browner than those from Sikkim and Nepal, and has very thick, soft fur.

Schlitter & Thonglongya (1971) treated the population of this species occurring in Nepal, Sikkim, northern India and adjacent parts of Pakistan as *R. t. vicerex* (Bonhote). Chakraborty (1983) regarded *R. vicerex* as a full species on the basis of tail being shorter than head and body against tail being longer than head and body in *R. turkestanicus* (Satunin). Since, specimens from Darjiling district (West Bengal), Sikkim and Nepal have the tail longer than head and body, they are treated here as *Rattus turkestanicus rattoides*.

162. *Rattus norvegicus* (Berkenhout)

1769. *Mus norvegicus* Berkenhout, *Outlines N. H. Gt. Britain and Ireland*, 1 : 5 (N. V) (Great Britain).

Common names : Norway Rat or Brown Rat (Eng.), Indur (Beng.).

Material examined : Calcutta district : 1 ♂, 3 ♀, 1 unsexed juv., no exact locality, colls. J. Anderson, B. Biswas, S. Sengupta, 5.ix.1939, 13.i.1972, rest undated; 1 ♂, Convent Lane, coll. T. B. Rai, 29.xii.1979; 1 ♂, Gobra, coll. H. A. Saha, 27.iii.1984; 1 ♂, Lindsay Street, coll. Ajoy Kumar Mandal, 10.vi.1980. North 24-Parganas district : 1 ♂, Baguihati, coll. P. Naskar, 20.ii.1990; 1 ♂, Nager Bazar (Dum Dum), coll. T. Sandhu, 18.ii.1987. South 24-Parganas district : 1 ♀, Sakher Bazar, coll. Ajoy Kumar Mandal, 23.iii.1977.

Measurements : External : 4 ♂ : H & B 220.0-265.0(241.0); Tl 194.0-240.0(212.0); Hf 40.0-47.0(44.0); E 21.0-23.0(22.5). 2 ♀ : H & B 238.0, 240.0; Tl 208.0, 213.0, Hf 42.0, 43.5; E 23.0, 24.0. Cranial : 4 ♂ : *on* 49.6-54.9(52.0); *n* 19.0-22.3(21.0); *pl* 27.0-29.0(28.1); *apf* 8.2-9.9(9.0); *d* 14.5-16.8(15.7); *b* 7.2-7.8(7.5); *mtr* 7.0-7.7(7.5); 4 ♀ : *on* 46.5-50.7(48.8); *n* 17.8-20.1(18.7); *pl* 24.4-28.5 (27.0); *apf* 7.5-9.3(8.5); *d* 13.3-15.4(14.5); *b* 7.7-8.8(8.1); *mtr* 5.8-7.7(6.9).

Distribution : India : West Bengal : Calcutta district (Blyth 1863), Haora district (Seal & Banerji 1969), North 24-Parganas district, South 24-Parganas district (Mandal 1981); Jammu & Kashmir (Ward 1905). S. E. Siberia and N. China; introduced worldwide, particularly in ports and large cities.

Remarks : A commensal rat, found mainly in godowns.

Genus *Niviventer* Marshall, 1976

Three species of this genus occur in West Bengal.

Key to the species of the genus *Niviventer*

1. Tail not much elongated, less than 140% of head and body length.....*N. niviventer*
Tail elongated, approximately 140% of head and body length.....2
2. Size small, occipitonasal length less than 32 mm.....*N. eha*
Size large, occipitonasal length more than 32 mm.....*N. fulvescens*

Niviventer niviventer (Hodgson)

Two subspecies occur in West Bengal.

Key to the subspecies of *N. niviventer*

- Undersurface of body without any grey patch.....*N. n. niviventer*
Undersurface of body with grey throat patch or pectoral streak.....*N. n. monticola*

163. *Niviventer niviventer niviventer* (Hodgson)

1836. *Mus niviventer* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 234 (Kathmandu, Nepal).

Common names : White-bellied Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 1 ♂, Ghoombhanjan (c 2,117 m), coll. R. K. Ghose, 29.iii.1975; 1 ♂, Selimbong (c 2,250 m), coll. R. K. Ghose, 23.iii.1975.

Measurements : External : 1 ♂ : H & B 136.0; Tl 163.0; Hf 27.0; E 21.0. Cranial : 1 ♂ : *on* 34.2; *n* 12.0; *pl* 16.2; *apf* 5.4; *d* 8.3; *b* 4.9; *mtr* 5.3.

Distribution : India : West Bengal : Darjiling district; Himachal Pradesh; Manipur (Roonwal 1950); Uttar Pradesh. Bhutan (Chakraborty 1975) and Burma.

Remarks : Both the specimens, though collected in the same month, yet that of Selimbong is distinctly brown, and of Ghoombhanjan black.

Not common.

164. *Niviventer niviventer monticola* (Ghose)

1964. *Rattus niviventer monticola* Ghose, *Proc. zool. Soc., Calcutta*, 17 : 193 (Palmajua, c 2,250 m, Darjiling district, West Bengal, India).

Common names : Ghose's White-bellied Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 3 ♂, 4 ♀, 3 subad. ♀, Palmajua (c 2,250 m), coll. H. Khajuria, 24, 25, 29, 30.vi.1958, 1, 7.vii.1958; 1 ♂, Sandakphu (c 3,600 m), coll. H. Khajuria, 13.vii.1958. All the specimens belong to the type-series.

Measurements : External : 4 ♂ : H & B 109.0-153.0(136.0); Tl 158.5-206.0 (188.0); Hf 27.0-30.0 (29.0); E 19.0-22.0 (21.0). 2 ♀ : H & B 113.5, 142.0; Tl 162.0, 185.0; Hf 27.0, 28.0; E 21.0, 22.0. Cranial : 4 ♂ : on 32.3-38.1(35.7); n 11.2-14.0(12.4); pl 15.5-17.8 (16.0); apf 5.8-6.5(6.2); d 8.4-10.0(9.3); mtr 5.4-6.1(5.6); 2 ♀ : on 32.2, 35.4; n 12.3, 13.3; pl 16.6, 17.3; apf 6.0, 6.1; d 9.0, 9.2; b 5.3; -; mtr 5.5; 6.1.

Distribution : India : West Bengal : Darjiling district (Ghose 1964).

Remarks : Common. It occurs in wet evergreen forest, with abundant undergrowth, or forests consisting of rhododendron and silver fir (Ghose 1964).

165. *Niviventer fulvescens fulvescens* (Gray)

1847. *Mus fulvescens* Gray, *Cat. Hodgson coll. Br. Mus.* : 18. (Nepal).

Common name : Chestnut Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 1 ♂, Batasia (c 1,829 m), coll. N.A. Baptista, 1.iii.1915; 1 ♂, 1 ♀, Nimbong (c 1,371 m), coll. N.A. Baptista, 12.vii.1912, 19.vi.1916; 3 ♂, 1 juv. ♀, Palmajua, (c 2,230 m), coll. H. Khajuria, 30.vi.1958, 7.vii.1958; 8 ♂, 8 ♀ : Pashok (c 914 m-1,066 m), coll. N.A. Baptista, C.A. Crump, R.S. Lister; 3, 12.xii.1914, 30.vi.1915, 3, 16.vii.1915, 2, 20.viii.1915, 5, 29.ix.1915, 1.x.1915; 1 ♂, Pedong (c 1,432 m), coll. N. A. Baptista, 8.viii.1916; 3 ♂, 4 subad ♂, 1 ♀, 1 subad ♀, Selimbong (c 2,250 m), coll. R.K. Ghose, 19, 20, 22, 23.iii.1975; 1 ♂, 1 ♀; Takdah (c 1,650 m), coll. H. Khajuria, 1,9.viii.1958.

Measurements : External : 12 ♂ : H & B 106.0-145.0(133.0); Tl 146.0-222.0(193.0); Hf 26.0-31.0(29.0); E 19.0-21.0(20.0). 9 ♀ : H & B 117.0-137.0(126.0); Tl 165.0-200.0(186.0); Hf 28.0-30.0(28.5); E 19.0-20.0(20.0). Cranial : 10 ♂ : on 35.0-38.4(36.5); n 12.6-14.5(13.5); pl 16.1-18.1(17.0); apf 5.4-6.3(5.9); d 8.9-10.0(9.3); b 4.5-6.1(5.4); mtr 4.3-6.0(5.4); 7 ♀ : on 33.4-37.3 (35.3); n 12.2-14.2(13.4); pl 15.6-17.5(16.4); apf 5.3-5.6(5.4); d 8.4-9.3(8.8); b 4.8-5.1(4.9); mtr 5.6-5.9(5.7).

Distribution : India : West Bengal : Darjiling district (Blanford 1888-91); Arunachal Pradesh; Assam; Meghalaya; Nagaland; Sikkim. Nepal and Burma.

Remarks : Specimens from Selimbong have soft fur; in the rest it is spiny.

Common in the forests and cultivated fields.

166. *Niviventer eha eha* (Wroughton)

1916. *Epimys eha* Wroughton, *J. Bombay nat. Hist. Soc.*, 24 : 248 (Lachen, c 2,682 m, Sikkim, India).

Common names : Little Himalayan Rat (Eng.), Indur (Beng.).

Material examined : Darjiling district : 1 ♂, 1 subad. ♂, 1 ♀, Palmajua (c 2,250 m), coll. H. Khajuria, 1, 7.vii.1958; 2 ♂, 1 ♀, Sandakphu (c 3,600 m), coll. H. Khajuria, 18,20,22.vii.1958.

Measurements : External : 3 ♂ : H & B 96.0-120.0(112.0); TI 168.0-193.0(178.0); Hf 25.0-27.5(26.5); E 18.0-20.0(18.8); 2 ♀ : H & B 107.0, 118.5; TI 178.5, 189.9; Hf 23.0, 25.0; E 19.0, 20.1. Cranial : 3 ♂ : *on* 28.2-32.4(30.6); *n* 9.6-11.0(10.2); *pl* 13.0-15.1(14.3); *apf* 4.6-5.6(5.2); *d* 6.5-8.1(7.4); *b* 4.2-4.5(4.3); *mtr* 4.7-4.9(4.8). 1 ♂ : *on* 30.2; *n* 10.2; *pl* 14.0; *apf* 5.2; *d* 7.2; *b* 4.2; *mtr* 4.7.

Distribution : India : West Bengal : Darjiling district (Wroughton 1916b); Sikkim. Nepal.

Remarks : In four out of six skulls, supraorbital ridge is well-developed (Khajuria & Ghose 1970). Common in rhododendron forest.

Genus *Leopoldamys* Ellerman, 1947

One species of the genus *Leopoldamys* occurs in West Bengal.

167. *Leopoldamys edwardsi edwardsi* (Thomas)

1882. *Mus edwardsi* Thomas, *Proc. zool. Soc. Lond.* : 587 (Mountains of western Fukien, probably Kuantun, China).

Common names : Edwards' Rat (Eng.), Indur (Beng.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Darjiling district (Thomas 1916a); Arunachal Pradesh; Nagaland; Sikkim. Burma, east to Vietnam and China.

Remarks : Appears to be rare.

Genus *Mus* Linnacus, 1758

Six species of the genus *Mus* occur in West Bengal.

Key to the species of the genus *Mus*

1. Anterior palatal foramina short, less than one-fifth of occipitonasal length, and not extending between maxillary tooth rows.....*M. pahari*
Anterior palatal foramina long, more than one-fifth of occipitonasal length, and extending posteriorly between maxillary tooth rows.2
2. Tail unicolored and longer than head and body.....*M. musculus*
Tail bicolored (dark above, pale below) and equal to or shorter than head and body3
3. Body fur spiny.....4
Body fur soft.....5

4. Anterior accessory cusp present on first upper molar; chromosome number 26.....*M. saxicola*
 Anterior accessory cusp absent on first upper molar; chromosome number 30.....*M. platythrix*
5. Larger in size, occipitonasal length more than 20 mm.....*M. cervicolor*
 Smaller in size, occipitonasal length less than 20 mm.6
6. Ventral surface of body white in colour.*M. booduga*
 Ventral surface of body grey in colour..... *M. dunnii*

Mus musculus Linnaeus

Three subspecies of *Mus musculus* occur in West Bengal. All of them do considerable damage to house-hold articles.

Key to the subspecies of *Mus musculus*

1. Undersurface of body light grey.....*M. m. homourus*
 Undersurface of body light or dark brown.....2
2. Dorsal surface of body dark brown.....*M. m. castaneus*
 Dorsal surface of body light brown.....*M. m. urbanus*

168. *Mus musculus castaneus* Waterhouse

1843. *Mus castaneus* Waterhouse, *Ann. Mag. nat. Hist.*, 12 : 134 (Philippines).

Common names : House Mouse (Eng.), Nengti Indur (Beng.).

Material examined : Bardhaman district : 1 ♀, Barakar, coll. B. Nath, 25.v.1948. Birbhum district : 3 ♂, Bandi Beat (near Chandrapur), coll. A.K. Poddar, 13.xii.1985; 4 ♂, Chandrapur, coll. A.K. Poddar, 16, 17.xii.1985; 2 ♂, 2 ♀, Jora Beat (near Chandrapur), coll. A.K. Poddar, 14.xii.1985; 1 ♂, Tumbani, coll. A.K. Poddar, 10.xii.1985.

Measurements : External : 9 ♂ : H & B 55.0-76.0(68.0); Tl 68.0-82.0(79.0); Hf 15.0-17.0(16.0); E 11.0-13.0(11.5). 3 ♀ : H & B 70.0-80.0(74.0); Tl 80.0-88.0(84.0); Hf 16.0-17.0(16.3); E 12.0-13.0(12.3). Cranial : 4 ♂ : *on* 19.4-21.8(20.1); *n* 6.5-7.3(6.7); *pl* 8.4-9.8(9.6); *apf* 3.9-4.7(4.3); *d* 4.8-5.0(4.9); *b* 3.1-3.5(3.3); *mtr* 3.1-3.4(3.2). 1 ♀ : *on* 21.2; *n* 8.3; *pl* 10.6; *apf* 4.5; *d* 5.3; *b* 3.6; *mtr* 3.2.

Distribution : India : West Bengal : Bardhaman district (Nath 1951), Birbhum district, Medinipur district (Wroughton 1915); Andhra Pradesh; Assam; Bihar; Delhi; Gujarat; Jammu & Kashmir (Chakraborty 1983); Karnataka; Kerala; Meghalaya; Orissa (Das *et al.*, in press). Africa, Sri Lanka, Burma, China, Thailand, Malaysia, Philippines and New Guinea.

Remarks : Common in houses.

169. *Mus musculus homourus* Hodgson

1845: *Mus homourus* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 268 (Nepal).

Common names : House Mouse (Eng.), Nengti Indur (Beng.).

Material examined : Darjiling district : 1 ♂, 1 ♀, Batasia (c 1,829 m), coll. C.A. Crump, 26.ii.1915; 1 ♂, 1 ♀, Ghoom (c 2,255 m), coll. C.A. Crump, 11.ii.1915; 3 ♂, 2 ♀, Gopaldhara (c

1,438 m), colls. N.A. Baptista, H. Stevens; 29.iv.1915; 22, 23.iv.1921, 5, 6.v.1921; 2 ♂, Kalimpong (c 1,249 m), coll. N.A. Baptista, 31.v.1916, 2.vi.1916; 1 ♂, 1 ♀, Narbong (c 609m), coll. C.A. Crump, 10.iii.1915; 2 ♂, 2 ♀, Pashok (c 1,066 m), coll. N.A. Baptista, 1.vii.1915, 18, 21.viii.1915, 7.ix.1915; 2 ♂, 1 ♀, Pedong (c 1,432 m), coll. N.A. Baptista, 1, 5.viii.1916, 2.x.1916; 3 ♂, 2 ♀, Sandakphu (c 3,600 m), coll. H. Khajuria, 12, 20.vii.1958; 1 ♂, 1 ♀, Sukiapokhri (c 2,133 m), coll. C.A. Crump, 17.ii.1915; 2 ♂, Takdah (c 1,650 m), coll. H. Khajuria, 6, 7.viii.1958; 1 ♂, 4 ♀, Tarkhola (c 352 m), coll. H. Khajuria, 14, 19.viii.1958. Jalpaiguri district : 1 ♂, 1 ♀, Bharnabari (c 182 m), coll. N. A. Baptista, 16.ii.1916; 1 ♂, 3 ♀, Hasimara (c 182 m), coll. N.A. Baptista, 7, 9.iii.1916.

Measurements : External : 14 ♂ : H & B 63.0-94.0(79.0); Tl 72.0-92.0(83.0); Hf 12.0-19.0(17.5); E 11.0-15.0(13.5). 10 ♀ : H & B 65.0-89.0(74.0); Tl 69.0-92.0(82.0); Hf 13.0-18.5(16.0); E 11.0-14.0(13.0). Cranial : 8 ♂ : *on* 20.3-22.8(21.3); *n* 6.8-9.0(7.3); *pl* 10.2-11.6(10.8); *apf* 4.4-5.2(4.6); *d* 5.2-5.7(5.4); *b* 3.3-3.8(3.5); *mtr* 2.8-3.8(3.6). 6 ♀ : *on* 21.1-23.6(21.6); *n* 7.0-8.8(7.1); *pl* 10.3-12.0(11.6); *apf* 4.3-6.0(4.8); *d* 5.1-5.8(5.5); *b* 3.2-4.0(3.3); *mtr* 3.0-3.6(3.4).

Distribution : India : West Bengal : Darjiling district (Blyth 1863), Jalpaiguri district (Wroughton 1916b); Assam; Himachal Pradesh; Jammu & Kashmir (Chakraborty 1983); Manipur (Roonwal 1950); Meghalaya; Nagaland; Sikkim; Tamil Nadu; Uttar Pradesh. Nepal, Burma, China, Formosa, Vietnam and Java.

Remarks : Very common; mostly collected from houses, occasionally from the field. A major pest of household goods and articles of merchandise.

170. *Mus musculus urbanus* Hodgson

1845. *Mus urbanus* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 269 (Kathmandu, Nepal).

Common names : House Mouse (Eng.), Nengti Indur (Beng.).

Material examined : Barddhaman district : 1 ♂, Arrah, coll. P.K. Das, 20.iv.1988; 1 ♂, 1 ♀, Churpurni, coll. P.K. Das, 28, 29.iv.1988; 3 ♀, 1 subad. ♀, Katoya, coll. P.K. Das, 30.iv.1988, 2.v.1988. Calcutta district : 2 ♂, 2 ♀, no exact locality, coll. S. Roy, 16.xii.1960, 6.i.1961; 1 ♀, Beliaghata, coll. Ajoy Kumar Mandal, 1.viii.1977; 1 ♀, Indian Museum compound, coll. Ajoy Kumar Mandal, 20.x.1975; 15 ♂, 3 subad. ♂, 14 ♀, 1 subad. ♀, Lindsay Street, coll. Ajoy Kumar Mandal, 2, 30.iii.1976, 23.iv.1977, 1, 11.viii.1977, 1, 2.ix.1977, 5.i.1979, 18.xi.1982, 28.i.1983, 29, 30.vii.1984, 3.v.1985, 11.v.1985. Darjiling district : 2 ♂, 1 ♀, 2 km N. of Batasi (c 2,078 m), coll. R. K. Ghose, 24, 26.v.1980; 1 ♂, Ghoom (c 2,255 m), coll. C.A. Crump, 9.ii.1915; 3 ♂, 3 ♀, 1 unsexed, Gopaldhara (c 1,438 m), colls. N. A. Baptista, H. Stevens, 18, 31.iv.1921, 10.v.1921; 1 ♂, Jonsong (c 970 m), coll. N.A. Baptista, 9.vi.1916; 3 ♂, 3 ♀, Kalimpong (c 1,249 m), coll. N. A. Baptista, 27.v.1916, 1.vi.1916, 26-28.vii.1916, 31.x.1916; 1 ♂, Narbong (c 609 m), coll. C. A. Crump, 11.iii.1915; 4 ♂, 2 ♀, Pashok (c 1,066 m), colls. N.A. Baptista, C.A. Crump, 7.xi.1914, 26.vi.1915, 9.viii.1915, 2.ix.1915, 6, 8.x.1915. Haora district : 2 ♂, 1 ♀, Shibpur Botanical Garden, coll. S.S. Saha, 3.vii.1968. Hugli district : 1 ♂, 2 ♀, Chinsurah, coll. V.C. Agrawal, 10.x.1982, 7.xi.1982; 25 ♂, 29 ♀, Singur, coll. Ajoy Kumar Mandal, 17.ii.1975 to 28.vii.1981. Koch Bihar district : 6 ♂, 1 subad. ♂, 6 ♀, Atiamochor, coll. S. Chakraborty, 5-7.iv.1986; 9 ♂, 7 ♀, Sitalkhuchi, coll. S. Chakraborty, 8, 13.iv.1986. Maldah district : 1 ♂, Maldah Town, coll. S. Chakraborty, 9.x.1987. Medinipur district : 1 ♀, Gidni (c 16.5 km NW of Jhargram), coll. P.K. Das, 9.ix.1984. Murshidabad district : 1 ♂, 1 ♀, Baharampur, coll. S. Chakraborty, 16.x.1987. Nadia district : 1 ♀, Madanpur, coll. P.K. Das, 16.vii.1979. North 24-Parganas district : 3 ♂, 4 ♀, Parmadan, coll. P.K. Das, 5-7, 9.v.1988; 8 ♂, 3 ♀, Salt Lake, coll. B. Biswas, 21.i.1964,

31.vi.1965. South 24-Parganas district : 5 ♂, 7 ♀, Barisha, coll. Ajoy Kumar Mandal, 28.vii.1976, 28.viii.1976, 2, 23.ix.1976, 8.vi.1978, 4.xii.1978, 13, 14.xii.1979, 1.xii.1981; 1 ♀, Chakthakurani, (c 6 Km S of Thakurpukur), coll. S. Sinha, 17.x.1987; 2 ♂, Sagar Island, coll. A.K. Mandal, 24.x.1976; 1 ♂, Sarkarpool, coll. Ajoy Kumar Mandal, 11.v.1984; 1 ♂, Thakurpukur, coll. Ajoy Kumar Mandal, 21.vii.1982. West Dinajpur district : 1 ♂, Barduary (c 2 km N of Raiganj), coll. S. Chakraborty, 11.x.1987; 1 ♀, Kulik (c 1 km N of Raiganj), coll. S. Chakraborty, 13.x.1987; a litter of six, Karnajora (c 2 Km E of Raiganj), coll. S. Chakraborty, 10.x.1987.

Measurements : External : 23 ♂ : H & B 59.0-88.0(76.0); TI 75.0-100.0(86.0); Hf 15.0-20.0(17.5); E 10.0-13.0(12.0). 16 ♀ : H & B 66.0-92.0(74.0); TI 81.0-99.0(86.0); Hf 12.0-19.0(16.5); E 11.0-13.5(12.0). Cranial : 14 ♂ : *on* 20.5-22.2(21.1); *n* 7.2-8.8(7.5); *pl* 9.8-11.3(10.7); *apf* 3.1-4.9(4.0); *d* 4.6-5.4(4.7); *b* 3.2-3.6(3.3); *mtr* 3.1-4.2(3.3). 10 ♀ : *on* 20.5-22.3(21.2); *n* 7.2-9.0(7.7); *pl* 10.0-11.6(10.8); *apf* 3.3-4.4(3.6); *d* 4.7-5.8(4.9); *b* 3.2-3.7(3.4); *mtr* 3.1-3.5(3.2).

Distribution : India : West Bengal : Bardhaman district, Calcutta district (Blyth 1863), Darjiling district (Wroughton 1916c), Haora district, Hugli district, Jalpaiguri district (Wroughton 1916b), Koch Bihar district, Maldah district, Medinipur district, Murshidabad district, Nadia district, North 24-Parganas district, Puruliya district, South 24-Parganas district, West Dinajpur district; Andaman Islands; Assam; Maharashtra; Rajasthan; Sikkim; Tamil Nadu; Uttar Pradesh. Nepal and Sri Lanka.

Remarks : Colour of undersurface varies from grey to brown, and tail from wholly dark to bicolor.

Pregnant females were obtained throughout the year; number of foetuses varied from 5 to 10.

Most common in houses.

171. *Mus booduga booduga* (Gray)

1837. *Leggada booduga* Gray, *Charlesworth's Mag. nat. Hist.*, 1 : 586 (Southern Mahratta country, India).

Common names : Little Indian Field Mouse (Eng.), Nengti Indur (Beng.).

Material examined : Calcutta district : 2 ♀, Garden Reach, coll. Mus Collector, -. Haora district : 2 ♂, 1 ♀, Shibpur Botanical Garden, coll. S.S. Saha, 5.vi.1967. Hugli district : 1 ♂, 1 ♀, Bally, coll. Mus collector, -; 1 ♂, 15 ♀, Singur, coll. Ajoy Kumar Mandal, 23.xii.1975 to 21.xii.1980. Medinipur district : 1 ♀, Kanaisole, coll. P.K. Das, 9.ix.1984. Murshidabad district : 1 ♂, Baharampur, coll. S. Chakraborty, 18.x.1987. North 24-Parganas district : 1 ♀, Dhapa, coll. Mus Collector, -; 1 ♂, 1 ♀, Nalbani (Salt Lake), coll. B. Biswas, 22.iii.1966. South 24-Parganas district : 1 ♂, Kachuberia (Sagar Island), coll. S. Chakraborty, 12.xii.1982.

Measurements : External 12 ♂ : H & B 50.0-78.0(64.0); TI 53.0-77.0(62.0); Hf 12.0-15.0(13.5); E 8.0-13.0(11.0). 16 ♀ : H & B 56.0-74.0(62.5); TI 54.0-76.0(60.5); Hf 11.0-14.0(12.5); E 10.0-11.0 (10.5). Cranial : 12 ♂ : *on* 17.9-20.1(19.2); *n* 6.7-7.7(7.1); *pl* 9.4-10.8(10.1); *apf* 3.4-4.2(3.6); *d* 5.0-5.9(5.4); *b* 3.2-3.6(3.4); *mtr* 3.0-3.4(3.2). 14 ♀ : *on* 17.6-20.0(19.1); *n* 6.0-8.5(7.0); *pl* 9.2-10.4(9.8); *apf* 3.4-4.5(3.6); *d* 5.0-5.7(5.3); *b* 3.1-3.5(3.2); *mtr* 3.2-3.4(3.3).

Distribution : India : West Bengal : Calcutta district (Blyth 1852b), Darjiling district (Fry 1923), Haora district, Hugli district, Jalpaiguri district, Koch Bihar district, Medinipur district, Murshidabad district, North 24-Parganas district, South 24-Parganas district, West Dinajpur district; Arunachal Pradesh and Assam (Kurup 1968); Bihar; Goa (Agrawal 1973); Gujarat; Himachal Pradesh; Jammu & Kashmir (Lal 1976); Karnataka; Kerala; Madhya Pradesh; Maharashtra; Meghalaya; Orissa; Tripura (Agrawal & Bhattacharyya 1977); Tamil Nadu. Bangladesh (Posamentier 1989).

Remarks : Very common in the paddy fields during harvesting. Also found in the 'Kachha' granneries adjacent to the fields.

172. *Mus dunnii* (Wroughton)

1912. *Leggada dunnii* Wroughton, *J. Bombay nat. Hist. Soc.*, 21 : 339 (Ambala, c 274 m, Haryana, India).

Common name : None.

Material examined : Bankura district : 1 ♀, Susunia, coll. V.C. Agrawal, 7.i.1985.

Measurements : External : 1 ♀ : H & B 77.0; Tl 55.0; Hf 14.5; E 12.0. Cranial : 1 ♀ : *on* 19.7; *n* 7.0; *pl* 10.4; *apf* 4.5; *d* 5.3; *b* 3.1; *mtr* 3.4.

Diagnosis : An extra cusp present on the anterior lamina of first upper molar; undersurface of body grey in colour.

Distribution : India : West Bengal : Bankura district (Agrawal & Bhattacharyya 1987); Bihar; Gujarat; Karnataka; Maharashtra; Orissa; Uttar Pradesh.

173. *Mus cervicolor cervicolor* Hodgson

1845. *Mus cervicolor* Hodgson, *Ann. Mag. nat. Hist.*, 15 : 268 (Nepal).

Common names : Fawn-coloured Mouse (Eng.), Nengti Indur (Beng.).

Material examined : Hugli district : 1 ♂, 7 ♀, Chinsurah, coll. V.C. Agrawal, 19.x.1982, 23.xi.1982, 14 ♂, 13 ♀, Singur, coll. Ajoy Kumar Mandal, 19.i.1978 to 17.vi.1980. Jalpaiguri district : 1 ♂, 1 ♀, Khuntimari, coll. S. Chakraborty, 14.ix.1983. Medinipur district : 1 ♂, Chandra, coll. P.K. Das, 18.ix.1984. North 24-Parganas district : 1 ♂, Nalbani (Salt Lake), coll. B. Biswas, 30.xi.1966. South 24-Parganas district : 1 ♂, 2 ♀, Hemnagar, coll. A.K. Mandal, 28.xii.1967. West Dinajpur district : 1 ♀, Raiganj, coll. S. Chakraborty, 13.x.1987.

Measurements : External : 12 ♂ : H & B 74.0-95.0(82.0); Tl 64.0-69.0(66.0); Hf 14.0-17.0(15.0); E 11.0-13.0(12.0). 15 ♀ : H & B 72.0-92.0(79.0); Tl 64.0-70.0(68.0); Hf 14.0-15.0(14.5); E 11.0-12.0(11.5). Cranial : 8 ♂ : *on* 20.3-22.6(21.5); *n* 8.0-8.7(8.3); *pl* 11.0-12.6(11.3); *apf* 4.5-5.2(4.8); *d* 5.5-7.0(6.3); *b* 3.0-3.6(3.4); *mtr* 3.2-3.6(3.4). 10 ♀ : *on* 20.4-23.3(21.6); *n* 7.5-8.9(8.4); *pl* 10.8-12.3(11.3); *apf* 4.2-5.2(4.5); *b* 3.2-3.8(3.4); *mtr* 3.3-3.8(3.4).

Distribution : India : West Bengal : Hugli district (Mandal 1976), Jalpaiguri district, Medinipur district, North 24-Parganas district, South 24-Parganas district (Mandal 1990), West Dinajpur district. Nepal and Burma.

Remarks : Common in the cultivated fields and adjacent huts. Breeds during October-November; litter-size varies from 6 to 11.

174. *Mus platythrix* Bennett

1832. *Mus platythrix* Bennett, *Proc. zool. Soc. Lond.* : 121 ('Dukhun' = Deccan, India).

Common name : Brown Spiny Mouse (Eng.).

Material examined : Puruliya district : 2 ♂, 1 ♀, Ajodhya Hills, coll. V.C. Agrawal, 17, 18.i.1985.

Measurements : External : 2 ♂ : H & B 78.0(2); Tl 57.0, 68.0; Hf 16.5(2); E 15.5, 16.5. 1 ♀ : H & B 83.0; Tl 63.0; Hf 16.5; E 17.0. Cranial : 2 ♂ : *on* 23.9, 24.0; *n* 9.3, 9.4; *pl* 12.2, 12.7; *apf* 4.6, 4.8; *d* 6.8, 7.0; *b* 3.2, 3.7; *mtr* 4.0, 4.1. 1 ♀ : *on* 27.4; *n* 9.9; *pl* 12.8; *apf* 4.9; *d* 7.0; *b* 3.7; *mtr* 4.2.

Distribution : India : West Bengal : Puruliya district ; Andhra Pradesh; Bihar; Gujarat; Himachal Pradesh; Karnataka; Kerala; Maharashtra; Madhya Pradesh; Punjab; Rajasthan; Tamil Nadu. Pakistan, Nepal and Burma.

Remarks : Mandal (1986b) reported this species from Medinipur. However, on examination of the specimen, it was found to be an example of *Mus saxicola* Elliot.

All the specimens were collected from forest.

175. *Mus saxicola* Elliot

1839. *Mus saxicola* Elliot, *Madras J. Litt. Sci.*, 10 : 215 (Madras, Tamil Nadu, India).

Common name : Elliot's Brown Spiny Mouse (Eng.)

Material examined : Bankura district : 5 ♂, 3 ♀, Raniband, coll. V. C. Agrawal, 10-13.i.1985; 9 ♂, 1 ♀, Susunia, coll. V. C. Agrawal, 6-8.i.1985. Birbhum district : 3 ♂, 3 ♀, 2 juv. ♀, Berul (near Chandrapur), coll. A. K. Poddar, 15-17.xii.1985; 4 ♂, 1 juv. ♂, 5 ♀, 3 juv. ♀, Chandrapur, coll. A. K. Poddar, 15-18.xii.1985; 2 ♂, 1 juv. ♂, 1 ♀, Madhaipur (near Chandrapur), coll. A. K. Poddar, 12.xii.1985. Medinipur district : 1 ♂, Mandalpuskarini (c 5 km N of Garbeta), coll. P. K. Das, 21.ix.1984. Puruliya district : 2 ♂, 1 ♀, Kuilapal, coll. V. C. Agrawal, 22.i.1985.

Measurements : External : 22 ♂ : H & B 60.0-110.0(87.0); Tl 58.0-75.0(69.0); Hf 16.5-19.0(17.5); E 14.0-17.0(15.5). 9 ♀ : H & B 72.0-103.0(85.0); Tl 57.0-84.0(68.0); Hf 16.0-18.5(17.0); E 12.0-18.0(14.5). Cranial : 15 ♂ : *on* 22.7-27.0(24.4); *n* 9.1-11.8(10.3); *pl* 11.7-13.9(12.7); *apf* 5.0-6.7(5.7); *d* 5.7-8.1(6.6); *b* 3.6-5.3(4.5); *mtr* 4.1-4.9(4.4). 6 ♀ : *on* 23.8-26.7(24.5); *n* 9.4-11.4(10.4); *pl* 12.8-14.5(12.8); *apf* 5.3-6.4(5.9); *d* 6.2-8.0(6.6); *b* 3.6-5.0(4.1); *mtr* 4.3-4.6(4.4).

Distribution : India : West Bengal : Bankura district (Agrawal & Bhattacharya 1987), Birbhum district, Medinipur district, Puruliya district. It occurs sympatrically with *Mus platythrix*.

Remarks : All specimens from Birbhum and a few from Bankura and Puruliya districts have soft fur; in the remaining it is spiny.

One female collected in December had 7 foetuses.

All the specimens were collected from forests. Common in drier parts of the State.

176. *Mus pahari pahari* Thomas

1916. *Mus pahari* Thomas, *J. Bombay nat. Hist. Soc.*, 24 : 414 (Batasia, c 1,829 m, Darjiling district, West Bengal, India).

Common name : Sikkim Mouse (Eng.).

Material examined : Darjiling district : 3 ♂, 1 ♀, Pashok (c 1,066 m), coll. N. A. Baptista, 27, 29.iv.1915, 20.viii.1915, 14.xi.1915; 1 ♂, Takdah (c 1,650 m), coll. H. Khajuria, 31.vii.1958.

Measurements : External : 4 ♂ : H & B 82.0-99.5(88.0); Tl 90.0-100.0(94.5); Hf 20.0(4); E 14.0-16.0(14.5). 1 ♀ : H & B 80.0; Tl 92.0; Hf 20.0; E 16.0. Cranial : 2 ♂ : *on* 25.1, 25.6; *n* 8.9, 9.7; *pl* 12.1, 12.5; *apf* 4.5, 6.2; *d* 6.2, 6.7; *b* 3.6, 4.6; *mtr* 3.4, 3.5.

Distribution : India : West Bengal : Darjiling district (Thomas 1916a); Assam; Nagaland; Sikkim. Burma.

Remarks : Found in the forest.

Genus *Golunda* Gray, 1837

Genus *Golunda* is represented by only one species, *Golunda ellioti*. The nominate subspecies occurs in West Bengal.

177. *Golunda ellioti ellioti* Gray

1837. *Golunda ellioti* Gray, *Charlesworth's Mag. nat. Hist.*, 1 : 586 (Dharwad, Karnataka, India).

Common name : Indian Bush Rat (Eng.).

Material examined : Darjiling district : 1 ♀, Karseong, coll. N. Annandale, -. Jalpaiguri district : 1 ♂, 1 ♀, Hasimara, coll. N. A. Baptista, 11.xii.1915, 1.iv.1916.

Measurements : External : 1 ♂ : H & B 98.0; TI 84.0; Hf 23.0; E 15.0. 1 ♀ : H & B 108.0; TI 101.0; Hf 23.0; E 16.0. Cranial : 1 ♂ : *on* --; *n* 12.8; *pl* 16.1; *apf* 5.4; *d* 7.6; *b* --; *mtr* 6.3. 1 ♀ : *on* -; *n* 12.5; *pl* 16.3; *apf* 5.1; *d* 8.1; *b* --; *mtr* 6.0.

Distribution : India : West Bengal : Darjiling district, Jalpaiguri district (Wroughton 1917a); Andhra Pradesh; Assam; Bihar; Karnataka; Kerala; Madhya Pradesh; Maharashtra; Orissa; Punjab; Tamil Nadu; Uttar Pradesh. Afghanistan, Pakistan, Sri Lanka and Nepal.

Remarks : Both the specimens from Hasimara have spiny fur.

Genus *Bandicota* Gray, 1873

Two species of the genus *Bandicota* occur in West Bengal.

Key to the species of genus *Bandicota*

Size large, head and body length more than 220 mm; anterior palatal foramina equally broad at both ends; nasals more than one-third of occipitonasal length. *B. indica*

Size small, head and body length less than 220 mm, anterior palatal foramina narrower posteriorly; nasals short, less than one-third of occipitonasal length..... *B. bengalensis*

178. *Bandicota bengalensis bengalensis* (Gray)

1833. *Arvicola bengalensis* Gray, *Ill. Indian Zool.*, 2 : pl. 21 (Bengal).

Common names : Lesser Bandicoot-Rat (Eng.); Metho Indur (Beng.).

Material examined : India : West Bengal : Bankura district : 2 ♂, Susunia, coll. V. C. Agrawal, 6, 7.i.1985. Calcutta district : 34 ♂, 14 ♀, 42 unsexed, no exact locality, coll. J. Anderson, B. Biswas, E. Blyth, W. C. Hossack, W. H. Pulford, A. Rahim, 3.ix.1951, 25.ii.1956, remaining undated. Darjiling district : 1 ♀, Kalimpong (c 1,249 m), coll. N. A. Baptista, 29.v.1915; 2 ♀, Nimbong (c 1,371 m), coll. N. A. Baptista, 11, 13.vi.1916; 3 ♂, 3 ♀, Pashok (c 1,066 m), coll. N. A. Baptista, 3, 12.vii.1915, 8.viii.1915, 30.ix.1915, 2.x.1915. Haora district : 1 ♂, no exact locality, coll. J. F. Simmons, -. Hugli district : 12 ♂, 7 ♀, Chinsurah, coll. V. C. Agrawal, S. Chakraborty, 9.iv.1982, 27.vi.1982, 3.iii.1983; 1 ♂, Kamardingi (near Jhapandanga), coll. S. Chakraborty, 21.ii.1974; 1 ♀, Ratanpur, coll. D. W. Parrack, B. S. Roy, 8.ii.1965; 6 ♂, 4 ♀, Singur, coll. Ajoy Kumar Mandal, 7.iv.1974, 12.vi.1975, 1, 2.iii.1976, 24.xii.1980; 1 ♀, Tarapur (near Jhapandanga), coll. S. Chakraborty, 21.ii.1974. Jalpaiguri district : 1 ♂, Gorumara, coll. S. Banerjee, 30.xi.1982; 3 ♂, 2 ♀, Hasimara (c 182 m), coll. N. A. Baptista, 23.x.1915; 1 ♂, Khuntimari, coll. S. Chakraborty, 10.ix.1983. Koch Bihar district : 1 ♂, 1 ♀, Sitalkhuchi, coll. S. Chakraborty, 12, 13.iv.1986. Maldah district : 1 ♂, 1 ♀, Maldah, coll. S. Chakraborty, 11.x.1987. Medinipur district : 1 ♂, 1 ♀, Balivasa (c 15 km SSE of Jhargram), coll. P. K. Das, 12, 13.ix.1984; 2 ♀, Dhadika (c 4 km N of Gorbeta), coll. P. K. Das, 22.ix.1984; 1 ♂, 1 ♀, Salbani, coll. C. A. Crump, 17, 18.ix.1914. Murshidabad district : 2 ♂, 3 ♀, Baharampur, coll. S. Chakraborty, 17.x.1987. Nadia district : 1 ♂, 1 ♀, Betai, coll. S. Chakraborty, 21.x.1983; 1 juv. ♀, Madanpur, coll. P. K. Das, 16.vii.1969; a litter of six,

Plassey, coll. S. Chakraborty, 21.x.1987. North 24-Parganas district : 1 unsexed, Bhatpara, coll. K. N. Mukherjee, --. South 24-Parganas district : 1 ♂, Behala, coll. H. P. Mukherjee, 27.vi.1963; 1 ♀, 1 subad. ♀, Gangasagar (Sagar Island), coll. S. Chakraborty, 16, 17.xii.1982; 1 ♂, 2 ♀, Kachuberia (Sagar Island), coll. S. Chakraborty, 18, 20.x.1982, 11.xii.1982; 13 ♂, 9 ♀, 1 unsexed juv., Taldi, coll. A. K. Mandal, 24-26.xii.1968.

Measurements : External : 43 ♂ : H & B 147.0-235.0(181.0); TI 100.0-174.0(147.0); Hf 27.0-48.0(33.0); E 19.0-25.0(22.0). 24 ♀ : H & B 148.0-214.0(172.0); TI 105.0-187.0(142.0); Hf 28.0-35.0(32.0); E 22.0-25.0(21.0). Cranial : 27 ♂ : *on* 33.3-43.0(39.2); *n* 11.4-15.3(12.2); *pl* 20.4-25.2(22.8); *apf* 5.6-8.4(7.1); *d* 10.1-13.6(12.2); *b* 7.0-10.0(8.3); *mtr* 6.7-8.0(7.2). 16 ♀ : *on* 33.0-42.8(38.9); *n* 11.0-15.0(12.0); *pl* 20.1-24.6(22.7); *apf* 6.0-8.3(6.9); *d* 10.0-13.0(12.1); *b* 6.8-9.4(8.0); *mtr* 6.6-8.2(7.1).

Distribution : India : West Bengal : Bankura district, Calcutta district (Sclater 1891), Darjiling district (Wroughton 1916b), Haora district (Sclater 1891), Hugli district, Jalpaiguri district (Wroughton 1917a), Koch Bihar district, Maldah district, Medinipur district (Sclater 1891), Murshidabad district, Nadia district, North 24-Parganas district, Puruliya district (Sclater 1891), South 24-Parganas district (Chakraborty 1977); throughout India. Pakistan, Sri Lanka, Nepal, Bhutan, Bangladesh and Burma.

Remarks : Most predominant rodent species of West Bengal, except in deltaic islands. Found in the field as well as in the godowns, causing considerable damage to grains.

Breeds throughout the year (Prakash 1976); litter size varies from 5 to 12 (Chakraborty 1977), but goes upto 15 (Prakash 1976).

Though no specimen of this species could be obtained from Birbhum and Bardhaman districts, but its burrows were observed in both these districts.

179. *Bandicota indica nemorivaga* (Hodgson)

1836. *Mus (Rattus) nemorivagus* Hodgson, *J. Asiat. Soc. Beng.*, 5 : 234 (Nepal).

Common names : Large Bandicoot-Rat (Eng.), Dhere Indur (Beng.), Ghous (Hind.).

Material examined : Bardhaman district : 1 ♀, Katoya, coll. P. K. Das, 2.v.1988. Calcutta district: 6 ♂, 6 ♀, no exact locality, coll. S. Biswas, W. C. Hossack, L. Lloyd, 2.vi.1953, rest undated. Hugli district : 1 ♂, Kamardingi (near Jhapandanga), coll. S. Chakraborty, 21.ii.1974; 1 ♀, Singur, coll. Ajoy Kumar Mandal, 17.i.1980. North 24-Parganas district: 1 ♂, Nalbani (Salt Lake), coll. B. Biswas, 3.v.1967. South 24-Parganas district: 1 ♂, 1 ♀, Gangasagar (Sagar Island), coll. S. Chakraborty, 14, 17.xii.1982; 6 ♂, 3 subad. ♂, 9 ♀, 2 subad ♀, Kachuberia (Sagar Island), coll. S. Chakraborty, 18, 19.x.1982, 9-12.xii.1982; 1 subad ♂, Sapkahali (Sagar Island), coll. S. Chakraborty, 9.x.1982; 1 ♂, 1 ♀, Thakurpukur, coll. A. K. Nag, 30.x.1974, 5.vi.1978.

Measurements : 11 ♂ : H & B 210.0-310.0(264.0); TI 184.0-293.0(234.0); Hf 42.0-58.0(51.0); E 21.0-30.0(25.5). 12 ♀ : H & B 221.0-300.0(258.0); TI 189.0-284.0(228.0); Hf 43.0-57.0(52.0); E 20.0-30.0(25.5). Cranial : 11 ♂ : *on* 46.2-63.1(55.3); *n* 15.6-23.5(19.4); *pl* 26.7-34.8(31.8); *apf* 8.0-11.5(10.0); *d* 15.1-19.9(17.6); *b* 8.3-10.6(9.4); *mtr* 8.3-9.8(9.5). 9 ♀ : *on* 43.5-62.1(54.8); *n* 15.3-22.9(19.2); *pl* 26.1-34.1(31.2); *apf* 8.1-11.0(9.8); *d* 14.8-19.6(17.3); *b* 8.1-10.3(9.2); *mtr* 8.4-10.0(9.6).

Diagnosis : Length of nasals shorter than that of the nominate subspecies, being, on average, less than 20 mm.

Distribution : India : West Bengal : Bardhaman district, Calcutta district (Blyth 1863), Haora district (Seal & Banerjee 1969), Hugli district, Medinipur district (Blyth 1863), North 24-Parganas

district, South 24-Parganas district (Nandi 1984); Assam; Bihar; Manipur; Meghalaya; Sikkim. Nepal, Bangladesh, Thailand and Formosa.

Remarks : Formerly, this species was abundant in Calcutta and Haora, but due to ecological changes and competition with *B. bengalensis* its population has declined (Seal & Banerji 1969). However, the Large Bandicoot-Rat is still abundant in the deltaic islands of West Bengal, where it is the most predominant rodent species. It plays an important role in the biological control of several pestiferous species of molluscs and crabs (Routh & Ghose 1979, Chakraborty 1985).

This species has also been observed in Nadia district.

Genus *Nesokia* Gray, 1842

Genus *Nesokia* is represented by one species, namely, *Nesokia indica*.

180. *Nesokia indica indica* (Gray)

1832. *Arvicola indica* Gray, *Ill. Indian Zool.*, 1 : pl. 11 (India).

Common name : Short-tailed 'Mole-Rat' (Eng.).

Material examined : Nadia district : 2 ♂, a litter of six, Plassey, coll. S. Chakraborty, 21.x.1987.

Measurements : External : 2 ♂ : H & B 145.0, 177.0; TI 84.0, 98.0; Hf 30.0, 31.0; E 19.0, 20.0. Cranial : 2 ♂ : *on* 37.6, 39.8; *n* 11.7, 12.0; *pl* 24.5, 25.0; *apf* 4.5, 5.0; *d* 14.9(2); *b* 7.0, 8.5; *mtr* 6.9, 7.2.

Diagnosis : Dorsum dull brown, undersurface slightly lighter; tail 70% of head and body or less; palatal foramina strongly shortened, being less than 14% of occipitonasal length.

Distribution : India : West Bengal : Nadia district (Agrawal *et al.*, in press); Bihar, Delhi; Haryana; Punjab; Rajasthan; Uttar Pradesh. Iran, Afghanistan, Pakistan and Bangladesh (Posamentier 1989).

Remarks : It is a serious pest of agriculture in the drier parts of India.

Subfamily GERBILLINAE

Out of three genera found in India, only one, *Tatera* Lataste, 1882 occurs in West Bengal. It is represented by only one species, *Tatera indica*.

181. *Tatera indica indica* (Hardwicke)

1807. *Dipus indicus* Hardwicke, *Trans. Linn. Soc. Lond.*, 2 : 144, pl. 26 (Between Varanasi and Hardwar, Uttar Pradesh, India).

Common names : Indian Antelope-Rat (Eng.), Jhenkur Indur (Beng.), Harna Musa (Hin.).

Material examined : Bankura district : 1 ♂, Susunia, coll. V. C. Agrawal, 7.i.1985. Medinipur district : 1 ♂, 1 ♀, Chandra (*c* 25 km NW of Medinipur), coll. P. K. Das, 18, 19.ix.1984; 1 subad. ♂, Mandalpuskarini (*c* 5 km N of Garbeta), coll. P. K. Das, 22.ix.1984. Murshidabad district : 1 ♀, Baharampur, coll. W. Theobald. Nadia district : 1 ♂, Plassey, coll. S. Chakraborty, 20.x.1987. North 24-Parganas district : 1 subad. ♀, Parmadan, coll. P. K. Das, 4.v.1988.

Measurements : External : 3 ♂ : H & B 174.0-193.0(186.0); TI 157.0-196.0(178.0); Hf 41.0-45.0(43.0); E 23.0-24.0(23.7). 1 ♀ : H & B 180.0; TI -; Hf 42.0; E 23.0. Cranial : 2 ♂ : *on* 47.0, 47.2; *n* 19.6, 20.0, *pl* 24.8, 25.0; *apf* 8.6, 9.2; *d* 12.7, 13.0; *b* 12.1, 12.3; *mtr* 6.7, 6.8.

Diagnosis : Colour of body above ranges from brown to sandy brown, undersurface white; tail dark above and below, paler on the sides, and tufted.

Distribution : India : West Bengal : Bankura district, Hugli district (Parrack 1966), Medinipur district (Blyth 1863, Mandal & Dey Sarkar 1984), Murshidabad district, Nadia district; Bihar; Gujarat; Jammu & Kashmir; Karnataka; Madhya Pradesh; Maharashtra; Orissa; Punjab; Rajasthan; Uttar Pradesh. Iran, Afghanistan, Pakistan and Nepal.

Remarks : This species is also another serious pest of agriculture, gradually establishing itself in different districts of West Bengal. A number of colonies were observed along the bank of the river Hugli in Nadia district.

Subfamily MICROTINAE

In India, subfamily Microtinae is represented by four genera and seven species. Of these, one species belonging to the genus *Pitimys* McMurtrie, 1831 occurs in West Bengal.

182. *Pitimys sikimensis* (Hodgson)

1849. *Neodon sikimensis* Hodgson, *Ann. Mag. nat. Hist.*, 3 : 202 (Sikkim).

Common name : Sikkim Vole (Eng.).

Material examined : Darjiling district : 1 ♂, no exact locality, coll. G. King; 16 ♂, 4 subad. ♂, 12 ♀, 2 subad. ♀, Sandakphu (c 3,600-3,657 m), coll. R. K. Ghose, H. Khajuria, 12-23.vii.1958, 14, 27.vi.1974, 12.iii.1975.

Measurements : External : 14 ♂ : H & B 97.0-114.4(105.5); TI 41.0-57.5(49.2); Hf 12.0-21.0(19.5); E 11.0-13.0(12.0). 10 ♀ : H & B 97.0-102.0(99.5); TI 40.0-54.0(47.0); Hf 18.0-20.0(19.0); E 10.0-14.5(12.2). Cranial : 14 ♂ : *on* 24.5-26.7(25.6); *n* 9.2-10.0(9.6); *pl* 14.7-16.4(15.5); *apf* 3.7-4.7(4.2); *d* 7.7-8.3(8.0); *b* 5.7-6.6(6.1); *mtr* 5.9-6.9(6.4). 8 ♀ : *on* 24.4-26.1(25.2); *n* 9.3-9.7(9.4); *pl* 15.2-16.1(15.6); *d* 7.8-8.4(8.1); *b* 5.9-6.5(6.2); *mtr* 5.9-7.1(6.3).

Diagnosis : Dark thick-furred voles. Ears moderately long, being about 13% of head and body length; tail bicolored, dark above and pale below, and 40-50% of head and body in length.

Distribution : India : West Bengal : Darjiling district (Blyth 1863); Sikkim. Nepal and Bhutan.

Remarks : Khajuria (1959) collected voles in Darjiling district at an altitude of c 3,600 m. It inhabits grasslands, rocks and forests. The stomach contained green vegetable matter. Litter-size 2-4.

Order CETACEA

Cetaceans have become highly specialised for aquatic mode of life. In adaptation to this, these animals have developed smooth, spindle-shaped and hairless body, with forelimbs flattened into paddle-shaped flippers. Hindlimbs are absent.

Three families of cetaceans are reported from the coastal as well as inland waters of West Bengal.

Key to the families of the order CETACEA

- 1. Teeth small, spade-like, with flat crowns..... PHOCAENIDAE
- Teeth large or moderate and conical.....2
- 2. Ribs abnormally articulated; symphysis of mandible never exceeding one-third of the length of ramus. DELPHINIDAE
- Ribs normally articulated; symphysis of mandible one-half of the length of ramus.
- PLATANISTIDAE

Family DELPHINIDAE

Four genera of the family Delphinidae are reported from West Bengal.

Key to the genera of the family DELPHINIDAE

1. Head globose, no trace of beak.....2
 Head with a distinct compressed beak.....3
2. Teeth confined to anterior half of rostrum. *Globicephala*
 Teeth occupying greater part of rostrum..... *Orcaella*
3. Teeth more than 5.1 mm in diameter, round in section, not more than 35 in number on each side of lower jaw.....*Sousa*
 Teeth less than 5.1 mm in diameter, oval in section, more than 35 in number on each side of lower jaw. *Stenella*

Genus *Stenella* Gray, 1866

One species of the genus *Stenella* is reported from coastal West Bengal.

183. *Stenella malayana* (Lesson)

1826. *Delphinus malayanus* Lesson, *Vov. Coquille, Zool.*, 1 : 184, Atlas, pl. 9, 5 (Between Java and Borneo).

Common name : Malay Dolphin (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Total length of body about 190 cm and height of dorsal fin 22 cm; body colour uniform ashy grey; no lateral grooves on bony palate.

Distribution : India : West Bengal : South 24-Parganas district (Blanford 1891). Banka Straits, Java, Singapore and Sulawesi.

Remarks : Honacki *et al.* (1982) kept *S. malayana* as a synonym of *S. attenuata* Gray.

Blanford (1891) recorded this species from the Bay of Bengal, near Sundarban. Recently, Mandal & Nandi (1989) have confirmed its occurrence there.

Genus *Sousa* Gray, 1866

One species of the genus *Sousa* occurs in coastal waters of West Bengal.

184. *Sousa plumbea* (Cuvier)

1829. *Delphinus plumbeus* Cuvier, *Regn. Anim.*, 1 : 288 (Malabar, India).

Common name : Plumbeous Dolphin (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : Total length of body 250-275 cm. Rostrum long, roughly one-sixth of the head and body length; dorsal fin long but low. Body colour purplish-grey or pinkish-grey, slightly paler on the undersurface.

Distribution : India : West Bengal : Jalpaiguri district (Ghosh & Chowdhury 1986), South 24-Parganas district (Mukherjee 1975); Kerala; Tamil Nadu. Pakistan, Sri Lanka, Burma, Straits of Malacca, extending west to the Red Sea.

Remarks : Honacki *et al.* (1982) treated *S. plumbea* as synonym of *Sousa chinensis* (Osbeck). However, Zhou *et al.* (1979, quoted by Honacki *et al.* 1982) and Pilleri & Gihl (1973) considered *plumbea* as a distinct species.

Based on the photograph of a stranded specimen, Ghosh & Chowdhury (1986) recorded Plumbeous Dolphin from Duduya river in Jalpaiguri district, but later, on an examination of the specimen, it was found to be an example of *Platanista gangetica* (Ghosh, in press).

Genus *Orcaella* Gray, 1866

The genus *Orcaella* is represented by only one species, *O. brevirostris*.

185. *Orcaella brevirostris* (Owen)

1866. *Phocaena (Orca) brevirostris* Owen, *Trans. zool. Soc. Lond.*, 6, 1 : 24, pl. 9, figs. 1, 2, 3 (Vishakhapatnam, Andhra Pradesh, India).

Common name : Irrawaddy Dolphin (Eng.).

Material examined : Calcutta district : 1 ♀ (skull), Circular canal, coll. J. F. Barkley, --.

Diagnosis : Total length of body about 214 cm and height of dorsal fin 10 cm. Body dark slaty blue to nearly black above, without streaks; a little paler on the undersurface.

Distribution : India : West Bengal : South 24-Parganas district (Mukherjee 1975); Andhra Pradesh; Orissa; Tamil Nadu. Coastal waters and large rivers of southeast Asia, Papua New Guinea and northern Australia.

Remarks : Present material was collected from Calcutta, and Sclater (1891) recorded this species from Hugli river near Srirampur and Budge Budge. However, at present, Irrawaddy Dolphin is restricted to the estuarine waters, in West Bengal.

Genus *Globicephala* Lesson, 1828

One species of the genus *Globicephala* occurs in coastal waters of West Bengal.

186. *Globicephala macrorhynchus* Gray

1846. *Globicephalus macrorhynchus* Gray, *Zool. Voy. H. M. S. "Erebus" and "Terror"* 1 : 33 ("South Seas").

Common name : Indian Pilot Whale (Eng.).

Material examined : Nil.

Measurements : Nil.

Distribution : India : West Bengal : Bay of Bengal. Tropical and subtropical waters of the world, and warm temperate north Pacific, possibly north to Alaska.

Remarks : Two examples of the Indian Pilot Whale have hitherto been observed, once, in the Salt Water Lakes, near Calcutta in July, 1952 (Jerdon 1867, Sclater 1891, Blanford 1888-91). Another specimen was killed in the river Hugli near Serampur (Hugli district) at about the same time (Jerdon 1867). These specimens belonged to a shoal consisting of several dozens, and were found stranded by E. Blyth. Subsequently, this species was no more observed in the coastal waters of West Bengal.

Family PHOCOENIDAE

Genus *Neophocaena* Palmer, 1899

The genus *Neophocaena* is represented by one species, *N. phocaenoides*.

187. *Neophocaena phocaenoides* (Cuvier)

1829. *Delphinus phocaenoides* Cuvier, *Regn. Anim.*, 1 : 291 ("Said to be from the Cape of Good Hope, where the animal does not occur according to G. Allen. Perhaps from Malabar Coast" -- Ellerman and Morrison-Scott, 1951).

Common name : Black Finless Porpoise (Eng.).

Material examined : Nil.

Measurements : Nil.

Diagnosis : A small-sized porpoise, about 150 cm long. No dorsal fin; body purplish-black throughout, with a few pinkish-grey spots around the mouth and throat; 15-21 spade-shaped teeth.

Distribution : India : West Bengal : South 24-Parganas district (Mukherjee 1975); rivers and seas along Andhra Pradesh; Kerala; Maharashtra; Orissa; Tamil Nadu. Persian Gulf to Java, China and Japan.

Remarks : Blanford (1888-91) recorded this species from Hugli river near Calcutta, during tide. However, in recent times there is no record of the species from this region.

Family PLATANISTIDAE

Genus *Platanista* Wagler, 1830

The genus *Platanista* is represented by one species, *P. gangetica*.

188. *Platanista gangetica* (Roxburgh)

1801. *Delphinus gangeticus* Roxburgh, *Asiat. Res. Trans. Soc.*, 7 : 171 (Hugli river, near Calcutta, West Bengal, India).

Common names : Gangetic Dolphin (Eng.), Susuk (Beng.), Suis (Hin.).

Material examined : Hugli district : 1 ♂, 1 ♀ (skull and skeleton), Hugli River, ----, ----.

Measurements : Nil.

Diagnosis : Body-size 214-244 cm, but sometimes a little longer; females larger than males. Colour of body blackish throughout. Dorsal fin rudimentary.

Distribution : India : West Bengal : Hugli river; the Ganga and the Brahmaputra rivers. Nepal and Bangladesh.

Remarks : Seen in tidal waters, but not in the sea. Even in early sixties of the present century, the Gangetic Dolphin was very common throughout the Hugli river system and very often captured by the fisherman in nets, particularly in the rainy season. However, with the construction of Farakka barrage and gradual pollution of the river, their number has dwindled considerably. Recently, Jones (1982) has reviewed the present state of this dolphin's distribution and abundance in different sectors of the Ganga-Brahmaputra-Meghna river system and estimated its population between 4000 and 5000 in the entire river system, with maximum concentration of 3000-3500 individuals in the estuarine belt between Hugli in the west to Sandwip Channel in the east.

SUMMARY

An account of the mammalian fauna of West Bengal, based mainly on the old and recent collections present in the Zoological Survey of India as well as those recorded in the literature, is given. Altogether 188 species and subspecies belonging to 107 genera, 33 families and 12 orders have been reported.

Keys and diagnostic characters for identification of each species have been given.

Detailed district-wise distribution in West Bengal along with the distributional range in India and outside for each described form have also been included.

The distribution of *Rhinopoma hardwickei hardwickei*, *Rhinopoma microphyllum kinneari*, *Megaderma spasma spasma*, *Tadarida aegyptica thomasi* and *Myotis siligorensis siligorensis* has been discussed in detail.

Scotoecus pallidus and *Rattus rattus khyensis* are recorded for the first time from West Bengal.

Morphological variations in *Canis aureus indicus*, *Macaca mulatta mulatta*, *Viverra zibetha*, *Paradoxurus hermaphroditus*, *Funambulus palmarum palmarum*, *Rattus rattus arboreus*, *Rattus rattus tistae*, *Rattus nitidus nitidus* have been enumerated.

Taxonomic remarks have been made on *Rhinolophus pusillus blythi* and *Myotis formosus formosus*.

Taxonomic status of *Crocidura kingiana*, has been revised. Notes on the breeding in *Scotophilus kuhli kuhli*, *Scotophilus heathi heathi*, *Petaurista nobilis nobilis*, *Rattus rattus arboreus* and *Mus saxicola* have been given.

Population status of several species of Primates and Carnivora have been discussed.

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AVES

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INTRODUCTION

The first Ornithological study in West Bengal was initiated by the two British pioneers, Edward Blyth, Curator of the Royal Asiatic Society of Bengal, Calcutta and Brain H. Hodgson, the British political representative to the Court of the King of Nepal in the around mid-nineteenth century.

Thereafter, workers like Finn (1917), Inglis (1925-1965), Law (1928), Lister (1951, 1954), Mathews (1953), Mukherjee (1969-1971), Osmaston (1904), Roonwal (1939) and Saha *et al.* (1971), etc. have contributed further to the knowledge of Ornithology of West Bengal. The present account is based mainly on the collection of birds brought by recent survey parties from different districts of West Bengal, as also on earlier specimens collected by the Royal Asiatic Society of Bengal, Calcutta, and Indian Museum, Calcutta, which were ultimately handed over to the Zoological Survey of India, and from published literature.

Some stray collections were also deposited earlier to the Royal Asiatic Society of Bengal by the following British Political and Military Officers and amateur naturalists:—

<i>Name of Collector</i>	<i>Period</i>	<i>Place of Collection</i>
E.G.L. Webb & Bonnevie	1845-1847	Darjiling
E.G.L. Webb	1839	Jalpaiguri
J. Wood-Mason	1870	Calcutta

Besides, Muller, V. Ball and G. Mason also collected birds from Darjiling.

The collections of the Zoological Survey of India is comprised of mainly two categories, namely:—

i) Collections made by the following foreign and Indian naturalists:

<i>Name of Collector</i>	<i>Period</i>	<i>Place of Collection</i>
G.E. Shaw	1918	Darjiling
P. Creswell	1920	Darjiling
C.M. Inglis	1925-1965	Jalpaiguri & Darjiling
A. Rahim	1927, 1928	Salt Lake, (Calcutta)
S.C. Law	1930	Darjiling

ii) Collections made by the following personnel of the Zoological Survey of India:

<i>Name of Collector</i>	<i>Period</i>	<i>Name of the District</i>
M.L. Roonwal	1939-1941	North 24-Parganas
B. Biswas	1950-1952	Puruliya & Darjiling
	1964-1969	South 24-Parganas
R.V. Sherard	1952	Darjiling
A.K. Mukherjee	1953-1982	Bankura, Birbhum, Darjiling, Hugli, Jalpaiguri, Medinipur, Puruliya, South 24-Parganas
H.N. Mitra	1955	Darjiling
B. Roy	1957 & 1960	Nadia & Puruliya
H. Khajuria	1958	Darjiling
R.L. Fernandez	1958	Darjiling
V.G. Gogate	1963 & 1967	South 24-Parganas
S.S. Saha	1964 & 1966	South 24-Parganas & Nadia
D.K. Ghosal	1966 & 1967	Haora & South 24-Parganas
A.K. Mondal	1969	South 24-Parganas
R.K. Ghosh	1974-1985	Darjiling & Jalpaiguri
P.K. Das	1979-1988	Bardhaman, Darjiling, Maldah, Murshidabad & North 24-Parganas
S. Chakraborty	1983 & 1986	Koch Behar & Jalpaiguri
A.K. Poddar	1985	Birbhum

In addition to the above, few stray collections were made by T.D. Soota (1974), S. Chatterjee (1974,1980,1983), B.C. Saha (1979), J.M. Dasgupta (1979) and R.L. Chowdhury (1980).

Total known families, genera and species and subspecies known from India are 78,405 and 2,110 respectively. Total known families from West Bengal is 60, genera 210, species and sub-species 540, of which 21 species and subspecies are recorded hereby for the first time from West Bengal, as marked with asterisk (*) in the 'systematic list' of birds from West Bengal. Ali and Ripley's (1968-1974) arrangement has been adopted in the present account.

SYSTEMATIC LIST OF BIRDS FROM WEST BENGAL
(As reported in this paper)

Order PODICIPEDIFORMES

Family PODICIPEDIDAE

1. *Podiceps cristatus* (Linnaeus)
2. *Podiceps ruficollis capensis* Salvadori

Order PELECANIFORMES

Family PHALACROCORACIDAE

3. *Phalacrocorax carbo* (Linnaeus)
4. *Phalacrocorax fuscicollis* Stephens
5. *Phalacrocorax niger* (Vieillot)
6. *Anhinga rufa melanogaster* Pennant

Order CICONIIFORMES

Family ARDEIDAE

7. *Ardea goliath* Cretzschmar
8. *Ardea cinerea* Linnacus
9. *Ardea purpurea manilensis* Meyen
10. *Ardea alba* Linnacus
11. *Ardeola striatus chloriceps* (Bonaparte)
12. *Ardeola grayii grayii* (Sykes)
13. *Bubulcus ibis coromandus* (Boddaert)
14. *Egretta intermedia intermedia* (Wagler)
15. *Egretta garzetta garzetta* (Linnaeus)
16. *Nycticorax nycticorax nycticorax* (Linnaeus)
17. *Ixobrychus cinnamomeus* (Gmelin)
18. *Ixobrychus sinensis* (Gmelin)
19. *Ixobrychus flavicollis flavicollis* (Latham)

Family CICONIIDAE

20. *Mycteria leucocephala* (Pennant)
21. *Anastomus oscitans* (Boddaert)
22. *Ciconia episcopus* (Boddaert)
23. *Leptoptilos dubius* (Gmelin)
24. *Leptoptilos javanicus* (Horsfield)

Family THRESKIORNITHIDAE

25. *Threskiornis aethiopica melanocephala* (Latham)
26. *Pseudibis papillosa* (Temminck)
27. *Platalea leucorodia major* Temminck & Schlegel

Order ANSERIFORMES

Family ANATIDAE

28. *Anser anser rubrirostris* Swinhoc

29. *Anser indicus* (Latham)
30. *Dendrocygna javanica* (Horsfield)
31. *Dendrocygna bicolor* (Vieillot)
32. *Tadorna ferruginea* (Pallas)
33. *Anas acuta* Linnaeus
34. *Anas crecca crecca* Linnaeus
35. *Anas poecilorhyncha poecilorhyncha* J.R. Forster
36. *Anas platyrhynchos* Linnaeus
37. *Anas strepera strepera* Linnaeus
38. *Anas penelope* Linnaeus
39. *Anas querquedula* Linnaeus
40. *Anas clypeata* Linnaeus
41. *Netta rufina* (Pallas)
42. *Aythya ferina* (Linnaeus)
43. *Aythya nyroca* (Cüldenstadt)
44. *Aythya fuligula* (Linnaeus)
45. *Nettapus coromandelianus coromandelianus* (Gmelin)
46. *Sarkidiornis melanotos* (Pennant)

Order FALCONIFORMES

Family ACCIPITRIDAE

47. *Elanus caeruleus vociferus* (Latham)
48. *Aviceda jerdoni jerdoni* (Blyth)
49. *Aviceda leuphotes leuphotes* (Dumont)
50. *Pernis ptilorhynchus ruficollis* Lesson
51. *Milvus migrans govinda* Sykes
52. *Haliastur indus indus* (Boddaert)
53. *Accipiter badius dussumieri* (Temminck)
54. *Accipiter trivirgatus indicus* (Hodgson)
55. *Accipiter nisus nisosimilis* (Tickell)
56. *Accipiter nisus melaschistos* Hume
57. *Accipiter virgatus affinis* Hodgson
58. *Buteo rufinus* (Cretzschmar)
59. *Buteo buteo japonicus* (Temminck & Schlegel)
60. *Butastur teesa* (Franklin)
61. *Spizaetus cirrhatus* (Gmelin)
62. *Hieraaetus fasciatus* (Vieillot)
63. *Hieraaetus pennatus* (Gmelin)
64. *Aquila heliaca heliaca* Savigny
65. *Aquila rapax* (Temminck)
66. *Aquila rapax nipalensis* Hodgson
67. *Aquila clanga* Pallas

68. *Ictinaetus malayensis* (Temminck)
69. *Haliaeetus leucoryphus* (Pallas)
70. *Ichthyophaga ichthyaetus ichthyaetus* (Horsfield)
71. *Sarcogyps calvus* (Scopoli)
72. *Gyps fulvus* (Hablizl)
73. *Gyps indicus* (Scopoli)
74. *Gyps bengalensis* (Gmelin)
75. *Neophron percnopterus* (Linnaeus)
76. *Circus cyaneus cyaneus* (Linnaeus)
77. *Circus macrourus* (S.G. Gmelin)
78. *Circus melanoleucos* (Pennant)
79. *Circus aeruginosus aeruginosus* (Linnaeus)
80. *Circus aeruginosus spilonotus* Kaup
81. *Circaetus gallicus* (Gmelin)
82. *Spilornis cheela melanotis* (Jerdon)
83. *Pandion haliaetus haliaetus* (Linnaeus)

Family FALCONIDAE

84. *Microhierax caerulescens caerulescens* (Linnaeus)
85. *Falco peregrinus* Tunstall
86. *Falco subbuteo* Linnaeus
87. *Falco chicquera chicquera* Daudin
88. *Falco naumanni* Fleischer
89. *Falco tinnunculus* Linnaeus

Order GALLIFORMES

Family PHASIANIDAE

90. *Francolinus francolinus* (Linnaeus)
91. *Francolinus pondicerianus* (Gmelin)
92. *Coturnix coromandelica* (Gmelin)
93. *Perdica asiatica asiatica* (Latham)
94. *Arborophila rufogularis rufogularis* (Blyth)
95. *Ithaginis cruentus affinis* Beebe
96. *Lophurus leucomelana melanota* (Hutton)
97. *Gallus gallus murghi* Robinson & Kloss
98. *Pavo cristatus* Linnaeus

Order GRUIFORMES

Family TURNICIDAE

99. *Turnix tanki* Blyth
100. *Turnix suscitator bengalensis* Blyth

Family RALLIDAE

101. *Rallus aquaticus indicus* Blyth

- 102. *Porzana fusca fusca* (Linnaeus)
- 103. *Porzana pusilla pusilla* (Pallas)
- 104. *Amaurornis phoenicurus chinensis* (Boddaert)
- 105. *Gallicrex cinerea* (Gmelin)
- 106. *Gallinula chloropus indica* Blyth
- 107. *Porphyrio porphyrio poliocephalus* (Latham)
- 108. *Fulica atra atra* Linnaeus

Order CHARADRIIFORMES

Family JACANIDAE

- 109. *Hydrophasianus chirurgus* (Scopoli)
- 110. *Metopidius indicus* (Latham)

Family CHARADRIIDAE

Subfamily CHARADRIINAE

- 111. *Vanellus cinereus* (Blyth)
- 112. *Vanellus indicus indicus* (Boddaert)
- 113. *Vanellus spinosus duvaucelii* (Lesson)
- 114. *Vanellus malabaricus* (Boddaert)
- 115. *Pluvialis squatarola* (Linnaeus)
- 116. *Pluvialis dominica fulva* (Gmelin)
- 117. *Charadrius leschenaultii* Lesson
- 118. *Charadrius dubius curonicus* Gmelin
- 119. *Charadrius dubius jerdoni* (Legge)
- 120. *Charadrius alexandrinus* Linnaeus
- 121. *Charadrius placidus* J.E. Gray
- 122. *Charadrius mongolus atrifrons* Wagler

Subfamily SCOLOPACINAE

- 123. *Numenius phaeopus phaeopus* (Linnaeus)
- 124. *Numenius phaeopus variegatus* (Scopoli)
- 125. *Numenius arquata arquata* (Linnaeus)
- 126. *Tringa erythropus* (Pallas)
- 127. *Tringa totanus totanus* (Linnaeus)
- 128. *Tringa stagnatilis* (Bechstein)
- 129. *Tringa nebularia* (Gunner)
- 130. *Tringa ochropus* Linnaeus
- 131. *Tringa glareola* Linnaeus
- 132. *Tringa terek* (Latham)
- 133. *Tringa hypoleucos* Linnaeus
- 134. *Arenaria interpres interpres* (Linnaeus)
- 135. *Gallinago solitaria solitaria* Hodgson
- 136. *Gallinago nemoricola* Hodgson

137. *Gallinago stenura* (Bonaparte)
 138. *Gallinago gallinago gallinago* (Linnaeus)
 139. *Gallinago minima* (Brünnick)
 140. *Scolopax rusticola rusticola* Linnaeus
 141. *Calidris canutus* (Linnaeus)
 142. *Calidris tenuirostris* (Horsfield)
 143. *Calidris ruficollis* (Pallas)
 144. *Calidris minuta* (Leisler)
 145. *Calidris temminckii* (Leisler)
 146. *Calidris subminutus* (Middendorff)
 147. *Calidris testacea* (Pallas)
 148. *Limicola falcinellus sibirica* Dresser
 149. *Philomachus pugnax* (Linnaeus)
- Family ROSTRATULIDAE
150. *Rostratula benghalensis benghalensis* (Linnaeus)
- Family RECURVIROSTRIDAE
151. *Himantopus himantopus himantopus* (Linnaeus)
- Family BURHINIDAE
152. *Burhinus oedicnemus* (Linnaeus)
- Family GLAREOLIDAE
153. *Cursorius coromandelicus* (Gmelin)
 154. *Glareola pratincola maldivarum* J.R. Forster
 155. *Glareola lactea* Temminck
- Family LARIDAE
156. *Larus ichthyaetus* Pallas
 157. *Larus brunnicephalus* Jerdon
 158. *Larus ridibundus ridibundus* Linnaeus
 159. *Chlidonias hybrida indicus* (Stephens)
 160. *Chlidonias leucopterus* (Temminck)
 161. *Gelochelidon nilotica affinis* (Horsfield)
 162. *Sterna aurantia* J.E. Gray
 163. *Sterna hirundo tibetana* Saunders
 164. *Sterna acuticauda* J.E. Gray
 165. *Sterna albifrons sinensis* Gmelin
 166. *Sterna bergii velox* Cretzschmar
 167. *Sterna bengalensis bengalensis* Lesson
- Order COLUMBIFORMES
- Family COLUMBIDAE
168. *Treron sphenura sphenura* (Vigors)
 169. *Treron pompadora phayrei* (Blyth)

- 170. *Treron bicincta* (Jerdon)
- 171. *Treron phoenicoptera phoenicoptera* (Latham)
- 172. *Ducula aenea sylvatica* (Tickell)
- 173. *Columba livia intermedia* Strickland
- 174. *Macropygia unchall tusalia* (Blyth)
- 175. *Streptopelia decaocto decaocto* (Frivaldszky)
- 176. *Streptopelia tranquebarica humilis* (Temminck)
- 177. *Streptopelia chinensis suratensis* (Gmelin)
- 178. *Streptopelia senegalensis cambayensis* (Gmelin)
- 179. *Chalcophaps indica indica* (Linnaeus)

Order PSITTACIFORMES

Family PSITTACIDAE

- 180. *Psittacula eupatria* (Linnaeus)
- 181. *Psittacula krameri borealis* (Neumann)
- 182. *Psittacula alexandri fasciata* (P.L.S. Muller)
- 183. *Psittacula cyanocephala bengalensis* (Forster)

Family CUCULIDAE

- 184. *Clamator coromandus* (Linnaeus)
- 185. *Clamator jacobinus serratus* (Sparman)
- 186. *Clamator jacobinus jacobinus* (Boddaert)
- 187. *Cuculus varius varius* Vahl
- 188. *Cuculus micropterus* Gould
- 189. *Cuculus canorus canorus* Linnaeus
- 190. *Cuculus saturatus saturatus* Blyth
- 191. *Cacomantis sonneratii* (Latham)
- 192. *Cacomantis merulinus querulus* Heine
- 193. *Eudynamys scolopacea scolopacea* (Linnaeus)
- 194. *Rhopodytes tristis tristis* (Lesson)
- 195. *Taccocua leschenaultii sirkee* (J.E.Gray)
- 196. *Centropus sinensis sinensis* (Stephens)
- 197. *Centropus sinensis intermedius* (Hume)

Order STRIGIFORMES

Family STRIGIDAE

Subfamily TYTONINAE

- 198. *Tyto alba stertens* Hartert

Subfamily Striginae
- 199. *Otus spilocephalus spilocephalus* (Blyth)
- 200. *Otus scops sunia* (Hodgson)
- 201. *Otus bakkamoena marathae* Ticehurst
- 202. *Otus bakkamoena lettia* (Hodgson)

- 203. *Bubo bubo bengalensis* (Franklin)
- 204. *Bubo nipalensis nipalensis* Hodgson
- 205. *Bubo zeylonensis leschenault* (Temminck)
- 206. *Bubo flavipes* (Hodgson)
- 207. *Glaucidium brodiei brodiei* (Burton)
- 208. *Glaucidium radiatum radiatum* (Tickell)
- 209. *Glaucidium cuculoides cuculoides* (Vigors)
- 210. *Glaucidium cuculoides rufescens* Baker
- 211. *Ninox scutulata lugubris* (Tickell)
- 212. *Athene brama indica* (Franklin)
- 213. *Strix leptogrammica newarensis* (Hodgson)
- 214. *Asio flammeus flammeus* (Pontoppidan)

Order CAPRIMULGIFORMES

Family CAPRIMULGIDAE.

- 215. *Caprimulgus indicus indicus* Latham
- 216. *Caprimulgus macrurus albonotatus* Tickell
- 217. *Caprimulgus asiaticus* Latham
- 218. *Caprimulgus affinis monticola* Franklin

Order APODIFORMES

Family APODIDAE

Subfamily APODINAE

- 219. *Collocalia unicolor* (Jerdon)
- 220. *Apus pacificus leuconyx* (Blyth)
- 221. *Apus affinis affinis* (J.E.Gray)
- 222. *Cypsiurus parvus batasiensis* (J.E. Gray)

Subfamily HEMIPROCNINAE

- 223. *Hemiprocne longipennis* (Rafinesque)

Order CORACIIFORMES

Family ALCEDINIDAE

- 224. *Ceryle rudis leucomelanura* Reichenbach
- 225. *Alcedo hercules* Laubmann
- 226. *Alcedo atthis bengalensis* Gmelin
- 227. *Pelargopsis amauroptera* (Pearson)
- 228. *Pelargopsis capensis capensis* (Linnaeus)
- 229. *Halcyon coromanda coromanda* (Latham)
- 230. *Halcyon smyrnensis fusca* (Boddaert)
- 231. *Halcyon smyrnensis perpulchra* Madarasz
- 232. *Halcyon pileata* (Boddaert)
- 233. *Halcyon chloris humii* Sharpe

Family MEROPIDAE

- 234. *Merops leschenaulti leschenaulti* Vieillot

235. *Merops philippinus philippinus* Linnaeus
 236. *Merops orientalis orientalis* Latham
 237. *Nyctornis athertoni athertoni* (Jardine & Selby)
 Family CORACIIDAE
 238. *Coracias benghalensis benghalensis* (Linnaeus)
 Family UPUPIDAE
 239. *Upupa epops epops* Linnaeus
 240. *Upupa epops ceylonensis* Reichenbach
 Family BUCEROTIDAE
 241. *Tockus birostris* (Scopoli)
 242. *Anthracoseros malabaricus malabaricus* (Gmelin)
 Order PICIFORMES
 Family CAPITONIDAE
 243. *Megalaima zeylanica caniceps* (Frankilin)
 244. *Megalaima lineata hodgsoni* Bonaparte
 245. *Megalaima franklinii franklinii* (Blyth)
 246. *Megalaima asiatica asiatica* (Latham)
 247. *Megalaima haemacephala indica* (Latham)
 Family INDICATORIDAE
 248. *Indicator xanthonotus xanthonotus* Blyth
 Family PICIDAE
 Subfamily JYNGINAE
 249. *Jynx torquilla torquilla* Linnaeus
 250. *Jynx torquilla chinensis* Hesse
 Subfamily PICINAE
 251. *Micropternus brachyurus phaiiceps* Blyth
 252. *Picus myrmecophoneus* Stresemann
 253. *Picus flavinucha flavinucha* Gould
 254. *Picus chlorolophus chlorolophus* Vieillot
 255. *Dinopium benghalense benghalense* (Linnaeus)
 256. *Picoides darjellensis darjellensis* (Blyth)
 257. *Picoides cathpharius cathpharius* (Blyth)
 258. *Picoides macei* (Vieillot)
 259. *Picoides mahrattensis mahrattensis* (Latham)
 260. *Picoides canicapillus semicoronatus* (Malherbe)
 261. *Picoides nanus* (Vigors)
 262. *Hemicircus canente* (Lesson)
 263. *Chrysocolaptes lucidus guttacristatus* (Tickell)

Order PASSERIFORMES

Family EURYLAIMIDAE

264. *Psarisomus dalhousiae dalhousiae* (Jameson)

Family PITTIDAE

265. *Pitta brachyura brachyura* (Linnaeus)

Family ALAUDIDAE

266. *Mirafra javanica cantillans* Blyth
 267. *Mirafra assamica assamica* Horsfield
 268. *Mirafra erythroptera erythroptera* Blyth
 269. *Eremopterix grisea* (Scopoli)
 270. *Ammomanes phoenicurus phoenicurus* (Franklin)
 271. *Calandrella cinerea* (Gmelin)
 272. *Calandrella raytal* (Blyth)
 273. *Calerida cristata chendoola* (Franklin)
 274. *Alauda gulgula* Franklin

Family HIRUNDINIDAE

275. *Riparia riparia diluta* (Sharpe & Wyatt)
 276. *Riparia paludicola chinensis* (J.E. Gray)
 277. *Hirundo concolor* Sykes
 278. *Hirundo rustica rustica* Linnaeus
 279. *Hirundo rustica gutturalis* Scopoli
 280. *Hirundo rustica tyleri* Jerdon
 281. *Hirundo smithii* Leach
 282. *Hirundo fluvicola* Blyth
 283. *Hirundo daurica erythropygia* Sykes

Family LANIIDAE

284. *Lanius vittatus* Valenciennes
 285. *Lanius tephronotus tephronotus* (Vigors)
 286. *Lanius schach tricolor* (Hodgson)
 287. *Lanius cristatus cristatus* Linnaeus

Family ORIOLIDAE

288. *Oriolus oriolus kundoo* Sykes
 289. *Oriolus xanthornus xanthornus* (Linnaeus)

Family DICRURIDAE

290. *Dicrurus adsimilis albirictus* (Hodgson)
 291. *Dicrurus adsimilis macrocercus* Vieillot
 292. *Dicrurus leucophaeus longicaudatus* Hay
 293. *Dicrurus leucophaeus hopwoodi* Baker
 294. *Dicrurus caerulescens caerulescens* (Linnaeus)

295. *Dicrurus annectans* (Hodgson)
 296. *Dicrurus aeneus aeneus* Vieillot
 297. *Dicrurus remifer tectirostris* (Hodgson)
 298. *Dicrurus hottentottus hottentottus* (Linnaeus)
 299. *Dicrurus paradiseus grandis* (Gould)

Family ARTAMIDAE

300. *Artamus fuscus* Vieillot

Family STURNIDAE

301. *Sturnus malabaricus malabaricus* (Gmelin)
 302. *Sturnus pagodarum* (Gmelin)
 303. *Sturnus roseus* (Linnaeus)
 304. *Sturnus contra contra* Linnaeus
 305. *Acridotheres tristis tristis* (Linnaeus)
 306. *Acridotheres ginginianus* (Latham)
 307. *Acridotheres fuscus fuscus* (Wagler)
 308. *Gracula religiosa intermedia* A. Hay

Family CORVIDAE

309. *Cissa chinensis chinensis* (Boddaert)
 310. *Cissa flavirostris flavirostris* (Blyth)
 311. *Dendrocitta vagabunda vagabunda* (Latham)
 312. *Dendrocitta frontalis frontalis* Horsfield
 313. *Dendrocitta formosae himalayana* Jerdon
 314. *Corvus splendens splendens* Vieillot
 315. *Corvus macrorhynchos levaillanti* Lesson

Family CAMPEPHAGIDAE

316. *Hemipus picatus* (Sykes)
 317. *Tephrodornis virgatus pelvica* (Hodgson)
 318. *Tephrodornis pondicerianus pondicerianus* (Gmelin)
 319. *Coracina novaehollandiae macei* (Lesson)
 320. *Coracina novaehollandiae nipalensis* (Hodgson)
 321. *Coracina melaschistos melaschistos* (Hodgson)
 322. *Coracina melanoptera sykesi* (Strickland)
 323. *Pericrocotus flammeus speciosus* (Latham)
 324. *Pericrocotus brevirostris brevirostris* (Vigors)
 325. *Pericrocotus solaris solaris* Blyth
 326. *Pericrocotus roseus roseus* (Vieillot)
 327. *Pericrocotus cinnamomeus vividus* Baker

Family IRENIDAE

328. *Aegithina tiphia tiphia* (Linnaeus)
 329. *Aegithina tiphia humei* Baker

- 330. *Chloropsis aurifrons aurifrons* (Temminck)
- 331. *Chloropsis hardwickii hardwickii* Jardine & Selby
- 332. *Chloropsis cochinchinensis jerdoni* (Blyth)

Family PYCNONOTIDAE

- 333. *Pycnonotus melanicterus flaviventris* (Tickell)
- 334. *Pycnonotus jocosus emeria* (Linnaeus)
- 335. *Pycnonotus jocosus monticola* (McClelland)
- 336. *Pycnonotus leucogenys leucogenys* (Gray)
- 337. *Pycnonotus cafer cafer* (Linnaeus)
- 338. *Pycnonotus cafer bengalensis* Blyth
- 339. *Pycnonotus striatus striatus* (Blyth)
- 340. *Criniger flaveolus flaveolus* (Gould)
- 341. *Hypsipetes madagascariensis psaroides* Vigors

Family MUSCICAPIDAE

Subfamily TIMALIINAE

- 342. *Pellorneum ruficeps mandellii* Blanford
- 343. *Trichastoma abbotti abbotti* (Blyth)
- 344. *Pomatorhinus schisticeps schisticeps* Hodgson
- 345. *Pomatorhinus erythrogenys haringtoni* Baker
- 346. *Pomatorhinus ferruginosus ferruginosus* Blyth
- 347. *Spelaeornis caudatus* (Blyth)
- 348. *Stachyris ruficeps ruficeps* Blyth
- 349. *Dumetia hyperythra* (Franklin)
- 350. *Macronous gularis rubricapilla* (Tickell)
- 351. *Chrysomma sinense sinense* (Gmelin)
- 352. *Turdoides caudatus caudatus* (Dumont)
- 353. *Turdoides earlei earlei* (Blyth)
- 354. *Turdoides striatus striatus* (Dumont)
- 355. *Garrulax albogularis albogularis* (Gould)
- 356. *Garrulax pectoralis melanotis* Blyth
- 357. *Garrulax striatus sikkimensis* (Ticehurst)
- 358. *Garrulax leucolophus leucolophus* (Hardwicke)
- 359. *Garrulax ocellatus ocellatus* (Vigors)
- 360. *Garrulax caerulatus caerulatus* (Hodgson)
- 361. *Garrulax ruficollis* (Jardine & Selby)
- 362. *Garrulax erythrocephalus nigrimentum* (Oates)
- 363. *Leiothrix argentauris argentauris* (Hodgson)
- 364. *Leiothrix lutea calipyga* (Hodgson)
- 365. *Pteruthius flaviscapis validirostris* Koelz
- 366. *Gampsorhynchus rufulus rufulus* Blyth
- 367. *Actinodura nipalensis nipalensis* (Hodgson)

368. *Actinodura nipalensis vinctura* Ripley
 369. *Minla strigula strigula* (Hodgson)
 370. *Minla cyanouroptera cyanouroptera* (Hodgson)
 371. *Yuhina bakeri* Rothschild
 372. *Yuhina flavicollis flavicollis* Hodgson
 373. *Alcippe chrysotis chrysotis* (Blyth)
 374. *Alcippe castaneiceps castaneiceps* (Hodgson)
 375. *Alcippe vinipectus vinipectus* (Hodgson)
 376. *Alcippe vinipectus chumbiensis* (Kinnear)
 377. *Heterophasia capistrata capistrata* (Vigors)
 378. *Heterophasia capistrata bayleyi* (Kinnear)

Subfamily MUSCICAPINAE

379. *Muscicapa latirostris* Raffles
 380. *Muscicapa muttui* (Layard)
 381. *Muscicapa ruficauda* Swainson
 382. *Muscicapa parva parva* Bechstein
 383. *Muscicapa parva albicilla* Pallas
 384. *Muscicapa westermanni collini* Rothschild
 385. *Muscicapa superciliaris* Jerdon
 386. *Muscicapa sapphira* (Blyth)
 387. *Muscicapa grandis grandis* (Blyth)
 388. *Muscicapa sundara sundara* (Hodgson)
 389. *Muscicapa pallipes* Jerdon
 390. *Muscicapa unicolor unicolor* (Blyth)
 391. *Muscicapa rubeculoides rubeculoides* (Vigors)
 392. *Muscicapa tickelliae* (Blyth)
 393. *Muscicapa thalassina thalassina* Swainson
 394. *Culicicapa ceylonensis calochrysea* Oberholser
 395. *Rhipidura hypoxantha* Blyth
 396. *Rhipidura aureola* Lesson
 397. *Rhipidura albicollis* (Vieillot)

Subfamily MONARCHINAE

398. *Terpsiphone paradisi* (Linnaeus)
 399. *Hypothymis azurea styani* (Hartlaub)
 400. *Pachycephala grisola* (Blyth)
 401. *Bradypterus thoracicus thoracicus* (Blyth)
 402. *Cisticola exilis erythrocephala* Blyth
 403. *Cisticola exilis tyleri* Jerdon
 404. *Cisticola juncidis cursitans* (Franklin)
 405. *Prinia hodgsonii hodgsonii* Blyth
 406. *Prinia subflava inornata* Sykes

- 407. *Prinia subflava fusca* (Hodgson)
- 408. *Prinia socialis* Sykes
- 409. *Prinia sylvatica gangetica* (Blyth)
- 410. *Prinia flaviventris flaviventris* (Delessert)
- 411. *Orthotomus sutorius patia* Hodgson
- 412. *Locustella certhiola rubescens* Blyth
- 413. *Chaetornis striatus* (Jerdon)
- 414. *Megalurus palustris toklao* (Blyth)
- 415. *Acrocephalus aedon aedon* (Pallas)
- 416. *Acrocephalus stentoreus brunnescens* (Jerdon)
- 417. *Acrocephalus orientalis* (Temminck & Schlegel)
- 418. *Acrocephalus bistrigiceps bistrigiceps* Swinhoe
- 419. *Acrocephalus dumetorum* Blyth
- 420. *Acrocephalus agricola agricola* (Jerdon)
- 421. *Hippolais caligata* (Lichtenstein)
- 422. *Phylloscopus collybita tristis* Blyth
- 423. *Phylloscopus affinis affinis* (Tickell)
- 424. *Phylloscopus affinis arcanus* Ripley
- 425. *Phylloscopus griseolus* Blyth
- 426. *Phylloscopus fuscatus fuscatus* (Blyth)
- 427. *Phylloscopus inornatus humei* (Brooks)
- 428. *Phylloscopus inornatus mandellii* (Brooks)
- 429. *Phylloscopus inornatus inornatus* (Blyth)
- 430. *Phylloscopus magnirostris* Blyth
- 431. *Phylloscopus trochiloides viridanus* Blyth
- 432. *Phylloscopus trochiloides trochiloides* (Sundevall)
- 433. *Phylloscopus trochiloides nitidus* Blyth
- 434. *Phylloscopus occipitalis* (Blyth)
- 435. *Phylloscopus reguloides* (Blyth)
- 436. *Seicercus affinis* (Hodgson)
- 437. *Seicercus burkii* (Burton)
- 438. *Seicercus poliogenys* (Blyth)
- 439. *Seicercus castaniceps* (Hodgson)
- 440. *Abroscopus hodgsoni* (Moore)

Subfamily TURDINAE

- 441. *Brachypteryx leucophrys nipalensis* Hodgson
- 442. *Erithacus calliope* (Pallas)
- 443. *Erithacus svecicus svecicus* (Linnaeus)
- 444. *Erithacus pectoralis* (Gould)
- 445. *Erithacus cyanurus rufilatus* (Hodgson)

446. *Erithacus indicus indicus* (Vieillot)
 447. *Copsychus saularis saularis* (Linnaeus)
 448. *Phoenicurus ochruros* (S. G. Gmelin)
 449. *Phoenicurus hodgsoni* (Moore)
 450. *Phoenicurus frontalis* (Vigors)
 451. *Phoenicurus schisticeps* (Gray)
 452. *Cinclidium frontale frontale* Blyth
 453. *Saxicola torquata indica* (Blyth)
 454. *Saxicola ferrea* Gray
 455. *Chaimarrornis leucocephalus* (Vigors)
 456. *Saxicoloides fulicata erythrura* (Lesson)
 457. *Monticola cinclorhynchus* (Vigors)
 458. *Monticola rufiventris* (Jardine & Selby)
 459. *Monticola solitarius pandoo* (Sykes)
 460. *Myiophonus caeruleus temminckii* (Vigors)
 461. *Zoothera citrina* (Latham)
 462. *Zoothera mollissima mollissima* (Blyth)
 463. *Zoothera dauma* (Latham)
 464. *Zoothera monticola monticola* Vigors
 465. *Turdus unicolor* Tickell
 466. *Turdus bouboul* (Latham)
 467. *Turdus ruficollis atrogularis* Jarocki
 468. *Turdus naumanni eunomus* Temminck

Family TROGLODYTIDAE

469. *Troglodytes troglodytes nipalensis* Blyth

Family PRUNELLIDAE

470. *Prunella himalayana* (Blyth)
 471. *Prunella immaculata* (Hodgson)

Family PARIDAE

Subfamily PARINAE

472. *Parus major nipalensis* Hodgson
 473. *Parus monticolus monticolus* Vigors
 474. *Parus ater aemodius* Hodgson
 475. *Parus rubdiventris beavani* (Jerdon)
 476. *Parus dichrous dichrous* Hodgson
 477. *Parus spilonotus spilonotus* Bonaparte
 478. *Sylviparus modestus modestus* Burton

Subfamily AEGITHALINAE

479. *Aegithalos concinnus iredalei* (Baker)
 480. *Aegithalos concinnus rubricapillus* (Ticehurst)

Family SITTIDAE

Subfamily SITTINAE

481. *Sitta castanea cinnamovertris* Blyth
 482. *Sitta himalayensis himalayensis* Jardine & Selby
 483. *Sitta formosa* Blyth
 484. *Sitta frontalis frontalis* Swainson

Family CERTHIIDAE

485. *Certhia discolor discolor* Blyth

Family MOTACILLIDAE

486. *Anthus hodgsoni hodgsoni* Richmond
 487. *Anthus hodgsoni yunnanensis* Uchida & Kuroda
 488. *Anthus trivialis trivialis* (Linnaeus)
 489. *Anthus novaeseelandiae richardi* Vieillot
 490. *Anthus novaeseelandiae rufulus* Vieillot
 491. *Anthus campestris* (Linnaeus)
 492. *Anthus roseatus* Blyth
 493. *Anthus similis similis* Jerdon
 494. *Motacilla indica* Gmelin
 495. *Motacilla flava thunbergi* Billberg
 496. *Motacilla flava beema* (Sykes)
 497. *Motacilla citreola citreola* (Pallas)
 499. *Motacilla citreola calcarata* Hodgson
 499. *Motacilla cinerea cinerea* Tunstall
 500. *Motacilla alba dukhunensis* Sykes
 501. *Motacilla alba personata* Gould
 502. *Motacilla alba leucopsis* Gould
 503. *Motacilla alba baicalensis* Swinhoe
 504. *Motacilla maderaspatensis* Gmelin

Family DICAERIDAE

505. *Dicaeum agile agile* (Tickell)
 506. *Dicaeum erythrorhynchos erythrorhynchos* (Latham)

Family NECTARINIIDAE

507. *Nectarinia zeylonica sola* (Vieillot)
 508. *Nectarinia asiatica asiatica* (Latham)

509. *Aethopyga nipalensis nipalensis* (Hodgson)
 510. *Aethopyga saturata saturata* (Hodgson)
 511. *Aethopyga siparaja seheriae* (Tickell)
 512. *Aethopyga ignicauda ignicauda* (Hodgson)
 513. *Arachnothera magna magna* (Hodgson)
- Family ZOSTEROPIDAE
514. *Zosterops palpebrosa palpebrosa* (Temminck)
- Family PLOCEIDAE
 Subfamily PASSERINAE
515. *Passer domesticus indicus* Jardine & Selby
 516. *Passer montanus malaccensis* Dubois
 517. *Petronia xanthocollis xanthocollis* (Burton)
- Subfamily PLOCEINAE
518. *Ploceus philippinus philippinus* (Linnaeus)
 519. *Ploceus philippinus burmanicus* Ticehurst
 520. *Ploceus megarhynchus megarhynchus* Hume
 521. *Ploceus megarhynchus salimalii* Abdulali
 522. *Ploceus benghalensis* (Linnaeus)
 523. *Ploceus manyar peguensis* Baker
- Subfamily ESTRILDINAE
524. *Estrilda amandava amandava* (Linnaeus)
 525. *Lonchura malabarica malabarica* (Linnaeus)
 526. *Lonchura punctulata punctulata* (Linnaeus)
 527. *Lonchura malacca rubroniger* (Hodgson)
 528. *Lonchura malacca atricapilla* (Vieillot)
- Family FRINGILLIDAE
 Subfamily CARDUELINAE
529. *Coccothraustes affinis* (Blyth)
 530. *Leucosticte nemoricola nemoricola* (Hodgson)
 531. *Carpodacus erythrurus roseatus* (Blyth)
 532. *Carpodacus nipalensis nipalensis* (Hodgson)
 533. *Carpodacus rhodochrous* (Vigors)
 534. *Carpodacus rhodopeplus rhodopeplus* (Vigors)
 535. *Carpodacus thura thura* Bonaparte & Schlegel
 536. *Pyrrhula erythrocephala* Vigors
- Family EMBERIZIDAE
537. *Emberiza rutila* Pallas
 538. *Emberiza pusilla* Pallas
 539. *Melophus lathamii* (Gray)

SYSTEMATIC ACCOUNT

Order PODICIPEDIFORMES

Family PODICIPEDIDAE

Genus *Podiceps* Latham, 1787

1. *Podiceps cristatus* (Linnaeus)

1758. *Colymbus cristatus* Linnaeus, *Syst. Nat.*, ed. 10. 1: 135 (Sweden).

1982. Ripley, P.2.

Common name : Great Crested Grebe (English).

Material examined : Nil.

Diagnostic characters : Two upstanding, backwardly directed blackish ear-tufts above head. Aquatic bird of dark grayish brown above and silky white below, slender longish neck and pointed bill, without tail. Hind toe small and vertically low.

Distribution : India : West Bengal (Bardhaman district) : Assam, Bihar, Gujarat, Manipur, Orissa and Rajasthan.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

2. *Podiceps ruficollis capensis* Salvadori

1884. *Podiceps capensis* Salvadori, *Ann. Mus. Civ. Genova* (2), 1 : 252 (Shoa, Africa).

1968. Ali and Ripley, Vol.1, P.6.

Common name : Little Grebe or Dabchick (English), Duburi (Bengali) and Pandubi (Hindi).

Material examined : Birbhum district : 1 ♂ and 1 unsexed, Chandrapur, coll. A.K. Mukherjee, 6.i.1981. North-24 Parganas district : 3 ♂ and 5 ♀, Salt Lake, coll. B. Biswas, 14.viii. 1965, 1 and 14.v. 1966, 23.xi. 1966, 12.i. 1967 and 6.ix. 1967.

Diagnostic characters : A small tailless aquatic bird with short pointed bill. Legs placed backwardly for swimming and diving. Crown of head dark brown, sides of head, throat and neck chestnut.

Measurements :

	Wing	Tail	Bill
4♂	97-100(98)	—	25-27(26)
4♀	98-103(100)	—	25-27(26)

Distribution : India : West Bengal (Birbhum and North-24 Parganas districts): found throughout the Indian Union except Andaman & Nicobar Islands. Bangladesh, Bhutan, Madagascar, Middle East, Nepal, Northern Africa, Pakistan, Sri Lanka and SE. Asia.

Order PELICANIFORMES

Family PHALACROCORACIDAE

Key to the genera of the family PHALACROCORACIDAE

Neck and body long, rather spindle-shaped, bill laterally compressed.....*Phalacrocorax*

Neck very slender with a bend at the 8th & 9th vertebrae, bill slender, straight, very sharp-pointed..

.....*Anhinga*

Genus *Phalacrocorax* Brisson, 1760

3. *Phalacrocorax carbo* (Linnaeus)

1801. *Pelecanus sinensis* Shaw, *Nat. Misc.*, 13: pl. 529, text (China)

1982. Ripley, p.10

Common name : Large Cormorant (English), Pan-kawri (Bengali) and Pan-kowwa (Hindi).

Material examined : Nil.

Diagnostic characters : A black duck-like water bird with slender bill, hooked at tip. Tail longish, stiff. Facial skin and throat white, gular pouch bright yellow.

Distribution : India : West Bengal (Bardhaman district) : Assam, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, and Uttar Pradesh. Sri Lanka.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

4. *Phalacrocorax fuscicollis* Stephens

1826. *Phalacrocorax fuscicollis* Stephens, *In Shaw's Gen. Zool.*, 13(1) : 91 (Bengal).

1982. Ripley, p.10

Common name : Indian Shag (English), Pan-kawri (Bengali) and Pan-kowwa (Hindi).

Material examined : Nil.

Diagnostic characters : Glistening bronze-black water bird with white tuft of feathers on each side of neck behind ear coverts. Head with few white specks. Bill dark brown and legs and feet black.

Distribution : India : West Bengal (Bardhaman district) : Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

5. *Phalacrocorax niger* (Vieillot)

1817. *Hydrocorax niger* Vieillot, *Nouv. Dict. Hist. Nat.*, 8: 88 (East Indies = Bengal).

1968 Ali and Ripley, vol.1, p.41

Common name : Little Cormorant (English), Pan kawri (Bengali) and Pan kowwa (Hindi).

Material examined : Calcutta district : 1♀, Chingrighata, coll. A. Rahim, 28.i. 1928; 1♂, Dhakuria, coll. P. Chakraborty, 7.xii. 1965. North 24-Parganas district : 3♂ and 2♀, Nalbani, coll. S.S. Saha, 28.ii. 1966, 9 and 31.viii. 1966 and 25.vi. 1969; 1♂, Palta, coll. M.L. Roonwal, 30.v. 1936. Puruliya district: 1♂, Puruliya-Dhanbad Road, coll. not known, 12.x. 1951. South 24-Parganas district: 2♀, Shambhunagar, coll. A.K. Mukherjee, 29.vii. 1955 and 1.x. 1955; 1♂ and 1♀, Sajanakhali, coll. A.K. Mukherjee, 10 and 17. iii. 1957.

Diagnostic characters : Black bird with a bluish or greenish sheen. A short crest on occiput and neck. Bill Stouter. Forehead domed shaped, tail longer.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4♂	190-205(199)	130-137(134)	41-42(42)
4♀	196,200	121 +	42(2)

Distribution : India : West Bengal (Calcutta, North 24-Parganas, Puruliya, South 24-Parganas) : found throughout the Indian mainland (absent in the Himalayas). Pakistan.

Genus *Anhinga* Brisson, 1760

6. *Anhinga rufa melanogaster* Pennant

1769. *Anhinga melanogaster* Pennant, *Indian Zool.* : 13, p.12 (Sri Lanka and Java).

1968. Ali and Ripley, vol. 1, p.43

Common name : Darter or Snake-bird (English), Goyar (Bengali) and Pandubi (Hindi).

Material examined : Calcutta district: 1♀, Dhakuria Lake, coll. P. Chakraborty, 7.xii. 1965.

Diagnostic characters : A black water bird with longer and slender snake like neck. Narrow head with straight and pointed bill. Tail long, stiff and fan shaped.

Measurements : 1♀ : Wing 226, tail 233, bill 88.

Distribution : India, West Bengal, (Calcutta district) : Throughout the Indian Union except Arunachal Pradesh, Manipur, Mizoram and Nagaland. Bangladesh, Pakistan, Burma, Old Indochina, Malaysia and Sulawesi.

Order CICONIIFORMES

Family ARDEIDAE

Key to the genera of family ARDEIDAE

1. Large sized, above 97 cm. *Ardea*
 Medium or small-sized, below 63 cm. 2
2. Plumage mainly varied coloured 3
 Plumage mainly dark slaty blue above..... *Ixobrychus*
3. Plumage mainly greenish or bluish black, with white and grey..... 4
 Plumage generally white and grey *Nycticorax*
4. Plumage generally greenish or bluish black *Butoroides*
 Plumage mainly white coloured 5
5. Head and neck brown or yellowish brown *Ardeola*
 Head and neck white throughout 6
6. Bill yellow *Bubulcus*
 Bill black..... *Egretta*

Genus *Ardea* Linnaeus, 17587. *Ardea goliath* Cretzschmar

1826. *Ardea goliath* Cretzschmar, In *Ruppell's Atlas, Vogel* : 39, pl. 26 (White Nib, Bahhar Abiad).

1968. Ali and Ripley, vol.1, p.53

Common name : Giant Heron (English).

Material examined : Nil.

Diagnostic characters : Crown and crest vinous chestnut, neck rufous cinnamon. Wings and tail, slaty grey. Breast with elongated plumes streaked white and slaty black. Underparts of wing chestnut. Legs and feet dark slaty black.

Distribution : India : West Bengal (South 24-Parganas district) : Madhya Pradesh. Pakistan, Bangladesh, Sri Lanka. Breeds in Islands of the African and Arabian Coast of the Red-sea and in Iraq.

Remarks : Observed this species in Sundarban area of South 24-Parganas district, West Bengal.

8. *Ardea cinerea* Linnaeus

1758. *Ardea cinerea* Linnaeus, *Syst. Nat.*, ed. 10. 1 : 143 (Europe, restricted to Sweden).

1982. Ripley, p.13

Common name : Grey Heron (English), Anjan (Bengali and Hindi).

Material examined : Nil.

Diagnostic characters : Ashy-grey with white crown and neck with a long black occipital crest below a prominent black dotted line down middle of foreneck. Leg and neck very long. Breast with elongated black-streaked white feathers. Abdominal feathers grayish white.

Distribution : India : West Bengal (Bardhaman district) : throughout the Indian Union. Pakistan, Nepal, Bangladesh, Burma, Thailand, Malaysia, Indochina, Siberia, China, Japan, Taiwan, Hainan, Europe and N. Africa to Asia minor.

Remarks : Gauntlett (1985) reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

9. *Ardea purpurea manilensis* Meyen

1834. *Ardea purpurea* var *manilensis* Meyen, *Nova Acta Acad. Caes. Leop. Carol.*, 16, suppl. : 102-103 (Philippines).

1968. Ali and Ripley, vol.1, p.57

Common name : Eastern Purple Heron (English), Lal kank (Bengali) and Lal anjan (Hindi).

Material examined : North 24-Parganas district : 1♂, and 1♀, Mahishbathan, coll. S.S. Saha, 20.vi. 1965, 14.viii. 1965 and 2.viii. 1966.

Diagnostic characters : Purplish blue or slaty bird with blackish wing and tail. Crown and crest slaty black, rest of head and neck ferruginous with boldly striped-black. Chin and throat white. Upper breast buffy-white with black and chestnut streaks. Abdomen slaty black and chestnut.

Measurements :

	Wing	Tail	Bill
2♂	375, 380	132(2)	150(2)
1♀	344	132	150

Distribution : India : West Bengal (North 24-Parganas) : Throughout the Indian sub-continent. Burma, Thailand, Indo-Chinese countries, China south of the Yangtze and Ryukyu Islands.

10. *Ardea alba* Linnaeus

1758. *Ardea alba* Linnaeus, *Syst. Nat.*, ed. 10, 1:144(in Europe = Sweden).

1982. Ripley, p.14.

Common name : Large Egret (English), Bada bak (Bengali) and Bada bagla (Hindi).

Material examined : Nil.

Diagnostic characters : Snow white marsh bird with blackish legs. Head with long slender neck and pointed black and yellow bill. In the breeding season a bunch of ornamental filamentous plumes develops on the back.

Distribution : India : West Bengal (Bardhaman district) : throughout the Indian Union. Pakistan, Nepal, Bangladesh, Sri Lanka, The Americas, Europe, Asia south to Australia and New Zealand.

Remarks : Gauntlett (1985) has recorded this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Ardeola* Boie, 1822.

11. *Ardeola striatus chloriceps* (Bonaparte)

1857. *Ardea chloriceps* 'Hodgs' = Bonaparte, *Consp. Gen. Av.*, 2 : 129 Nepal. (Restricted to Hitaura, Chisapani Garhi district, by Biswas, 1959, *Curr. Sci.*, 28 : 288).

1982. Ripley, Vol.1, p.14.

Common name : Little Green Heron (English), Kana bak or Kuro bak (Bengali) and Kancha bagla (Hindi).

Material examined : South 24-Parganas district : 1 unsexed, Baman Khali, Sagar Island, coll, D.K. Ghosal, 29 x. 1966.

Diagnostic characters : A slaty grey glossed with dark green and bronze green bird. Crown and long occipital crash glossy, greenish black is check white, head and neck grey. Chin and centre of throat white, under tail coverts white with blackish tips.

Measurements : 1 unsexed : Wing 164, tail 56, bill 61.

Distribution : India: West Bengal (South 24-Parganas district): throughout the Indian Sub-continent including Laccadive Islands. Burma, Thailand, Malaysia, Indochina, Indonesia, Philippines, Sunda Islands, Celebes (Sulawesi). Numerous other races occur in S. America, Africa, Indian Ocean islands, and eastern Asia south to Australia and S. Pacific islands.

12. *Ardeola grayii grayii* (Sykes)

1832. *Ardea Grayii* Sykes, *Proc. zool. Soc. Lond.* : 158 (Dukhun = Deccan, India).

1968. Ali and Ripley, vol.1, p.63.

Common name : Indian Pond Heron or Paddybird (English), Konch back (Bengali) and Bagla (Hindi).

Material examined : Medinipur district: 1 ♂, Joshpur, coll. A.K. Mukherjee, 16.x 1979. North 24-Parganas district: 2♂, 6♀ and 1 unsexed, Nalbani, coll. B. Biswas, 16, 23 and 30 v. 1965, 4. vii. 1965, 8.viii. 1965, 2.xii. 1965 and 2.xii. 1966.

Diagnostic characters : Earthy brown bird with head and neck dark brown streaked with yellowish buff. Chin and throat white, upper breast white streaked with brown. Rest of plumage white, including tail. In breeding, long recumbent white or buff occipital crest of lanceslate plumes.

Measurements :

	Wing	Tail	Bill
2♂	220, 223	78,80	78(2)
10♀	180-209(196)	68-88(72)	65-74(69)

Distribution : India: West Bengal (Medinipur and North 24-Parganas district): throughout the Indian Union. Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, and from Persian Gulf to Malayasia through Burma.

Genus *Bubulcus* Bonaparte, 1855

13. *Bubulcus ibis coromandus* (Boddaert)

1783. *Cancroma coromanda* Boddaert, *Table Pl. enlum.* : 54(Coromandel=Tamil Nadu, India).

1968. Ali and Ripley, vol.1, p.66.

Common name : Cattle Egret (English), Gaibak (Bengali) and Badami bagla (Hindi).

Material examined : Medinipur district: 1♂, Kankrajhar, coll. A.K.Mukherjee, 15.x. 1979. North 24-Parganas district: 1♀, Palta, coll. M.L. Roonwal, 6.x. 1939; 2♂ and 2♀, Nalbani, coll. B. Biswas, 2.xii. 1957, 11.vi. 1966; 3♂ and 3♀, Sambhunagar, coll. A.K. Mukherjee, 28 and 31. vii. 1955, 27.ix. 1955 and 27.xi. 1955.

Diagnostic characters : A snow white bird usually seen on grazing cattle. Bill yellow. Orbital and facial skin greenish yellow. Legs and feet black. In breeding, head, neck and back the golden buff feathers disintegrated and hairlike.

Measurements :

	Wing	Tail	Bill
5♂	231-254(245)	83-90(87)	70-75(72)
4♀	227-250(242)	83-90(87)	72-74(72)

Distribution : India: West Bengal (Medinipur and North 24-Parganas district) : Throughout Indian Union. Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Burma, Indo-Chinese countries, Malaysia, S.China, Korea, S. Japan, Taiwan, Hainan, Philippines, Sunda islands, Celebes and Ceram, S. America and U.S.A.

Genus *Egretta* Forster, 1817

14. *Egretta intermedia intermedia* (Wagler)

1829. *Ardea intermedia* Wagler, *Isis von Oken*, col. 659 (Java).

1968. Ali and Ripley, vol.1, p.71.

Common name : Smaller or Median Egret (English), Korche bak (Bengali) and Karchia bagla (Hindi).

Material examined : South 24-Parganas district: 1♂, Kamakhapur, coll. A.K. Mukherjee, 3.x. 1955.

Diagnostic characters : Plumage entirely white. Occipital crest absent. In breeding, on back as well as breast presence of decomposed filamentous plumes. Legs and feet black. Bill black; yellow at base (breeding).

Measurements : 1♂ : Wing 350, tail 140, bill 135.

Distribution : India: West Bengal(South 24-Parganas district): Found throughout the Indian Union. Bangladesh, Nepal, Burma, Thailand, Indo-Chinese countries, Malaysia, China, Japan, Greater Sunda Is. and the Philippines.

15. *Egretta garzetta garzetta* (Linnaeus)

1766. *Ardea Garzetta* Linnaeus, *Syst. Nat.*, ed. 12, 1 : 237 ('Oriente' = northeast Italy).

1968. Ali and Ripley, vol.1. p.72.

Common name : Little Egret (English), Chhota Korche bak (Bengali) and Karchia bagla (Hindi).

Material examined : North 24-Parganas district: 1♂, Palta Water Works, coll. M.L. Roonwal, 30.v. 1936. South 24-Parganas district: 2♂, Sambhunagar, coll. A.K. Mukherjee, 5 and 10.x.1955.

Diagnostic characters : Size equal to Hen. Plumage snow-white, bill black. Legs black, feet orange yellow. In breeding, nuchal crest of two long narrow plumes and filamentous feathers on back and breast.

Measurements : 3♂: Wing 250, 275(2); tail 90, 98, 100: bill 92, 95, 100.

Distribution : India : West Bengal (North 24-Parganas districts): Throughout the Indian Union. Bangladesh, Nepal, Sri Lanka, South and East Europe, East Africa, Middle East, Iran, Afghanistan, Pakistan, Burma, Malaysia, China, Hainan and Japan.

Genus *Nycticorax* T. Forster, 1817.

16. *Nycticorax nycticorax nycticorax* (Linnaeus)

1758. *Ardea Nycticorax* Linnaeus, *Syst. Nat.*, ed. 10, 1: 142 (Southern Europe).

1968. Ali and Ripley, vol.1. p.78.

Common name : Night Heron (English), Bachka (Bengali) and Waak (Hindi).

Material examined : South 24-Parganas district: 3♂, Nalbani, coll. B. Biswas, 29.vii. 1965, 3.iv. 1966.

Diagnostic characters : Size equal to Pond Heron. Bill stout, back and scapular ashy-grey with greenish black. Forehead and sides of head white. Occipital crest, crown and nape black. Sides of breast and belly ashy-grey. Legs and feet dull green.

Measurements : 3♂ : Wing 279-288(282), tail 102-103(102), bill 82-99(90).

Distribution : India: West Bengal (South 24-Parganas district) : Throughout the Indian Union. Pakistan, Nepal, Bhutan, Sri Lanka, Central and southern Europe, south to Africa, Middle East, Burma, Thailand, Malaysia, the Indo-Chinese countries to China and Japan.

Genus *Ixobrychus* Billerg, 1828.

17. *Ixobrychus cinnamomeus* (Gmelin)

1789. *Ardea cinnamomeus* Gmelin, *Syst. Nat.*, 1(2): 643 (China).

1968. Ali and Ripley, vol.1, p.84.

Common name : Chestnut Bittern (English), Lal bak (Bengali) and Lal bagla (Hindi).

Material examined : South 24-Parganas district: 2♀, Nalbani, coll. B. Biswas, 10.iv. 1965 and 2.v. 1963.

Diagnostic characters : Size smaller than preceding bird. In male, crown, crest, back and wings chestnut cinnamon. Chin and throat whitish, dark median stripe on forehead. In female, head and back chestnut-brown. Crown blackish, underwing rufous buff.

Measurements : 2♀ : Wing 146(2); tail 40,44; bill 60,64.

Distribution : India: West Bengal (South 24-Parganas district): Throughout the subcontinent including Maldives islands. Burma, Thailand, Malaysia, Philippines, Sunda Islands, Celebes (Sulawesi), China from Manchuria to Hainan and Ryukhu Islands.

18. *Ixobrychus sinensis* (Gmelin)

1789. *Ardea sinensis* Gmelin, *Syst. Nat.* 1(2): 642 (China)

1968. Ali and Ripley, vol.1. p.86.

Common name : Yellow Bittern (English), Kat bak (Bengali) and Fun bagla (Hindi).

Material examined : North 24-Parganas district: 4♂ and 5♀, Nalbani, coll. B. Biswas, 23.v. 1964, 23 and 31.v. 1965, 9.vi. 1965, 19 and 23.vi. 1966 and 24.v. 1967; 2♂, near Mahisbathan, coll. V.G. Gogeta, 5.vi. 1966.

Diagnostic characters : Size equal to preceding bird. In male, back chiefly yellowish brown, bushy crest and crown black. Sides of neck vinous pink. Rump dark ashy, tail slaty black. Chin, throat pale yellow, vent and abdomen yellowish buff. In female, similar to male except a buff mesial line down the foreneck and throat.

Measurements

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4♂	130-137(133)	43-48(45)	64-70(67)
5♀	128-132(130)	43-45(44)	65-72(68)

Distribution : India: West Bengal (North 24-Parganas district): Throughout the Indian Union except Manipur, Mizoram and Nagaland. Bangladesh, Nepal, Sri Lanka, Burma, Thailand, Malaya to China, Japan, New Guinea and the Caroline Is.

19. *Ixobrychus flavicollis flavicollis* (Latham)

1790. *Ardea flavicollis* Latham, *Index Orn.*, 2 : 701 (India).

1968. Ali and Ripley, vol.1, p.88.

Common name : Black Bittern (English), Kalo bak (Bengali) and Kala bagla (Hindi).

Material examined : South 24-Parganas district : 1♀, Patharpratima, Sagar island, coll. B. Biswas, 10.vii. 1967.

Diagnostic characters : Size slightly bigger than Pond Heron. In male, head, back, wing and tail slaty grey to almost black. On either side of the neck bright ochre-yellow band. Chin and throat white with a rufous dotted line in the middle of neck. In female, head, back and wing more brown less slaty-grey. Breast streaked with white and rufous.

Measurements : 1♀ : Wing 200, tail 66, bill 102.

Distribution : India : West Bengal (South 24-Parganas district): Throughout the Indian Union excluding Andaman & Nicobar Islands. Bangladesh, Pakistan, Nepal, Burma, Thailand, Malaysia, Indochina, China, Greater Sunda Is. and Celebes (Sulawesi).

Family CICONIIDAE

Key to the genera of the family CICONIIDAE

1. Mandibles leaving open space near middle of bill.....*Anastomus*
Mandibles not leaving any space.....2
2. Bill straight.....*Leptoptilos*
Bill down curved or slightly up curved.....3
3. Bill down curved.....*Mycteria*
Bill slightly up curved.....*Ciconia*

Genus *Mycteria* Linnaeus, 1758

20. *Mycteria leucocephala* (Pennant)

1769. *Tantalus leucocephalus* Pennant, *Indian Zool.*, 11, p1. 10 (Ceylon = Sri Lanka).

1982. Ripley, p.20.

Common name : Painted Stork (English), Sona jangha (Bengali) and Janghil (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to Vulture. Face yellow, unfathered, waxy; bill yellow and slightly curved, fleshy brown-long legged, neck long; plumage white closely barred with metallic, greenish, black on back. Breast acrossed with black band; delicate rose-pink near the tail, the shoulders and wing.

Distribution : India: West Bengal (Bardhaman district): Throughout Indian mainland except Arunachal Pradesh, Himachal Pradesh and Jammu and Kashmir. Pakistan, Nepal, Bangladesh, Sri Lank, Burma, Thailand, Malaya Peninsula, Indochina and China.

Remarks : Gauntlett (1985) has observed this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Anastomus* Bonnaterre. 1791

21. *Anastomus oscitans* (Boddaert)

1783. *Ardea oscitans* Boddaert, *Table Pl. enlum.* : 55 (Pondicherry, India).

1968. Ali and Ripley, vol.1, p.95.

Common name : Openbill Stork (English), Shamukh khol (Bengali) and Gungla (Hindi).

Material examined : South 24-Parganas district : 2♂, Shambhunagar, coll. A.K. Mukherjee, 20.vii. 1955.

Diagnostic characters : Size equal to large Duck. Bill wedge-shaped, yellow. Legs and feet pinkish brown. Neck, back and breast white, mantle, wings and tail greenish black.

Measurements : 2 ♂ : Wing 420(2): tail 180(2): bill 185, 190.

Distribution : India:: West Bengal (South 24-Parganas district): Throughout Indian Union. Pakistan, Bangladesh, Nepal, Sri Lanka, Burma, Thailand, Malaysia and Indo-China subregion.

Genus *Ciconia* Brisson, 1760

22. *Ciconia episcopus* (Boddaert)

1783. *Ardea episcopus* Boddaert, *Table Pl. enlum*: 54 (Coromandel coast).

1982. Ripley, p.21.

Common name : Whitenecked Stork (English), Manik jor (Bengali) and Laglag (Hindi).

Material examined : Nil.

Diagnostic characters : Black and white stork. Neck white, crown black, leg and feet red. Back, wing and tail greenish blue, under-tail coverts white.

Distribution : India : West Bengal(Barddhaman district): throughout Indian mainland except Arunachal Pradesh, Himachal Pradesh and Jammu & Kashmir. Pakistan, Nepal, Bangladesh, Sri Lanka and Burma.

Remarks : Gauntlett (1985) reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

Genus *Leptoptilos* Lesson, 1831

23. *Leptoptilos dubius* (Gmelin)

1789. *Ardea dubia* Gmelin, *Syst. Nat.*, 1(2): 624(India).

1982. Ripley, p.22

Common name : Adjutant Stork (English), Hargila (Bengali and Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to Vulture. Neck reddish, bill huge four-sided wedge shaped. A naked pinkish gular pouch hanging from base of neck. Back, wing and tail blackish grey.

Distribution : India : West Bengal(Barddhaman district): Assam, Bihar, Gujarat, Haryana, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bangladesh, Burma, Thailand, Malaysia, Indo-Chinese countries and Indonesia.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

24. *Leptoptilos javanicus* (Horsfield)

1821. *Ciconia Javanica* Horsfield, *Trans. Linn. Soc. London*, 13(1): 188(Java).

1982. Ripley, p.22

Common name : Lesser Adjutant (English), Madan chur (Bengali) and Chhota garur (Hindi).

Material examined : Nil.

Diagnostic characters : Back glossy metallic black, breast and abdomen white. Head almost naked, reddish yellow.

Distribution : India: West Bengal (Barddhaman district): Arunachal Pradesh, Assam, Bihar, Gujarat, Kerala, Orissa, Rajasthan and Uttar Pradesh. Nepal, Bangladesh, Burma, Malaysia, Indonesia and China.

Common name : Spoonbill (English), Khunte bak (Bengali) and Chamcha (Hindi).

Material examined : Nil.

Diagnostic characters : Size bigger than a domestic Duck; plumage snow white. Long-necked and long legged (black); bill black and yellow spatula shaped. Cinnamon-yellow patch at foreneck.

Distribution : India: West Bengal (Birbhum, Medinipur and South 24-Parganas districts): Throughout Indian mainland Pakistan. Nepal, Bangladesh, Sri Lanka, Central Asia from China, Southern Transbaikalia, Ussuriland, Japan, south to Syria, Egypt and Taiwan.

Remarks : Recorded this species from Sundarban area of South 24-Parganas district, Digha Sea Shore, Medinipur district, Santiniketan in Birbhum district, and Taherpur in Nadia district, West Bengal.

Order ANSERIFORMES

Family ANATIDAE

Key to the genera of the Family ANATIDAE

1. Hind toe not lobed *Sarkidiornis*
Hind toe narrowly or broadly lobed..... 2
2. Hind toe narrowly lobed..... 3
Hind toe broadly lobed..... 6
3. Bill short and goose like *Nettapus*
Bill rather flat and broad 4
4. Primaries equal to secondaries in length *Dendrocygana*
Primaries longer than the secondaries..... 5
5. Entire outer web of inner secondaries chestnut..... *Tadorna*
Outer web of inner secondaries not chestnut..... *Anas*
6. Width of culmen becoming narrower towards tip..... *Netta*
Width of culmen becoming broader towards tip..... *Aythya*

Genus *Anser* Brisson, 1760

28. *Anser anser rubirostris* Swinhoe

1871. *Anser cinereus* Var, *rubirostris* Swinhoe, *Proc. zool. Soc. Lond.*, : 416, ex. Gray, 1846 *Cat. Bds. Nepal*, 144, *nom. nud. ex Hodgson*, 1844. *Zool. Misc.* : 86, *nom. nud.* (Shanghai).

1968. Ali and Ripley, vol.1, p.129

Common name : Eastern Grey Lag Goose (English), Rajhas (Bengali) and Rajhans (Hindi).

Material examined : Nil.

Diagnostic characters : Size bigger than domestic Goose; plumage barred with ashy brown. Upper tail coverts white; bill, legs and feet pink.

Distribution : India : West Bengal (Birbhum, Haora, Kochbehar and South 24-Parganas districts): Throughout the Indian mainland except Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. Pakistan,

Nepal, Bangladesh, eastern Mediterranean, Black and Caspian seas, and in Scistan and China. Breeds eastward from *c* 40°E and South of 60°N, through Asia Minor and Central Asia to Kamchatka.

Remarks : Observed this species from Sundarban area of South 24-Parganas district, Santiniketan in Birbhum district, Santragachi in Haora district and in Chilapara area in Kochbehar district of West Bengal.

29. *Anser indicus* (Latham)

1790. *Anas indicus* Latham, *Index Orn.*, 2 : 839 (Taimyr = India, *vice* Ticehurst, 1930, *JBNHS*, 34 : 489).

1982. Ripley, p.27

Common name : Barheaded Goose (English), Badi hans (Bengali) and Hans (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than the preceding Goose. A conspicuous white stripe on head, face, throat and chin. A black bar across sinciput from eye to eye; bill and legs yellow.

Distribution : India : West Bengal(Barddhaman district): Andhra Pradesh, Assam, Bihar, Gujarat, Jammu & Kashmir, Karnataka, Madhya Pradesh, Orissa, Punjab, Rajasthan and Uttar Pradesh. Pakistan, Nepal, Bangladesh and Burma. Breeds on high elevation lakes in Central Asia from the Tien Shan to Kokonor.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

Genus *Dendrocygna* Swainson, 1837

30. *Dendrocygna javanica* (Horsfield)

1821. *Anas javanica* Horsfield, *Trans. Linn. Soc. Lond.*, 13: 199, pl. 1 (Java).

1968. Ali and Ripley, Vol.1, p.138.

Common name : Lesser Whistling Teal or Tree Duck (English), Sharali (Bengali) and Seelhi (Hindi).

Material examined : Birbhum district : 2♂ and 1♀, Gonpur, coll. A.K. Mukherjee, 9.i. 1981; 1♂, Mollarpur, coll. A.K. Mukherjee 11.i. 1981. Medinipur district : 1♀, Telkorai, *c* 9 km from Kanaisoli camp, coll. A.K. Mukherjee, 7.x. 1979. North 24-Parganas district : 1♂, Nalbam. N. Salt Lake, coll. B. Biswas 21.xii. 1966.

Diagnostic characters : Size smaller than domestic Duck. Upper tail coverts uniformly chestnut.

Measurements :

	Wing	Tail	Bill
3♂	196-202(199)	43-50(47)	46-50(48)
1♀	195	37	47

Distribution : India : West Bengal (Birbhum, Medinipur and North 24-Parganas districts) : Throughout the Indian Union. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, S. China, Malaysia, Thailand, Viet Nam, Ryukyu Is. and Indonesia.

31. *Dendrocygna bicolor* (Vieillot)

1816. *Anas bicolor* Vieillot, *Nouv. Dict. Hist. Nat.*, 5 : 136 (Paraguay).

1982. Ripley, p. 29.

Common name : Large Whistling Teal (English) and Bada sharal (Bengali).

Material examined : Nil.

Diagnostic characters : Size slightly bigger than preceding bird; upper tail coverts whitish. A broad rusty whitish collar round middle of foreneck.

Distribution : India : West Bengal (Bardhaman district): Andhra Pradesh, Assam Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Orissa, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh. Pakistan, Bangladesh, Sri Lanka, Burma, U.S.A., Mexico, Northern tropical S. America, Brazil, Peru, South to Paraguay and N. Argentina, East Africa from Lake Chad to Natal, Madagascar.

Remarks : Also recorded this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

Genus *Tadorna* Von Oken, 181732. *Tadorna ferruginea* (Pallas)

1764. *Anas (ferruginea)* Pallas, in *Vroeg., Cat. d'Ois.*, Adumbr. : 5 (Tartary).

1982. Ripley, p.29.

Common name : Brahminy Duck (English), Chaka-chaki (Bengali) and Chakwa ♂ Chakwi ♀ (Hindi).

Material examined : Nil.

Diagnostic characters : Orange brown Duck, head and neck pale; a prominent metallic green speculum on wing and a white patch in front.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland except Karnataka, Kerala, Tamil Nadu and Tripura. Pakistan, Nepal, Bangladesh, Sri Lanka and China, Nile Valley and Britain. Breeds in S. Spain and from SE. Europe, near East Caspian Sea, across Asia to Transbaikalia South to Himalayan and SW. China.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Anas* Linnaeus, 175833. *Anas acuta* Linnaeus

1758. *Anas acuta* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 126 (Sweden).

1968. Ali and Ripley, vol.1, p.149.

Common name : Pintail (English), Dig hans (Bengali) and Seenkh par (Hindi).

Material examined : Birbhum district : 2♂, Chandrapur, coll. A.K. Mukherjee, 6.i. 1981. Medinipur district: 1♂, Chilkigarh, coll. A.K. Mukherjee, 8.x. 1979. North 24-Parganas district: 1♀, Mitpukur, coll. S.S. Saha, 17. vi. 1970.

Diagnostic characters : Size smaller than a domestic Duck. In male, head and throat chocolate. A white band running down either side of neck. Speculum metallic bronze-green; central tail feathers long, pointed and pin like. In female, tail without pinlike elongation; colouration mottled brown and buff.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	275-286(281)	108-135(124)	61-70(66)
1 ♀	255	112	60

Distribution : India : West Bengal (Birbhum, Medinipur and North 24-Parganas districts) : Throughout the Indian subcontinent excluding Andaman and Nicobar Islands. Europe, N. America, including British Isles. N. Africa, Ethiopia, the Persian Gulf and China.

34. *Anas crecca crecca* Linnaeus

1758. *Anas Crecca* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 126 (Sweden).

1982. Ripley, p.31.

Common name : Common Teal (English), Patari hans (Bengali) and Chhoti murghabi (Hindi).

Material examined : Nil.

Diagnostic characters : In male, head chestnut with a broad metallic green band running backward from in front of eye to nape. A speculum (metallic green) back side of white wing patch. In female, colouration mottled dark and light brown with black and green wing speculum.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian Union. Pakistan, Nepal, Bangladesh, Sri Lanka, Burma, China, Indo-Chinese countries, Philippines, N. Africa, Nile Valley, Somali Land and Parsia. Breeds in Europe and Asia from Iceland to China, Manchuria and Kurila Islands and Japan.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

35. *Anas poecilorhyncha poecilorhyncha* J. R. Forster

1781. *Anas poecilorhyncha* Forster, *Indian Zool* : 23 pl. 13. f. 1 (Ceylon = Sri Lanka).

1968. Ali and Ripley, vol.1, p.157.

Common name : Spotbill Duck (English) and Gugral (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to domestic Duck. In male the colouration scaly patterned, buffy grey and dark brown; wing with a black and white margined metallic green speculum. Legs bright coral red; bill dark yellow tipped; forehead with two swollen orange red spots. In female, the colouration is duller and size is slightly smaller than male.

Distribution : India : West Bengal (Birbhum, Haora and South 24-Parganas districts) : Throughout the Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Mizoram and Nagaland.

Remarks : Observed this species from Sundarban area of South 24-Parganas district, Santinekatan in Birbhum district and Santragachi in Haora district, West Bengal.

36. *Anas platyrhynchos* Linnaeus

1758. *Anas platyrhynchos* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 125 (Sweden).

1982. Ripley, p.32.

Common name : Mallard (English), Nil sir (Bengali and Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding Duck. In breeding male, head metallic dark green and neck separated from chestnut breast by narrow white collar. Speculum metallic purple blue bordered in front and behind by narrow black and white bands; bill yellowish green, legs orange. In female, colouration brown and buff, streaked and spotted with black. Chin, throat and foreneck plain buff.

Distribution : India : West Bengal (Bardhaman district) : Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Uttar Pradesh. Pakistan, Nepal, Bangladesh, Burma, China, Japan, N. Africa and Nile Valley.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

37. *Anas strepera strepera* Linnaeus

1758. *Anas strepera* Linnaeus, *Syst. Nat.* ed. 10, 1 : 125 (Sweden).

1982. Ripley, p.32.

Common name : Gadwal (English), Peeing hans (Bengali) and Myla (Hindi).

Material examined : Nil.

Diagnostic characters : Size less than a domestic Duck; breeding male, dark brown and grey with black tail. Chestnut patch with black and white speculum in wing. In female, duller and smaller, dark brown, mottled with buff; leg orange yellow, wing with white wing mirror (speculum).

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian Mainland, rare in South India. Pakistan, Nepal, Bangladesh, Sri Lanka, N. Africa, Ethiopia, China. Breeds in Eurasia from Iceland to Kamchatka, South to England, Holland, Germany, Central Russia, Caspian, Seistan and Transbaikalia.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

38. *Anas penelope* Linnaeus

1758. *Anas penelope* Linnaeus, *Syst. Nat.* ed. 10, 1 : 126 (Sweden).

1982. Ripley, p. 33.

Common name : Wigeon (English), Chhota lal sir (Bengali and Hindi).

Material examined : Nil.

Diagnostic characters : Size equal preceding bird. In breeding male, head and neck chestnut; fore head and crown cream colour, a white horizontal bar on closed wing, tail black. In female, general aspect duller and less reddish brown, lesser wing coverts grey.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian Mainland. Pakistan, Nepal, Bangladesh, Sri Lanka, China, Japan, Nile Valley, Abyssinia and Britain. Breeds in temperate regions north to the Arctic circle and beyond from Iceland and Scotland to Kamchatka.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

39. *Anas querquedula* Linnaeus

1758. *Anas querquedula* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 126 (Sweden).

1982. Ripley, p.33.

Common name : Garganey (English), Giria hans (Bengali) and Patari (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. In breeding male, sides of head and neck pinky brown streaked with white, prominent white eye-brows. In female, head brown with conspicuous whitish eye brow, wing shoulders greyish brown.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian Mainland. Pakistan, Nepal, Bangladesh, Sri Lanka and in Europe.

Remarks : Gauntlett (1985) has observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

40. *Anas clypeata* Linnaeus

1758. *Anas clypeata* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 124 (South Sweden).

1982. Ripley, p. 33

Common name : Shoveller (English), Khunte hans (Bengali) and Ghirah (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. In breeding male, head and neck glossy metallic green; wing shoulder patch pale blue, a white bar between wing patch and metallic green speculum; breast white, vent and abdomen reddish chestnut. In female, general aspect mottled dark brown and buff, with greyish blue shoulder patch.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland. Pakistan, Nepal, Bangladesh, Sri Lanka, Burma, China, Japan, Hawaii, Lower California, Honduras, Florida (U.S.A), East Africa & Persian Gulf. Breeds in Europe (Commonly in Britain), Asia and N. America.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

Genus *Netta* Kaup, 1829

41. *Netta rufina* (Pallas)

1773. *Anas rufina* Pallas, *Reise Russ. Reich*, 2 : 713 (Caspian Sea).

1982. Ripley, p.34

Common name : Redcrested Pochard (English), Bada rangamuri (Bengali) and Lal sir (Hindi).

Material examined : Nil.

Diagnostic characters : Size less than a domestic Duck. In breeding male, head chestnut and golden orange, bill bright crimson, wing with white shoulder patches and white wing mirror. In female, back dull sooty brown with dark brown; sides of head and foreneck whitish, abdomen whitish.

Distribution : India : West Bengal (Barddhaman and Birbhum districts) : Throughout Indian mainland except Arunachal Pradesh, Karnataka, Kerala, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Bangladesh, Burma, China and Mediterranean region. Breeds from Southern France, Holland, through lower Danube, S. Russia east across Kirghiz Steppes to W. Siberia.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal. We also observed this species in Santiniketan, Birbhum district, West Bengal.

Genus *Aythya* Boie, 182242. *Aythya ferina* (Linnaeus)

1758. *Anas ferina* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 126 (Sweden).

1982. Ripley, p.34

Common name : Common Pochard (English), Lal Muri (Bengali) and Lal sir (Hindi).

Material examined : Nil.

Diagnostic characters : Size less than a domestic Duck. In breeding male, head and neck chestnut red, breast black; vent and belly light grey finely vermiculated with black, rump black, a dull grey speculum on wing. In female, head, neck and breast rufous brown.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian Mainland except Kerala, Meghalaya, Mizoram, Nagaland, Tamil Nadu and Tripura. Pakistan, Nepal, Bangladesh, Burma, China and Nile Valley. Breeds in British Isles, S. Scandinavia, and from eastern Russia through W. Siberia to Lake Baikal, South to Holland, Germany, Balkans, Black Sea, Kirghiz steppes and Yarkand.

Remarks : Gauntlett (1985) has observed this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

43. *Aythya nyroca* (Guldenstadt)

1770. *Anas nyroca* Guldenstadt, *Novi Comm. Sci. Petropol.* 14 : 403 (-regionibus Tanaicensibus inter gradum 54°-55°.... = S. Russia).

1982. Ripley, p.35

Common name : White-eyed Pochard (English), Bhuti hans (Bengali) and Burar mada (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. In breeding male, general aspect of plumage rich rufous-brown and blackish brown. White speculum on wing. Undertail coverts white, eyes white. In female, characters similar to male but duller. Eye brown.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland except Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Pakistan, Nepal, Bangladesh, Burma, Mediterranean region, Nile Valley & Persian Gulf. Breeds in S. Europe, Balkans, Poland and W. Siberia to Ob valley, South to N. Africa, Persia, Turkestan, Kashmir, the Pamirs and S. Tibet.

Remarks : Noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

44. *Aythya fuligula* (Linnaeus)

1758. *Anas fuligula* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 128 (Sweden).

1982. Ripley, p. 35

Common name : Tufted Duck (English), Bamuniya hans (Bengali) and Ablak (Hindi).

Material examined : Nil.

Diagnostic characters : Size less than a domestic Duck. In breeding male, head, neck, breast, back and tail jet black; flanks and sides of body white. Occipital tuft prominent, eye yellow. In female, head neck, breast, back and tail brown; occipital tuft rudimentary. Sides of body and flanks sootier.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian Union except Andaman & Nicobar Islands and in Jammu & Kashmir. Pakistan, Nepal, Bangladesh, Maldives Islands,

N. Africa (Nile Valley), Persian Gulf, China and Philippines. Breeds in Europe and Asia from Iceland and the British Isles to the Commander Islands (Pacific), South to Central Europe, Balkans, Kirghiz Steppes, Lake Baikal, the Amur and Sakhalin.

Remarks : Gauntlett (1985), has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Nettapus* Brandt, 1836

45. *Nettapus coromandelianus coromandelianus* (Gmelin)

1789. *Anas coromandelianus* Gmelin, *Syst. Nat.*, 1(2) : 522 (Coromandel = Tamil Nadu, India).

1968. Ali and Ripley, vol. 1, p. 190

Common name : Cotton Teal or Quacky-duck (English), Bali hans (Bengali) and Girja (Hindi).

Material examined : Birbhum district : 3 ♂ and 1 ♀, Rajanagar c 8 km N. of Chandrapur camp, coll. A.K. Mukherjee, 4.i.1981; Gonpur, c 8 km E of Mollarpur camp, coll. A.K. Mukherjee, 9.i.1981. North 24-Parganas district : 3 ♂ and 3 ♀ Nalbani, S.S. Saha, 3.vii.1966, 25.vi.1966; 14.v.1966, 14.vi.1967 and 25.vi.1969.

Diagnostic characters : Size equal to Partridge. In breeding male, crown blackish brown, back blackish brown glossed with purple and green; black collar round base of neck; wing with white wing bar. Female, duller and browner with less contrasty white; wing bar less prominent; eye with a dark line.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
6 ♂	150-172(160)	60-68(64)	29-30(29)
4 ♀	152-159(156)	50-65(61)	20-30(29)

Distribution : India : West Bengal (Birbhum and North 24-Parganas districts) : Throughout the Indian Union excepting in Kerala, Punjab and Rajasthan. Bangladesh, Pakistan, Nepal, Burma, Sri Lanka, China, Malay and East Indies.

Genus *Sarkidiornis* Eyton, 1838

46. *Sarkidiornis melanotos* (Pennant)

1769. *Anser melanotos* Pennant, *Ind. zool.* : 12, pl. 11 (Ceylon = Sri Lanka).

1982. Ripley, p.37

Common name : Comb Duck (English), Nakta (Bengali and Hindi)

Material examined : Nil.

Diagnostic characters : Size slightly larger than domestic Duck. In male, a fleshy knob on base of bill at forehead, wing with bronze speculum. Head and neck white, speckled with black. Back black, glossed with blue green and purple. In female, Comb on bill absent. Underparts mottled with brown.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland except Arunachal Pradesh, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Tamil Nadu and Tripura. Pakistan, Nepal, Bangladesh, Burma, China, Africa from Gambia and the Sudan, South to the cape and Madagascar.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Order FALCONIFORMES

Family ACCIPITRIDAE

Key to the genera of the Family ACCIPITRIDAE

1. Head and neck bare..... ***Gyps***
 Head and neck feathered.....2
2. Upper mandible with two sharply pointed conical "teeth".....***Aviceda***
 Upper mandible without teeth.....3
3. Lores feathered.....***Pernis***
 Lores unfeathered.....4
4. Tarsus long, two or more times length of bill from tip to gape.....5
 Tarsus short, less than two times length of bill from tip to gape.....7
5. Feathers across throat and up each side of neck forming conspicuous ruff.***Circus***
 Ruff not present.....6
6. Nuchal crest absent or pointed.....***Accipiter***
 Nuchal crest broad covering whole nape.....***Spilornis***
7. Front of tarsus covered with small hexagonal scales8
 Front of tarsus scutellate.....9
8. Size small, second primary longest.....***Elanus***
 Size larger, third or fourth primary longest.....***Pandion***
9. Tail forked.***Milvus***
 Tail not forked..... 10
10. Third primary longest.....***Haliaeetus***
 Fourth primary longest.....***Haliastur***

Genus *Elanus* Savigny, 1809

47. *Elanus caeruleus vociferus* (Latham)

1790. *Falco vociferus* Latham, *Index Orn.*, 1 : 46 (India = Coromandel Coast, ex. Sonnerat, apud, Hartert).

1968. Ali and Ripley, vol.1, p.212

Common name : Blackwinged Kite (English), Kapassi (Bengali and Hindi).

Material examined : Medinipur district : 1♂, Joshpur; c 8 km from Banspahari, coll. A.K. Mukherjee, 16.x. 1979.

Diagnostic characters : Size less than a House Crow. The plumage mainly grey and white; crown, nape, back, rump and tail-coverts pale ashy grey; tail white, wing shoulders with black patches.

Measurements : 1 ♂ : Wing 270, tail 121, bill 25.

Distribution : India : West Bengal (Medinipur district) : Throughout Indian mainland and Laccadive Islands. Pakistan, Nepal, Bangladesh, Sri Lanka, east to S. Yunnan, south to N. Tenasserim and the Indochinese countries.

Genus *Aviceda* Swainson, 1836

48. *Aviceda jerdoni jerdoni* (Blyth)

1842. *Pernis jerdoni* Blyth, *J. Asiat. Soc. Beng.*, 11 : 464 (no type locality = Malacca).

1968. Ali and Ripley, vol. 1, p.215

Common name : Blyth's Baza (English).

Material examined : Jalpaiguri district : 1♀, Binnaguri, coll. E.G.L. Webb, 23.i.1939.

Diagnostic characters : Size equal to Jungle Crow; Head with a black occipital crest, chin and throat rufous and white, head rufous and black; tail brown with three dark bands. In female, colouration paler throughout; breast fulvous white.

Measurements : 1♀ : Wing 328, tail 223, bill 25.

Distribution : India : West Bengal (Jalpaiguri district): Assam, Meghalaya and Sikkim. Burma, Thailand, Malay, Peninsula and Sumatra.

49. *Aviceda leuphotes leuphotes* (Dumont)

1820. *Falco leuphotes* Dumont, *Dict. Sci. Nat.*, 16 : 217 (Pondicherry, India).

1968. Ali and Ripley, vol.1, p.218

Common name : Indian Blackcrested Baza (English).

Material examined : Darjiling district : 1♂, Singla, coll. C.M. Inglis, 13.vii. 1925; 2♂, Sukna, coll. T.D. Soota, 13.vii. 1974.

Diagnostic characters : Size equal to a Pigeon. Head, neck, back, rump, tail coverts and tail black. Head with black, long occipital crest. Foreneck and upper breast black; abdomen with black and chestnut bands.

Measurements : 3 ♂ : Wing 238-246(241): tail 134-140(136): bill 25-27(26).

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Karnataka, Kerala, Meghalaya and Sikkim. Bangladesh, Nepal and Sri Lanka.

Genus *Pernis* Cuvier, 1817

50. *Pernis ptilorhynchus ruficollis* Lesson

1830. *Pernis ruficollis* Lesson, *Traite d'Orn.*, livr. 1 : 77 (Patrie inconnue' = Bengal, India).

1968. Ali and Ripley, vol.1, p.222

Common name : Crested Honey Buzzard (English) and Shahutela (Hindi).

Material examined : North 24-Parganas district : 1♂, Madhyamgram, coll. S. Choudhury, 25.xii. 1974.

Diagnostic characters : Size equal to Pariah Kite. Extremely variable colour in different phases. Usually with head darker grey, back greyish brown, breast and belly pale brown narrowly cross-banded with white, nuchal crest black. Tail greyish, with broad blackish subterminal and median cross bands.

Measurements : 1 ♂ : Wing 425, tail 263, bill 45.

Distribution : India : West Bengal(North 24-Parganas): Throughout Indian Union except Andamans & Nicobar Is., Arunachal Pradesh, Manipur, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan, Sri Lanka east to Tonkin and Laos and in Yunnan of China.

Genus *Milvus* Lacepede, 1799

51. *Milvus migrans govinda* Sykes

1832. *Milvus Govinda* Sykes, *Proc. zool. Soc. Lond.* 81 (Dukhun = Deccan, India).

1968. Ali and Ripley, vol.1, p.227

Common name : Pariah Kite (English) and Cheel (Bengali and Hindi).

Material examined : Calcutta district : 1♀, Indian Museum compound, coll. S.K. Bakshi, 30.x. 1953. Medinipur district : 1♀, Joshpur; c 8 km. from Banspahari, coll. A.K. Mukherjee, 16.x. 1979.

Diagnostic characters : Head, back and tail dark fulvous-brown. Bill black, legs and feet yellow, claws black. Tail deeply forked.

Measurements : 2♀ : Wing 413, 417; tail 260, (-); bill 38+, 41.

Distribution : India : West Bengal (Calcutta and Medinipur district): Throughout the Indian Union excluding Nicobar Islands. Bangladesh, Burma, Malaysia (Occasional), Nepal, Pakistan and Sri Lanka.

Genus *Haliastur* Selby, 1840

52. *Haliastur indus indus* (Boddaert)

1783. *Falco Indus* Boddaert, *Table Pl. enlum* : 25 (Pondicherry, India).

1968. Ali and Ripley, vol.1, p.230

Common name : Brahminy Kite (English), Shankha Cheel (Bengali) and Brahmini Cheel (Hindi).

Material examined : Calcutta district; 1♀, Dum Dum, coll. A.K. Mukherjee, 6.viii. 1950. North 24-Parganas district: 9♂ and 8♀, Nalbani, coll. B. Biswas, 21.vi. 1964, 5.vii. 1964, 20.vi. 1965, 14.viii. 1965, 5.x. 1966 and 12.vi. 1969.

Diagnostic characters : Size slightly smaller than the preceding bird. Head, neck, upper back and breast white; lower back, wings, abdomen and tail rusty red or deep chestnut. Tips of wings black.

Measurements :

	Wing	Tail	Bill
9♂	350-388(370)	180-207(197)	35-40(37)
9♀	372-403(389)	192-222(208)	36-40(37)

Distribution : India : West Bengal(Calcutta and North 24-Parganas district): Throughout the Indian Union excluding Nicobar Islands. Bangladesh, Pakistan, Nepal, Burma, China, Sri Lanka, Thailand and Vietnam.

Genus *Accipiter* Brisson, 176053. *Accipiter badius dussumieri* (Temminck)

1824. *Falco dussumieri* Temminck, *Pl. Col. Livr.* 52, text to pl. 308 (adult) pl. 336 (immature). (India, type from Bengal).

1968. Ali and Ripley, vol.1, p.238

Common name : Indian Shikra (English), Shikre (Bengali) and Shikra ♀, Chipka ♂ (Hindi).

Material examined : Darjiling district: 1♂, Selimbong, coll. R.K. Ghosh, 29.xi. 1977; 1♂, Sumsing, coll. R.L. Choudhury, 18.xii. 1980.

Diagnostic characters : Size smaller than a House Crow. Head and back ashy blue grey; breast barred with white and rusty brown, throat with median grey stripe. Long tail with multibanded; female slightly larger and dark smoky brown.

Measurements : 2 ♂ : Wing 180, 184; tail 138, 140 : bill 19,20.

Distribution : India : West Bengal(Darjiling district): Throughout the Indian Union except Andaman & Nicobar Islands, Arunachal Pradesh, Assam Kerala, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan and Nepal.

54. *Accipiter trivirgatus indicus* (Hodgson)

1836. *Astur indicus* Hodgson, *Bengal Sporting Mag.*, 8: 177 (Nepal).

1968. Ali and Ripley, vol.1, p.240

Common name : North Indian Crested Goshawk (English).

Material examined : Darjiling district : 1♂, Selimbong, coll. R.K. Ghosh, 3.xii. 1977.

Diagnostic characters : Size slightly bigger than a House crow; forehead dark brown; crown and nuchal crest blackish grey, throat white, breast white broadly streaked, belly barred with rich rufous brown. Undertail coverts white, tail with four dark brown bars. Female larger in size.

Measurements : 1 ♂ : Wing 226, tail 198, bill 28.

Distribution : India : West Bengal(Darjiling district): Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Orissa, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand, Malay Peninsula, Indo-China, China and Taiwan.

55. *Accipiter nisus nisosimilis* (Tickell)

1833. *Falco Nisosimilis* Tickell, *J. Asiat. Soc. Beng.*, 2: 571: (Marcha, Borabhum, India).

1968. Ali and Ripley, vol.1, p.243

Common name : Asiatic Sparrow-Hawk (English) and Basha ♀, Bashin ♂ (Hindi).

Material examined : Darjiling district : 1♀, Mungpoo, coll. G.E. Shaw, 11.xi. 1918. Jalpaiguri district : 1 unsexed, Rehti Forest, coll. C.M. Inglis, 24.xii. 1936.

Diagnostic characters : Size slightly smaller than House Crow. In male, the legs slender and longer; a white supercilium, tail with four or five blackish bands. Female larger than male, more brown, back less grey and below paler.

Measurements : 1♀ : Wing 245, tail 178, bill 24.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Throughout the Indian Union except Nicobar islands and Lakshadweep and Minicoy Islands. Bangladesh, Pakistan, Nepal, Burma and China, Breeds in N. and C. Asia from Turkestan to the sea of Okhotsk, Japan, N. China

and E. China south to the Yongtse. Winters to Burma and S. China.

56. *Accipiter nisus melaschistos* Hume

1869. *Accipiter Melaschistos* Hume *Rough Notes, March*: 128 (Interior of the Himalayas).

1968. Ali and Ripley, vol.1, p.245

Common name : Indian Sparrow-Hawk (English) and Basha ♀, Bashin ♂ (Hindi).

Material examined : Darjiling district: 1♀, Mongpu, coll. C.M. Inglis, 27.x. 1923; 1♂, Toomsong, coll. C.M. Inglis, 10.iv. 1926. Jalpaiguri district : 1♀, Rehti forest, coll. C.M. Inglis, 24.xii. 1936; Banahat Tea Estate, coll. C.M. Inglis, 10.xii. 1947.

Diagnostic characters : Size equal to preceding bird; head, neck and back darker slate, throat breast and belly more rufous; tail with four to five blackish bands.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1♂	245	175	24
3♀	248-257(253)	185-190(187)	23-24(24)

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan and Burma.

57. *Accipiter virgatus affinis* Hodgson

1836. *Accipiter affinis* Hodgson, *Bengal Sporting Mag.*, n.s., 8: 179 (Nepal).

1968. Ali and Ripley, vol 1, p.247

Common name : East Himalayan Besra Sparrow-Hawk (English) and Khand besra (Hindi).

Material examined : Darjiling district, 1♂ and 1♀, Mongpu, coll. C.M. Inglis, 7.iv. 1931; 9.vi. 1935; 1♂, Rangima, coll. C.M. Inglis, 28.vii. 1932; 1♂, Selimbong, coll. R.K. Ghosh, 29.xi. 1977. Jalpaiguri district: 1♂, Huldibari, coll. C.M. Inglis, 4.iii. 1935.

Diagnostic characters : Size equal to preceding bird. Head, neck and back blackish slaty grey, tail grey, with three or four blackish bands. Chin and throat white; a broad blackish mesial stripe and two faint moustachial streaks on throats upper breast and flanks rufous, lower breast and abdomen barred. In female, crown and nape slaty black, back chocolate brown.

Measurements : 1♂ : Wing 206, tail 162, bill 25.

Distribution : India : West Bengal (Darjiling and Jalpaiguri district): Arunachal Pradesh, Assam, Manipur and Sikkim. Bangladesh, Nepal, Burma, Thailand, Indo-Chinese countries, China and Taiwan.

Genus *Buteo* Lacepede, 1799

58. *Buteo rufinus* (Cretzschmar)

1826. *Falco rufinus* Cretzschmar, in Ruppell's Atlas, Vog. : 40, pl. 27 (Upper Nubia, Schendi and Sennar, and Ethiopia).

1982. Ripley, p. 46.

Common name : Long legged Buzzard (English) and Chuhamar (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to Pariah Kite. Head, neck and breast white; throat with blackish moustachial stripes, legs long, lemon yellow, tail creamy rufous with prominent subterminal band.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Burma, in Africa from Sudan to the Valleys of the White and Blue Nile. Breeds from South Russia, Kirghiz steppes, Turkestan and W. Mongolia, South of Greece, Asia Minor, and the Western Himalayas.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

59. *Buteo buteo japonicus* (Temminck & Schlegel)

1844. *Falco buteo japonicus* Temminck & Schlegel, in *Siebold's Fauna Jap.*, Aves : 16 (Japan).

1968. Ali and Ripley, vol.1, p.255

Common name : Buzzard (English) and Chuhamar (Hindi).

Material examined : Nil.

Diagnostic characters : Size slightly smaller than the preceding bird. So many phases occur. In one of these, head creamy brown, eye with a black marking; legs and feet yellow. Cere yellow.

Distribution : India : West Bengal (South 24-Parganas district) : Throughout Indian mainland. Nepal, Bhutan, Bangladesh, Sri Lanka, Burma and China. Breeds in Asia from E. Turkestan and the Upper Yennessi north to Dauria and Lake Baikal, east to Ussuriland, south to the Himalayas, Manchuria, Korea and Japan.

Remarks : Observed this species from Sundarban area and Salt Lake area of South 24-Parganas district.

Genus *Butastur* Hodgson, 1843

60. *Butastur teesa* (Franklin)

1832. *Circus Teesa* Franklin, *Proc. zool. Soc. Lond.*, pt. 1: 115 (Farther India = Ganges-Nerbudda, *apud* Baker).

1982. Ripley, p.48

Common name : White-eyed Buzzard-Eagle (English) and Tisa (Hindi).

Material examined : Nil.

Diagnostic characters : Head, back and tail greyish brown. Throat white, two dark cheek-stripes, and a third central stripe running down from chin. White patch on nape, chest and belly whitish brown; cere orange yellow, eyes white.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland excepting Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Bangladesh and Burma.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal. (Gauntlett, 1985).

Genus *Spizaetus* Vieillot, 181661. *Spizaetus cirrhatus* (Gmelin)

1788. *Falco cirrhatus* Gmelin, *Syst. Nat.*, 1(1) : 275 (Ceylon = Sri Lanka).

1982. Ripley, p.49

Common name : Indian Crested Hawk-Eagle (English) and Shah baaz (Hindi).

Material examined : Nil.

Diagnostic characters : Size slightly bigger than kite. Head, back, wing and tail brown; throat white with narrow black, longitudinal streaks, breast with broad chocolate streaks; hind crown with prominent crest. Legs feathered, long and slender. Female slightly larger.

Distribution : India : West Bengal (Bardhaman district) : Arunachal Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and Andaman Islands. Sri Lanka, Burma & Thailand.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Hieraaetus* Kaup, 184462. *Hieraaetus fasciatus* (Vieillot)

1822. *Aquila fasciata* Vieillot, *Mem. Soc. Linn. Paris* 2(2): 152 (Montpellier, France).

1982. Ripley, p.49

Common name : Bonelli's Hawk-Eagle (English) and Morangi (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird; head, back and wings dark umber-brown. Chin, throat, breast and belly white to rufous-buff, streaked with blackish. Tail dark grey above, whitish below with a broad black sub-terminal band. Female slightly larger.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland except Arunachal Pradesh, Assam Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Sri Lanka, Southern Europe South to N. Africa and east to Southern China.

Remarks : Gauntlett (1985) has observed this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

63. *Hieraaetus pennatus* (Gmelin)

1788. *Falco pennatus* Gmelin, *Syst. Nat.*, 1(1): 272 (No type locality given).

1982. Ripley, p.49

Common name : Booted Hawk-Eagle (English) and Gilehri mar (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than a kite. Two distinct phases - light and dark phases. Light phase - head and back pale buffy or rufous white, wing darkest; a narrow black streak running between the eyes and the lores. Dark phase - head and back brown with dark stripes, tail coverts white, breast with blackish streaks, tail greyish brown.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Pakistan, Nepal, Sri Lanka, Burma, Malay Peninsula, North east Africa. Breeds in the Siberian Peninsula, S. France, SE Europe and S. Russia east to S. Transbaikalia, south to N. Africa and India.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal. (Gauntlett, 1985).

Genus *Aquila* **Brisson**, 1760

64. *Aquila heliaca* Savigny

1809. *Aquila heliaca* Savigny, *Deser. Egypte*, Ois. : 82, pl. 12 (Upper Egypt).

1982. Ripley, p.50

Common name : Imperial Eagle (English), Frus (Bengali) and Satangal (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than vulture. Head and neck pale blackish brown, back deep glossy blackish brown, back with irregular white marks; vent and undertail coverts dull buff.

Distribution : India : West Bengal (Barddhaman district): Gujarat, Himachal Pradesh, Jammu & Kashmir, Rajasthan and Uttar Pradesh. Pakistan, Nepal, Sudan, Somaliland, China, Southern Europe to South Russia, eastward to lake Baikal, South to Greece, Cyprus and Asia Minor.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

65. *Aquila rapax* (Temminck & Laug)

1828. *Falco rapax* Temminck & Laug., *Planch, color. d'Ois., Livr. 75*, pl. 455 Mch 1. (South Africa).

1982. Ripley, p.50

Common name : Tawny Eagle (English), and Ragar (Hindi).

Material examined : Nil.

Diagnostic characters : Back dirty buff to brownish black. Wings long reaching almost to tail tip when bird at rest; wings with two pale bars on upper as well as underside of wings; legs and feet bright yellow, claws black.

Distribution : India : West Bengal (Barddhaman district): Throughout Indian mainland except Arunachal Pradesh, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Pakistan, Nepal, Bangladesh, Burma and China. Breeds from the Altai to Mongolia and SE. Siberia, south to NW. India.

Remarks : Observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

66. *Aquila rapax nipalensis* Hodgson

1833. *Aquila nipalensis* Hodgson, *Asiat. Res.*, 18(2): 13, pl. 1(Nepal).

1968. Ali and Ripley, vol.1, p.278

Common name : Eastern Tawny Eagle (English) and Fumiz (Hindi).

Material examined : Nil.

Diagnostic characters : Back deep blackish brown, nape with a rufous patch, two pale bars on wing. Bill black, cere deep yellow, legs and feet dull yellow.

Distribution : India : West Bengal (Darjiling and Jalpaiguri district): Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal and Bangladesh, Burma, and China. Breeds from Altai to Mongolia and SE. Siberia, South to NW India and Himalayas.

Remarks : Observed this species at Siliguri, Darjiling district and at Jaldapara area of Jalpaiguri district of West Bengal.

67. *Aquila clanga* Pallas

1811. *Aquila clanga* Pallas, *Zoogr. Rosso Asiat.*, 1 : 351 (Russia and Siberia).

1982. Ripley, p.51

Common name : Greater Spotted Eagle (English) and Kaljanga (Hindi).

Material examined : Nil.

Diagnostic characters : Size larger than kite. Back dark blackish brown mantle with purplish reflections, upper tail coverts white, minute white specks on body and wings; chin, throat and belly slightly paler. Female larger. Bill slaty blue, cere greenish sulphur - yellow.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland except Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Kerala, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu, and Tripura. Pakistan, Nepal, Bangladesh, China, NE. Africa. Breeds in European Russia from Lat. 60°N. South to the Balkan States, east through Turkestan, S. Siberia and Transbaikalia to Amurland, South to NW. India and N. China.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Ictinaetus* Blyth, 1843

68. *Ictinaetus malayensis* (Temminck and Laug)

1824. *Falco malayensis* Temminck & Laug, *Planch. color. d'Ois.* Livr. 20, pl.117 (Java).

1982. Ripley, p.51

Common name : Black Eagle (English).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. Entire plumage black, tail grey-barred; legs yellow, bill greenish with black tip, cere yellow.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Burma, Thailand and Malay Peninsula.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Haliaeetus* Savigny, 1809

69. *Haliaeetus lucoryphus* (Pallas)

1771. *Aquila lucorypha* Pallas, *Reise Versch. Prov. Russ. Reichs.*, 1 : 454 (Lower Ural river).

1968. Ali and Ripley, vol.1, p.289

Common name : Ringtailed or Pallas's Fishing Eagle (English), Koral, Machhal (Bengali) and Machharang (Hindi).

Material examined : North 24-Parganas district : 1♂, 1(unsexed) Nalbani, North Salt Lake, coll. V.G. Gogate, 4.iv. 1965, 26.viii. 1967; 1♂, coll. D.K. Ghosal, 17.iv. 1966; 1♀ Mahisbathan, N. Salt Lake, coll. D.K. Ghosal, 3.iv. 1966.

Diagnostic characters : Size bigger than kite. Back and wings dark brown, head, neck and upper back pale golden brown; tail white with terminal band, legs and feet dull white.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2♂	550, 560	263, 265	63, 67
1♀	600	275	69

Distribution : India : West Bengal (North 24-Parganas district): Assam, Bihar, Gujarat, Himachal Pradesh, Madhya Pradesh, Orissa, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Burma, Nepal, Russia, Iran, Iraq and Afghanistan.

Genus *Ichthyophaga* Lesson, 1843

70. *Ichthyophaga ichthyaetus ichthyaetus* (Horsfield)

1821. *Falco Ichthyaetus* Horsfield, *Trans. Linn. Soc. London* 13(1): 136 (Java)

1968. Ali and Ripley, vol.1, p.291

Common name : Greyheaded Fishing Eagle (English), Machhmoral (Bengali) and Madhuya (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. Crown, nape and upper back light brown; head and neck grey. Lower back dark brown, tip of wings blackish, breast paler brown; belly, vent and tail white, tail with a blackish terminal band, cere brown.

Distribution : India : West Bengal (Bardhaman, Jalpaiguri and South 24-Parganas districts): Throughout Indian mainland except Arunachal Pradesh, Hariyana, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab and Tripura. Nepal, Bangladesh, Burma, Malay Peninsula, Philippines, Greater Sunda Islands and eastward to Celebes.

Remarks : Observed this species in Port Canning, South 24-Parganas district, Jalpaiguri District and Bardhaman district, West Bengal.

Genus *Sarcogyps* Lesson, 1842

71. *Sarcogyps calvus* (Scopoli)

1786. *Vultur calvus* Scopoli, *Del. Faun. et. Flor. Insurb.* 2 : 85 (Pondicherry, ex. Sonnerat).

1982. Ripley, p.53

Common name : Black Vulture (English), Kalo shagoon (Bengali) and Bhaonra (Hindi).

Material examined : Nil.

Diagnostic characters : Naked head, neck, thighs and legs deep yellowish red; breast and thigh patches white.

Distribution : India : West Bengal (Bardhaman district): Throughout the Indian Union. Pakistan, Nepal, Bangladesh, Burma, Thailand, Malay Peninsula and Vietnam.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

Genus *Gyps* Savigny, 1809

72. *Gyps fulvus* (Hablizl)

1783. *Vultur fulvus* Hablizl, *Neue nord Beytr.*, 4 : 38 (North Persia)

1982. Ripley, p.54

Common name : Griffon Vulture (English).

Material examined : Nil.

Diagnostic characters : Naked neck. Head covered with yellowish white hair like feathers and down. Back and tail cinnamon-brown with scrawny. Throat and belly pinkish brown.

Distribution : India : West Bengal (Bardhaman district): Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Rajasthan, and Uttar Pradesh. Pakistan and Nepal.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

73. *Gyps indicus* (Scopoli)

1786. *Vultur indicus* Scopoli, Del. Faun. et. Flor. Insurb. 2 : 85 (India, ex. Sonnerat).

1982. Ripley, p.55

Common name : Indian Longbilled Vulture (English) and Gidh (Hindi).

Material examined : Nil.

Diagnostic characters : Head, nape and neck patchily covered with white brown hair-like feathers or down. A distinct ruff of soft white feathers at base of neck.

Distribution : India : West Bengal (Bardhaman district): Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttar Pradesh.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

74. *Gyps bengalensis* (Gmelin)

1788. *Vultur bengalensis* Gmelin, *Syst. Nat.*, 1(1) : 245 (Bengal).

1968. Ali and Ripley, vol.1, p.307

Common name : Indian Whitebacked Vulture (English), Sakun (Bengali) and Gidh (Hindi).

Material examined : Haora district : 1♂ and 1♀, Botanical Garden, Shibpur, coll. B. Biswas, 15.v. 1969.

Diagnostic characters : Back brownish black, neck naked, rump white; whitish ruff of soft feathers round base of scrawny neck.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1♂	540	182	78
1♀	550	205	75

Distribution : India : West Bengal (Haora district): Throughout Indian Union except Andaman & Nicobar Islands, Arunachal Pradesh, Lakshadweep, Meghalaya, Mizoram, and Nagaland.

Genus *Neophron* Savigny, 1809

75. *Neophron percnopterus* (Linnaeus)

1758. *Vultur Perenopterus* (Sic) Linnaeus, *Syst. Nat.*, ed. 10, 1:87 (Egypt).

1982. Ripley, p.56.

Common name : Egyptian vulture (English), and Swet sakun (Bengali), Kol murghab (Hindi).

Material examined : Nil.

Diagnostic characters : Head, face and foreneck yellow; back and below dirty white, tip of wings black.

Distribution : India, West Bengal (Bardhaman district): Throughout Indian mainland except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Sri Lanka, Turkestan, Afghanistan, Morocco, Egypt, Arabia, Persia, Canary and Cape Verde Islands.

Remarks : Gauntlett (1985) has observed this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

Genus *Circus* Lapeyroue, 1799

76. *Circus cyaneus* (Linnaeus)

1766. *Falco cyaneus* Linnaeus, *Syst. Nat.* ed. 12, 1 : 126 (Europe, Africa = Vicinity of London, England, ex. Edwards, pl. 225).

1982. Ripley, p.57

Common name : Hen Harrier (English), Math cheel (Bengali) and Girgit mar (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than Kite. In male, back darker ashy grey, upper breast white, upper tail coverts white. In female back dark brown, below brown streaked.

Distribution : India : West Bengal (Bardhaman district): Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Punjab, Sikkim and Uttar Pradesh. Pakistan, Nepal, Burma, China, Mediterranean, N.E. Africa. Breeds in Europe north to the Arctic Circle (Casually further) and in Asia south of the Tundra, east probably to the Lena River, south to the Pyrenees, Italy, Turkestan and Tibet.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

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

1770. *Falco macrourus* S.G. Gmelin, *Reise. d. Russl. th.*, 1 : 48 (Voronezh, southern Russia).

1982. Ripley, p.57

Common name : Pale Harrier (English), Math cheal (Bengali) and Girgit mar (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. In male, back ashy grey, tip of wings black; throat, breast and belly pure white; tail long white cross-barred with grey. In female, back umber brown with prominent pale rufous.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian Union. Pakistan, Nepal, Bangladesh, Sri Lanka, Burma, in Africa from the Sudan to Cape Province. Breeds from the Baltic Sea provinces east to Tarbagatai and the Tian shans, south to Rumania, S. Russia and Ferghana.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

78. *Circus melanoleucos* (Pennant)

1769. *Falco melanoleucos* Pennant, *Ind. Zool.* : 12, pl. 2 (Ceylon = Sri Lanka).

1968. Ali and Ripley, vol.1, p.223

Common name : Pied Harrier (English) and Pahatai (Hindi).

Material examined : North 24-Parganas district : 2♂ and 1♀, Nalbani, North Salt Lake, coll. B. Biswas, 21. iii. 1965.

Diagnostic characters : Size smaller than Kite. In male, head, back, throat and upper breast black; rump and belly white, tail grey. Wing silvery grey, tips black and a black band across the wing above. In female, back dark brown, rump and nape white; throat, breast and belly pale fulvous-rufous.

Measurements :

	Wing	Tail	Bill
2♂	356,362	212,213,	30,32
1♀	345	205	30

Distribution : India: West Bengal:(North 24-Parganas district): Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, Manipur, Meghalaya, Orissa, Tamil Nadu and Uttar Pradesh. Nepal and Bangladesh.

79. *Circus aeruginosus aeruginosus* (Linnaeus)

1758. *Falco aeruginosus* Linnaeus, *Syst. Nat.*, ed, 1 : 91 (Europe, restricted type locality, Sweden).

1968. Ali and Ripley, vol.1, p.224

Common name : Marsh Harrier (English), Tika bauri (Bengali) and Safed sira (Hindi).

Material examined : North 24-Parganas district: 3♀, Nalbani, North Salt Lake, coll. B. Biswas, 16 and 30. i. 1966; and 10.iv. 1966.

Diagnostic characters : Size equal to preceding bird. In male, head, neck, breast and back dark brown with pale fulvous; belly and vent dark rufous, wing and tail silvery grey; tips of wings black. In female, back dark chocolate brown. Head with a creamy buff cap, shoulders of wings buff.

Measurements : 3♀ : Wing 390-405(398): tail 210-243(230): bill 37-38(38).

Distribution : India : West Bengal (North 24-Parganas district): Throughout Indian Union except Nicobar Islands. Bangladesh, Pakistan, Nepal, Sri Lanka, Maldives, Burma, Malay Peninsula, China, Japan, Philippines and Africa. Breeds from S. Sweden and Denmark east to the Yenesei, south to the Mediterranean, Turkestan and Mongolia.

80. *Circus aeruginosus spilonotus* Kaup

1847. *Circus spilonotus* Kaup, *Isis von Oken*, col. 953 (Asia).

1968. Ali and Ripley, vol.1, p.326

Common name : Eastern Marsh Harrier (English).

Material examined : North 24-Parganas district : 3♀, Nalbani, North Salt Lake, coll. B. Biswas, 26.xii. 1965, 16 and 30.i.1966.

Diagnostic characters : Size smaller than a Kite. In male, head black, nape and throat white, heavily streaked with black, rump white barred with black. Tail and wings light grey, tip of wings blackish; breast and abdomen white. In female, back dark brown, buffy white on head and throat; legs and feet pale yellow.

Measurements : 3♀ Wing 406-411 (408): tail 239-245(242): bill 37-40(39).

Distribution : India: West Bengal (North 24-Parganas district): Assam and Manipur.

Remarks : This is a new locality record from West Bengal.

Genus *Circaetus* Vieillot, 1816.

81. *Circaetus gallicus* Gmelin)

1788. *Falco gallicus* Gmelin, *Syst. Nat.*, 1(1) : 259 (France).

1982. Ripley, p.58

Common name : Short-toed Eagle (English), Sapmaril (Bengali) and Saampmaar (Hindi).

Material examined : Nil.

Diagnostic characters : Back earthy brown. Chin, throat and upper breast paler; lower breast, belly and vent white barred with pale brown. Tail with three or four dark bands, the terminal one broadest.

Distribution : India : West Bengal(Barddhaman district): Throughout Indian mainland except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal and NE. Africa. Breeds in C. Europe east to Turkestan and Mongolia south to N. Africa, Persia and N. China.

Remarks : Reported this species from Durgapur and Damodar Valley Barddhaman district, West Bengal (Gauntlett, 1985).

Genus *Spilornis* G.R. Gray, 1840

82. *Spilornis cheela melanotis* (Jerdon)

1844. *Buteo melanotis* Jerdon, *Madras Jour. Lit. Sci.*, 13 : 166 (At the foot of the Nilgiris, India).

1968. Ali and Ripley, vol.1, p.31

Common name : Peninsular Crested Serpent Eagle (English).

Material examined : Darjiling district :1♂, Samsing, coll. R.L. Chowdhury, 12.xii. 1980. Nadia district: 1♂, Chakdaha; coll. A. Rahim. 9.xii. 1930.

Diagnostic characters : Size larger than a Kite. Back dark brown, head with a nuchal crest; breast and belly paler brown, ocellated and finely barred with white and blackish, tail with two broad bands, cere and lores yellow. Legs and feet dull yellow.

Measurements : 1 ♂ : Wing 400, tail 207, bill 42.

Distribution : India : West Bengal (Darjiling and Nadia districts): Andhra Pradesh, Bihar, Goa, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Rajashtan and Tamil Nadu. Bangladesh.

Genus *Pandion* Savigny, 1809

83. *Pandion haliaetus haliaetus* (Linnaeus)

1758. *Falco Haliaetus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 91 (Europe, restricted type locality, Sweden ex Fn. Suec.).

1968. Ali and Ripley, vol.1, p.336

Common name : Osprey (English), Utkrosh (Bengali) and Machlimar (Hindi).

Material examined : North 24-Parganas district: 1♂, Nalbani, North Salt Lake, coll. B. Biswas, 25.xii. 1964.

Diagnostic characters : Size smaller than a Kite, back dark brown; head with tufted feathers of

white streaking. Throat, breast and belly white, a conspicuous broad, brown band across upper breast; behind eye, a blackish band.

Measurements : 1 ♂: Wing 485, tail 207, bill 43.

Distribution : India : West Bengal (North 24-Parganas district): Throughout the Indian Union except Arunachal Pradesh, Mizoram, and Nagaland. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, Thailand, Malay Peninsula, Philippines, Sunda Islands and S. Africa. Breeds in Europe and Asia from Scotland (formerly) and Lapland east to Kamchatka and Japan, South to Spain. N. Africa, Mediterranean islands, Greece, Red Sea coasts, S. Arabia and S. China.

Family FALCONIDAE

Key to the Genera of the family FALCONIDAE

Wing under 170 mm. *Microhierax*
Wing over 180 mm..... *Falco*

Genus *Microhierax* Sharpe, 1874

84. *Microhierax caerulescens caerulescens* (Linnaeus)

1758. *Falco caerulescens* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 88 (Asia = Bengal, ex. Edwards, pl. 108).
1968. Ali and Ripley, vol.1, p.338

Common name : Himalayan Redbreasted Falconet (English).

Material examined : Darjiling district: 1 ♂, Teesta, coll. A.K. Mukherjee, 12.ii. 1963.

Diagnostic characters : Size equal to Bulbul. Back glossy black; forehead, sides of face and supercilium white, eye with a black band, a white collar on hind neck; chin, throat, thighs and undertail coverts deep ferruginous. Belly and vent rusty white.

Measurements : 1 ♂ : Wing 102, tail 60, bill (from cere) 10.

Distribution : India: West Bengal(Darjiling district): Assam, Bihar, Sikkim and Uttar Pradesh. Nepal and Bhutan.

Genus *Falco* Linnaeus, 1758

85. *Falco peregrinus* Tunstall

1771. *Falco peregrinus* Tunstall, *Orn. Brit.* : 1 (Great Britain).
1982. Ripley, p.62

Common name : Peregrine Falcon (English) and Bhyri ♀. Bhyri bacha ♂ (Hindi).

Material examined : Nil.

Diagnostic characters : Size less than a kite. Back ashy grey or slate grey; check with a conspicuous black moustachial stripes; throat, breast and belly pinky fulvous, narrowly barred with blackish.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland excepting Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Bangladesh, Sri Lanka, Burma, Indochinese countries, China, New Guinea, N. Africa, Japan and Sunda Islands.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

86. *Falco subbuteo* Linnaeus

1758. *Falco subbuteo* Linnaeus, *Syst. Nat.*, ed. 10. 1 : 89 (Europe, restricted type locality, Sweden).
1982. Ripley, p.62

Common name : Hobby (English).

Material examined : Nil.

Diagnostic characters : Size equal to a Dove. Back slaty grey; chin with moustachial streaks; throat, breast and belly rushy white, broadly streaked with black, undertail coverts rufous.

Distribution : India : West Bengal (Barddhaman district): Arunachal Pradesh, Kerala, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu and Tripura. Pakistan, Nepal, Bangladesh, Africa, China, Turkestan and Persia.

Remarks : Observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

87. *Falco chicquera chicquera* Daudin

1800. *Falco chicquera* Daudin, *Traite d'Orn.*, 2 : 121 (Bengal).

1968. Ali and Ripley, vol.1, p.359

Common name : Redheaded Merlin (English) and Turumati (Hindi).

Material examined : North 24-Parganas district : 1 unsexed, Salt Lake, coll. B. Biswas, 1963.

Diagnostic characters : Size equal to preceding bird; back bluish grey; crown, nape, sides of head and check-stripe chestnut, tip of wings blackish, tail grey with a broad, black band near end, tip of tail white, breast white streaked with blackish; flanks and abdomen white barred. Cere, legs and feet orange yellow.

Measurements : 1 unsexed : Wing 125, tail 135, bill 23.

Distribution : India : West Bengal (North 24-Parganas district): Throughout Indian region excepting Andaman and Nicobar Islands, Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Lakshadweep, Manipur, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan and Nepal.

88. *Falco naumanni* Fleischer

1818. *Falco naumanni* Fleischer, in L  urop and Fischer's "Sylvan" Jahrb. for 1817-1818, p.174 ("Searce visitor to southern Germany and Switzerland").

1982. Ripley, p.65

Common name : Lesser Kestrel (English).

Material examined : Nil.

Diagnostic Characters : Size equal to Pigeon. In male, head, neck, rump and tail ashy grey; tip of tail white with a broad, black subterminal band; mantle vinous brick red. Breast and flanks rufous with round black spots. In female, back pale rufous, cross-barred with black, breast vinous buff densely streaked and abdomen spotted with blackish, cerc orange yellow; legs and feet bright chrome yellow.

Distribution : India : West Bengal (Barddhaman district): Andhra Pradesh, Assam, Bihar, Haryana, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Tamil Nadu and Uttar Pradesh. E. Africa and Maldives. Breeds from Turkestan eastward to Manchuria and N. China.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

89. *Falco tinnunculus* Linnaeus

1758. *Falco tinnunculus* Linnaeus *Syst. Nat.*, ed. 10, 1 : 90 (Europe, restricted type locality, Sweden, *apud* Hartert).

1982. Ripley, p.65

Common name : Kestrel (English) and Narzinak ♂, Narzi ♀ (Hindi).

Material examined : Nil.

Diagnostic characters : In male, crown, nape and sides of neck ashy grey finely streaked with blackish, cheek stripe blackish; rump, tail coverts grey, tail tipped with white and a black subterminal bar. In female, back pale rufous, cross barred with black, rump and tail tinged with grey.

Distribution : India : West Bengal (Bardhaman district): Throughout Indian mainland except Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Rajasthan and Tripura. Pakistan, Bangladesh, Sri Lanka, Burma, China, Japan and Tibet.

Remarks : Observed this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

Order GALLIFORMES

Family PHASIANIDAE

Key to the genera of the family PHASIANIDAE

(Based on Adult males)

1. Large metallic ocelli on tail feathers.....*Pavo*
No ocellations on tail or tail coverts.....2
2. Wing over 200 mm.....3
Wing under 200 mm.....4
3. A flesh erect comb on the crown.....*Gallus*
No flesh comb on the crown.....*Lophura*
4. Tail longer than wing, tail feathers numbering 14.....*Ithaginis*
Tail shorter than wing5
5. Size moderate, wing over 120 mm.....6
Size small, wing under 120 mm.....7
6. Tail less than 1/2 length of wing.....*Arborophila*
Tail more than 1/2 length of wing*Francolinus*
7. 1st primary longer than 4th*Coturnix*
1st primary between 7th and 10th*Perdicula*

Genus *Francolinus* Stephens, 181990. *Francolinus francolinus* (Linnaeus)

1766. *Tetra francolinus* Linnaeus. *Syst. Nat.*, ed. 12, 1 : 275 (Cyprus, Europe).

1982. Ripley, p.70

Common name : Black Partridge (English) and Kala teetar (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a Grey Partridge. In male, entire plumage jet black, scalloped, spotted and barred with white and fulvous, Cheek-patch white. Collar chestnut; under-parts jet black, belly and vent chestnut. In female, entire plumage pale brown, nape with dull chestnut patch. Chin and throat buffy white breast, belly and flanks wavyly barred and scalloped black and white.

Distribution : India : West Bengal (Barddhaman district) : Arunachal Pradesh, Assam, Gujarat, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Orissa, Punjab, Sikkim, and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, from Cyprus east through the Middle East and Transcaucasia.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

91. *Francolinus pondicerianus* (Gmelin)

1789. *Tetrao pondicerianus* Gmelin, Syst. Nat.1(2) : 760 (Pondicherry, India).

1982. Ripley, p.71

Common name : Indian Grey Partridge (English), Khyr (Bengali) and Safed teetar (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. Back wings and tail largely grayish brown, rufous and chestnut, mottled, barred and vermiculated with buff and black. Chin and throat pale buff and rufous and a distinct gorget lying round the rufous throat. Lower plumage buff with narrow irregular blackish brown bars which fade out towards the vent. Tail largely chestnut.

Distribution : India : West Bengal(Barddhaman district): Throughout Indian mainland except Arunachal Pradesh, Assam, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan and Sri Lanka.

Remarks : Reported this species from Durgapur and Damodar Valley Barddhaman district, West Bengal (Gauntlett, 1985).

Genus *Coturnix* Bonnatere, 1791

92. *Coturnix coromandelica* (Gmelin)

1789. *Tetrao coromadelicus* Gmelin, Syst. Nat., 1(2): 764 (Coromandel coast).

1982. Ripley, p.73

Common name : Rain Quail (English).

Material examined : Nil.

Diagnostic characters : Size smaller than a Grey Quail. In male, back distinctly buff spear-shaped streaks and irregular mottling and barring of reddish brown and black. Chin and a line down centre of throat black; breast rufous buff, flanks brown longitudinally streaked with black. In female, chin and throat creamy buff. Breast spotted with blackish.

Distribution : India : West Bengal (Burddhaman district) : Throughout Indian mainland. Pakistan, Bangladesh, Sri Lanka and Burma.

Genus *Perdicula* Hodgson, 1837

93. *Perdicula asiatica asiatica* (Latham)

1790. *Perdix asiatica* Latham, *Index Orn.* 2 : 649 (Mahratta region, India).

1969. Ali and Ripley, vol.2, p.45

Common name : Jungle Bush Quail (English) and Lowwa (Hindi).

Material examined : Puruliya district : 1 ♂, Ajodhya hills, coll. A.K. Mukherjee, 23.ii. 1982.

Diagnostic characters : Size equal to the preceding bird. In male, back fulvous brown streaked and mottled with black and buff. Chin and throat bright chestnut. Breast and belly white, closely barred with black. In female, like male, underparts from breast to belly pale pinkish rufous.

Measurements : 1 ♂ : Wing 85, tail 43, bill 15.

Distribution : India : West Bengal (Bardhaman district): Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, and Tamil Nadu.

Genus *Arborophila* Hodgson, 1837

94. *Arborophila rufogularis rufogularis* (Blyth)

1850. *Arborophila rufogularis* Blyth, *J. Asiat. Soc. Beng.*, 18:819 (Darjeeling = Darjiling).

1969. Ali and Ripley, vol.2, p.59

Common name : Rufousthroated Hill Partridge (English).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. In male, back golden olive-brown, spotted with black on rump and upper tail-coverts. Wing-coverts, chestnut with large grey and black drops. Chin and throat rufous. A narrow black line on foreneck in between throat and breast. In female, chin and throat with black spots, more white drops on breast and abdomen.

Distribution : India : West Bengal (Darjiling district): Arunachal Pradesh, Assam, Sikkim and Uttar Pradesh.

Remarks : Blyth (1850) reported this bird from Darjiling, Darjiling district.

Genus *Ithaginis* Wagler, 1832

95. *Ithaginis cruentus affinis* Beebe

1912. *Ithaginis cruentus affinis* Beebe, *Zoologica*, 1 : 191 (British Sikkim = Sikkim, India).

1969. Ali and Ripley, vol.2, p.77

Common name : Sikkim Blood Pheasant (English).

Material examined : Darjiling district: 1 ♀, Sandakphu, Darjiling, West Bengal, coll. R.L. Fernandez, 16.vii. 1958.

Diagnostic characters : Size equal to domestic Fowl. In male, back grey; underparts apple green streaked with yellow. Crown with a full mop-like crest. Bare orbital patch red, bordered by black. In female, back brown finely vermiculated with blackish brown, throat bright ochre.

Measurements : 1 ♀ : Wing 190, tail 137, bill 25.

Distribution : India : West Bengal (Darjiling district): Sikkim and Bhutan.

Genus *Lophurus* Temminck, 1813

96. *Lophurus leucomelana melanota* (Hutton)

1848. *Euplocomus melanotus* 'Blyth' = Hutton, *J. Asiat. Soc. Beng.*, 17(2): 694 in text (Darjeeling = Darjiling, Darjiling district, West Bengal, India).

1969. Ali and Ripley, vol. 2, p.98

Common name : Blackbacked Kaleej Pheasant (English).

Material examined : Darjiling district, 1♂, Rajima, coll. C.M. English, 19.xii. 1927.

Diagnostic characters : Size slightly smaller than the preceding bird. In male, back gloomy black with violet, green and purple reflections, feathers scalloped with velvety black. Crown with a whitish grey crest. Chin and throat blackish brown. Breast feathers long and lanceolate, white with brown bases. Abdomen and vent brown. In female similar to male but back darker richer brown with narrow whitish scalloping. Crest and upper back chestnut.

Measurements : 1 ♂ : Wing 240, tail 280, bill 39.

Distribution : India: West Bengal(Darjiling district): Sikkim, Nepal and Bhutan.

Genus *Gallus* Brisson, 1760

97. *Gallus gallus murghi* Robinson & Kloss

1920. *Gallus ferrugineus murghi* Robinson & Kloss, *Rec. Ind. Mus.*, 19 : 14, 15 (Chairala, Gaya district, Bihar, India).

1969. Ali and Ripley, vol.2, p.102

Common name : Indian Red Junglefowl (English), Jangli murgha (Bengali and Hindi).

Material examined : Jalpaiguri district : 2♂, Chunabhati, coll. H.N. Mitter, 22. i. 1955.

Diagnostic characters : Size equal to a domestic Fowl. In male, back with orange red and yellow hackles on neck and rump; underparts uniformly black, wings with bright blue wing patches. In female, back reddish brown finely vermiculated with buff and black; under parts light rufous brown.

Measurements : 2 ♂ : Wing 214, 230; tail 310, 350; bill 22,24.

Distribution : India : West Bengal (Jalpaiguri district): Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Meghalaya, Orissa, Sikkim, Tripura and Uttar Pradesh. Pakistan and Bangladesh.

Genus *Pavo* Linnaeus, 1758

98. *Pavo cristatus* Linnaeus

1758. *Pavo cristatus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 156 ('India orientali, Zeylona'= India),

1969. Ali and Ripley, vol.2, p.123

Common name : Indian Peafowl (English), Mayur (Bengali) and Mayura (Hindi).

Material examined : Nil.

Diagnostic characters : In male, lower back light bronze green narrowly scalloped with black. Wings close-bar with black and buff. Upper tail coverts elongated metallic bronze, green, boldly ocellated with purplish black-centred coppery discs or eye-spots. Head with fan-shaped crest, blue neck and breast. In female, somewhat smaller, upper tail coverts not elongated, lower neck metallic green, abdomen buffy white.

Distribution : India : West Bengal (Darjiling, Jalpaiguri and Kochbehar districts): Throughout Indian mainland.

Remarks : Observed this species in Jalpaiguri district, Kochbehar district and Darjiling district, West Bengal.

Order GRUIFORMES

Family TURNICIDAE

Genus *Turnix* Bonnaterra, 179199. *Turnix tanki* Blyth

1843. *Turnix tanki* Blyth, *J. Asiat. Soc. Beng.*, 12: 180 (No Locality = Bengal, based on drawing by Buchanan Hamilton).

1982. Ripley, p.89

Common name : Indian Yellowlegged Button Quail (English) and Bater (Bengali).

Material examined : Nil.

Diagnostic characters : Size equal to a Bush Quail. In male, back grayish brown, in regularly cross-bared vermiculated with black. Wing coverts buff spotted with black; chin and throat whitish. Breast darker and rusty brownish; sides of breast black spotted. In female, similar to male except a broad orange rufous half-collar on back and sides of neck.

Distribution : India: West Bengal (Bardhaman district): Throughout Indian Union excepting Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Bangladesh and Sri Lanka.

Remarks : Noted this species from Durgapur and Damodar Valley Bardhaman district, West Bengal (Gauntlett, 1985).

100. *Turnix suscitator bengalensis* Blyth

1852 (1849). *Turnix bengalensis* Blyth, *Cat. Bds. Mus. Asiat. Soc.* : 256, in text (Lower Bengal).

1969. Ali and Ripley, vol.2, p.132

Common name : Lower Bengal Bustard-Quail (English); Gulu (Bengali and Hindi).

Material examined : Bankura district : 1♂, Susunia Hills, coll. J.M. Dasgupta, 28.i. 1979. Birbhum district: 1♂, Chandrapur, Suri, coll. A.K. Mukherjee, 5.i. 1981. Nadia district: 1♂, Prafullanagar, c. 4 km West of Phulia, coll. D.K. Ghosal, 9.vi. 1963.

Diagnostic characters : Size equal to the preceding bird. In male, back variegated rufous brown, black and white, chin and throat white; breast pale buff barred with black, abdomen brownish buff. In female, similar to male excepting chin, throat and middle breast black. Flanks brownish buff barred with black.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3♂	70-80(78)	27-28(27)	15-16(15)

Distribution : India : West Bengal (Bankura, Birbhum and Nadia districts).

Family RALLIDAE

Key to the genera of the Family RALLIDAE

1. Bill from gape subequal or longer than the tarsus *Rallus*
- Bill from gape much shorter than tarsus 2

2. Frontal shield absent to slightly developed.....3
 Frontal shield well developed4
3. Quill second longest; first between fifth and seventh.....*Porzana*
 Quill three to six longest; first shorter than eight.....*Amaurornis*
4. Toes with membranous fringe divided into convex lobes. Plumage black or blackish grey
 *Fulica*
 No lobate fringe on toes.....5
5. Plumage blue; frontal shield truncate behind. *Porphyrio*
 Plumage not blue; frontal shield not truncate behind.....6
6. Toes with a narrow straight edged lateral fringe. Sexes alike..... *Gallinula*
 Toes with fringes. Sexes not alike. *Gallicrex*

Genus *Rallus* Linnaeus, 1758

101. *Rallus aquaticus indicus* Blyth

1849. *Rallus indicus* Blyth, *J. Asiat. Soc. Beng.* 18(2): 820 (Lower Bengal and India generally).

1969. Ali and Ripley, vol.2, p.151

Common name : Indian Water Rail (English) and Ambukukkut (Bengali).

Material examined : North 24-Parganas district; 1♀, Babu bheri, N. Salt Lakes, coll. P.V. George, 9.ii. 1963.

Diagnostic characters : Size smaller than grey Partridge. Crown, back, wings and tail deep olive brown boldly streaked with black. Brown eye-stripe prominent. Cheek and throat white. Sides of head, neck and breast pale grey; belly and vent barred black and white.

Measurements : 1♀ : Wing 125, tail 51, bill 54.

Distribution : India: West Bengal (North 24-Parganas district): Assam, Bangladesh, Burma and China. Breeds in E. Siberia from the Lena east to Amur and Ussuriland, south to Transbaikhalia, Chihili, and Korea; Japanese Islands from Sakhalin to Kyushu.

Genus *Porzana* Vieillot, 1816

102. *Porzana fusca fusca* (Linnaeus)

1766. *Rallus fuscus* Linnaeus, *Syst. Nat.*, ed. 12, 1 : 262 (Philippines).

1982. Ripley, p.95

Common name : Northern Ruddy Crake (English).

Material examined : North 24-Parganas district : 1♀, Babu bheri, Salt Lake, P.V. George, 19.xii. 1965; 1♀, Nalbani, Salt Lake, coll. S.S. Saha, 21. xii. 1965.

Diagnostic characters : Size bigger than a Grey Quail. Back dark olive brown. Forehead, sides of face and supercilia vinous-chestnut. Chin and centre of throat whitish; sides of throat, breast vinous-chestnut. Abdomen and vent olive-brown.

Measurements : 2♀ : Wing 101, 103; tail 50, 52; bill 23(2).

Distribution : India : West Bengal (North 24-Parganas district): Andhra Pradesh, Assam, Bihar,

Delhi, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Burma and Thailand.

103. *Porzana pusilla pusilla* (Pallas)

1776. *Rallus pusillus* Pallas, *Reise Russ. Reichs* 3 : 700 (Dauria).

1969. Ali and Ripley, vol.2, p.160

Common name : Eastern Baillon's Crane (English).

Material examined : North 24-Parganas district : 1♂, Babu Bheri, Salt Lake, coll. P.V. George, 21.i. 1963; 1♂, Dattabad, Salt Lake, coll. B. Biswas, 3.i. 1965; 7♂ and 3♀, Nalbani, N. Salt Lake, coll. B. Biswas, 7.iii. 1965, 12.20,22,25,27.ii. 1966, 2,30.iii. 1967, 6.iv. 1967; 1♂ and 1♀, coll. S.S. Saha, 20.iii and 20.iv. 1967.

Diagnostic characters : Size equal to a Grey Quail. Back rufescent olive brown broadly streaked with dark brown. Scapulars, back, rump and upper tail-coverts with narrow white paint-like smears. Sides of head, neck and breast grey. Abdomen, belly, vent and under tail-coverts barred brown and white.

Measurements :

	Wing	Tail	Bill
6♂	87-98(91)	35-46(42)	20-21(20)
3♀	88-90(89)	44-45(44)	20-22(21)

Distribution : India: West Bengal (North 24-Parganas district) : Throughout Indian Union except Nicobar Islands. Bangladesh, Nepal, Burma, Sri Lanka, China, Malay Archipelago and the Philippines. Breeds in C. and E. Asia from the upper to Amurland and Japan, South to Kashmir, Mongolia, N. China and Korea, Lower Himalayas in N. India.

104. *Amaurornis phoenicurus chinensis* (Boddaert)

1783. *Fulica chinensis* Boddaert, *Table Pl. enlum* : 54 (China, ex Daubenton, pl. 896, restricted to Hongkong by Stresemann, 1913, *Nov. Zool.*, 20: 304)

1969. Ali and Ripley, vol.2, p.168

Common name : Chinese Whitebreasted Waterhen (English), Panpaira (Bengali) and Dauk (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. Crown, hind neck, wings, back and tail dark slaty grey. Forehead, sides of head, chin, throat, breast and belly pure white. Vent and under tail coverts rufous. Legs and feet yellowish green; the base of upper mandible red.

Distribution : India : West Bengal (All districts of West Bengal): Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Orissa, Punjab, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, Burma, Thailand, China, Malay Peninsula, Cambodia, Taiwan and Hainan.

Remarks : Recorded this bird almost in all the districts of West Bengal.

Genus *Gallicrex* Blyth, 1852

105. *Callicrex cinerea* (Gmelin)

1789. *Fulica cinerea* Gmelin, *Syst. Nat.* 1(2): 702 (China, ex Latham).

1969. Ali and Ripley, vol.2, p.172

Common name : Watercock (English) Jal morag (Bengali) and Kora (Hindi).

Material examined : North 24-Parganas district: 1♂, Kalikapur Salt Lake, coll. S.S. Saha, date not known; 1♂; Nalbani, N. Salt Lake, coll. S.S. Saha, 18.vi. 1966.

Diagnostic characters : Size equal to a Grey Partridge. In non-breeding plumage both sexes alike. Back dark brown broadly scalloped with fulvous. Underparts pale buffy brown with fine wavy darker bars. Yellowish horny shield on forehead. In breeding male : Back, neck, throat, breast and tail black; wings and abdomen black, scalloped with grey. A bright red flashy horny shield on forehead projecting above the crown. Belly, vent and underparts of tail barred with grey. In breeding female : similar to male, excepting less barred on underparts.

Measurements : 2♂: Wing 220(2); tail 77, 79; bill 67, 73.

Distribution : India : West Bengal(North 24-Parganas district) : Throughout Indian Union except Nicobar Islands, Arunachal Pradesh, Lakshadweep, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan, Sri Lanka, Maldiva, Archipelago, Burma, Malay Peninsula, Indo-China, Indonesia, the Philippines, Celebes, China, Korea and Japan.

Genus *Gallinula* Brisson, 1760

106. *Gallinula chloropus indica* Blyth

1842. *Gallinula chloropus* ? var. *indicus* Blyth, *J. Asiat. Soc. Beng.*, 11 : 887(Calcutta, Calcutta district, West Bengal, India).

1969. Ali and Ripley, vol.2, p.175

Common name : Indian Moorhen (English), Jal murgi (Bengali and Hindi).

Material examined : Bankura district: 1♀, Ranjagar, c 8 km N. of Chandanpukur, coll. A.K. Mukherjee, 4.i. 1981. North 24-Parganas district: 4♂ and 2♀, Nalbani, Salt Lake, coll. B. Biswas, 5.v. 1963, 22.iii. 1964, 16.vi. 1965, 12.vi. 1969 and 1♀, Babu Bheri, N. Salt Lake, coll. P.V. George, 23.i. 1963; 1♂, Nalbani, North Salt Lake, coll. P.V. George, 9.ii. 1963; 3♂ and 3♀, N. Salt Lake, coll. S.S. Saha, 30.i. 1966, 30.iv. 1966, 21, 28, xii. 1966, 2.iii. 1967, 20.iv. 1967, 6.xii. 1968, and 8.25.vi. 1969.

Diagnostic characters : Size equal to the preceding bird. Back and wings black, slaty grey and brown. Wings white bordered. Head, neck and breast slaty grey, paler and whitish on centre of abdomen. Under tail-coverts white with a black central patch. Forehead with bright red frontal shield. Legs and feet slaty green.

Measurements :

	Wing	Tail	Bill
8♂	162-192 (170)	46-78 (65)	35-42 (37)
7♀	155-166 (161)	60-68 (65)	30-35 (32)

Distribution : India: West Bengal (Bankura and North 24-Parganas districts): Throughout Indian mainland. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, Thailand, Malay Peninsula, Cambodia, Hainan, Taiwan, Ryukyu Islands, Tibet, China and Japan.

Genus *Porphyrio* Brisson, 1760

107. *Porphyrio porphyrio poliocephalus* (Latham)

1801. *Gallinula poliocephala* Latham, *Index Orn.*, Suppl. : 68 (India).

1969. Ali and Ripley, vol.2, p.178

Common name : Indian Purple Moorhen (English), Kam pakhi (Bengali), and Kaim (Hindi).

Material examined : North 24-Parganas district: 9♂ and 4♀, Nalbani, coll. S.S. Saha, 6.vi. 1965, 5 and 30.i. 1966, 27.iii. 1966, 24.iv. 1966, 4.i. 1967, 27.iii. 1967, 20.iv. 1967, 24.v. 1967; 1♂ and 1♀, coll. B. Biswas, 6.iv. 1968 and 25.vii. 1969.

Diagnostic characters : Size equal to a Hen. Back purplish lilac, a deep red casque covering the crown. The neck, breast and abdomen bluish with purple lilac; undertail-coverts white. Red legs and enormous toes.

Measurements :

	Wing	Tail	Bill
9♂	246-267(258)	85-100(93)	62-69(65)
4♀	235-263(246)	88-95(69)	61-64(62)

Distribution : India : West Bengal (North 24-Parganas district): Throughout Indian mainland except Arunachal Pradesh, Meghalaya, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan and Sri Lanka.

Genus *Fulica* Linnaeus, 1758

108. *Fulica atra atra* Linnaeus

1758. *Fulica atra* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 152 (Europe, restricted type locality Sweden, ex ref. to Fn. Svec.).

1969. Ali and Ripley, vol.2, p.180

Common name : Coot (English), Jal kukkut (Bengali) and Dasari (Hindi).

Material examined : North 24-Parganas district: 2♂ and 3♀, Nalbani, coll. B. Biswas, 2 and 7.xii. 1966, 11.i. 1967.

Diagnostic characters : Entire plumage slaty black, wings with white edges. Ivory-white pointed bill and frontal shield covering forehead.

Measurements :

	Wing	Tail	Bill
2♂	205, 210	53, 54	49, 50
3♀	175-208(193)	53-55(54)	43-50(46)

Distribution : India: West Bengal (North 24-Parganas district): Throughout Indian region. Bangladesh, Pakistan, Nepal, Sri Lanka, Java, Celebes, Sudan and Arabia.

Breeds in greater part of Europe and Asia South to N. Africa, Asia Minor, Southern China, Azores and Iceland.

Order CHRADRIIFORMES

Family JACANIDAE

Key to the genera of the family JACANIDAE

Frontal lappet at base of bill resting against forehead, primaries not attenuated. *Metopidius*

No frontal lappet, 1st and 4th primaries attenuated *Hydrophasianus*

Genus *Hydrophasianus* Wagler, 1832

109. *Hydrophasianus chirurgus* (Scopoli)

1786. *Tringa Chirurgus* Scopoli, *Del. Flor. et. Faun. Insubr.*, fasc. 2 : 92 (In nova Guiana' = Luzon ex Sonnerat).

1969. Ali and Ripley, vol.2, p.199

Common name : Pheasant-tailed Jacana (English), Surdal (Bengali), and Pihuya (Hindi).

Material examined : North 24-Parganas district : 2♂, Nalbani, coll. B. Biswas, 12 and 20.vi. 1965.

Diagnostic characters : Size equal to a Grey Partridge. Back rump and underparts chocolate brown. Tail pointed down curved Pheasant-like. Face and foreneck white, hindneck pale silky golden yellow.

Measurements : 2♂: Wing 235, 238; tail 304, 320; bill 37 (2).

Distribution : India: West Bengal (North 24-Parganas district): Throughout Indian mainland. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, Thailand, Malay Peninsula, Java, Combodia, Philippines, China and Taiwan.

Genus *Metopidius* Wagler, 1832

110. *Metopidius indicus* (Latham)

1790. *Parra indica* Latham, *Index Orn.*, 2 : 765 (India).

1969. Ali and Ripley, vol.2, p.201

Common name : Bronzewinged Jacana (English) and Karatiya (Bengali).

Material examined : Birbhum district: 1♂, Chandrapur, c 10 km N.W. of Suri, coll. A.K. Mukherjee, 3.i. 1981.

Diagnostic characters : Size equal to the preceding bird. Back and wings metallic greenish bronze. Tail chestnut-red. A white stripe over eye to nape. Neck, breast and belly glossy black. Bill red at base, greenish yellow.

Measurements : 1♂: Wing 159, tail 40, bill 37.

Distribution : India : West Bengal (Birbhum district): Throughout Indian mainland except Arunachal Pradesh, Mizoram, Nagaland and Tripura. Bangladesh, Nepal, Burma, Thailand, Vietnam, Cambodia, Malay peninsula and Indonesia.

Family CHARADRIIDAE

Key to the Subfamilies of Family CHARADRIIDAE

Bill straight, like that of pigeon. Upper mandible-middle portion constricted, tip swollen..... *Charadriinae*

Bill straight or decurved or recurved. Upper mandible-tip occasionally flattened and pitted. *Scolopacinae*

Key to the genera of the subfamily CHARADRIINAE

1. Tail feathers grey or brown, outer tail feathers white or white tipped..... *Charadrius*
- Tail feathers white with a broad black band on the distal half or with narrowly barred with dusky spots on margins of outer tail feathers. 2

2. Tail with narrowly barred. Black spotted.....*Pluvialis*
 Tail with broad black band and often with a narrow white terminal band..... *Vanellus*

Genus *Vanellus* Brisson, 1760

111. *Vanellus cinereus* (Blyth)

1842. *Pluvianus cinereus* Blyth, *J. Asiat. Soc. Beng.*, 11: 587 (Calcutta, Calcutta district, West Bengal, India).

1969. Ali and Ripley, vol.2, p.211

Common name : Greyheaded Lapwing (English).

Material examined : South 24-Parganas district: 1♂, Mitpukur, c. 24 km NE of Calcutta, coll. B. Biswas, 17.xi. 1965; 1♂, Sambhunagar, coll. A.K. Mondal, 23.ix. 1984.

Diagnostic characters : Size slightly bigger than a Grey Partridge. Back and wings light brown, head and neck grey. Tail white with broad black terminal band. Breast with a chocolate pectoral band. Abdomen white. Primaries and secondaries white.

Measurements :

	Wing	Tail	Bill
2♂ :	225, 244	100, 110	36, 42
1♀ :	242	108	43

Distribution : India: West Bengal (South 24-Parganas district): Andaman Islands, Assam, Bihar, Jammu & Kashmir, Manipur and Uttar Pradesh. Bangladesh, Nepal, Burma, Malaya, Indo-Chinese countries and China.

Breeds in Mongolia, China south to the Yangtse Valley, Manchuria, Korea and Japan.

112. *Vanellus indicus indicus* (Boddaert)

1783. *Tringa Indica* Boddaert, *Table Pl. enlum.* : 150 (Goa, India, ex Daubenton, pl. 807).

1969. Ali and Ripley, vol.2, p.212

Common name : Redwattled Lapwing (English) and Titori (Hindi).

Material examined : South 24-Parganas district : 1♂, Dayapur, coll. A.K. Mondal, 23.ix. 1984; 2♀, Sambhunagar, coll. A.K. Mukherjee, 24.vii. 1955, and 29.x. 1955.

Diagnostic characters : Back and wings bronze-brown. Head, neck and breast black. A creamson fleshy wattles in front of each eye. A white band behind eyes running down sides of neck and wings to meet the white underparts. Calls : Did-ye-do-it.

Measurements :

	Wing	Tail	Bill
1♂	223	124	38
2♀	214, 224	105, 120	39, 44

Distribution : India: West Bengal (South 24-Parganas district) : Throughout Indian mainland. Pakistan, Nepal, Bhutan, Bangladesh, Eastern Transcaspian, Iraq, Iran, Arabia and Afghanistan.

113. *Vanellus spinosus duvaucelii* (Lesson)

1826. *Charadrius Duvaucelii* Lesson, *Dict. Sci. Nat.*, ed. Levrault., 42 : 38 (Calcutta, Calcutta district, West Bengal, India).

1969. Ali and Ripley, vol.2, p.216

Common name : Spurwinged Lapwing (English).

Material examined : Darjiling district : 1 unsexed, Terai, coll. J. Anderson, date of collection not known.

Diagnostic characters : Size equal to a Grey Partridge. Back, part of wings, neck and breast vinous-grey and sandy brown. Upper tail-coverts and tail white. Terminal half of tail black. Primaries and primary coverts black; central secondaries white. Cheeks, chin and throat black bordered with white, centre of abdomen black. Rest of underparts white. Wings with long curved spur on the bend; forehead, crown and occipital crest black.

Measurements : 1 unsexed : Wing 192, tail 89, bill 33.

Distribution : India: West Bengal (Darjiling district): Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Orissa, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Burma, Thailand, Vietnam and Yunnan of China.

114. *Vanellus malabaricus* (Boddaert)

1783. *Charadrius malabaricus* Boddaert, *Table pl. enlum.* : 53 (Malabar coast, ex Daubenton, pl. 880).

1982. Ripley, p.112

Common name : Yellow-wattled Lapwing (English) and Zirdi (Hindi).

Material examined : Nil.

Diagnostic characters : Back, head, breast and part of wings sandy brown. Tail white with broad black terminal band. Crown black. Facial wattle bright yellow and underparts white. A white wing-bar on black primaries.

Distribution : India: West Bengal (Barddhaman district): Throughout Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Bangladesh and Sri Lanka.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

Genus *Pluvialis* Brisson, 1760115. *Pluvialis squatarola*, Linnacus)

1758. *Tringa Squatarola* Linnacus, *Syst. Nat.*, ed. 10, 1 : 149 (in Europe = Sweden).

1969. Ali and Ripley, vol.2, p.220

Common name : Grey Plover (English), and Bada batan (Bengali and Hindi).

Material examined : South 24-Parganas district, 1 ♂, and 1 ♀, Chamatala, Sagar Island, coll. B. Biswas, 28.x. 1966.

Diagnostic characters : In non-breeding plumage, as commonly seen in winter, back dark brown scalloped with pale brownish grey. Forehead and lores white speckled with black; sides of head and neck white streaked with brown. Tail white narrowly barred with brown. Throat, breast and flanks streaked and spotted with brown. Belly and vent white.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	199	83	36
1 ♀	203	81	39

Distribution : India: West Bengal (South 24-Parganas district): Andaman Islands, Andhra Pradesh, Assam, Bihar, Gujarat, Jammu & Kashmir, Karnataka, Kerala, Lakshadweep, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Burma, Thailand, Malay, Europe, Africa and Madagasker.

Breeds on the Arctic tundra of Europe and Asia from the Kanin Peninsula to E. Siberia, Kolguev, Great Layakov and Wrangel Is. (also in Arctic N. America).

116. *Pluvialis dominica fulva* (Gmelin)

1789. *Charadrius fulvus* Gmelin, *Syst. Nat.*, 1(2): 687 (Tahiti).

1969. Ali and Ripley. vol.2, p.222

Common name : Eastern Golden Plover (English), Sona batan (Bengali) and Chhota batan (Hindi).

Material examined : Medinipur district: 1 ♂, Malabati Camp, coll. A.K. Mukherjee, 19.x. 1979. North 24-Parganas district: 1 ♂, Bantala, Salt Lake, coll. S.S. Saha, 4.iv. 1967; 1 ♂, coll. B. Biswas, 4.iv. 1967. South 24-Parganas district: 1 ♂ and 1 ♀, Bakhali, Sagar Island, coll. B. Biswas, 29.x. 1966 and 8.iii. 1970; 1 ♂, coll. S.S. Saha, 8.iii. 1970; 1 ♂, Champatala Beach, coll. B. Biswas, 29.x. 1966; 3 ♂, Dayapur, Gomar River Bank, coll. A.K. Mondal, 23 and 24.ix. 1969, 3 ♂, and 1 ♀, Gangasagar, Sagar Island, coll. B. Biswas, 31.x. 1966, 24.ix.1969 and 7.iii. 1970.

Diagnostic characters : In non-breeding (winter): Head, back and wing mottled brown, white and golden yellow. Underparts whitish, breast mottled with brown, grey and yellow. Axillaries grey.

Measurements : 6 ♂: Wing 157-166(162), tail 59-63(60), bill 28-30(28).

Distribution : India: West Bengal (Medinipur, North 24-Parganas and South 24-Parganas districts): Throughout Indian Union. Pakistan, Nepal, Bhutan Bangladesh, Sri Lanka, Burma, Thailand, Malaysia, Indo-chinese countries, S. China, Ocenia, Australia, Hawaii Island, East Africa and Pacific Coast of N. America.

Genus *Charadrius* Linnaeus, 1758117. *Charadrius leschenaultii* Lesson

1826. *Charadrius Leschenaultii* Lesson, *Dict. Sci. Nat.*, ed. Levrault, 42: 36 (Pondicherry, India).

1969. Ali and Ripley, vol. 2, p.226

Common name : Large Sand Plover (English).

Material examined : South 24-Parganas district : 1 ♀, Champatala, Sagar Island, coll. B. Biswas, 28.x. 1966.

Diagnostic characters : In non-breeding (winter): Back ashy brown. Forehead and supercilia fulvous-white. A broad brown band from lores under eye to ear-coverts. Underparts white with a pale brown band across breast, usually broken in the middle.

Measurements : 1 ♀ : Wing 143, tail 58, bill 30.

Distribution : India : West Bengal (South 24-Parganas district): Andaman & Nicobar Islands, Andhra Pradesh, Gujarat, Kerala, Maharashtra, Orissa, Rajasthan and Tamil Nadu. Bangladesh, Pakistan, Nepal, Maldives, Burma, Thailand, Malaysia, Australia, Coast of S. Asia, south of Turkestan, Korea and south Africa.

118. *Charadrius dubius curonicus* Gmelin

1789. *Charadrius curonicus* Gmelin, *Syst. Nat.* 1(2): 692 (Kurland).

1969. Ali and Ripley, vol. 2, p.231

Common name : European Little Ringed Plover (English).

Material examined : Medinipur district: 1♂, Belpahari, coll. A.K. Mukherjee, 10.x. 1979.

Diagnostic characters : Back sandy brown. Forecrown, black, a black band from lores through eye to ear-coverts. A double collar on hind neck (a upper white, the lower black). underparts white with a black pectoral band.

Measurements : 1♂: Wing 120, tail 53, bill 19.

Distribution : India: West Bengal (Medinipur district): Throughout Indian Union. Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Burma, Thailand, Malaya Peninsula, Indochina, New Guinea, Bismarck, Archipelago, apparently also the greater and Lesser Sunda Islands.

119. *Charadrius dubius jerdoni* (Legge)

1880. *Aegialitis jerdoni* Legge, *Proc. zool. Soc. Lond.* : 39 (Ceylon = Sri Lanka and middle India)

1969. Ali and Ripley, vol. 2, p.231

Common name : Indian Little Ringed Plover (English), Firia (Bengali) and Merwa (Hindi).

Material examined : Medinipur district: 1♂, Belpahari, coll. A.K. Mukherjee, 10.x. 1979. North 24-Parganas district : 1♀, Mitpukur, coll. B. Biswas, 6.iv. 1965.

Diagnostic characters : Similar to preceding bird but smaller in size.

Measurements :

	<i>Sing</i>	<i>Tail</i>	<i>Bill</i>
1♂	114	58	19
1♀	111	51	17

Distribution : India: West Bengal (Medinipur and North 24-Parganas district): Throughout Indian Union except Arunachal Pradesh, Manipur, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan, Nepal, Burma, Thailand, Malay peninsula, Indochina, New Guinea, Bismarck Archipelago and Sunda Islands.

120. *Charadrius alexandrinus* Linnaeus

1758. *Charadrius alexandrinus* Linnaeus, *Syst. Nat.*, ed. 10; 1: 150 (Egypt, ex Hasselquist).

1982. Ripley, p.115

Common name : Kentish Plover (English).

Material examined : Nil.

Diagnostic characters : Back and crown sandy grey-brown, forehead white and a white collar on hind neck. Underparts with a black broken pectoral band. A narrow white wing bar on wings, outer tail feathers white.

Distribution : India: West Bengal (Barddhaman district): Throughout Indian mainland except Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Rajasthan, Sikkim, and Tripura. Pakistan, Nepal, Sri Lanka, Maldives. Breeds on the Canary, Madeira, Azores, and Cape Verde Islands, South coast of England and the greater part of Europe and C. Asia from Sweden and Latvia east to Korea, south to the northern Sahara, Egypt, Arabia, and Sind. Migrates in winter to tropical and southern Africa, India, S. China, Japan, Taiwan and the Sunda Islands.

Remarks : Gauntlett (1985) has observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

121. *Charadrius placidus* J.E. Gray

1863. *Charadrius placidus* J.E. Gray, *Cat. etc. Mamm. Bds., Nepal and Tibet... Brit. Mus., ed. 2*: 70 (Nepal).

1982. Ripley, p.116

Common name : Longbilled Ringed Plover (English).

Material examined : Nil.

Diagnostic characters : Forehead wholly white; lores and cheek blackish brown, remaining characters similar to Little Ringed Plover, but larger in size.

Distribution : India: West Bengal (Barddhaman district): Assam and Bihar. Nepal, Bhutan and Bangladesh.

Remarks : Noted this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal. (Gauntlett, 1985).

122. *Charadrius mongolus atrifrons* Wagler

1829. *Charadrius atrifrons* Wagler, *Isis Von Oken* 22, Col, 650 (Bengal).

1969. Ali and Ripley, Vol. 2, p. 238.

Common name : Pamirs Lesser Sand Plover (English).

Material examined : South 24-Parganas district: 1 ♂, Champatala, coll. B. Biswas, 28.x. 1966.

Diagnostic characters : In non-breeding (winter) : Back and wings sandy greyish brown. Underparts white. Forehead fulvous. Ear-coverts brownish. A very faint white collar on hind neck.

Measurements : 1 ♂ : Wing 126, tail 46, bill 14.

Distribution : India: West Bengal (South 24-Parganas district): Andaman & Nicobar Islands, Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Kerala, Maharashtra, Manipur, Orissa, Rajasthan, Sikkim and Tamil Nadu. Bangladesh, Pakistan, Nepal, Sri Lanka, Maldives, Burma, Thailand, Malay Peninsula, Sunda Islands, Red Sea coast, East Africa, south to the Zambesi and Islands of the Indian Ocean.

Breeds on the Kirghiz steppes and Tibet.

Key to the genera of subfamily SCOLOPACINAE

1. Tibia feathered.....2
- Tibia unfeathered.3
2. Tibia entirely feathered.....*Scolopax*
- Tibia partially feathered.*Gallinago*

3. Toes partially webbed.....4
 Toes divided.7
4. Bill long, over 65 mm.....5
 Bill under 65 mm.6
5. Bill curved downwards..... *Numenius*
 Bill slightly curved up..... *Limosa*
6. No white on secondary coverts or upper tail coverts..... *Philomachus*
 White on upper tail-coverts and tip of secondary coverts..... *Tringa*
7. Bill spoon-shaped. *Eurynorhynchus*
 Bill not spoon-shaped.....8
8. Bill sharply pointed..... *Arenaria*
 Bill not sharply pointed9
9. Tip of bill slightly decurved *Limicola*
 Tip of bill slightly expanded..... *Calidris*

Genus *Numenius* Brisson, 1760

123. *Numenius phaeopus phaeopus* (Linnaeus)

1758. *Scolopax Phaeopus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 146 (in Europe = Sweden).

1969. Ali and Ripley, vol.2, p.242

Common name : Whimbrel (English) and Chhota gulinda (Bengali and Hindi).

Material examined : South 24-Parganas district : 1♀, Gangasagar, Sagar Island, coll. B. Biswas, 30.x. 1966.

Diagnostic characters : Upper back and wings sandy brown with whitish spots; lower back and rump white; upper tail coverts barred brown and whitish. Chin, throat sullied white narrowly streaked with blackish and abdomen barred.

Measurements : 1♀: Wing 245, tail 102, bill 86.

Distribution : India: West Bengal (South 24-Parganas district): Andaman & Nicobar Islands, Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Lakshadweep, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Sri Lanka, Africa, Madagascar, Arabia and Islands in the Western Indian Ocean.

Breeds in northern Scandinavia, Lapland, Finland, northern Russia, W. Siberia to Tobolsk and the upper Irtysh.

124. *Numenius phaeopus variegatus* (Scopoli)

1786. *Tantalus variegatus* Scopoli, *Del. Flor. et Faun. Insurb.*, fasc. 2: 92 (No locality = Luzon, *ex* Sonnerat).

1969. Ali and Ripley, vol.2, p.244

Common name : Eastern Whimbrel (English) and Chhota gulinda (Bengali and Hindi).

Material examined : South 24-Parganas district: 3♂, Suparibhanga Is., coll. V.G. Gogate, 29.x.

1966; 1♀, Bagmara, Sunderbans, coll. S. Chatterjee, 13.ix. 1983; 1♀, Gangasagar, coll. S.S. Saha, 30.x. 1966.

Diagnostic characters : Most of the characters similar to the preceding birds, differs only in being much darker and browner on back. Rump and upper tail coverts more heavily barred with brown. Under tail coverts broadly barred and streaked with dark brown.

Measurements : 1♀: Wing 222, tail 97, bill 80.

Distribution : India: West Bengal (South 24-Parganas district): Assam, Manipur. Bangladesh, Commander Islands, Japan, China, Indo-Australasian Archipelago to New Guinea, Australia, Tasmania, New Caledonia, Caroline, Marianne and Pelew Islands.

Breeds in E. Siberia West to the Lena River.

125. *Numenius arquata arquata* (Linnaeus)

1758. *Scolopax Arquata* Linnaeus, *Syst. Nat.*, ed. 10, 1: 145 (in Europa = Sweden).

1969. Ali and Ripley, vol.2, p.245

Common name : Curlew (English), Sada kastachura (Bengali) and Badda gulinda (Hindi).

Material examined : South 24-Parganas district: 1♂, Champatala, Sagar Island, coll. B. Biswas, 8.iii. 1970.

Diagnostic characters : Back and wings darkish sandy brown. Bill long, slender and downcurved. Underparts whitish scalloped with fulvous streaked with black. Tail with whitish striped with black.

Measurements : 1♂: Wing 297, tail 110, bill 150.

Distribution : India: West Bengal (South 24-Parganas district) : Andhra Pradesh, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh.

Genus *Tringa* Linnaeus, 1758

126. *Tringa erythropus* (Pallas)

1764. *Scolopax erythropus* Pallas, in Voreg's *Cat. Adumbr* : 6 (Holland).

1969. Ali and Ripley, vol.2, p.255

Common name : Spotted Rodshank (English) and Batan (Hindi).

Material examined : North 24-Parganas district: 4♀, Mitpukur, coll. B. Biswas, 27 and 28.iv. 1965 and 17.xi. 1965.

Diagnostic characters : In non-breeding (winter); Upper back, crown and hind neck ashy brown. White supercilia from base of bill. Bill slender straight. Legs longish, orange red. Lower back, rump and upper tail coverts white. Wings mottled and barred with white. Tail ashy brown, barred with white on edges. Underparts white, indistinctly spotted and mottled.

Measurements : 2 ♀ : Wing 165, 170; tail 67(2); bill 69(2).

Distribution : India: West Bengal (North 24-Parganas district): Throughout Indian Union excepting Andaman and Nicobar Islands, Arunachal Pradesh, Manipur, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, China, Japan and Malay Peninsula.

Breeds in Scandinavia north of the Arctic Circle, N. Russia South to Moscow, Kazan and Orenburg, and in N. Asia east to Kamchatka.

127. *Tringa totanus totanus* (Linnaeus)

1758. *Scolopax Totanus* Linnaeus, *Syst. Nat.*, ed, 10, 1 : 145 (in Europe = Sweden).

1969. Ali and Ripley, vol.2, p.257

Common name : Common Redshank (English) and Chota batan (Hindi).

Material examined : Calcutta district : 1♀, Calcutta, coll. Z.S.I. Party 31.i. 1969. North 24-Parganas district: 1♂, Nalbani, coll. A.K. Mukherjee, 29.vi. 1967. South 24-Parganas district: 1♂ and 4♀, Champatala Beach, coll. not known, 28.x. 1966; 2♀, Kakdwip, coll. not known, 27.x. 1966; 3♀, Suparibhanga, coll. not known, 29.x.1966.

Diagnostic characters : In non-breeding (winter): Upperback greyish brown. Lower back and rump white. Tail white barred with brown. Underparts white, breast finely streaked with brown. Bill straight slender, orange-red and black. White band on wings.

Measurements

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3♂	152-159(154)	60-65(62)	46-48(47)
6♀	157-165(160)	60-70(65)	46-55(51)

Distribution : India: West Bengal (Calcutta, North 24-Parganas and South 24-Parganas districts): Throughout Indian Union including Andaman & Nicobar Islands. Pakistan, Nepal, Bangladesh, Sri Lanka, Malaya States, Philippines and Sunda Islands. Breeds in central and eastern Asia to Transbaikali and west Kansu.

128. *Tringa stagnatilis* (Bechstein)

1803. *Totanus stagnatilis* Bechstein, *Orn. Taschenb. Deutschl* 2 : 292, pl. 29 (Germany).

1969. Ali and Ripley, vol.2, p.259

Common name : Marsh Sandpiper or Little Greenshank (English) and Biler balubatan (Bengali).

Material examined : South 24-Parganas district: 1♂, Mitpukur, coll. B. Biswas, 13.xi. 1965.

Diagnostic characters : Upperback and forehead greyish brown. Supercilium, sides of head, lower back and rump pure white. Underparts pure white, sides of breast more or less marked with brown. Bill almost straight and black. Legs very slender and greenish. Tail narrowly barred brownish.

Measurements : 1♂: Wing 150, tail 57, bill 30.

Distribution : India: West Bengal (South 24-Parganas district): Throughout Indian Union except Andaman & Nicobar Islands and Lakshadweep. Bangladesh, Pakistan, Sri Lanka, Burma, Indo-chinese countries, Sunda Islands and the Moluccas to Australia, Africa and Arabia.

Breeds in SE. Europe, C. and S. Russia and across middle Asia South of lat. 56° at least as far east as Transbaikalia, South to Turkestan and N. Mongolia.

129. *Tringa nebularia* (Gunnerus)

1767. *Scolopax nebularis* Gunnerus, in *Leem, Beskr. Finn. Lapper* : 251 (District of Trondhjem, Norway).

1969. Ali and Ripley, vol.2, p.261

Common name : Greenshank (English), Gotra (Bengali) and Timtima (Hindi).

Material examined : North 24-Parganas district: 1♀, Mitpukur, coll. B. Biswas, 17.xi. 1955, South 24-Parganas district: 1♂, Manmathanagar, coll. A.K. Mukherjee, 5.xii. 1955.

Diagnostic characters : In non-breeding (winter): Upperback greyish brown; forehead, lowerback, rump and tail white. Tail with faint, almost invisible barring. Underparts white, greyish on foreneck and sides of head.

Measurements : 1♀: Wing 186, tail 78, bill 60.

Distribution : India: West Bengal (North 24-Parganas and South 24-Parganas districts) : Throughout Indian Union. Bangladesh, Pakistan, Nepal, Sri Lanka, Maldives Islands, Eastwards through South East Asia to Australia and New Zealand, Mediterranean countries and Africa.

Breeds in N. Europe south to Leningrad, Kazan and across N. Asia to Kamchatka south to about 55°N.

130. *Tringa ochropus* Linnaeus

1758. *Tringa Ochrophus* Linnaeus, *Syst. Nat.*, ed, 10, 1 : 149, (in Europa = Sweden).

1969. Ali and Ripley, vol.2, p.263

Common name : Green Sandpiper (English).

Material examined : Birbhum district: 1♂, Chandrapur, coll. not known, 6.i. 1981. Medinipur district: 1♂, Joshpur, near Banspahari, coll. A.K. Mukherjee, 16.x. 1979.

Diagnostic characters : In non-breeding (winter): Back dark brown glossed with bronze-green; head and neck ashy brown. Rump and tail white, tail faintly barred with blackish. Underparts whitish, throat, breast and flanks finely streaked with brown.

Measurements : 2♂: Wing 128, 135; tail 58, 62; bill 40, 41.

Distribution : India: West Bengal (Birbhum and Medinipur districts): Throughout India except Nicobar Islands, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, Thailand, Indo-chinese countries, Philippine countries, Hainan, Taiwan, British Isles, Mediterranean Region, Africa South to Angola and Kenya.

Breeds in northern Europe and Asia, north to Arctic Circle, South to Transcaspia, Turkestan, NW. Mongolia and the Amur river.

131. *Tringa glareola* Linnaeus

1758. *Tringa Glareola* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 149 (in Europa = Sweden).

1969. Ali and Ripley, vol.2, p.265

Common name : Spotted Sandpiper (English), Balu batan (Bengali) and Chupka (Hindi).

Material examined : Bankura district: 2 , Susunia Hills, coll. J.M. Das Gupta, 1.ii. 1979. Medinipur district: 1 , Chilkigarh, c. 4 km., S. of Kanai soli camp, coll. A.K. Mukherjee, 8.x.1979; 1 , Malabati camp, coll. A.K. Mukherjee, 19.x. 1979. North 24-Parganas district: 1 , Duttband, coll. B. Biswas, 6.ii. 1952; 6 and 6 , Mitpukur, coll. B. Biswas, 23.ii. 1965, 26.iii. 1965., 2.iv. 1965, 7.xii. 1966, and 23.xii. 1967; 1 , Nalbani, coll. B. Biswas, 31.iii. 1963; 1 , and 3 , coll. S.S. Saha, 2.v. 1966 and 30.viii. 1967; 1 and 1 unsexed, Thakurdwari, coll. B. Biswas, 6 and 28.ii. 1970.

Diagnostic characters : In non-breeding (winter): Upperback greyish brown and sepia-brown indistinctly spotted and marked with white. Supercilium whitish. Rump, tail and lower back white. Tail barred with blackish. Underparts whitish, pale dusky breast.

Measurements :

	Wing	Tail	Bill
6 ♂	118-125(122)	47-51(49)	33-36(34)
4 ♀	124-131(126)	48-54(51)	34-37(35)

Distribution : India : West Bengal (Bankura, Medinipur and North 24-Parganas districts) : Throughout Indian Union including Andaman and Maldiva Islands. Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka. Breeds in North Europe and North Asia east to the Amur River, Kamchatka, and northern Kurile Islands. Wintering throughout Africa and SE. Asia, Japan, Philippines, Malaya Archipelago to Australia.

132. *Tringa terek* (Latham)

1774. *Scolopax cinerea* Guldenstadt, *Novi. Comm. Sci. Petropol.* 19 : 437, pl. 19, preoccupied in genus *Tringa* by *Tringa cinerea* Brunnich, 1764 (Shores of the Caspian Sea about the mouth of the Terek river).

1969. Ali and Ripley, vol. 2, p. 269.

Common name : Terek Sandpiper (English).

Material examined : South 24-Parganas district : 2 ♂, Gangasagar, coll. S. S. Saha, 30.x.1966; 1 ♂, Suparibhanga, coll. T. P. Bhattacharya, 21.x.1967.

Diagnostic characters : In non-breeding (winter) : Back, rump and upper tail-coverts greyish brown. Forehead and supercilium white. Bill slender upturned black; legs orange-yellow. Forehead and supercilium white. Underparts white, faintly streaked on neck and and breast.

Measurements : 3 ♂ : Wing 120-134(129), tail 53-58(55) bill 47-53(50).

Distribution : India : West Bengal (South 24-Parganas district) : Andaman Islands, Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Orissa and Tamil Nadu. Bangladesh, Pakistan, Sri Lanka, Burma, Malay Archipelago, Australia, Tasmania, East Africa, Madagascar and Mauritius.

Breeds in N. Russia to Siberia east to Kolyma river, south from southern Urals to Lake Baikal and beyond.

133. *Tringa hypoleucos* Linnaeus

1758. *Tringa hypoleucos* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 149 (in Europa = Sweden).

1969. Ali and Ripley, vol. 2, p. 271.

Common name : Common Sandpiper (English).

Material examined : North 24-Parganas district : 2 ♀, Bantala, coll. B. Biswas, 6.ix.1964 and 6.xi.1964; 1 ♀, Mitpukur, coll. B. Biswas, 30.i.1969; 2 ♂ and 1 ♀, Sukchar, c 16 km. N. of Calcutta, coll. B. Biswas, 2.viii.1964 and 2.x.1964. South 24-Parganas district : 1 ♀, Baliara, Fraserganj, coll. D.K. Ghosal, 20.iv.1966; 2 ♂, Dayapur, coll. A.K. Mandal, 23.ix.1969; 1 ♂, Kamachhapur, coll. not known, date not known; 1 ♂, coll. A.K. Mukherjee, 4.x.1955; 1 ♀, Sambhunagar, coll. A.K. Mukherjee, 7.x.1955; 1 ♀, Suparibhanga Island, coll. V. G. Gogate, 29.x.1966.

Diagnostic characters : In non-breeding (winter) : Upperparts olive brown. Rump and tail brown. Outer rectrices white. Sides of head and neck ashy brown, streaked darker. Supercilium broad and pale. Underparts white with a broad diffuse dusky band across breast.

Measurements :

	Wing	Tail	Bill
4 ♂	108-114(111)	52-55(53)	30-32(31)
5 ♀	101-114(108)	54-58(56)	30-31(30)

Distribution : India : West Bengal (North 24-Parganas and South 24-Parganas districts) : Throughout India. Pakistan, S. China, Taiwan, the Philippines, Malaya Archipelago to Australia.

Breeds throughout Europe and Asia south of the tundra, south to N. Spain, N. Italy, S. Russia, Iran, Mongolia, Manchuria and Japan.

Genus *Arenaria* Brisson, 1760

134. *Arenaria interpres interpres* (Linnaeus)

1758. *Tringa Interpres* Linnaeus, 1758. *Syst. Nat.*, ed. 10, 1 : 148 (Europe and North America=Gotland, Sweden).

1969. Ali and Ripley, vol. 2, p. 274

Common name : Turnstone (English).

Material examined : South 24-Parganas district : 1 ♂, Gangasagar, Sagar Island, coll. B. Biswas, 6.iii.1970.

Diagnostic characters : In non-breeding (Winter) : Back dark brown and white. Rump and tail-coverts white. Tail dark brown tipped with whitish. Foreneck and sides of breast brown. Chin, throat belly and vent pure white. Bill straight, conical and black.

Measurements : 1 ♂ : Wing 155, tail 61, bill 26.

Distribution : India : West Bengal (South 24-Parganas district) : Andaman & Nicobar Islands, Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Lakshadweep, Maharashtra, Manipur, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. Pakistan, Sri Lanka, Maldives, Burma, Malay Peninsula and Archipelago.

Breeds on arctic coasts and tundras from Scandinavia eastward across Siberia, locally to Alaska to lat 76°N.

Genus *Gallinago* Brisson, 1760

135. *Gallinago solitaria solitaria* Hodgson

1831. *Gallinago Solitaria* Hodgson, *Gleanings in Science*, 3 : 238 (Nepal).

1969. Ali and Ripley, Vol. 2, p. 278

Common name : Eastern Solitary Snipe (English) and Ban chaha (Hindi).

Material examined : Darjiling district : 1 ♀, Selimbong, coll. R.K. Ghosh, 3.xii.1977.

Diagnostic characters : Crown with longitudinal stripes and median pale band. Entire plumage variegated brown, black, rufous, fulvous and white. Bill slender and straight.

Measurements : 1 ♀ : Wing 163, tail 70, bill 77.

Distribution : India : West Bengal (Darjiling district) : Assam, Himachal Pradesh, Jammu & Kashmir, Kerala, Manipur, Orissa, Sikkim and Uttar Pradesh. Bangladesh, Pakistan and Nepal.

Breeds in Central Asia at high elevations from Tarbagatai the Sayan and Khangai Mts. South to the Tian Shans and Himalayas, east to Koko Nor and Upper Burma.

136. *Gallinago nemoricola* Hodgson

1836. *Gallinago Nemoricola* 'Ej.'=Hodgson, *Proc. zool. Soc. Lond.* : 8 (Nepal).

1969 Ali and Ripley, Vol. 2, p. 280

Common name : Wood Snipe (English), Ban chaha (Bengali) and Chaha (Hindi).

Material examined : South 24-Parganas district : 1 ♀, Pukurkona, coll. H. Grievonl, 10.xi.1953; 1 ♀, Suburb of Calcutta, coll. J.N. Taylor, 27.xii.1956.

Diagnostic characters : Back dark brown with black rufous and buff streaks. Breast fulvous barred with brown; belly and vent white closely barred with brown.

Measurements : 2 ♀ : Wing 132, 142; tail 58,63; bill 66,70.

Distribution : India : West Bengal (South 24-Parganas district) : Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya Orissa, Sikkim, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Bhutan, Tibet, Sri Lanka and Burma.

137. *Gallinago stenura* (Bonaparte)

1830. *Scalopax Stenura* 'Kuhl'=Bonaparte, *Ann. Stor. Nat. Bologna* 4 : 335 (Sunda Islands).

1969. Ali and Ripley, Vol. 2, p. 282

Common name : Pintail Snipe (English); Kadakhocha (Bengali) and Chaha (Hindi).

Material examined : Birbhum district : 1 ♂, Chandrapur, coll. A.K. Mukherjee, 1.i.1981. North 24-Parganas district : 1 ♀, Mitpukur, coll. S.S. Saha, 23.x.1969.

Diagnostic characters : Crown with longitudinal stripes. Supercilium prominent. Borders of scapulars rufous. Outer tail feathers narrow and stiff. Under wing coverts much heavily and darkly barred. Legs and feet greyish green.

Measurements :

	Wing	Tail	Bill
1 ♂	136	48	71
1 ♀	134	46	66

Distribution : India : West Bengal (Birbhum and North 24-Parganas districts) : Throughout Indian Union except Lakshadweep. Bangladesh, Pakistan, Nepal, Bhutan, Sri Lanka, Indochinese countries, China, Hainan, Taiwan, Sunda Islands and Timor.

Breeds in E. Siberia west to the Yenisey, north to c lat. 67° South to E. Turkestan, N. Tibet, the upper Hoang-ho, Amurland and Sakhalin.

138. *Gallinago gallinago gallinago* (Linnaeus)

1758. *Scolopax Gallinago* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 147 (in Europa=Sweden).

1969. Ali and Ripley, vol. 2, p. 287

Common name : Fantail Snipe (English), Kadakhocha (Bengali) and Chaha (Hindi).

Material examined : North 24-Parganas district : 1 ♂ and 1 ♀, Nalbani, N. Salt Lake, coll. B. Biswas, 19.iv.1964 and 31.i.1965; 1 ♂ and 1 ♀, Salt Lake, coll. B. Biswas, 15.xi.1964; 1 ♂, and 2 ♀, Mitpukur, coll. S.S. Saha, 7.xii.1966; 2 ♂, and 1 ♀, coll. B. Biswas, 25.ii.1968 and 23.x.1969.

Diagnostic characters : Back dark brown, heavily streaked with black, rufous and buff. Underparts whitish. Bill straight slender yellowish horny on basal half, dark horny brown on terminal half. Three outer pairs of tail feathers marked with dusky spots and bars.

Measurements :

	Wing	Tail	Bill
5 ♂	125-136 (134)	52-57 (55)	66-72 (70)
4 ♀	121-131 (128)	50-55 (53)	69-73 (71)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout the Indian Union. Bangladesh, Pakistan, Nepal, Sri Lanka, Maldives Islands, Indochinese countries, China, Japan, Sunda Islands, Mediterranean region, Egypt, East Africa south to Kenya and Persia.

Breeds in Europe and Asia from Scandinavia to eastern Siberia, north to lat, 66°30' to 70°, South to the British Isles, Pyrenees, the Alps, Balkan States, Caucasus, Kirghiz steppes, the Pamirs, Himalayas, Transbaikalia, the Amur River, Hokkaido and the Kurile Is.

139. *Gallinago minima* (Brunnich)

1764. *Scolopax Minima* Brunnich, *Orn. Boreal.* : 49 (E. Christianso, Denmark).

1969. Ali and Ripley, vol. 2, p 290

Common name : Jack Snipe (English) and Chota chaha (Hindi).

Material examined : North 24-Parganas district : 1 ♀, Mitpukur, coll. B. Biswas, 3.iii.1967.

Diagnostic characters : Back metallic green and purple sheen in the streaked dark brown. Crown without the central strike. Tail wedge-shaped, uniformly dark and pointed. Bill shorter and stouter.

Measurements : 1 ♀ : Wing 109, tail 47, bill 46.

Distribution : India : West Bengal (North 24-Parganas district) : Throughout the Indian Union. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, West Europe, Mediterranean region, Egypt, Iraq and Iran.

Breeds in E. Europe and Asia from N. Norway east to the Kolyma Delta, South to Denmark, E. Prussia, Baltic States, Central Russia, and the forest steppe of Minussinsk; Southward limit in W. and E. Siberia not known.

Genus *Scolopax* Linnaeus, 1758140. *Scolopax rusticola rusticola* Linnaeus

1758. *Scolopax Rusticola* Linnaeus, *Syst. Nat.*, ed, 10, 1 : 146 (Europe, restricted type locality, Sweden).

1969. Ali and Ripley, vol. 2, p. 292

Common name : Woodcock (English) and Tuteetar (Hindi).

Material examined : Darjiling district : 1 ♀, Sandakphu, coll. R.K. Ghose, 27.vi.1974.

Diagnostic character's : Back brownish grey blotched and barred with black, rufous and buff. Hind crown, neck and rump cross-barred black and rufous. Chin white; throat, breast and belly brownish white cross-barred with dark brown. Bill long, slender and straight. Nape with alternate black and pale bars. Large eyes are situated abnormally high up and far back in the head.

Measurements : 1 ♀ : Wing 116, tail 25, bill 53.

Distribution : India : West Bengal (Darjiling district) : Throughout Indian Union. Bangladesh, Pakistan, Nepal, Bhutan, Sri Lanka, China, Japan, Maderia, the Canary Is. the Azores, the Mediterranean region and Egypt.

Breeds in the British Isles, Scandinavia, Russia and across Asia, south to the Pyrenees, Alps, northern Balkan States, Kashmir, the Himalayas, Ussuri and Japan.

Genus *Calidris* Merrem, 1804

141. *Calidris canutus* (Linnaeus)

1758. *Tringa Canutus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 149 (in Europa=Sweden).

1982. Ripley, p. 125

Common name : Knot (English).

Material examined : Nil.

Diagnostic characters : Back brownish grey. Underparts white. Wing with a wing-bar. Upper tail coverts with black bars. Bill short and black. Legs short and greenish.

Distribution : India : West Bengal (Bardhaman district) : Pakistan and Sri Lanka.

Breeds in Spitzbergen and on the Taimyr Peninsula. Winters in Africa.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

142. *Calidris tenuirostris* (Horsfield)

1821. *Totanus tenuirostris* (Horsfield), *Trans. Linn. Soc.*, London, 13(1) : 192(Java).

1969. Ali and Ripley, vol. 2, p. 297

Common name : Eastern Knot (English).

Material examined : Nil.

Diagnostic characters : Upperback light brownish grey, boldly streaked with black. Lower back, rump and upper tail coverts dark brown scalloped with white. Underparts whitish. Foreneck and upper neck streaked or spotted with dark brown.

Distribution : India : West Bengal (Birbhum, Medinipur and South 24-Parganas districts) : Andaman Island, Assam, Lakshadweep Island and Tamil Nadu. Pakistan, Bangladesh, Burma, Malay Archipelago, Moluccas and Australia.

Remarks : Observed in Sundarban, South 24-Parganas and in Digha Sea Shore, Medinipur District, Santiniketan in Birbhum District, West Bengal.

143. *Calidris ruficollis* (Pallas)

1776. *Tringa Ruficollis* Pallas, *Reise Russ. Reichs* 3 : 700 ('circa lacus salsos Dauriae Campestris'=Kulussutai, Southern Transbaikalia, fide Ridgway, 1919. *Bull. U.S. nat. Mus.* no.50, pt. 8 : 292).

1969. Ali and Ripley, vol. 2, p. 300

Common name : Eastern Little Stint (English) and Chhota panlowwa (Hindi).

Material examined : North 24-Parganas district : 1 ♂, Mitpukur, coll. B. Biswas, 28.iv.1965.

Diagnostic characters : Back greyish brown or dusky with mottled. Underparts whitish. Tarsus short stout and black. Bill black.

Measurements : 1 ♂ : Wing 99, tail 42, bill 20.

Distribution : India : West Bengal (North 24-Parganas district) : Andaman & Nicobar Islands and

Tamil Nadu. Indochinese countries, Australia, New Zealand, Philippines, China and Taiwan.

Breeds in northern and northeastern Siberia.

144. *Calidris minuta* (Leisler)

1812. *Fringa Minuta* Leisler, *Nachtrage Zu Bechstein's Naturg. Deutschl.* : 74 (Hanau am Main, Germany).

1969 Ali and Ripley, vol. 2, p. 301

Common name : Little Stint (English) and Chhota panlowwa (Hindi).

Material examined : North 24-Parganas district : 7 ♂ and 5 ♀, Mitpukur, c 11 km. S. of Deganga, coll. B. Biswas, 27.iii.1965, 6, 7, 27 and 28.iv.1965, 13.xi.1965; 5 ♂ and 4 ♀, Nalbani, coll. B. Biswas, 28.i.1965, 4.ii.1965, 3.iii.1967; 2 ♀, coll. S.S. Saha, 3.iv.1966. South 24-Parganas district : 3 ♂, Champatala, Sagar Island, coll. S.S. Saha, 27 and 28.x.1965.

Diagnostic characters : Back mottled greyish brown; underparts white; outer tail feathers smoky brown; bill and legs black. Wings with narrow wing bar.

Measurements

	Wing	Tail	Bill
5 ♂	90-98(94)	39-44(40)	22-24(23)
7 ♀	86-99(94)	36-43(30)	22-23(23)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout Indian Union except Nicobar Islands. Pakistan, Nepal, Sri Lanka, Burma, Africa and the southern shores of Caspian Ocean.

Breeds in U.S.S.R.

145. *Calidris temminckii* (Leisler)

1812. *Tringa Temminckii* Leisler, *Nachtrage Zu Bechstein's Naturg. Deutschl.* : 64 (Hanau am Main, Germany).

1969. Ali and Ripley, vol. 2, p 303

Common name : Temminck's Stint (English) and Chhota panlowwa (Hindi).

Material examined : North 24-Parganas district : 1 ♂ and 2 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 31.i.1965 and 4.ii.1965; 6 ♂ and 1 ♀, Mitpukur, coll. B. Biswas, 27 and 28.iv.1965.

Diagnostic characters : Back greyish brown and less mottle. Underparts partly white. Breast light brownish grey; outer tail feathers pure white. Legs olive brown.

Measurements

	Wing	Tail	Bill
7 ♂	94-96(95)	43-47(45)	18-22(20)
3 ♀	94-97(96)	42	20-21(20)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout the Indian Union.

Bangladesh, Pakistan, Maldives, Sri Lanka, Burma, Malay Peninsula, China, Japan, Europe in the Mediterranean region, NE. Africa, Iraq and Iran.

Breeds from N. Norway east to the Chukchi Peninsula but not north of lat. 72° at the mouth of Yenisey, north of 76° on Taimyr Peninsula; Kolguev and Vaigach Is.; exact southern limits not determined, but extends into the "Alpine Zone" of N. Europe and Asia.

146. *Calidris subminutus* (Middendorff)

1853. *Tringa subminuta* Middendorff, *Reise Nord. und Ost. Siberian* 2, Th. 2 : 222, pl. 19, f.6 (Western slopes of the Stanovoi Mountains and mouth of the Uda).

1969. Ali and Ripley, vol. 2, p. 305

Common name : Longed Stint (English).

Material examined : North 24-Parganas district : 1 ♂ and 2 ♀, Mitpukur, coll. B. Biswas, 3 and 28.iv.1965.

Diagnostic characters : Back dark brown with mottlings; crown black. Outer tail feathers greyish brown. Underparts whitish. Middle tail feathers blackish, wings, with a narrow white wings bar.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	93	38	22
2 ♀	91,92	33,39	20,23

Distribution : India : West Bengal (North 24-Parganas district) : Andaman Islands, Assam and Bihar. Bangladesh, Sri Lanka, Maldives, Burma, Malay Peninsula, Sunda Islands, the Philippines, China and Japan.

Breeds in E. Siberia south to Kamchatka and on the commander and Kurile Is., perhaps also on Sakhalin.

147. *Calidris testacea* (Pallas)

1764. *Scolopax testacea* Pallas, in Vroeg's *Cat. Adumber* : 5 (Holland).

1969. Ali and Ripley, vol. 2, p. 310

Common name : Curlew - Sandpiper (English).

Material examined : South 24-Parganas district : 1 ♂, Gangasagar, Sagar Island, coll. S.S. Saha, 30.xi.1966.

Diagnostic characters : Back greyish brown with fine dark mottle; Underparts whitish; breast streaked and washed with brown. Bill downcurved. Upper tail coverts white.

Measurements : 1 ♂ : Wing 125, tail 40, bill 41.

Distribution : India : West Bengal (South 24-Parganas district) : Andaman & Nicobar Islands, Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Orissa and Tamil Nadu. Sri Lanka, Maldives, Pakistan, Burma, Malay Archipelago, Australia, Europe, Africa and Madagascar.

Breeds in N. Asia at the mouth of the Yenisey, in W. Taimyr, Cape Bolschoi Baranov and on the New Siberian Is.

Genus *Limicola* Koch, 1816148. *Limicola falcinellus sibirica* Dresser

1876. *Limicola sibirica* Dresser, *Proc. zool. Soc. Lond.* : 674 (Siberia and China).

1969. Ali and Ripley, vol. 2, p 317

Common name : Eastern Broadbilled Sandpiper (English).

Material examined : South 24-Parganas district : 1 ♀, Champatala, coll. S.S. Saha, 28.x.1966.

Diagnostic characters : Back dark mottle greyish brown. Rump, upper tail coverts and middle rectrices brown. Supercilium white; wing with blackish shoulder patch.

Measurements : 1 ♀ : Wing 107, tail 37, bill 37.

Distribution : India : West Bengal (South 24-Parganas district) : Bangladesh, Sunda Islands, Australia, Indochinese countries, China, Hainan and Taiwan.

Breeding range unknown but presumably N.-Siberia east of the Yenisey.

Genus *Philomachus* Merrem, 1804149. *Philomachus pugnax* (Linnaeus)

1758. *Tringa Pugnax* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 148 (in Europa minus boreali=Southern Sweden).

1969. Ali and Ripley, vol. 2, p. 318

Common name : Ruff (English), Geowala (Bengali) and Bagbad (Hindi).

Material examined : Calcutta district : 1 ♂, Suburb of Calcutta, coll. P.K. Sen, 19.iii.1955. North 24-Parganas district : 1 ♀, Mitpukur, coll. B. Biswas, 27.iv.1965.

Diagnostic characters : In non-breeding (winter) : Back dumpy greyish brown with bold blackish scally-patterned. Wings with white wings bar. Rump dark. Tail with a white patch on either sides as its base.

Measurements : 1 ♀ : Wing 153, tail 57, bill 36.

Distribution : India : West Bengal (Calcutta and North 24-Parganas districts) : Throughout Indian Union. Bangladesh, Pakistan, Nepal, Sri Lanka, Maldiv Islands, Burma, China, Africa, eastern Atlantic Islands, North America and the Lesser Antilles.

Breeds in N. Europe and Asia from Nordkapp east across the tundra to the Kolyma south to eastern England, Belgium, Bavaria, Hungary, Steppes of S. Amur.

Family ROSTRATULIDAE

Genus *Rostratula* Vieillot, 1816150. *Rostratula benghalensis benghalensis* (Linnaeus)

1758. *Rallus benghalensis* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 153 (Asia).

1969. Ali and Ripley, vol. 2, p. 325

Common name : Painted Snipe (English), Baggarji (Bengali) and Rajchaha (Hindi).

Material examined : Barddhaman district : 1 ♀, Katoya, coll. P. K. Das, 30.iv.1988. North 24-Parganas district : 2 ♀, Mitpukur, coll. B. Biswas, 13.xi.1965 and 31.iii.1966; 1 ♂, and 2 unsexed, coll. S. S. Saha, 23.x.1969 and 14.iv.1970; 2 ♂, and 1 ♀, Nalbani, North Salt Lake, coll. S. S. Saha, 11.ii.1966, 14.iii.1966, 14.v.1966.

Diagnostic characters : Back metallic olive or bronze-green with buff and blackish streaks and markings. Chin, throat and upper breast chestnut; lower breast blackish. Belly and vent white. Whitish "Spectacles" with a white patch behind eye and white bands over shoulders to sides of breast. Bill long, slender, straight and slightly down curved at tip.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	130-134(132)	39-72(53)	51
4 ♀	134-140(136)	40-46(43)	44-56(50)

Distribution : India : West Bengal (Bardhaman and North 24-Parganas districts) : Throughout the Indian Union. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, Malay Peninsula, Cambodia, Philippines, Indonesia, China, Japan, Africa, Madagascar, Iran and Arabia.

Family RECURVIROSTRIDAE

Genus *Himantopus* Brisson, 1760

151. *Himantopus himantopus himantopus* (Linnaeus)

1758. *Charadrius Himantopus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 151 (Southern Europe)

1969. Ali and Ripley, vol. 2. p. 329

Common name : Indian Blackwinged stilt (English), Lal thengi (Bengali) and Gazpaon (Hindi).

Material examined : North 24-Parganas district : 7 ♂ and 4 ♀, Nalbani, North Salt Lake, coll. S. S. Saha, 10 and 24.iv.1966, and 31.v.1967; 2 ♀, coll. B. Biswas, 2.xii.1966.

Diagnostic characters : Back glistening white; mantle and wings glossy metallic black. Underparts glistening white. Head with few black spots; tail pale grey-brown. Undersurface of wings black. Bill straight, slender and black. Legs long, thin and reddish. In female, back brown, head and hindneck sullied with brownish grey.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
6 ♂	212-230(224)	70-85(78)	72-80(76)
5 ♀	214-230(217)	71-88(77)	70-79(74)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout Indian Union excepting Andaman & Nicobar Islands. Pakistan, Nepal, Bhutan, Bangladesh and Burma.

Breeds locally in the Mediterranean region; about the mouth on the Danube; steppes of S. Russia; S. Asia east to China and S. Arabia, the Malaya States; Egypt, Africa south of the Sahara and Madagascar.

Family BURHINIDAE

Genus *Burhinus* Illiger, 1811

152. *Burhinus oedicnemus* (Linnaeus)

1758. *Charadrius oedicnemus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 151 (England, Europe).

1982 Ripley, p. 106.

Common name : Stone Curlew (English), Chhota shilabatan (Bengali) and Karwanak (Hindi).

Material examined : Nil.

Diagnostic characters : Size larger than Grey Partridge. Back dark streaked sandy brown. Legs long, yellowish green "thick kneed" Eyes huge, yellow "goggle" like. Wings with two narrow white bars. Call-pick-pick-pick-pick.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland except Arunachal Pradesh, Meghalaya, Mizoram and Tripura. Pakistan, Nepal, Bangladesh, Sri Lanka, Burma, Thailand and Combodia. Breeds in northern Africa from Morocco to Egypt, South to the Tademat Plateau, Tuareg Mts and Faiyrem; Crete, Cyprus; Southern Palestine south to Sinai; desert of Kara Kum, and Afghanistan southward to the Persian Gulf, Baluchistan.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

Family GLAREOLIDAE

Key to the genera of the Family GLAREOLIDAE

Hind toe absent, tarsus equal to 1/3rd of wing or more.....*Cursorius*

Hind toe present, tarsus equal to 1/5th of wing.....*Glareola*

Genus *Cursorius* Latham, 1790

153. *Cursorius coromandelicus* (Gmelin)

1789. *Charadrius coromandelicus* Gmelin, *Syst. Nat.*, 1(2) : 692 (Coromandel Coast).

1982. Ripley p. 108.

Common name : Indian Courser (English) and Nukri (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than Grey Partridge. Crown rufous with a conspicuous double black and white stripe through and above eye to nape. Back sandy brown; throat, breast and belly chestnut and black. Legs long, bare, china-white. Bill black.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Pakistan, Nepal and Sri Lanka.

Remarks : Gauntlett (1985) has observed this species from Durgapur and Damodar Valley. Barddhaman district, West Bengal.

Genus *Glareola* Brisson, 1760

154. *Glareola pratincola maldivarum* J.R. Forster

1795. *Glareola (Pratincola) Maldivarum* J.R. Forster, *Faunula India*, ed. 2 : 11 (Open sea in the latitude of the Maldive Islands, ex Latham, *Gen. Syn.* 5 : 224, Vr.B).

1969. Ali and Ripley, vol. 2, p. 14

Common name : Large Indian Pratincole or Swallow-Plover (English) and Bada babuibatan (Bengali).

Material examined North 24-Parganas district : 1 ♂, Bantala, coll. S.S. Saha, 4.v.1967; 1 ♂. Mahisbathan, coll. D.K. Ghosal, 8.v.1966; 1 ♂, coll. S. S. Saha, 20.iii.1966; 1 ♂, coll. A. K. Das, 20.iii.1966; 2 ♀, Nalbani, coll. D.K. Ghosal, 17.iv.1966. South 24-Parganas district : 2 ♂ and 1

unsexed, Gangasagar, Sagar Island, Coll. D.K. Ghosal, 22.x.1967; 1 unsexed, Kapit Muni Ashram, coll. D.K. Ghosal, 22.x.1967.

Diagnostic characters : Size equal to Myna. Crown and back olive-brown; upper tail-coverts white; tail black with white base, deeply forked. Chin and throat pale rufous-buff bounded by the black loop; upper breast brown; abdomen white. Legs and feet dusky black. Calls-Kirri-Kirri.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
5 ♂	176-188(180)	77-85(81)	21-23(22)
4 ♀	180-190(183)	76-77(77)	21-23(22)

Distribution : India : West Bengal (North 24-Parganas and South 24-Parganas districts) : Throughout Indian Union except Lakshadweep. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, Thailand, Indo-China, Hainan and Australia.

155. *Glareola lactea* Temminck

1820. *Glareola lactea* Temminck, *Man. d'Orn.*, ed. 2, 2 : 503(Bengal).

1969. Ali and Ripley, vol. 3, p. 15

Common name : Small Indian Pratincole (English) and Chhota babuibatan (Bengali).

Material examined : Nil.

Diagnostic characters : Size large than Sparrow. Back pale sandy grey. Forehead brown, a black band from eye to bill; throat and breast sooty brown tinged with rufous; rest white. Tail slightly forked, base white, blackish towards end.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Punjab, Nepal, Bangladesh and Sri Lanka.

Remarks : Noted this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal. (Gauntlett, 1985).

Family LARIDAE

Key to the Genera of the family LARIDAE

1. Bill stout, compressed, upper-mandible longer than the lower; the tip of upper mandible curved.....*Larus*
Bill slender, straight with pointed tip.....2
2. Tail short, generally half-length of wing.....*Chlidonias*
Tail long, generally longer than half-length of wing.....3
3. Bill stout, culmen somewhat curved.....*Gelochelidon*
Bill slender, culmen straight or nearly so.....*Sterna*

Genus *Larus* Linnaeus, 1758

156. *Larus ichthyaetus* Pallas

1773. *Larus Ichthyaetus* Pallas, *Reise Russ. Reich* 2 : 713 (Caspian Sea).

1969. Ali and Ripley, vol. 3, p. 29

Common name : Great Blackheaded Gull (English) and Dhomra (Hindi).

Material examined : South 24-Parganas district : 1 ♂, Fraserganj, coll. D.K. Ghosal, 24.iv.1966.

Diagnostic characters : Size slightly larger than domestic Duck. Head and neck black; back, throat, breast and belly pure white. Wings white with subterminal black bands and tips white. Bill stout, yellow and tip bright red. Legs and feet greenish yellow.

Measurements : 1 ♂ : Wing 463, tail 170, bill 78.

Distribution : India : West Bengal (South 24-Parganas district) : Assam, Bihar, Delhi, Gujarat, Karnataka, Kerala, Maharashtra, Orissa, Rajasthan and Tamil Nadu. Bangladesh, Pakistan, Sri Lanka, Burma, south to the eastern Mediterranean Sea and Persian Gulf.

157. *Larus brunnicephalus* Jerdon

1840. *Larus brunnicephalus* Jerdon, *Madras J. Lit. & Sci.* 12 : 225 (West Coast of Indian Peninsula).
1969. Ali and Ripley, vol. 3, p. 31

Common name : Brownheaded Gull (English) and Dhomra (Hindi).

Material examined : North 24-Parganas district : 1 ♂, coll. B. Biswas, 5.xii.1965; 2 ♂ and 2 ♀, Nalbani, coll. B. Biswas, 4 and 12.iv.1965 and 10.iv.1968. South 24-Parganas district : 1 ♂ Gangasagar, Sagar Island, coll. B. Biswas, 7.iii.1970.

Diagnostic characters : Size equal to jungle crow. Head and chin dark coffee brown (in summer), greyish white (in winter) with a vertical black crescent mark behind the ear. Back grey; under parts white. Wings with blackish tip. Bill, legs and feet deep blood red.

Measurements :

	Wing	Tail	Bill
4 ♂	320-342(333)	108-133(119)	52-56(54)
2 ♀	321,328	113,124	52,53

Distribution : India : West Bengal (North 24-Parganas and south 24-Parganas districts) : Throughout Indian mainland. Coast of Pakistan, Nepal, Bangladesh, Sri Lanka and southern Asia. Breeds in Central Asia from Chinese Turkestan to S. Mangolia and south to Laos between c 3000 and 4500m.

158. *Larus ridibundus ridibundus* Linnaeus

1776. *Larus ridibundus* Linnaeus, *Syst. Nat.*, 12, 1 : 225 (European seas-England).
1969. Ali and Ripley, vol. 3, p. 33

Common name : Blackheaded Gull (English) and Dhomra (Hindi).

Material examined : North 24-Parganas district : 1 ♂, Nalbani, North Salt Lake, coll. S.S. Saha, 21.xii.1965.

Diagnostic characters : Size equal to House Crow. Head blackish brown (in summer), white (in winter); back grey, underparts white, Bill, legs and feet deep bright red.

Measurements : 1 ♂ : Wing 312, tail 120, bill 52.

Distribution : India : West Bengal (North 24-Parganas district) : Andhra Pradesh, Assam, Bihar, Delhi, Gujarat, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab,

Rajasthan, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Indochina, Japan and the Philippines south to the Azores, Gambia, southern shores of the Mediterranean, Nile valley and Persian Gulf.

Breeds in Europe and Asia.

Genus *Clidonias* Rafinesque, 1822

159. *Clidonias hybrida indicus* (Stephens)

1826. *Viralva Indica* Stephens, in Shaw's *Gen. Zool.*, 13(1) : 169 (Cawnpore=Kanpur, Kanpur district, Uttar Pradesh, India).

1969. Ali and Ripley, vol.3, p.39

Common name : Indian Whiskered Tern (English) and Ganga cheel (Hindi).

Material examined : South 24-Parganas district : 1 ♂ and 1 ♀, Joiria c 27 km.NE of Calcutta, coll. Griavis, 29.xi.1953.

Diagnostic characters : Size smaller than Pigeon. Crown flecked with blackish (in winter), glossy jet black cap down to the eyes (in summer); back and wings silvery grey. Tail grey and forked; cheeks, chin and throat snow-white; belly black; bill reddish brown to red. Legs and feet dark coral brown.

Measurements :

	Wing	Tail	Bill
♂	222-228 (224)	80-89 (83)	34-39 (36)
♀	212-219 (215)	75-85 (79)	34-36 (35)

Distribution : India : West Bengal (South 24-Parganas district) : Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Meghalaya, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal and Sri Lanka.

160. *Clidonias leucopterus* (Temminck)

1815. *Sterna Leucoptera* Temminck, *Men. d'Orn.* : 483. (Coasts of the Mediterranean).

1969. Ali and Ripley, vol.3, p.41

Common name : Whitewinged Black Tern (English) and Ganga cheel (Hindi).

Material examined : North 24-Parganas district : 2 ♀, Nalbani, coll. B. Biswas, 20.vi.1965; 1 ♀, coll. S.s. Saha, 2.v.1966.

Diagnostic characters : Size equal to preceding bird. Entire head and body velvety black (in summer), forehead white, hindhead mottled blackish. Tail pure white. Legs and feet redbrown.

Measurements ; 3 ♀ : Wing 190-203(194); tail 66-68(67); bill 29-31(30).

Distribution : India : West Bengal (North 24-Parganas district) : Andaman Island, Assam, Gujarat and Madhya Pradesh. Bangladesh, Sri Lanka, Maldives, Burma, China, Malay Archipelago to Australia and Africa.

Breeds in SE. Europe and c. Asia from Hungary and Galicia, C. Russia, Siberia, Transbaikalia and Amurland, south to Turkestan and N. Mongolia.

Genus *Gelochelidon* C.L. Brehm, 1830

161. *Gelochelidon nilotica affinis* (Horsfield)

1821. *Sterna affinis* Horsfield, *Trans. Linn. Soc. Lond.*, 13(1) : 199 (Java).

1969. Ali and Ripley, vol.3, p.44

Common name : Javan Gullbilled Tern (English).

Material examined : South 24-Parganas district : 1 ♀, Sajnekhali, Sunderban, coll. A.K. Mukherjee, 13.iii.1957.

Diagnostic characters : Size smaller than House Crow. Back pale pearl-grey and underparts white; tail deeply forked, white. Bill stout and black.

Measurements : 1 ♀ : Wing 315, tail 110, bill 49.

Distribution : India : West Bengal (South 24-Parganas district) : Andaman Islands, Assam, Bihar, and Orissa. Bangladesh and Malay Archipelago.

Genus *Sterna*, 1758

162. *Sterna aurantia* J.E. Gray

1831. *Sterna aurantia* J.E. Gray, in Hardwicke's *Ill. Ind. Zool.*, 1(5) : pl. 69, f. 2. (India).

1969. Ali and Ripley, vol.3, p.48

Common name : Indian River Tern (English) and Ganga Cheel (Hindi).

Material examined : North 24-Parganas district : 4 ♂, and 1 ♀, Bantala, coll. S.S. Saha, 12.vii.1967; 1 ♀, Nalbani, coll. B. Biswas, 3.iii.1966; 1 ♀, coll. S.S. Saha, 23.ix.1967.

Diagnostic characters : Size equal to House Crow. Back pale grey, underparts white, wings narrow pointed forehead and nape glossy jet black (in summer); flecked and streaked with black (in winter). Tail deeply forked.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	260-267 (263)	110-130 (119)	47-51 (49)
3 ♀	251-268 (261)	143-155 (149)	46-51 (48)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout Indian mainland. Bangladesh, Pakistan, Nepal, Burma, and Malay Peninsula east to the Mekong river.

163. *Sterna hirundo tibetana* Saunders

1876. *Sterna tibetana* Saunders, *Proc. zool. Soc., Lond.* : 649(Tibet).

1969. Ali and Ripley, Vol.3, p.51

Common name : Tibetan Common Tern (English) and Ganga cheel (Hindi).

Material examined : North 24-Parganas district : 1 unsexed, Nalbani, Salt Lake, coll. S.S. Saha, 23.vii.1967.

Diagnostic characters : Size smaller than house crow. Back dark ashygrey and browner. Chin throat and under tail-coverts dark grey.

Measurements : 1 unsexed : Wing 250, tail 127, bill 42.

Distribution : India : West Bengal (North 24-Parganas district) : Throughout Indian mainland. Bangladesh, Sri Lanka and Malay Archipelago.

Breeds on the inland waters of Turkestan, Ladakh and Tibet.

164. *Sterna acuticauda* J.E. Gray

1831. *Sterna Acuticauda* J.E. Gray, in Hardwicke's *Ill. Ind. zool.* 1(6) : pl. 70, f. 3
(Cawnpore=Kanpur, Kanpur district, Uttarpradesh, India)

1982. Ripley, p. 139

Common name : Blackbellied Tern (English) and Ganga cheel (Hindi).

Material examined : Nil.

Diagnostic characters : Back ashy grey. Forehead, crown, nape and crest glossy black. Lores and cheeks pure white. Chin and throat white. Breast, belly and vent black. Tail deeply forked.

Distribution : India : West Bengal (Barddhaman.district) : Throughout the Indian Union. Pakistan. Bangladesh, Sri Lanka, Burma, Thailand and Indochinese countries.

Remarks : Recorded this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

165. *Sterna albifrons sinensis* Gmelin.

1789. *Sterna sinensis* Gmelin, *Syst. Nat.*, I : 608 (China).

1969. Ali and Ripley, vol.3, p.66

Common name : Whiteshafted Ternlet (English).

Material examined : South 24-Parganas district : 1 ♂, Baghmara, Sunderban, coll. S. Chatterjee, 12.iii.1983.

Diagnostic characters : Back grey; underparts white; forehead white; crown with velvety black cap. Lores black. Bill and feet orange yellow.

Measurements : 1 ♂ : Wing 150, tail 72, bill 33.

Distribution : India : West Bengal (South 24-Parganas district) : Maharashtra and Tamil Nadu. Sri Lanka, Indochina, Philippines, Celebes, Sunda Islands, Bismarck Archipelago, New Guinea, China, Korea and Japan.

166. *Sterna bergii velox* Cretzschmar

1827(1826). *Sterna Velox* Cretzschmar, in Ruppell's Atlas, Vogel : 21, pl. 13 (Red Sea Coasts).

1969. Ali and Ripley, vol.3, p.67

Common name : Red Sea Large Crested Tern (English).

Material examined : South 24-Parganas district : 2 ♀, Baghmara, Sunderban, coll. S. Chatterjee, 18.ix.1983.

Diagnostic characters : Back grey with lilac tinge. Tail greyish white; primaries blackish. Crown, nape and nuchal-crest velvety black. Neck and underparts white. Bill lemon-yellow. Legs black.

Measurements : 2 ♀ : Wing 325, 338; tail 163,165; bill 64, 73.

Distribution : India : West Bengal (South 24-Parganas district) : Lakshadweep, Maharashtra and Tamil Nadu. Bangladesh. Pakistan, Sri Lanka, Burma, Mergui Archipelago, coast of northeastern Africa, Asia from the Red Sea to Pakistan.

167. *Sterna bengalensis bengalensis* Lesson

1831. *Sterna bengalensis* Lesson, *Traite d'Orn.* 8 : 621 (Coasts of India).

1969. Ali and Ripley, vol.3, p.69

Common name : Indian Lesser Crested Tern (English).

Material examined : Nil.

Diagnostic characters : Back with lilac tinge. Crown and nuchal crest black. Bill orange-yellow. Legs and feet black.

Distribution : India : West Bengai (South 24-Parganas district) : Andaman and Nicobar Islands, Andhra Pradesh, Gujarat, Karnataka, Kerala, Lakshadweep, Maharashtra, Orissa and Tamil Nadu. Pakistan, Maldiv Island, Burma, Thailand, Indonesia and coast of Persian Gulf.

Remarks : We have recorded this species from Sundarban rivers in South 24-Parganas, West Bengal.

Order COLUMBIFORMES

Family COLUMBIDAE

Key to the genera of the family COLUMBIDAE

1. Plumage greenish.2
Plumage not greenish.....3
2. Plumage with much yellowishgreen above and below.....*Treron*
Plumage vinaceous with metallic green in upper parts.*Chalcophaps*
3. Tail with 14 feathers, head entirely whitish..... *Ducula*
Tail with 12 feathers, head not white.....4
4. Plumage distinctly barred with black.*Macropygia*
Plumage not barred.5
5. Wing above 200 mm., outer tail feathers blackish at tips.*Columba*
Wing below 180 mm., outer tail feathers white or grey at tips.*Sterptopelia*

Genus *Treron* Vieillot, 1816

168. *Treron sphenura sphenura* (Vigors)

1832 (1831). *Vinago sphenura* Vigors, *Proc. zool. Soc. Lond.* : 173 (Himalayas).

1969. Ali and Ripley, vol.3, p.96

Common name : Kokla or Wedgetailed Green Pigeon (English) and Kokla (Hindi).

Diagnostic characters : Size equal to a Pigeon. In male, entire plumage yellowish green; crown and breast stinged with orange-rufous. Scapula's with maroon; Chin and throat yellow. In female, all characters like male excepting lacks of rufous on crown and maroon in upper parts.

Material examined : Darjiling district : 1 ♀, Kumani, Kalimpong Forest Division, coll. R.K. Ghose, 18.iii.1985.

Measurements : 1 ♀ : Wing 172, tail 122, bill 14.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Manipur, Nagaland, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan and Burma.

169. *Treron pompadora phayrei* (Blyth)

1862. *Osmotreron Phayrei* Blyth, *J. Asiat. Soc. Beng.*, 31 : 344 (Tounghoo, Burma).

1969. Ali and Ripley, vol.3, p.102

Common name : Ashyheaded Green Pigeon (English) and Hariyal (Bengali).

Material examined : Nil.

Diagnostic characters : Size smaller than the preceding bird. In male, back and scapulars chestnut-marron; crown and nape dark ashy grey; sides of head greenish yellow; hindneck green, chin and throat greenish yellow; upper breast orange; lower breast and abdomen olive-green; under tail-coverts cinnamon. In female, similar to male, but lacks chestnut mantle and orange breast.

Distribution : India : West Bengal (Barddhaman, Birbhum, Jalpaiguri, Kochbehar and Malda districts) : Arunachal Pradesh, Assam, Manipur and Meghalaya. Bangladesh, Burma, Thailand and the Indo-chinese countries.

Remarks : We have recorded this sub species in Birbhum, Barddhaman, Jalpaiguri, Malda and Kochbehar districts in West Bengal.

170. *Treron bicincta* (Jerdon)

1840. *Vinago bicincta* Jerdon, *Madras J. Lit. Sci.*, 12 : 13 (Sea coast south of Tellicherry).

1982. Ripley, p. 147

Common name : Orangebreasted Green Pigeon (English) and Harial (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a Pigeon. In male, back deep green, head light yellow, breast with a band lilac across followed by orange. Under tail-coverts cinnamon edged with pale yellow. Tail slaty with a broad blackish subterminal band except central pair of tail feathers. In female, back olive yellow; underparts yellowish green, lacking lilac and orange breast.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland except Arunachal Pradesh, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Pakistan, Nepal, Bangladesh, Burma, Thailand, Malay Peninsula, Vietnam and Sri Lanka.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

171. *Treron phoenicoptera phoenicoptera* (Latham)

1790. *Columba phoenicoptera* Latham, *Index Orn.*, 2 : 597 (India).

1969. Ali and Ripley, vol 3, p.106

Common name : Bengal Green Pigeon (English) and Harial (Hindi).

Material examined : Bankura district : 1 ♀, Baripal Dam, coll. B.C. Saha, 5.xi.1979. Haora district : 2 ♂, Botanical Garden, coll. not known, 29.x.1966 and 21.vi.1967. Medinipur district : 2 ♂, Banspahari, coll. A.K. Mukherjee, 14.x.1979 and 16.x.1979.

Diagnostic characters : Size equal to the preceding bird. Back greenish grey; red shoulder patch, neck yellow. Lower breast grey; belly and flank grey.

Measurements :

	Wing	Tail	Bill
4 ♂	188-193 (191)	100-118 (111)	23-26 (24)
1 ♀	182	100	24

Distribution : India : West Bengal (Bankura, Haora and Medinipur districts) : Arunachal Pradesh, Assam, Bihar, Haryana, Manipur, Meghalaya, Mizoram, Orissa, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Nepal and Bangladesh.

Genus *Ducula* Hodgson, 1836

172. *Ducula aenea sylvatica* (Tickell)

1833. *Columba Sylvatica* Tickell, *J. Asiat. Soc. Beng.*, 2 : 581 (Borabhum).

1969. Ali and Ripley, vol.3, p.111

Common name : Northern Green Imperial Pigeon (English) and Bada harial (Hindi).

Material examined : Jalpaiguri district : 1 ♂ and 1 ♀, Chilapata, coll. R.K. Ghosh, 7 and 9.iii.1985.

Diagnostic characters : Size equal to a Crow. Head breast and belly pinkish grey; back, wing and tail bright metallic bronzy green. Under tail-coverts deep maroon.

Measurements :

	Wing	Tail	Bill
1 ♂	220	162	30
1 ♀	218	138	31

Distribution : India : West Bengal (Jalpaiguri district) : Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Orissa, Sikkim, and Uttar Pradesh. Bangladesh, Burma, Thailand and Indochinese countries.

Genus *Columba* Linnaeus, 1758

173. *Columba livia intermedia* Strickland

1844. *Columba intermedia* Strickland, *Ann. Mag. nat. Hist.*, 13 : 39 (India=Calcutta, Calcutta district, West Bengal).

1969. Ali and Ripley, vol.3, p.125

Common name : Indian Blue Rock Pigeon (English), Gola pyra (Bengali) and Kabutar (Hindi).

Material examined : Medinipur district : 1 ♂, Belpahari, coll. Dr. A. K. Mukherjee, 10.x.1979.

Diagnostic characters : Entire plumage bluish grey; nape and upper breast with glistening metallic green, purple and magenta sheen. Wing with two dark bands. Tail with terminal black bands.

Measurements : 1 ♂ : Wing 218, tail 120, bill 24.

Distribution : India : West Bengal (Medinipur district) : Throughout Indian Union. Bangladesh, Nepal, Bhutan, Sri Lanka, Burma and Thailand.

Genus *Macropygia* Swainson, 1837

174. *Macropygia unchall tusalia* (Blyth)

1843. *Columba tusalia* Hodgson=Blyth, *J. Asiat. Soc. Beng.* 12(2): 936 (Darjeeling = Darjiling, Darjiling district, West Bengal, India).

1969. Ali and Ripley, vol.3, p.138

Common name : Bartailed Cuckoo-Dove (English).

Material examined : Darjiling district : 1 ♀, Selimbong, coll. R.K. Ghose, 4.xii.1977.

Diagnostic characters : Size equal to a Pigeon. In male, back, wings and tail brownish rufous, barred with black. Tail long, broad and graduated. Forehead buff, crown lilac-purple, hind neck metallic green. Chin and throat lilac-buff, breast and abdomen dark-lilac. In female, the upperparts duller, head and breast barred with dark brown.

Measurements : 1 ♀ : Wing 195, tail 175, bill 26.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Sikkim and Uttar Pradesh. W. Szechuan, Burma, Thailand, Bhutan and Nepal.

Genus *Streptopelia* Bonaparte, 1855

175. *Streptopelia decaocto decaocto* (Frivaldszky)

1758. *Columba risoria* Linnaeus, *Syst. Nat.* ed. 10. 1 : 65 (Based on a pale domesticated bird).

1969. Ali and Ripley, vol.3, p.147

Common name : Indian Ring Dove (English), Par ghughu (Bengali) and Gugi (Hindi).

Material examined : Medinipur district : 1 ♂, Kanaisoli, coll. A.K. Mukharjee, 7.x.1979; 1 ♂, Belphari coll. A.K. Mukherjee, 10.x.1979; 1 ♂, Malabati, coll. A.K. Mukherjee, 8.x.1979.

Diagnostic characters : Size smaller than a Pigeon. Entire plumage pale greyish-brown. Hindneck with a narrow black half-collar. Outer rectrices with edges, central pair blackish.

Measurements : 3 ♂ : Wing 160-175(165); tail 120-142(107); bill 20-22(21.5).

Distribution : India : West Bengal (Medinipur district) : Throughout Indian Union except Andaman and Nicobar Islands. From Hungary over SE Europe, Asia Minor and Sri Lanka.

176. *Streptopelia tranquebarica humilis* (Temminck)

1824. *Columba humilis* Temminck, *Pl. Col., livr.* 44 : 259 (but not pl. 258) (Bengal and Luzon).

1969. Ali and Ripley, vol.3, p.151

Common name : Burmese Red Turtle-Dove (English) and Lal Ghughu (Bengali).

Material examined : North 24-Parganas district : 1 ♂, Mitpukur, Salt Lake, coll. B. Biswas, 13.xi.1965.

Diagnostic characters : Size equal to a Myna. Head grey, back brick-red and underparts pinkish. Hind neck with a narrow black half collar.

Measurements : 1 ♂, Wing 136, tail 89, bill 17.

Distribution : India : West Bengal (North 24-Parganas district) : Andaman Islands, Arunachal Pradesh, Assam, Manipur, Meghalaya and Uttar Pradesh. Bangladesh, Burma, North China, Indochinese countries, Thailand, Philippines and Tibet.

177. *Streptopelia chinensis suratensis* (Gmelin)

1789. *Columba suratensis* Gmelin, *Syst. Nat.* 1(2) : 778 (Surat, Gulf of Cambay, India).

1969. Ali and Ripley, vol.3, p.152

Common name : Indian Spotted Dove (English), Teli ghughu (Bengali) and Chitta fakhta (Hindi).

Material examined : Bankur district : 1 ♀, Susunia Hills, coll. J.M Dasgupta, 1.ii.1979. Medinipur district : 1 ♀ and 1 unsexed, Bansphari Kankrajhar, coll. A.K. Mukherjee, 14 and 15.x.1979. North 24-Parganas district : 1 ♀, Duttabad, Salt Lake, coll. B. Biswas, 5.xii.1965. South 24-Parganas district : 1 unsexed, Raidighi, Canning, coll. A.K. Mukherjee, 17 and 26.xii.1979.

Diagnostic characters : Size smaller than a Pigeon. Back pinkish brown; head grey; hindneck and upper back with a conspicuous black and white "chess board" Chin vinous-grey, paler on throat; belly, vent and under-tail coverts white.

Measurements : 4 ♀ : Wing 132-144(133); tail 123-143(130); bill 20.

Distribution : India : West Bengal (Bankura, Medinipur, North 24-Parganas and South 24-Parganas districts) : Throughout the Indian Union, except Andaman and Nicobar Islands, Arunachal Pradesh, Manipur, Mizoram and Nagaland. Bangladesh and Pakistan.

178. *Streptopelia senegalensis cambayensis* (Gmelin)

1789. *Columba cambayensis* Gmelin, *Syst. Nat.* 1(2): 779 ('Cambaya', i.e. Gulf of Cambay, Gujarat, India).

1969. Ali and Ripley, vol.3, p.155

Common name : Indian Little Brown Dove (English) and Chhota fakhta (Hindi).

Material examined : Bankura district : 1 ♂ and 1 ♀, Susunia Hills, coll. J.M. Dasgupta, 28.i.1979.

Diagnostic characters : Size slightly smaller than a Myna. Head pink; back earthy brown wing with grey patches. On either sides of foreneck "chess board" in black and rufous. Throat and breast pinkish brown; belly and vent white.

Measurements

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	128	110	20
1 ♀	111	111	19

Distribution : India : West Bengal (Bankura district) : Throughout Indian Union except Andaman (probably introduced) & Nicobar Islands, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. Bangladesh and Pakistan.

Genus *Chalcophaps* Gould, 1843

179. *Chalcophaps indica indica* (Linnaeus)

1758. *Columba indica* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 164 (Orientali=Amboina vide Stresemann, 1952, *Ibis* 94 : 511).

1969. Ali and Ripley, vol.3, p.157

Common name : Indian Emerald Dove (English) and Raj ghughu (Bengali).

Material examined : Darjiling district : 1 ♂, Kalijhora, coll. not known, 27.i.1953.

Diagnostic characters : Size slightly larger than a Myna. Upper back and wings with brilliant bronzed emerald-green back; forehead and eye-brows white; crown grey. A band of white fringed feathers across lower back. Wings with whitish grey patch. Underparts chestnut.

Measurements : 1 ♂ : Wing 147, tail 88, bill 21.

Distribution : India : West Bengal (Darjiling district) : Throughout the Indian Union, except Manipur Mizoram and Nagaland. Bangladesh, Nepal, Bhutan, Burma, Malay Peninsula, Indochinese countries, Indonesia and Philippines.

Order PSITTACIFORMES

Family PSITTACIDAE

Genus *Psittacula* Cuvier, 1800180. *Psittacula eupatria* (Linnaeus)1766. *Psittacus Eupatria* Linnaeus, *Syst. Nat.*, ed. 12,1 : 140 (No locality=Gingi, India ex Brisson).

1982. Ripley, p. 158

Common name : Large Indian Parakeet (English), Hiranman tota (Hindi) and Chandana (Bengali).*Material examined* : Nil.*Diagnostic characters* : Size bigger than a Pigeon. In male, entire feathers grass green. Wing-shoulders deep red. A prominent rose-pink collar around neck and a broad black band from lower mandible to the rose collar. In female, the rose-pink collar and black mandibular stripe absent.*Distribution* : India : West Bengal (Barddhaman district) : Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu.*Remarks* : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.181. *Psittacula krameri borealis* (Neumann)1915. *Paleornis krameri borealis* Neumann, *Orn. Monatsb.*, 23 : 178 (Assam : India).

1969. Ali and Ripley, vol.3, p.169

Common name : Northern Roseringed Parakeet (English), Tiya (Bengali) and Tota (Hindi).*Material examined* : Medinipur district : 1 ♂, Belphari, coll. A.K. Mukherjee, 10.x.1979. North 24-Parganas district : 1 ♂, Nalbani, N. Salt Lake, coll. B. Biswas, 10.vii.1965.*Diagnostic characters* : Size slightly bigger than a Myna. In male, the entire plumage grass-green. A rose-pink and black collar on neck. In female, the neck collar is replaced by an indistinct emerald green ring.*Measurements* :

	Wing	Tail	Bill
1 ♂	162	172	26
1 ♀	175	235	25

Distribution : India : West Bengal (Medinipur and North 24 Parganas districts) : Andhra Pradesh, Assam, Bihar, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Meghalaya, Orissa, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Burma, China and Vietnam.182. *Psittacula alexandri fasciata* (P.L.S. Muller)1776. *Psittacus fasciatus* P.L.S. Muller, *Natursyst.*, Suppl., : 74 (Pondicherry, erroneously restricted to Arakan by Ticehurst, 1933, *J. Bombay nat. Hist. Soc.*, 36 : 934).

1969. Ali and Ripley, vol.3, p.172

Common name : Indian Redbreasted Parakeet (English) and Madna (Hindi).*Material examined* : Jalpaiguri district : 1 ♂, Ambari, Baikantapur Forest, coll. R.K. Ghosh, 23.iii.1985.*Diagnostic characters* : Size slightly smaller than a Pigeon. In male, head purplish grey, forehead

black; back brighter green. A broad black stripes from lower mandible to sides of head. Wing with yellow shoulder patch. Throat and breast vinacious red; belly bluish green; vent and undertail-coverts yellowish green. In female head tinged blue green, breast red and dark.

Measurements : 1 ♂ : Wing 171, tail 169, bill 26.

Distribution : India : West Bengal (Jalpaiguri district) : Assam, Bihar, Manipur, Meghalaya, Nagaland, Orissa, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Indochinese countries, Vietnam, China and Hainan Islands.

183. *Psittacula cyanocephala bengalensis* (Forster)

1781. *Psittacus bengalensis* Forster, in Pennant's *Indian Zool.*, 40 (Bengal, restricted to Calcutta, Calcutta district, West Bengal, India by whistler and Kinnear).

1969. Ali and Ripley, vol.3, p.178

Common name : Northern Blossomheaded Parakeet (English), Fultusi (Bengali) and Tuiya tota (Hindi).

Material examined : Medinipur district : 1 ♀, Bansphari, coll. A.K. Mukherjee, 14.x.1979.

Diagnostic characters : Size smaller than a Myna. In male, back and underparts grass green. Head bright bluish red, collar black and verdigris. Wings with maroon-red wing patch. In female, characters similar to male except the head duller and greyer; collar bright yellow. Shoulder patch absent.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	134	118	19
1 ♀	136	204	22

Distribution : India : West Bengal (Medinipur district) : Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Orissa, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal and Bhutan.

Order CUCULIFORMES

Family CUCULIDAE

Key to the genera of the family CUCULIDAE

1. Tarsus more or less feathered anteriorly.....4
Tarsus naked.....2
2. Plumage of head and shoulder spiny3
Plumage of head and shoulder not spiny *Eudynamys*
3. Claw of hind toe much lengthen and nearly straight.....*Centropus*
Claw of hind toe not as above.....6
4. Head crested, tarsus feathered top only.....*Clamator*
Head not crested, tarsus feathered throughout in front.....5
5. Larger; wing 150 mm. or above *Cuculus*

- Smaller; wing below 150 mm.....*Cacomantis*
 6. Naked sides of head not united.....*Rhopodytes*
 Sides of head not naked.....*Taccocua*

Genus *Clamator* Kaup, 1829

184. *Clamator coromandus* (Linnaeus)

1766. *Cuculus coromandus* Linnaeus, *Syst. Nat.*, ed. 12, I : 171 (Coromandel = Pondicherry, India).
 1969. Ali and Ripley, vol.3, p. 192

Common name : Redwinged crested cuckoo (English).

Material examined : Calcutta district : 1 ♀, Indian Museum compound, coll. Narayan, 9.iv.1972.

Diagnostic characters : Size larger than a House Crow. Back and head with crest glossy black; a white half-collar on hind neck; wings chestnut. Chin, throat and breast rust colour, belly and vent whitish.

Measurements : 1 ♂ : Wing 166, tail 240, bill 31.

Distribution : India : West Bengal (Bankura and Calcutta districts) : Arunachal Pradesh, Assam, Bihar, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand Malay Peninsula, the Indochinese countries, Indonesia, Philippines, Celebes and China.

Remarks : Chattopadhyay (1986) has recorded this species from Bankura, Bankura district, West Bengal and claimed as new locality record from eastern India. But this bird was reported earlier by Ali and Ripley, 1969.

185. *Clamator jacobinus serratus* (Sparrrman)

1786. *Cuculus serratus* Sparrrman, *Mus. Carls.*, fasc. I, no.3 and pl. (Cape of Good Hope = Cape Peninsula, Cape Province, S. Africa.)

1969. Ali and Ripley, vol.3, p.194.

Common name : Pied Crested Cuckoo (English); Shah bulbul (Bengali) and Papiya (Hindi).

Material examined : North 24 Parganas district : 1 ♂, Nalbani, N. Salt Lake, coll. B. Biswas, 20.vi.1965; 1 ♂, coll. A.K. Das, 22.v.1966; 1 ♂, coll. D.K. Ghosal, 20.vi. 1966; 1 ♀, Sukchar, coll. B. Biswas, 2.vii. 1964; 2 ♀, Kalikapur, coll. B. Biswas, 31.x. 1965.

Diagnostic characters : Size equal to a Myna. Back, head with crest, wings and tail black. Wings with roundish white patch. Tail graduated with white tips. Underparts white.

Measurements :

	Wing	Tail	Bill
3 ♂	145-161 (150)	160-172 (164)	25-27 (26)
3 ♀	146-165 (154)	162-168 (164)	25-27 (26)

Distribution : India : West Bengal (North 24-Parganas district) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal and Africa (South of Sahara).

186. *Clamator jacobinus jacobinus* (Boddaert)

1783. *Cuculus Jacobinus* Boddaert, *Table Pl. enlum.* : 53 (Coromandel coast = Pondicherry, India, ex Daubenton, pl. enlum., pl. 872).

1969. Ali and Ripley, vol.3, p.197

Common name : Ceylon Pied Crested Cuckoo (English).

Material examined : Barddhaman district : 1 ♂ (Juv.), Barakar, coll. T. B. Sinha, 18.xi.1948. Calcutta district : 1 ♀, Calcutta, coll. H. N. Mitra, 18.ix. 1965. South 24-Parganas district : 3 ♂ and 1 ♀, Sambhunagar, Sunderbans, coll. A. K. Mukherjee, 26.ix. and 2.x. 1955.

Diagnostic characters : Size slightly smaller than the preceding bird. It is identical with *Clamator jacobinus serratus* except for its smaller size.

Measurements :

	Wing	Tail	Bill
3 ♂	146-148 (146)	170-172 (171)	26-27 (26)
2 ♀	144, 148	144, 158	25, 27

Distribution : India : West Bengal (Barddhaman, Calcutta and South 24 Parganas districts) Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh and Tamil Nadu. Sri Lanka.

Genus *Cuculus* Linnaeus, 1758187. *Cuculus varius varius* Vahl

1797. *Cuculus varius* Vahl, *Skiv. Naturhist. Selsk.*, Kjobenhavn, 4(1) : 60 (Tranquebar).

1963. Ali and Ripley, vol.3, p.200

Common name : Brainfever Bird (English), Chokgallo (Bengali) and Kapak (Hindi).

Material examined : Bankura district : 1 ♀, Susunia Hills, coll. J. M. Dasgupta, 28.i.1978. Haora district : 1 ♂, Botanical Garden, Sibpur, coll. J. M. Dasgupta, 21.vi.1967. Jalpaiguri district : 1 ♂, Khuntimari, coll. R. K. Ghose, 11.iii.1985. North 24-Parganas : 1 ♂, Bantala, Salt Lake, coll. B. Biswas, 4.iv. 1967. Puruliya district : 1 ♂, Matha, coll. A. K. Mukherjee, 19.ii.1982. South 24-Parganas district : 1 ♂ Baruipur, coll. B. Biswas, 7.xi.1965.

Diagnostic characters : Size equal to a Pigeon. Crown and back ashy grey; tail long, tipped rufescent, with 4 or 5 whitish and black bars. Chin and throat white suffused with rufous and ashy on breast; abdomen and flanks barred with brownish.

Measurements :

	Wing	Tail	Bill
5 ♂	189-206 (196)	158-172 (166)	27-30 (28)
1 ♀	192	137	24

Distribution : India : West Bengal (Bankura, Haora, Jalpaiguri, North 24-Parganas, Puruliya and South 24 Parganas districts) : throughout Indian mainland. Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

188. *Cuculus micropterus* Gould1837. *Cuculus micropterus* Gould, *Proc. zool. Soc. Lond.*, : 137 (Himalayas).

1982. Ripley, p. 166

Common name : Indian Cuckoo (English) and Bou-Katha-Kao (Bengali).*Material examined* : Nil.*Diagnostic characters* : Size equal to the preceding bird. In male, back dark slaty grey with a brownish tinge. Tail long with a broad black subterminal band. Chin and throat pale ashy; breast and belly white, cross barred with widely spaced broad black bands. In female, chin and throat pale grey; breast browner, with a rufous tinge.*Distribution* : India : West Bengal (Barddhaman district) : Throughout Indian Union. Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Indonesia and Philippines. Breeds in Burma, Thailand, Malay Peninsula, S. China, Korea and U.S.S.R.*Remarks* : Gantlett (1985) has observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.189. *Cuculus canorus canorus* Linnaeus1758. *Cuculus canorus* Linnaeus, *Syst. Nat.* ed. 10, 1 : 110 (Europa = Sweden, ex Fn. Suec.).

1969. Ali and Ripley, vol.3, p.208

Common name : Cuckoo (English).*Material examined* : North 24-Parganas district : 1 ♀, Nalbani, N. Salt Lake, coll. D. K. Ghosal, 8.v.1986, 1 ♀, coll. B. Biswas, 5.x.1967.*Diagnostic characters* : Size equal to a Pigeon. In male, back and wings dark ashy grey; blackish brown tail, spotted and tipped with white. Crown, foreneck, chin and breast pale ashy; belly and vent whitish, narrowly cross-barred with black. In female, throat, breast and sides of neck with rufous tinge; hepatic phase : entire upper plumage barred chestnut and blackish brown. Underparts also barred with pale chestnut and blackish.*Measurements* :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♀	191,199	148, 158	26 (2)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout Indian Union except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura. Breeds in Europe and N. E. Siberia, Kamchatka, Asia Minor, Iran, Manchuria, Korea, Japan and Kurile Is. Winter visitors in Africa, Malayasia to New guinea.190. *Cuculus saturatus saturatus* Blyth1843. *Cuculus saturatus* 'Hodgson' = Blyth, *J. Asiat. Soc. Beng.*, 12 (2) : 942 (Nepal).

1969. Ali and Ripley, vol.3, p.211

Common name : Himalayan Cucukoo (English).*Material examined* : Nil.*Diagnostic characters* : Similar to the preceding bird excepting pure white of the edge of the wing shoulder, without any brown barring.*Distribution* : India : West Bengal (South 24-Parganas district) : Andaman Nicobar Islands,

Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Burma, Thailand, China and Taiwan.

Remarks : Chattopadhyay (1986) has recorded this species from 24-Parganas district, West Bengal.

Genus *Cacomantis* S. Muller, 1843

191. *Cacomantis sonneratii* (Latham)

1790. *Cuculus Sonneratii* Latham, *Index Orn.*, 1 : 215 (India).

1982. Ripley, p.168.

Common name : Indian Baybanded Cuckoo (English).

Material examined : Nil.

Diagnostic characters : Size equal to a Myna. Crown, back, and wings bright rufous, crossbarred with brown. Chin, throat, sides of head whitish with fine wavy brown cross-bars. Tail deep rufous, tipped with white and subtipped with black.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Nepal, Bhutan, Bangladesh, Burma, Thailand and Vietnam.

Remarks : Gauntlett (1985) has noted this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

192. *Cacomantis merulinus querulus* Heine

1863. *Cacomantis querulus* Heine, *J. Orn.*, 11 : 352. New name for *Polyphasia tenuirostris* Jerdon, 1862, not *Cuculus tenuirostris* Gray, 1834, which = *Cacomantis passerinus* (Vahl), (Lower Bengal, Assam, Sylhet, Burma and China).

1969. Ali and Ripley, vol.3, p.220

Common name : Burmese Plaintive Cuckoo (English) and Chhota bharau (Bengali).

Material examined : North 24-Parganas district : 1 ♂, Babu bheri, Salt Lake, coll. B. Biswas, 17.iii.1963; 2 ♀ Nalbani, N. Salt Lake, coll. B. Biswas, 13.ix.1964; and 30.x.1965; 1 ♀, Kalikapur, Salt Lake, coll. B. Biswas; 30.x.1965.

Diagnostic characters : Size equal to the preceding bird. In male, back ashy grey and brown. Tail barred blackish, white tipped. Head ashy grey. Breast, belly and vent rufous-buff. In female, dimorphic with a hepatic phase.

Measurements :

	Wing	Tail	Bill
3 ♀	112-117 (113)	112-118 (114)	21-23 (22)
1 ♂	117	125	20+

Distribution : India : West Bengal (North 24-Parganas district) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand, Indochinese countries, Malay Peninsula, Hainan and China.

Genus *Eudynamis* Vigors & Horsfield, 1826

193. *Eudynamis scolopacea scolopacea* (Linnaeus)

1758. *Cuculus scolopaceus* Linnaeus, *Syst. Nat.*, ed 10, 1 : 111 (Malabar, Kerala, India).

1969. Ali and Ripley, vol.3, p.227

Common name : Indian Koel (English), Kokil (Bengali) and Koel (Hindi).

Material examined : Bankura district: 1 ♀, Susunia Hills, coll. J. M. Dasgupta, 31.i.1979. Barddhamn district : 1 ♂ and 1 ♀, Arrah, coll. P. K. Das, 24.iv.1988. Calcutta district : 1 ♀, Indian Museum compound, coll. B. Roy, 28.ix.1954. Haora district : 3 ♂ and 8 ♀, Botanical Garden, Shibpore, coll. J. Anderson, date not known. Medinipur district : 1 ♂, Bansphari, coll. A. K. Mukherjee, 14.x.1979; 1 ♂, Belpahari, coll. A. K. Mukherjee, 12.x.1979. South 24-Parganas district : 1 ♀, Beliaghata, coll. B. Biswas, 27.xi.1950; 1 ♀, Raidighi, coll. A. K. Mukherjee, 26.xii.1979.

Diagnostic characters : Size equal to a House Crow. In male, entire plumage glistening metallic black. Bill yellowish green. Eyes crimson. Calls; Kuoo, kuoo, etc. In female, back, wings dark brown with white spotted and barred. tail and wings barred with white; chin and throat spotted, breast, belly and vent whitish barred with blackish.

Measurements :

	Wing	Tail	Bill
7 ♂	182-206 (194)	189-198 (191)	32-35 (33)
12 ♀	181-192 (188)	162-188 (178)	31-35 (34)

Distribution : India : West Bengal (Bankura, Barddhaman, Calcutta, Haora, Medinipur, South 24-Parganas districts) : Throughout Indian Union except eastern India beyond Assam and Andaman & Nicobar Is. Pakistan Nepal, Bhutan, Bangladesh and Sri Lanka.

Genus *Rhopodytes* Cabains & Heine, 1863

194. *Rhopodytes tristis tristis* (Lesson)

1830. *Melias tristis* Lesson, *Traite d'Orn., livr. 2* : 132 (Sumatra, errore=Bengal).

1969. Ali and Ripley, vol.3,p.231

Common name : Large Greenbilled Malkoha (English) and Bon kokil (Bengali)

Material examined : Jalpaiguri district : 1♀, Chunabati, coll. A.K. Mukherjee, 24.i.1955.

Diagnostic characters : Size equal to a Pigeon. Back dark ashy grey with deep green gloss. Forehead grey with shiny bristly black shafts to the feathers. Tail green glossed black, graduated long and broad; rectrices tipped with white. Chin, throat and sides of head yellowish ashy grey darkening to blackish on abdomen and vent.

Measurements : 1 ♀ : Wing 151, tail 273, bill 38.

Distributions : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Assam, Bihar, eastern Madhya Pradesh, Manipur, Meghalaya, Nagaland, Orissa, Sikkim and Tripura. Nepal, Bhutan and Bangladesh.

Genus *Taccocua* Lesson, 1830

195. *Taccocua leschenaultii sirkee* (J.E. Gray)

1831. *Centropus sirkee* J.E. Gray, in Hardwicke's *Ill. Ind. Zool.*, 1(6), Pl. 28(No locality = Cawnpore = Kanpur, Uttar Pradesh, India).

1969. Ali and Ripley, vol.3, p.234

Common name : Western Sirkeer Cuckoo (English) and Jangli tota (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a House Crow. Back wings, and tail earthy brown and rufous. Head and breast earthy brown with fine glistening black shaft streaks on feathers. Bill bright cherry-red and yellow. Rectrices with broad white-tips.

Distribution : India : West Bengal : Himachal Pradesh, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Uttar Pradesh. Pakistan.

Genus *Centropus* Illiger, 1811

196. *Centropus sinensis sinensis* (Stephens)

1815. *Polophilus sinensis* Stephens, in *Shaw's Gen. Zool.*, 9(1) : 51 (Said to inhabit China = Ning Po, China, by designation of Stresemann, 1913. *Nov. Zool.* 20 : 321).

1969. Ali and Ripley, vol.3, p.240

Common name : Common Crow-Pheasant or Coucal (English), Kuka (Bengali) and Mahoka (Hindi).

Material examined : North 24-Parganas district : 1 ♂, Bantala, Salt Lake, coll. B. Biswas, 12.vii.1967; 1 ♂, Kalikapur, S. Salt Lake, coll. S.S. Saha, 22.viii.1967; 1 ♂, Nalbani, N. Salt Lake, coll. B. Biswas, 17.iii.1968. Puruliya district : 1 unsexed, Moncharpur, coll. not known, 26.i.1955.

Diagnostic characters ; Size equal to a Jungle Crow. Black and tail glossy black. Wings chestnut. Tail black, long, broad and graduated.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	190-203 (196)	220-256 (233)	40-42 (41)
1 ♀	204	281	43

Distribution : India : West Bengal (North 24-Parganas and Puruliya districts) : Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Bhutan and China.

197. *Centropus sinensis intermedius* (Hume)

1873. *Centroccyx intermedius* A.O.H. (= Hume), *Str. Feath.*, 1 : 454, in text (Dhoon, Dacca and Thayetmyo).

1969. Ali and Ripley, vol.3, p.242

Common name : East Pakistan Crow-Pheasant (English) and Kuka (Bengali).

Material examined : Bardhaman district : 1 ♀, Govindpur, coll. M.L. Roonwal, 18.xi.1948. Calcutta : 1 unsexed, coll. Anderson, date not known; Calcutta : 1 ♂, coll. not known, date not known. Puruliya district : 2 unsexed, Monoharpur, coll. not known, 25.i.1955 and 26.i.1955; 1 unsexed, Mohanpur, coll. not known 25.i.1955.

Diagnostic characters : Characters similar to the preceding bird and smaller in size.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	191	224	39
1 ♀	204	280	42

Distribution : India : West Bengal (Bardhaman and Puruliya districts) : Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Burma, Thailand, the Indochinese countries Hainan and China.

Order STRIGIFORMES

Family STRIGIDAE

Key to the subfamilies of family STRIGIDAE

Facial disc and ruff well marked ear-orifice smaller than eye, middle claw pectinate.... TYTONINAE

Facial disc and ruff ill marked; ear-orifice larger than eye, middle claw simple..... STRIGINAE

Key to the genera of the family STRIGIDAE

Middle claw pectinate on inner side.	<i>Tyto</i>
Middle claw not pectinate.....	2
Ear-tufts present.	3
Ear-tufts absent.	5
Wing exceeding 250 mm.....	4
Wing under 250 mm.	<i>Otus</i>
Wing exceeding 350 mm.....	<i>Bubo</i>
Wing 280-330 mm.	<i>Asio</i>
Wing 250 mm. and above	<i>Strix</i>
Wing 240 mm. and below.....	6
Plumage uniform above.....	<i>Ninox</i>
Plumage barred or spotted above.....	7
Plumage barred above.....	<i>Glaucidium</i>
Plumage spotted above.	<i>Athene</i>

Genus *Tyto* Billberg, 1828198. *Tyto alba stertens* Hartert

1929. *Tyto alba Stertens* Hartert, *Nov. Zool.*, 35 : 98 (Cachar, Cachar district. Assam, India).

1969. Ali and Ripley, vol.3, p.250

Common name : Indian Barn Owl (English), Lakshmi pecha (Bengali) and Buri churi (Hindi).

Material examined : Calcutta district : 4 ♂ and 3 ♀, Chowranghee, coll. not known, 16.vi.1887, 1.iii.1888, 11.vi.1889 and 8.xii.1898. Haora district : 1 ♂ and 1 ♀, Botanical Garden, Shibpur, coll.

not known, 24.i.1889. South 24-Parganas district : 1 ♂, Sambhunagar, Sundarban, coll. A.K. Mukherjee, 28.ix.1955.

Diagnostic characters : Back and wings golden buff and grey, finely stippled with black and white. Head large round with a white monkey-like facial disc. Underparts silky white tinged with buff and usually spotted dark brown.

Measurements :

	Wing	Tail	Bill
3 ♂	294-298(296)	117-122(119)	34-36(35)
3 ♀	295	120-126(124)	34-35(35)

Distribution : India : West Bengal (Calcutta, Haora and South 24-Parganas districts) : Throughout the Indian mainlands. Bangladesh, Pakistan, Nepal, Sri Lanka and Burma.

Genus *Otus* Pennant, 1769

199. *Otus spilocephalus spilocephalus* (Blyth)

1846. *Ephialtes spilocephalus* Blyth, *J. Asiat. Soc. Beng.*, 15 : 8 (Darjeeling=Darjiling, Darjiling district, West Bengal, India).

1969. Ali and Ripley, vol.3, p.257

Common name : Eastern Spotted Scops Owl (English).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Mungpow, coll. C.M. Inglis, 27.v.1923 and 8.ix.1925; 1 ♂, Below Sureil, coll. Nunlal, 1.iii.1920.

Diagnostic characters : Size equal to a Myna. Head, back and wings rusty brown with pale spotted. Underparts speckled brown on white. Wings with numerous pale bands.

Measurements :

	Wing	Tail	Bill
2 ♂	144,145	81(2)	22,21
1 ♀	153	82	20

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Manipur, Meghalaya, Nagaland, Sikkim and Tripura. Bangladesh, Nepal, Bhutan and Burma.

200. *Otus scops sunia* (Hodgson)

1836. *Scops sunia* Hodgson, *Asiat. Res.*, 19 : 175 (Nepal).

1969. Ali and Ripley, vol.3, p. 262

Common name . North Indian Scops Owl (English).

Material examined : Jalpaiguri district : 1 ♂, Ambari, Baikantapur, coll. R.K. Ghose, 22.iii.1985; 1 ♀, Rehti Forest, coll. C.M. Inglis, 9.iii.1936, 1 ♀, Moraghat Forest, coll. C.M. Inglis, 18.i.1931.

Diagnostic characters : Size smaller than the preceding bird. Head, back and wings brown with pale streaks. Head with ear-tufts; brown wings with white markings. Underparts whitish brown with dark blotches.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	165	75	22
2 ♀	150, 152	68(2)	20, 21

Distribution : India : West Bengal (Calcutta, Jalpaiguri and South 24-Parganas districts) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Manipur, Orissa, Sikkim, Uttar Pradesh. Pakistan, Nepal, Bhutan and Bangladesh.

Remarks : Blyth (1845) reported this bird from Lower Bengal and Calcutta.

201. *Otus bakkamoena marathae* Ticehurst

1922. *Otus bakkamoena marathae* Ticehurst, *Bull. Br. Orn. Cl.* 42 : 122 (Raipur, Central Province=Madhya Pradesh, India).

1969. Ali and Ripley, vol.3, p.268

Common name : Central Indian Collared Scops Owl (English) and Tharkavi Choghad (Hindi).

Material examined : Birbhum district : 1 ♂ and 1 ♀, Chandrapur, coll. A.K. Poddar, 10 and 13.xii.1985.

Diagnostic characters : Size equal to a Myna. Head with horn. Back grey brown or rufous brown mottled and vermiculated with whitish, chin and throat white, throat barred with black.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	167	78	26
1 ♀	170	81	25

Distribution : India : West Bengal (Birbhum district) : Gujarat, Madhya Pradesh, Maharashtra and Orissa.

202. *Otus bakkamoena lettia* (Hodgson)

1836. *Scops lettia* Hodgson, *Asiat. Res.*, 19 : 176 (Nepal).

1969. Ali and Ripley, vol.3, p. 270

Common name : Burmese Collared Scops Owl (English).

Material examined : Darjiling district : 1 ♂, Kalijhora, coll. P.K. Das, 19.ii.1979; 1 ♀, Thumbo T.E., coll. G.A. Lock, 2.iii.1937. Jalpaiguri district : 1 ♂, Moraghat, coll. C.M. Inglis, 2.ii.1931.

Diagnostic characters : Size equal to the preceding bird. Back rufous brown. The characters are similar to the preceding bird. Tarsus feathered only to base of toes.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♂	160,173	78,84	22,26
1 ♀	170	83	22

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Arunachal Pradesh, Bihar, Manipur, Meghalaya, Mizoram and Nagaland and Sikkim. Bangladesh, Nepal, Bhutan, Burma and Thailand.

Genus *Bubo* Dumeril, 1806203. *Bubo bubo bengalensis* (Franklin)

1831. *Otus Bengalensis* Franklin, *Proc. zool. Soc. London* : 115 (The Ganges between Calcutta and Benares and in the Vindhyan Hills between the latter place and Gurra Mundela).

1969. Ali and Ripley, vol.3, p.273

Common name : Indian Great Horned-Owl (English), Hutom pecha (Bengali) and Ghughu (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a Pariah Kite. Back dark brown streaked and mottled with tanny-buff and black. Head with two prominent blackish horns or ear-tufts. Chin whitish, throat light rufous with dark spots; breast and belly yellowish rufous with longitudinal streaks.

Distribution : India : West Bengal (Birbhum and Medinipur districts) : Throughout the Indian mainland. Pakistan, Nepal, Bhutan, Bangladesh and Burma.

Remarks : We have observed this bird in Birbhum district and Medinipur district, West Bengal.

204. *Bubo nipalensis nipalensis* Hodgson

1836. *Bubo nipalensis* Hodgson, *Asiat. Res.*, 19 : 172 (Nepal).

1969. Ali and Ripley, vol.3, p.276

Common name : Forest Eagle-Owl (English).

Material examined : Darjiling district : 1 ♀, Below Darjiling, coll. not known 3.v.1937; 1 ♀, Soong, coll. not known, 1939.

Diagnostic characters : Head with two outwardly slanting black and white horns. Back dark brown scalloped with buff. Chin and throat fulvous white, barred with blackish, and on abdomen and bars breaking up into chevron-like spots.

Measurements : 2 ♀, Wing 360,450; tail 235(2); bill 55,57.

Distribution : India : West Bengal (Darjiling district) : Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand and Vietnam.

205. *Bubo zeylonensis leschanault* (Temminck)

1820. *Strix leschenault* Temminck, *Pl. col., livr.*, 4, pl. 20 (Eastern provinces of India = Chandernagore = Chandannagore, Hugli district, West Bengal. India).

1969. Ali and Ripley, vol.3, p.280

Common name : Brown Fish Owl (English), Bhootoom pecha (Bengali) and Ullu (Hindi).

Material examined : Darjiling district : 1 unsexed Singla, coll. not known, 27.vii.1936. Jalpaiguri district : 4 ♂ and 1 ♀, Rajabhat khola, Moraghat, Torsa river and Haldibari, coll. C.M. Inglis, 18.i.1933; 5,7 and 25.iii.1936 and 3.ii.1939.

Diagnostic characters : Size equal to a Pariah Kite. Head back and tail rufous brown, heavily streaked with black. Head with two "horns" Underparts whitish with fine wavy brown crossbars and bold blackish streaks. A large white patch on throat and foreneck. Eyes bright golden yellow.

Measurements :

	Wing	Tail	Bill
4 ♂	395-450(411)	185-198(191)	49-50(49)
1 ♀	385	183	50

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Throughout Indian Union. Bangladesh, Pakistan, Nepal and Bhutan.

206. *Bubo flavipes* (Hodgson)

1836. *Cultrunguis Flavipes* Hodgson, *J. Asiat. Soc. Beng.* 5 : 364, pl. 26 (Nepal).

1969. Ali and Ripley, vol.3, p.283

Common name : Tawny Fish Owl (English).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding birds. Back rich orange-rufous with broad blackish shaft-stripes. Quills of wings and tail dark brown, with buff bars and tips. A white patch on throat. Underparts rich orange-rufous with dark brown shaft-stripes, broadest on breast.

Distribution : India : West Bengal (Barddhaman, Medinipur and Puruliya districts) : Assam, Bihar, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, Burma, Indo-chinese countries, China and Taiwan.

Remarks : We have recorded this bird in Barddhaman district, Puruliya district and Medinipur district, West Bengal.

Genus *Glaucidium* Boie, 1826

207. *Glaucidium brodiei brodiei* (Burton)

(1836) 1835. *Noctua Brodiei* Burton, *Proc. zool. Soc. Lond.* : 152 (Himalayas, restricted to Simla = Shimla, Himachal Pradesh, India by Baker, 1927 *Fauna Br. India.* 4 : 450.

1969. Ali and Ripley, vol.3, p.285

Common name : Collared Pigmy Owlet (English).

Material examined : Darjiling district : 1 unsexed, Pashok, coll. W.H. Mathews, 1.ii.1924; 1 ♀, Lebta Road, Mangpu, coll. C.M. Inglis, 22.viii.1937.

Diagnostic characters : Size equal to a Quail. Back, wings and tail barred grey brown. Supercilium white. A rufous half-collar on upper back, A white patch on throat.

Measurements : 1 ♀ : Wing 99, tail 68, bill 16.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Bhutan, Malay Peninsula, Vietnam, Hainan and China.

208. *Glaucidium radiatum radiatum* (Tickell)

1833. *Strix Radiata* Tickell, *J. Asiat. Soc. Beng.*, 2 : 572 (Jungles of Borabhum and Dholbhum).

1969. Ali and Ripley, vol.3, p.286

Common name : Barred Jungle Owlet (English), Chhota Kalpencha (Bengali) and Jangli Choghad (Hindi).

Material examined : Darjiling district : 1 ♂, Samsung, coll. R.L. Chowdhury, 12.xii.1980.

Diagnostic characters : Size equal to a Myna. Head, back, wings and tail dark brown prominently barred with pale rufous. Chin, middle of breast and abdomen white. Throat and sides of abdomen and vent barred dark Olive-brown and white.

Measurements : 1 ♂ : Wing 130, tail 76, bill 20.

Distribution : India : West Bengal (Darjiling district) : Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Sikkim, Tamil Nadu. Nepal, Bhutan and Sri Lanka.

209. *Glaucidium cuculoides cuculoides* (Vigors)

1831. *Noctua cuculoides* Vigors, *Proc. zool. Soc. Lond.* : 8 (Himalayas, i.e. Simla-Almora district, India).

1969. Ali and Ripley, vol.3, p.289

Common name : West Himalayan Barred Owlet (English) and Badda dundul (Hindi).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. A.K. Mukherjee, 13.v.1977.

Diagnostic characters : Size larger than the preceding bird. It is similar to the above mentioned bird but larger. Abdomen whitish with longitudinal dark striations, supercilium white and prominent.

Measurements : 1 ♂, Wing 154, tail 85, bill 22.

Distribution : India : West Bengal (Darjiling district) : Himachal Pradesh, Jammu & Kashmir, Sikkim and Uttar Pradesh. Pakistan and Nepal.

210. *Glaucidium cuculoides rufescens* Baker

1926. *Glaucidium cuculoides rufescens* Baker, *Bull. Br. Orn. Cl.*, 47 : 59 (Noong-Zai-ban=lat, 24*48' N, long, 93*12'E., Manipur, India).

1969. Ali and Ripley, vol.3, p.291

Common name : Burmese Barred Owlet (English).

Material examined : Darjiling district : 1 ♀, Kumani, coll. R.K. Ghose, 18.iii.1985, Jalpaiguri district : 1 ♂, Sipchu Beat, upper Tandloo forest Range, coll. R.k. Ghose, 19.iii.1985.

Diagnostic characters : Size, smaller than the preceding bird. Colouration much richer rufous-brown. Breast more streaked less barred.

Measurements :

	Wing	Tail	Bill
1 ♂	153	90	21
1 ♀	152	85	22

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Assam, Manipur, Meghalaya and Tripura. Bangladesh, Burma, Laos and Vietnam.

Genus *Ninox* Hodgson, 1837211. *Ninox scutulata lugubris* (Tickell)

1833. *Strix Lugubris* tickell, *J. Asiat. Soc. Beng.*, 2 : 572 (Dampra, Dholbhum, Bengal) [Now in Chaibasa district, Bihar, India].

1969. Ali and Ripley, vol.3, p.292

Common name : Indian Brown Hawk-Owl (English); Kal Pencha (Bengali) and Choghad basra (Hindi).

Material examined : Birbhum district : 1 unsexed, Chandrapur c 10 km. NW. of Suri, coll. A.K. Mukherjee, 5.1.1981. Jalpaiguri district : 1 ♂, Khuntimari, coll. R.K. Ghose, 16.iii.1985.

Diagnostic characters : Size equal to a Pigeon. Head, back and wings dark greyish brown. Wings with irregular white patches about the shoulders. Throat fulvous streaked white brown; breast and belly white with large drop of reddish brown forming broken bars. Black barred tail with white tipped.

Measurements :

	Wing	Tail	Bill
1 ♂	221	123	24

Distribution : India : West Bengal (Birbhum and Jalpaiguri districts) : Andhra Pradesh, Arunachal Pradesh, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Sikkim, Tamil Nadu and Uttar Pradesh. Pakistan, Nepal and Bhutan.

Genus *Athene* Boie, 1822212. *Athene brama indica* (Franklin)

1831. *Noctua Indica* Franklin, *Proc. zool. Soc. Lond.* : 115 (Banks of the Ganges and in the mountain chain of upper Hindoostan, i.e., Uttar Pradesh, India).

1969. Ali and Ripley, vol.3, p.299

Common name : Northern Spotted Owlet (English), Kutura pencha (Bengali) and Oolloo (Hindi).

Material examined : Birbhum district : 1 ♂, Chandrapur c 10 km. of Suri, coll. A.K. Mukherjee, 6.i.1981. North 24-Parganas : 1 ♂, Kalikapur, S. Salt Lake, coll. not known, 23.viii.1964. South 24-Parganas : 1 ♂ and 1 ♀, Patharpratima, Sagar Island, coll. not known, 14.viii.1966; 1 ♂, Namkhana, coll. not known, 21.iv.1966; 1 ♂, Raidighi, coll. A.K. Mukherjee, 21.xii.1979; 1 ♂, Canning, coll. A.K. Mukherjee, 16.xii.1979.

Diagnostic characters : Size equal to a Myna. Head, back, wings and tail greyish brown white spotted. Underparts whitish with brown barred.

Measurements :

	Wing	Tail	Bill
6 ♂	156-169(166)	75-85(79)	21-24(22)
3 ♀	166-169(168)	80-86(84)	21-23(22)

Distribution : India : West Bengal (Birbhum, Darjiling, North 24-Parganas and South 24-Parganas districts) : Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu &

Kashmir, Madhya Pradesh, Maharashtra, Manipur, Orissa, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan and Bangladesh.

Remarks : Roonwal (1939) reported from Siliguri, Darjiling district, West Bengal.

Genus *Strix* Linnaeus, 1758

213. *Strix leptogrammica newarensis* (Hodgson)

1836. *Ulula newarensis* Hodgson, *Asiat. Res.* 19, : 168 (Nepal).

1969. Ali and Ripley, vol.3. p.307

Common name : Himalayan Brown Wood Owl (English).

Material examined : Darjiling district : 1 ♀, and 1 unsexed, Mungpoo, coll. P. Cresswell, 13.x.1918 and 26.i.1920; 1 ♀, Takdah, coll. R.L. Fernandez, 5.vii.1958.

Diagnostic characters : Size smaller than a Pariah Kite. Back, wings and upper tail coverts chocolate-brown barred with white. Head with whitish facial disc framed with brown. A prominent white supercilium. Tail brown barred with fulvous and white tipped. Chin mixed with chocolate white, throat with a white patch; breast and belly pale fulvous suffused with brownish and barred with dark brown.

Measurements : 1 ♀ : Wing 395, tail 223, bill 43.

Distribution : India : West Bengal (Darjiling district) : Assam, Himachal Pradesh, Manipur, Meghalaya, Nagaland, Sikkim and Uttar Pradesh. Pakistan, Nepal, Burma and Thailand.

Genus *Asio* Brisson, 1760

214. *Asio flammeus flammeus* (Pontoppidan)

1763. *Strix Flammea* Pontoppidan, *Dansk. Atlas*, 1 : 617, pl. 25 (Sweden).

1969. Ali and Ripley, vol.3, p.314

Common name : Shorteard Owl (English).

Material examined : Hugli district : 1 ♀, Singur, coll. J. Oppenheimer, 30.xi.1971.

Diagnostic characters : Size larger than a Pigeon. Head darker greyish; facial disc white with bristly black feathers intermingled surrounded by a dark brown ruff. Two blackish brown short ear-tufts. Wings and tail barred rufous and black. Underparts pale buff longitudinally streaked with brown.

Measurements : 1♀: Wing 335, tail 154, bill 30.

Distribution : India : West Bengal (Hugli district): Throughout Indian Union. Bangladesh, Pakistan, Nepal, Sri Lanka, Maldives Islands, south to the Mediterranean, North Africa, Palestine, Ethiopia and Aden.

Breeds in Europe and Asia north to c 70°N. lat., south to Italy, The Balkan Peninsula, Caucasus, Turkestan, N. Mongolia, SE. Manchuria, and Sakhalin Is. Also in N. America.

Order CAPRIMULGIFORMES

Family CAPRIMULGIDAE

Genus *Caprimulgus* Linnaeus, 1758

215. *Caprimulgus indicus indicus* Latham.

1790. *Caprimulgus indicus* Latham, *Index Orn.*, 2 : 588 (India).

1970. Ali and Ripley, vol.4, p.10

Common name : Indian Jungle Nightjar (English) and Dabchiri (Hindi).

Material examined : Nil.

Diagnostic characters : Tarsus feathered; four outer pairs of tail feathers with sub terminal white spots in male white in female without white tips. Call-UK-Krukroo.

Distribution : India : West Bengal (Bankura, Birbhum and Malda districts): Throughout Indian mainland excepting Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan and Bangladesh.

Remarks : Recorded this bird in Bankura district, Birbhum district and Malda district, West Bengal.

216. *Caprimulgus macrurus albonotatus* Tickell

1833. *Caprimulgus Albonotatus* Tickell, *J. Asiat. Soc. Beng.*, 2: 580 (Dampara, Dholbhum, Bengal)
[Now in Chaibasa district, Bihar, India]

1970. Ali and Ripley, vol.4, p.16

Common name : Indian Longtailed Nightjar (English).

Material examined : North 24-Parganas district: 1♂ and 1♀, Budge Budge, coll. S. Chatterjee, 17 and 20.xii. 1974.

Diagnostic characters : Tail long and graduated. A white spot on first four primaries in male. In female the outer tail feathers pale yellowish buff. Call-Chaunk-Chaunk.-Chaunk.

Distribution : India : West Bengal (North 24-Parganas district): Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Hariyana, Himachal Pradesh, Maharashtra, Meghalaya, Orissa, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Nepal and Bhutan.

217. *Caprimulgus asiaticus* Latham

1790. *Caprimulgus asiaticus* Latham, *Index Orn.*, 2 : 588 (India = Bombay).

1982. Ripley, p. 193

Common name : Common Indian Little Nightjar (English) and Chapka (Hindi).

Material examined : Nil.

Diagnostic characters : Tarsus almost naked. Back with distinct narrow black streak. Call-chuck-chuck-chuck-r-r-r.

Distribution : India : West Bengal (Barddhaman district): Throughout Indian mainland excepting Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal, Bhutan, Bangladesh, Tibet, Burma, Thailand and Indochinese countries.

Remarks : Reported this species from Durgapur and Damodar valley, Barddhaman district, West Bengal (Gauntlett, 1985).

218. *Caprimulgus affinis monticola* Franklin

1831. *Caprimulgus monticolus* Franklin, *Proc. zool. Soc. Lond.*: 116 (Ganges between Calcutta and Benares, India).

1970. Ali and Ripley, vol.4, p.23

Common name : Franklin's Nightjar (English) and Chhippak (Hindi).

Material examined : Bankura district: 1♂, Ranibandh, coll. A.K. Mukherjee, 5.iii. 1982.

Diagnostic characters : Back without distinct black streaks. Outer tail feathers all white except at tip in male white mottled throughout in female. Tarsus naked.

Measurements : 1♂: Wing 197, tail 119, bill 21.

Distribution : India: West Bengal (Bankura district): Throughout India except, Andaman & Nicobar Islands, Arunachal Pradesh and Jammu & Kashmir. Bangladesh, Pakistan, Nepal, Bhutan, Burma and Thailand.

Order APODIFORMES

Family APODIDAE

Key to the genera of the family APODIDAE

Four toes directed forward though 1st reversible *Apus*

Toes arranged in pairs, 3rd & 4th outward, 1st & 2nd inward. *Cypsiurus*

Genus *Collocalia* G.R. Gray, 1840

219. *Collocalia unicolor* (Jerdon)

1840. *Hirundo unicolor* Jerdon, *Madras J. Lit. Sci.*, 11 : 238 (Coonoor Pass).

1970. Ali and Ripley, vol.4, p.29

Common name : Indian Edible - nest Swiftlet (English)

Material examined : Nil.

Diagnostic characters : A tiny slender black brown swift slightly smaller than a House-Sparrow with a slightly forked tail. The rump concolourous with back. Bill black.

Distribution : India : West Bengal (Darjiling district): Karnataka, Kerala, Maharashtra and Tamil Nadu. Sri Lanka.

Remarks : Blyth (1845) has reported this species as *Cypselus unicolor* which is now synonymised to *Collocalia unicolor*, from Darjiling, Darjiling district.

Genus *Apus* Scopoli, 1777

220. *Apus pacificus leuconyx* (Blyth)

1845. *Cypselus leuconyx* Blyth, *J. Asiat. Soc. Beng.*, 14(1): 212(Calcutta).

1970. Ali and Ripley, vol.4, p.49

Common name : Himalayan Whiterumped Swift (English).

Material examined : Calcutta district : 1 unsexed, vicinity of Calcutta (Metiabruz, Calcutta), coll. E. Willis, 1844.

Diagnostic characters : Rump white. Tail deeply forked. Bill black. Legs and feet purplish brown or purplish black. A swift more or less equal in size of a House-Sparrow.

Measurements : Wing 160, tail 42/66, bill 11.

Distribution : India : West Bengal (Calcutta district): Andhra Pradesh, Arunachal Pradesh, Assam, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Sikkim and Uttar Pradesh. Pakistan, Nepal and Bhutan.

Remarks : Blyth (1845) described this bird on the basis of this specimen (Holotype) from Calcutta district.

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

1830. *Cypselus affinis* J.E. Gray, in Gray and Hardwicke's *III. Ind. Zool.*, 1(2), pl.35, f.2 (No locality=Ganges, India).

1970. Ali and Ripley, vol.4, p.51

Common name : Indian House Swift (English) and Ababeel (Hindi).

Material examined : Calcutta district: 1♂, Lindsey Street, Calcutta, coll. S. Dutta, 3.viii. 1966.

Diagnostic characters : Crown brown, forehead more grey but no white and no trace of supercilium. Bill horny black. Legs and feet pinky brown.

Measurements : 1♂: Wing 110, tail 42, bill 10.

Distributions : India : West Bengal (Calcutta district): Throughout India except Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Kerala, Manipur, Meghalaya, Mizoram, Nagaland and Tripura.

Remarks : Blyth (1845) recorded this species from Calcutta as *Cypselus affinis* which is now synonymised to *Apus affinis affinis*.

Genus *Cypsiurus* Lesson, 1843

222. *Cypsiurus parvus balasiensis* (J.E. Gray)

1829. *Cyp. [selus] Batasiensis* (Sic) J.E. Gray, in Griffith's *Anim. Kingdom*, 7:60 (India, restricted to Calcutta, Calcutta district, West Bengal by Baker, 1927. *Faun. Br. India*, 4: 336, re-restricted hereby to Balasore district, north-eastern Orissa).

1970. Ali and Ripley, vol.4, p.56

Common name : Indian Palm Swift (English), Bathasi (Bengali) and Patta deuli (Hindi).

Material examined : Calcutta district: 2♂, coll. Capt. Mackie, 2.xi. 1912.

Diagnostic characters : A small swift with deeply forked tail. Toes arranged in pairs, the 3rd and 4th toes outward, the 1st and 2nd inward.

Measurements : 2♂: Wing 116, 120; tail 32, (-); bill 55, (-).

Distribution : India : West Bengal (Calcutta district): Throughout India excepting Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Bangladesh.

Genus *Hemiprocne* Nitzsch, 1833

223. *Hemiprocne longipennis* (Rafinesque)

1803. *Hirundo longipennis* Rafinesque, *Bull. Soc. Phil. Paris*, 3 : 153 (Java).

1982. Ripley, p. 201

Common name : Crested Tree Swift (English) and Tajdar ababeel (Hindi).

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian Union. Nepal, Bangladesh, Sri Lanka, Burma, Thailand and Indochinese countries.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

Order CORACIIFORMES

Family ALCEDINIDAE

Key to the genera of the family ALCEDINIDAE

1. Plumage black and white *Ceryle*
 Plumage not black and white 2
2. Tail shorter than bill *Alcedo*

- Tail longer than bill.....3
 3. Bill compressed, culmen flattened and grooved on either side.....*Pelargopsis*
 Bill not compressed, culmen rounded and not grooved.....*Halcyon*

Genus *Ceryle* Boie, 1828

224. *Ceryle rudis leucomelanura* Reichenback

1851. *Ceryle leucomelanura* Reichenback, *Handb. Spec. Orn.*: 21, pl. coix b, f. 3488 (Ceylon=Sri Lanka).

1970. Ali and Ripley, vol.4, p.71

Common name : Indian Pied Kingfisher (English), Phatka machhura (Bengali) and Kilkila (Hindi).

Material examined : Calcutta district: 1♂ and 1 unsexed, Patipukur, coll. B. Biswas, 17.ix. 1950. North 24-Parganas: 2♂ and 2♀, Nalbani, N. Salt Lake, coll. B. Biswas, 23.v. 1965, 6.vi. 1965, 23.v. 1965 and 31.v. 1967; 1♂, coll. S.S. Saha, 19.vi. 1966.

Diagnostic characters : Plumage black and white. Bill long and compressed. Wings rather pointed. Tail longer than culmen. It can be easily identified by its spectacular habit of "Standing on its tail" in mid-air, hovering over water.

Measurements :

	Wing	Tail	Bill
3♂	126-133 (130)	55-68 (63)	64-67 (65)
3♀	135-140 (137)	55-73 (64)	64-70 (67)

Distribution : India: West Bengal (Calcutta and North 24-Parganas districts): Throughout Indian main lands except Kerala. Bangladesh, Pakistan, Nepal, Bhutan, Sri Lanka, Afghanistan, Burma, Thailand and Vietnam.

Genus *Alcedo* Linnaeus, 1758

225. *Alcedo hercules* Laubmann

1845. *Alcedo grandis* Blyth, *J. Asiat. Soc. Beng.*, 14(1): 190 Darjiling = Darjiling, Darjiling district, West Bengal, India.

1970. Ali and Ripley, vol.4, p.74

Common name : Blyth's or Great Blue Kingfisher (English).

Material examined : Darjiling district: 1♀, Terai, coll. J. Anderson, date not known.

Diagnostic characters : Small, blue and green kingfisher with brilliant blue back and rump with white throat and deep rust-coloured chest and abdomen.

Measurements : 1♀: Wing 98, tail 46, bill 42.

Distribution : India: West Bengal (Darjiling district): Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Bangladesh and Bhutan.

226. *Alcedo atthis bengalensis* Gmelin

1788. *Alcedo bengalensis* Gmelin, *Syst. Nat.*, 1(1): 450 (Bengal).

1970. Ali and Ripley, vol.4, p.76

Common name : Indian Small Blue Kingfisher (English); Chhota machhranga (Bengali) and Chhota kilkila (Hindi).

Material examined : Bankura district: 1 unsexed, Susunia Hills, coll. J.M. Dasgupta, 29.i. 1979. North 24-Parganas district: 1♂, Babu Bhere, Salt Lake, coll. B. Biswas, 17.iii. 1963; 1♂, Bara Paresh, coll. B. Biswas, 8.xi. 1964; 1♂, Beliaghata, coll. B. Biswas, 27.xi. 1950; 2♂, Duttband, coll. B. Biswas, 5.xii. 1965; 1♂, Kalikapur, coll. B. Biswas, 30.viii. 1964; 1♂ and 7♀, Nalbani, coll. B. Biswas, 14.iv. 1963, 28.ii. 1965, 11.vii. 1965, 20.ii. 1966, 18.x. 1967, 18.xii. 1967, 5.xi. 1969. South 24-Parganas district: 1 unsexed, Canning, coll. A.K. Mukherjee, 16.xii. 1979; 1♂ and 1♀, Raidighi, coll. A.K. Mukherjee, 24.xii. 1979; 1♂, Sambhunagar, coll. A.K. Mukherjee, 7.x. 1953.

Diagnostic characters : A small blue kingfisher with a white patch on side of neck. Throat white, chest and belly light rusty coloured.

Measurements :

	Wing	Tail	Bill
6♂	69-73(70)	29-34(33)	39-46(42)
9♀	69-73(71)	27-34(32)	40-47(43)

Distributions : India: West Bengal (Bankura, North 24-Parganas and South 24-Parganas districts): Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Manipur, Nagaland, Orissa, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan and Bangladesh.

Genus *Pelargopsis* Gloger, 1842

227. *Pelargopsis amauroptera* (Pearson)

1841. *Halcyon amauropterus* Pearson, *J. Asiat. Soc. Beng.*, 10(2): 635 (Calcutta, Calcutta district, West Bengal, India).

1970. Ali and Ripley, vol.4, p.83

Common name : Brownwinged Storkbilled Kingfisher (English) and Gurial (Bengali).

Material examined : South 24-Parganas district: 1♀, Baghmara, Sunderban, coll. S. Chatterjee, 15.ix. 1983.

Diagnostic characters : A pigeon-sized salt water kingfisher with an enormous red bill. Head, neck and underparts brownish yellow; mantle and tail dark brown; back and rump bright pale blue.

Measurements : 1♀: Wing 154, tail 90, bill 85.

Distribution : India: West Bengal (South 24-Parganas district): Assam. Bangladesh, Burma and Malay Peninsula to the Langkawi Islands.

228. *Pelargopsis capensis capensis* (Linnaeus)

1766. *Alcedo capensis* Linnaeus, *Syst. Nat.*, ed. 12, 1 : 180 (Cape of Good Hope=Chandernagor, Hugli district, West Bengal, India, vide Stresemann, 1952, *Ibis* 94: 517-21).

1970. Ali and Ripley, vol.4, p.84

Common name : Brownheaded Storkbilled Kingfisher (English); Gurial (Bengali) and Bada kilkila (Hindi).

Material examined : Haora district: 1♀, Botanical Garden, Shibpur, coll. V.B. Gogate, 21.vi. 1963. Jalpaiguri district. 1♂, Kuntimari, coll. R.K. Ghose, 14.iii. 1985.

Diagnostic characters : A great-sized like a pigeon with enormous blood-red dagger-shaped bill. Head dark greyish brown and the back with brilliant pale greenish blue with a yellowish collar on hind neck.

Measurements : 1♀: Wing 155, tail 97, bill 92.

Distribution : India: West Bengal (Haora and Jalpaiguri districts): Assam, Gujarat, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan and Sri Lanka.

Genus *Halcyon* Swainson, 1821

229. *Halcyon coromanda coromanda* (Latham)

1790. *Alcedo coromanda* Latham, *Index Orn.*, 1 : 252 (Coromandel, India).

1970. Ali and Ripley, vol. 4, p. 87.

Common name : Indian Ruddy Kingfisher (English).

Material examined : Nil.

Diagnostic characters : A cinnamon-coloured Kingfisher with a white rump and brilliant red bill and feet. Head, neck, mantle light rufous. Chestnut, chin throat and belly light rufous.

Distribution : India : West Bengal (South 24-Parganas district) : Assam, Manipur, Nagaland, Sikkim and Tamil Nadu. Nepal, Bhutan, Bangladesh, Burma, Malay Peninsula, Thailand, Indo-chinese countries, Indonesia and China.

Remarks : Observed this species in Sundarban areas of South 24-Parganas district, West Bengal.

230. *Halcyon smyrnensis fusca* (Boddaert)

1783. *Alcedo fusca* Boddaert, *Table Pl. enlum.* : 54 (Malabar Coast, Kerala, India).

1970. Ali and Ripley, vol. 4, p. 90.

Common name : Indian Whitebreasted Kingfisher (English), Sandabuk machhranga (Bengali) and Kourilla (Hindi).

Material examined : Darjiling district : 2 ♀, Rieng, coll. T. D. Soota, 2.vi.1974 and 30.vi.1974; 1 ♂, Parmadan, coll., P. K. Das, 6.v.1988. North 24-Parganas district : 1 ♀, Beliaghata, coll. B. Biswas, 27.xi.1950; 1 ♂, Palta water works, coll. M. L. Roonwal., 6.x.1941; 1 ♀, Nalbani, coll. B. Biswas, 30.vii.1969. South 24-Parganas district : 2 ♂ and 1 unsexed, Raidighi, coll. A. K. Mukherjee, 25.xii.1979; 1 ♂, Gosaba, coll. A. K. Mukherjee, 22.xii.1979; 1 ♀, Dayapur, coll. A. K. Mondal, 23.ix.1969.

Diagnostic characters : Size bigger than Myna. Head, neck and belly chocolate brown; back and wings brilliant turquoise-blue, chin, throat and centre of breast glistening white. Wing with a white wing patch. Bill long, heavy, pointed and coral-red.

Measurements :

	Wing	Tail	Bill
3 ♂	116-120 (118)	80	62-64 (63)
6 ♀	116-121 (119)	76-80 (78)	59-66 (62)

Distribution : India : West Bengal (Darjiling, North 24-Parganas and South 24-Parganas districts) : Bihar, Goa, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Podicherry, Sikkim, Tamil Nadu and Uttar Pradesh. Nepal, Bangladesh and Sri Lanka.

231. *Halcyon smyrnensis perpulchra* Madarasz1904. *Halcyon perpulchra* Madarasz, *Ann. Mus. nat. Hungar.*, 2 : 85 (Singapore).

1970. Ali and Ripley, vol. 4, p. 92.

Common name : Eastern Whitebreasted Kingfisher (English) and Sandabuk Machhranga (Bengali).*Material examined* : North 24-Parganas district : 1 ♀, Mitpukur, Salt Lake, coll. B. Biswas, 13.xi.1965; 1 ♂, 30.vii.1969.*Diagnostic characters* : Size larger than a Myna. Back turquoise blue; head, neck and belly pale chocolate-brown. Wing with white wing-patch. Chin, throat and centre of breast-glistening white. Bill long, heavy and pointed coral-red.*Measurements* :

	Wing	Tail	Bill
1 ♂	119	78	63
1 ♀	110	66	60

Distribution : India : West Bengal (North 24-Parganas district) : Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Meghalaya, Nagaland and Orissa. Bangladesh, Bhutan, Burma, Thailand, Malay Peninsula, Indochinese countries, China, Hainan and Taiwan.232. *Halcyon pileata* (Boddaert)1783. *Alcedo pileata* Boddaert, *Table Pl. enlum.* : 41 (China, ex Daubenton, *Pl. enlum.*, no. 673).

1970. Ali and Ripley, vol. 4, p. 94.

Common name : Blackcapped Kingfisher (English) and Kourilla (Hindi).*Material examined* : South 24-Parganas district : 1 ♂, Kapilmuni, Sagar Island, coll. V. B. Gogate, 30.x.1966; 1 ♂ and 1 ♀, Sajnekhali, coll. A. K. Mukherjee, 12.iii.1957.*Diagnostic characters* : Back deep cobalt blue; crown velvety black. Head separated from back by a prominent white collar. Bright coral red bill. A large white patch in wing. Underparts pale rusty buff.*Measurements* :

	Wing	Tail	Bill
1 ♂	133	83	70
1 ♀	130	82	69

Distribution : India : West Bengal (South 24-Parganas district) : Andaman Nicobar Islands, Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Maharashtra, Manipur, Nagaland, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. Bangladesh, Sri Lanka, Burma, Thailand, Malay Peninsula, the Indo-chinese countries, China, Korea, Hainan, Philippines and Indonesian Islands.233. *Halcyon chloris humii* Sharpe1892. *Halcyon humii* Sharpe, *Cat. Bds. Br. Mus.* 17 : 217 (in key) : 281, pl. 8 (Siam to the Malay Peninsula and Sumatra; type from Jaram, Selangor, Malay Peninsula, *fide* Oberholser, 1919, *Proc. U.S. nat. Mus.*, 55 : 373).

1970. Ali and Ripley, vol. 4, p. 96.

Common name : Eastern Whitecollared Kingfisher (English).

Material examined : South 24-Parganas district : 1 unsexed, eastern bank of Mechnakhal, Sunderbans, coll. S. Chatterjee, 11.ix.1983; 1 ♀, Kakdwip, coll. S. S. Saha, 13.xii.1966.

Diagnostic characters : Back and crown greenish blue; a prominent white nuchal collar extending white underparts. A black band from eye to eye encircling the crown. White supercilium and a white patch under the eye. Underparts white.

Measurements : 1 ♀ : Wing 109, tail 68, bill 49.

Distribution : India : West Bengal (South 24-Parganas district). Bangladesh, Burma, Malay Peninsula, Tioman, Archipelago and Sumatra.

Family MEROPIDAE

Key to the genera of the family MEROPIDAE

Breast and throat feathers not elongate.....*Merops*

Breast and throat feathers elongate, loose and coloured differently from the surrounding plumage.....*Nyctyornis*

Genus *Merops* Linnaeus, 1758

234. *Merops leschenaulti leschenaulti* Vieillot

1817. *Merops Leschenaulti* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 14 : 17 (Java, errore = Ceylon = Sri Lanka).

1970. Ali and Ripley, vol. 4, p. 99.

Common name : Chestnutheaded Bee-eater (English) and Lalsir patringa (Hindi).

Material examined : Darjiling district : 1 , Sipchu, Forest Beat, coll. R. K. Ghosh, 19.iii.1985.

Diagnostic characters : Size equal to a Bulbul. Crown, hindneck and upperback bright cinnamon-chestnut. Chin and throat yellow bordered by the rufous and black gorget. Lowerback, wings, breast, belly and tail grass-green. Bill black, slender, curved and pointed.

Measurements : 1 : Wing 108, tail 80, bill 37.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Goa, Karnataka, Kerala, Manipur, Nagaland, Orissa, Tamil Nadu, Sikkim and Uttar Pradesh. Nepal, Bhutan Bangladesh, Sri Lanka, Burma, Malay Peninsula, Yunnan, Thailand and the Indochinese countries.

235. *Merops philippinus philippinus* Linnaeus

1766. *Merops philippinus* Linnaeus, *Syst. Nat.*, ed. 12, 1 : 183 (Philippine Islands).

1970. Ali and Ripley, vol. 4, p. 106.

Common name : Bluetailed Bee-eater (English) and Bada patringa (Hindi).

Material examined : North 24-Parganas district : 1 , Bantala, coll. not known, 6.ix.1964; 4 and 2, Nalbani, coll. B. Biswas, 11.vii.1964, 8, 11 and 14.viii.1964.

Diagnostic characters : Size equal to the preceding bird. Back bright green, bill slender, curved and black. A black stripe from back of bill through the eyes to the ear-coverts; throat and breast deep chestnut; rump and tail bright-cerulean blue.

Measurements :

	Wing	Tail	Bill
5 ♂	126-136(131)	92-142(108)	46-48(47)
3 ♀	117-128(123)	90-125(103)	44-47(46)

Distribution : India : West Bengal (North 24-Parganas district) : Andaman & Nicobar Islands, Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Sri Lanka, Burma, Thailand, Malay Peninsula, Indochinese countries, Indonesian Islands, Philippines and China.

236. *Merops orientalis orientalis* Latham

1801. *Merops orientalis* Latham, Index Orn., Suppl. : xxxiii (India = Pondicherry, India, Vide Stresemann, 1952, Ibis 94 : 515).

1970. Ali and Ripley, vol. 4, p. 109.

Common name : Indian Small Green Bee-eater (English), Banaspati (Bengali) and Harrial (Hindi).

Material examined : Birbhum district : 2 ♂, Chandrapur, coll. A. K. Mukherjee, 31.xii.1980 and 2.i.1981. Darjeeling district : 1 ♀, Gorubathan, coll. A. K. Mukherjee, 30.i.1955. North 24-Parganas district : 1 ♂, Bantala, coll. B. Biswas, 6.xii.1964; 1 ♂, Duttaband, coll. B. Biswas, 29.xi.1964; 1 ♂, and 1 ♀, Kalikapur, coll. B. Biswas, 30.viii.1964; 1 ♂, Nalbani, coll. S. S. Saha, 5.xi.1964; 1 ♀, coll. B. Biswas, 15.i.1970; 2 ♂, Parmadan, coll. P. K. Das, 6.v.1988; 1 unsexed, Palta water works, coll. M. L. Roonwal, 5.x.1939. South 24-Parganas district : 1 ♂, Canning, coll. A. K. Mukherjee, 16.xii.1979; 1 unsexed, Gosaba, coll. A. K. Mukherjee, 22.xii.1979; 2 ♂, Gosaba, coll. A. K. Mukherjee, 22.xii.1979; 2 and 5.viii.1955; 2 ♂, Raidighi, coll. A. K. Mukherjee, 24 and 25.xii.1979; 2 ♂, Sambhunagar, coll. A. K. Mukherjee, 26.ix.1955 and 10.x.1955; 1 unsexed, Satjela, coll. A. K. Mukherjee 3.viii.1955.

Diagnostic characters : Size equal to a Sparrow. Back and underparts grass-green; head and neck tinged with reddish brown. Central pairs of tail feathers project beyond tail as blunt pins. Bill slender, long and slightly curved. Chin and throat verditer blue bordered by a black gorget.

Measurements :

	Wing	Tail		Bill
		Inner/outer		
12 ♂	86-99 (94)	$\frac{64}{112}$ / $\frac{83}{137}$	$\frac{71}{126}$	31-35 (33)
5 ♀	85-95 (90)	$\frac{72}{115}$ / $\frac{73}{120}$	$\frac{73}{118}$	30-33 (31)

Distribution : India : West Bengal (Birbhum, Darjiling, North 24-Parganas and South 24-Parganas

districts) : Throughout the Indian mainland excepting Arunachal Pradesh, Assam, Manipur, Mizoram, Meghalaya, Nagaland and Tripura; Nepal, Bhutan, and Bangladesh.

Genus *Nyctyornis* Jardine and Selby, 1830

237. *Nyctyornis athertoni athertoni* (Jardine & Selby)

1830. *Merops athertoni* Jardine & Selby, Ill. Orn., 2, pl. 58 and text (India = near Bangalore, Karnataka).

1970. Ali and Ripley, vol.4, p.112

Common name : Bluebearded Bee-eater (English).

Material examined : Darjiling district : 1 ♂, Gish, coll. A. K. Mukherjee, 12.ii.1955.

Diagnostic characters : Size equal to a Pigeon. Back wings and tail grass-green; pale greenish blue forehead, upper breast light blue. Rest of lowerparts rusty buff, broadly streaked with green. Bill black, long, slender and slightly curved.

Measurements : 1 ♂ : Wing 139, tail 132, bill 47.

Distribution : India : West Bengal (Darjiling district) : Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Sikkim, Tamil Nadu and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand, Indochinese countries and Hainan Islands.

Family CORACIIDAE

Genus *Coracias* Linnaeus, 1758

238. *Coracias benghalensis benghalensis* (Linnaeus)

1758. *Corvus benghalensis* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 106 (Benghala, i.e. Madras, Madras district, Tamil Nadu *vide* Biswas, 1961, *Bull. Zool. Nomencl.*, 18 : 217-18; fixed at Tulin, Purulia = Puruliya district, West Bengal, India, by Biswas's Neotype designation as per ICNZ Ruling [Opinion 663].

1970. Ali and Ripley, vol.4, p.116

Common name : Northern Roller (English), Nilkantha (Bengali) and Sabz (Hindi).

Material examined : Medinipur district : 1 ♂ and 2 ♀, Banspaha Belphari, coll. A. K. Mukherjee, 14.x.1979, 11.xii.1979. North 24-Parganas district : 1 ♂, Nalhati, N. Salt Lake, coll. B. Biswas, 23.v. 1965. Puruliya district : 6 ♂ and 1 ♀, Tulin, coll. B. Biswas, 17-iii. 1960. South 24-Parganas district : 1 ♂, Kum Kum dighi, S. Medinipur, coll. J. J. Jerkins, 11.xi.1908.

Diagnostic characters : Size equal to the preceding bird. Back brownish rufous; crown light blue. Reddish brown collar on hind neck. Wings banded dark and light blue. Tail and breast rufous brown streaked with white, abdomen and vent pale blue. Bill black and tarsi grey.

Measurements :

	Wing	Tail	Bill
9 ♂	171-185(182)	114-126(123)	39-43(41)
7 ♀	171-183(179)	119-127(124)	39-43(40)

Distribution : India : West Bengal (Medinipur, North 24-Parganas, Puruliya and South 24

Parganas districts) : Assam, Bihar, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan and Bangladesh.

Remarks : Roonwal (1939) reported from Siliguri and Naksalbari, Darjiling district, West Bengal.

Family UPUPIDAE

Genus *Upupa* Linnaeus, 1758

239. *Upupa epops epops* Linnaeus

1758. *Upupa Epops* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 117 (Europae sylvia = Sweden).

1970. Ali and Ripley, vol. 4, p. 124.

Common name : European Hoopoe (English) and Hudhud (Hindi).

Diagnostic characters : Size equal to a Myna. Head, upperback, throat and breast fawn coloured. Lowerback, wings and tail with black and white zebra-makings. Crown with prominent black and white tipped crest. Bill long, slender and curved.

Material examined : Birbhum district : 1 ♂, Chandrapur, Suri, coll. P. K. Das, 2.i.1981. Medinipur district : 1 ♂, Kankrajhar, coll. A. K. Mukherjee 15.x.1979. North 24-Parganas district. 1 ♂, Kankrajhar, coll. A. K. Mukherjee 15.x.1979. North 24-Parganas district. 1 ♀, Salt Lake, coll. B. Biswas, 23.iii.1967. South 24-Parganas district : 2 ♂, Bamankhali Beach, Sagar Island, coll. B. Biswas, 28.x.1966 and 9.iii.1970.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	149-155(153)	94-102(98)	55-62(59)
1 ♀	146	99	54

Distribution : India : West Bengal (Birbhum, Medinipur, North 24-Parganas and South 24-Parganas districts) : Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Sikkim and Uttar Pradesh. West Pakistan, North Africa and Arabia.

Breeds also in Europe and Asia from S. Sweden to SW. Siberia and Kirghiz steppe, South to NW. Africa, Palestine, Iraq, Iran and Altai, Mediterranean Islands; occasionally England.

240. *Upupa epops ceylonensis* Reichenbach

1853. *Upupa ceylonensis* Reichenbach, *Handb. Spec. Orn.*, Scansoriae : 320, pl. Dxcv, f. 4036 (Ceylon = Sri Lanka).

1970. Ali and Ripley, vol. 4, p. 128.

Common name : Ceylon Hoopoe (English).

Material examined : South 24-Parganas district : 1 ♂, Bamankhali Beach, Sagar Island, coll. Z.S.I. Party, 28.x.1966.

Diagnostic characters : Slightly smaller than the preceding bird. Back, head, throat breast and crest deep rufous. Crown with black tipped crest feathers.

Measurements : 1 ♂ : Wing 152, tail 107, bill 52.

Distribution : India : West Bengal (South 24 Parganas district) : Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Sikkim, Tamil Nadu and Uttar Pradesh. Sri Lanka.

Family BUCEROTIDAE

Key to the genera of the family BUCEROTIDAE

- Casque large, ridge like ending in a single point *Anthracoceros*
 Casque small or absent *Tockus*

Genus *Tockus* Lesson, 1930.241. *Tockus birostris* (Scopoli)

1786. *Buceros birostris* Scopoli, *Del. Flor. et Faun. Insubr., fasc., 2* : 87 (Cormandel, Tamil Nadu, India).

1970. Ali and Ripley, vol. 4, p. 130.

Common name : Grey Hornbill (English) and Dhanesh (Hindi).

Material examined : Puruliya district : 1 ♂, Ajoydhya Hills, coll. A. K. Mukherjee, 29.ii.1982.

Diagnostic characters : Size equal to a Kite. Entire plumage brownish grey. Bill heavy, curved blackish and surmounted by a casque. Tail long, black and white tipped and graduated.

Measurements : 1 ♂ : Wing 210, tail 265, bill from posterior base of casque 100.

Distribution : India : West Bengal (Puruliya district) : Andhra Pradesh, Gujarat (except Run of Kutch), Goa, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Pondicherry, Punjab, Sikkim, Tamil Nadu and Uttar Pradesh. Pakistan and Nepal.

Genus *Anthracoceros* Reichenbach, 1849242. *Anthracoceros malabaricus malabaricus* (Gmelin)

1788. *Buceros malabaricus* Gmelin, *Syst. Nat.* 1(1) : 359 (India = Chandernagor, Hugli district, West Bengal, apud Baker).

1970. Ali and Ripley, vol.4, p.140

Common names : Infisn Pied Hornbill (English).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Sukna, coll. R. L. Chowdhury, 3 and 9.xii.1980. Jalpaiguri district : 1 ♂, Khuntimari, coll. R. K. Ghose, 12.iii.1985.

Diagnostic characters : Back, head, neck and upper breast black, white underparts and ponderous pale yellow and black bill surmounted by a ridge-like casque. Outer tail feathers black, only white at the ends.

Measurements :

	Wing	Tail	Bill from forehead
2 ♂	298, 305	265, 280	162, 164
1 ♀	298	270	138

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Haryana, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Orissa, Pondicherry and Tamil Nadu. Sri Lanka. Elsewhere : Bangladesh, Bhutan, Burma and Nepal.

Order PICIFORMES

Family CAPITONIDAE

Genus *Megalaima* G. R. Gray, 1842243. *Megalaima zeylanica caniceps* (Franklin)

1831. *Bucco caniceps* Franklin, (1830-31). Proc. zool. Soc. Lond. : 121 ('On the Ganges between Calcutta and Benares and the Vindhyan Hills between the latter place and Gurrah Mundela on the Nerbudda').

1970. Ali and Ripley, vol. 4, p. 150.

Common name : Northern Green Barbet (English) and Bada basanta (Bengali and Hindi).

Material examined : Haora district : 2 ♀, Botanical Garden, Shibpur, coll. not known, 21.vi.1967. North 24-Parganas district : 4 ♂, Parmadan. coll. P. K. Das, 6.v.1988, 7.v.1988, 6.viii.1988.

Diagnostic characters : Size slightly larger than a Myna. Upperback, head, neck, chin, throat and upperbreast brown streaked with whitish. Wings and lower back grass green. Lower breast, abdomen and vent pale green. Tail bluish. A naked orange coloured patch around eye extending to base of bill.

Measurements :

	Wing	Tail	Bill
4 ♂	129-131 (130)	78-85 (82)	31-35 (33)
2 ♀	121-131 (126)	78-82 (80)	35-36 (35)

Distribution : India : West Bengal (Haora, North 24-Parganas and South 24-Parganas districts); Bihar, Gujarat, Himachal Pradesh, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Sikkim and Uttar Pradesh. Nepal.

244. *Megalaima lineata hodgsoni* Bonaparte

1850. *Megalaima hodgsoni* Bp. = Bonaparte, *consp. Av.*, 1 : 144 (Nepal, restricted to simra, Central Nepal, by Ripley, 1950, *Proc. Biol. Soc. Washington*, 63 : 102).

1970. Ali and Ripley, vol. p. 154.

Common name : Eastern or Assam Lineated Barbet (English).

Material examined : Jalpaiguri district : 1 ♀, Chunabati, coll. A. K. Mukherjee, 19.i.1955.

Diagnostic characters : Size slightly larger than the preceding bird. Head, neck, throat and upperbreast brown coarsely streaked with whitish. Back, wings and abdomen grass-green; a naked orange coloured patch around eye extending to base of bill.

Measurements : 1 ♀ : Wing 126, tail 82, bill 28.

Distribution : India : West Bengal (Jalpaiguri district) : Assam, Bihar, Manipur, Orissa and Sikkim. Nepal, Bhutan, Bangladesh, Burma, Thailand, the Indochinese countries and Malaya Peninsula.

Remarks : Roonwal (1939) reported from Gish, Jalpaiguri district, West Bengal.

245. *Megalaima franklinii franklinii* (Blyth)

1842. *Bucco Franklinii* Blyth, *J. Asiat. Soc. Beng.*, 11(1) : 167 (Darjeeling = Darjiling).

1970. Ali and Ripley, vol. 4, p. 157.

Common name : Goldthroated barbet (English).

Material examined : Darjiling district : 3 unsexed, Darjiling, coll. Webb, 1842.

Diagnostic characters : Size equal to a Myna. Entire plumage grass-green, except head; crown bright golden and crimson; ear coverts grey and a broad black stripe above eye from bill to nape, chin and throat golden yellow; an orange spot on each side of base of bill near gape.

Measurements : 3 unsexed : Wing 87-100(95), tail 54-66(62), bill 22-24(23).

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland and Sikkim. Nepal, Bhutan, Bangladesh, Burma, China and Vietnam.

Remarks : Blyth (1842) described this bird for the first time from Darjiling, Darjiling district.

246. *Megalaima asiatica asiatica* (Latham)

1790. *Trogon asiaticus* Latham, 1790. *Index Orn.*, 1 : 201 (India = Calcutta, Calcutta district, West Bengal, India, *fide* Baker).

1970. Ali and Ripley, vol. 4, p. 158.

Common name : Bluethroated Barbet (English) and Bada basantha bauri (Bengali).

Material examined : Darjiling district : 1 ♀, Gorubathan, coll. R. L. Chaudhury, 7.xii.1980. South 24-Parganas district : 1 ♀, Raidighi, coll. A. K. Mukherjee, 24.xii.1979.

Diagnostic characters : Size equal to the proceeding bird. Entire plumage excepting head chiefly grass green; forehead crimson, then yellowish followed by a transverse black band above the eyes; crown behind this crimson, with black streak on either side. A short supercilium, feathers round eye, ear-coverts, chin and throat verditer blue. A crimson spot on each side of base of lower mandible. Bill heavy conical and base of bill surrounded by conspicuous black bristles.

Measurements : 1 ♀ : Wing 102, tail 61, bill 29.

Distribution : India : West Bengal (Darjiling and South 24-Parganas districts) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Bhutan and Burma.

Remarks : Roonwal (1939) recorded from Naksalbari, Darjiling district, West Bengal.

247. *Megalaima haemacephala indica* (Latham)

1788. *Bucco indicus* Latham, *Index, Orn.*, 1(1) : 205 (India).

1970. Ali and Ripley, vol. 4, p. 163.

Common name : Coppermith (English); Chhota basantha bauri (Bengali) and Chhota basanth (Hindi).

Material examined : Bardhaman district : 1 ♂, Arrah, coll. P. K. Das, 22.iv.1988, Medinipur district : 1 ♂, Malabati Camp, coll. A. K. Mukherjee, 17.x.1979. North 24-Parganas district : 2 ♂, Bantala coll. not known, 4.v.1967; 2 ♂, Hediarrhat, coll. B. Biswas, 19.vii.1964; 1 ♂, Kalikapur, coll. B. Biswas, 8.viii.1964. South 24-Parganas district : 1 ♀, Canning, coll. A. K. Mukherjee, 17.xii.1979; 1 ♂, Raidighi, coll. A. K. Mukherjee, 27.xii.1979.

Diagnostic characters : Size slightly longer than a sparrow. Back grass-green with throat yellow; breast and forehead crimson; abdomen and vent green streaked yellowish, tail short and truncated.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
8 ♂	80-85(83)	34-36(35)	18-19(18)
2 ♀	80-84(82)	36-38(37)	18-19(18)

Distribution : India : West Bengal (Bardhaman, Medinipur, North 24-Parganas and South 24-Parganas districts) : Throughout Indian mainland excepting Kerala. Pakistan, Nepal, Bhutan, Bangladesh, Yunnan, Malaya, Thailand and the Indochinese countries.

Family INDICATORIDAE

Genus *Indicator* Stephens, 1815

248. *Indicator xanthonotus* Blyth

1842. *Indicator xanthonotus* Blyth, *J. Asiat. Soc. Beng.*, 11(1) : 116 (Darjeeling = Darjiling).

1970. Ali and Ripley, vol. 4, p. 166.

Common name : Nepal Orangerumped Honeyguide (English).

Material examined : Darjiling district : 1 ♀, Darjiling, coll. Pearson, 1842.

Diagnostic characters : Size equal to a sparrow, upper back, wings and underparts dark olive-brown, forehead and cheeks glistening orange yellow. Middle of back pure yellow, lower back and rump orange-yellow. Upper tail-coverts and tail blackish brown; under tail coverts black, scalloped paler.

Measurements : 1 ♀ : Wing 84, tail 54, bill 10.

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal and Bhutan.

Remarks : Blyth (1842) described this bird for the first time from Darjiling, district. This is a holotype.

Family PICIDAE

Key to the subfamilies of family PICIDAE

Shafts of tail feathers stout and rigid.....PICINAE

Shafts of tail feathers soft and flexibleJYNGINAE

Key to the genera of the subfamily PICINAE

1. Nostrils concealed by feathers.....2

Nostrils exposed.....3

2. Mantle wholly or partly green.....*Picus*

Mantle black and white.....*Picoides*

3. Mantle rufous or crimson, banded*Micropternus*

Mantle golden olive, not banded.....4

4. Hallux large, about half length of 2nd toe.....*Chrysocolaptes*

Hallux small, about one-third length of 2nd toe or lacking.....*Dinopium*

Genus *Jynx* Linnaeus, 1758249. *Jynx torquilla torquilla* Linnaeus1758. *Jynx Torquilla* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 112 (Europe = Sweden).

1970. Ali and Ripley, vol. 4, p. 168.

Common name : European Wryneck (English) and Garden eyengtha (Hindi).*Material examined* : Bankura district : 1 ♀ and 1 unsexed, Susunia Hills, coll. J. M. DasGupta, 29.i.1979 and 2.ii.1979. Medinipur district : 1 ♀, Belpahari, coll. A. K. Mukherjee, 2.x.1979.*Diagnostic characters* : Size smaller than a Bulbul. Back and wings silvery grey-brown, streaked and vermiculated with black and fulvous, underparts whitish with blackish arrow head markings like cross barred pattern. Tail with 3 or 4 conspicuous dark bands.*Measurements* : 2 ♀ : Wing 86, 90; tail 70 (-), bill 17, 18.*Distribution* : India : West Bengal (Bankura and Medinipur districts) : Goa, Gujarat, Haryana, Karnataka, Kerala, Orissa, Punjab, Rajasthan and Uttar Pradesh. Pakistan, European and African countries.250. *Jynx torquilla chinensis* Hesse1911. *Jynx torquilla chinensis* Hesse, *Orn. Monatsb.*, 19 : 181 (China, Tsingtao, Shantung).

1970. Ali and Ripley, vol. 4, p. 170.

Common name : Chinese Wryneck (English) and Gardan eyengtha (Hindi).*Material examined*: 1 unsexed, Chandrapur c 10 km. N W of Suri, Birbhum district, coll. A. K. Mukherjee, 31.xii.1980; 1 ♂, Mollarpur, c 8 km. E. of Gonpur, coll. A. K. Mukherjee, 11.i.1981.*Diagnostic characters* : Back silvery dark grey brown, streaked and vermiculated with more blackish and less fulvous; whitish below. Dark markings on nape, back and scapulars. Darker ochre on throat and upper breasts, the vermiculation and spots on the upperparts averaging slightly coarser.*Measurements* :

	Wing	Tail	Bill
1 ♂	89	73	16
1 unsexed	83	67	18

Distribution : India : West Bengal (Birbhum and South 24-Parganas districts) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. Bangladesh, Bhutan, Burma, Thailand, China and Indochinese countries. Breeds from the southern end of Lake Baikal, N. Manchuria and the Amur south to N. Szechuan and the Yangtze Valley.*Remarks* : Saha *et al.* (1971) reported this subspecies from Salt Lake, South 24-Parganas.Genus *Micropternus* Blyth, 1845251. *Micropternus brachyurus phaiiceps* Blyth1845. *Micropternus phaiiceps* Blyth, *J. Asiat. Soc. Beng.*, 14(1) : 195 (Arrakan, Burma) [near Calcutta, Calcutta district, West Bengal, India, *vide* Ticehurst, *J. Bombay nat. Hist. Soc.*, 35 : 32]

1970. Ali and Ripley, vol. 4, p. 178

Common name : Eastern Rufous Woodpecker (English).

Material examined : Haora district : 1 ♂, and 1 unsexed, Botanical Garden, Shibpur, coll. not known, 21.vi.1967.

Diagnostic characters : Size slightly larger than a Myna. Entire plumage chestnut rufous, narrowly cross-banded with black on back, wings and tail. Feathers of throat pale-edged producing a streak or scaly pattern. Male differed from female by a crescent shaped crimson patch on feathers under the eye.

Measurements : 1 ♂; Wing 121, tail 58, bill 29.

Distribution : India : West Bengal (Haora district) : Assam, Bihar, Madhya Pradesh, Manipur, Nagaland, Orissa and Sikkim. Bangladesh, Nepal, Bhutan, Burma, and Thailand.

Genus *Picus* Linnaeus, 1758

252. *Picus myrmecophoneus* Stresemann

1920. *Picus myrmecophoneus* Stresemann, *Verh. Orn. Ges. Bayern* 14 : 289 (Himalaya and Central India).

1970. Ali and Ripley, vol. 4, p. 184.

Common name : Little Scalybellied Green Woodpecker (English).

Material examined : Nil.

Diagnostic characters : Size larger than a Myna. In male, back grass-green, rump bright yellow; greenish brown tail, barred with whitish. Crown and crest crimson, nape with orange and black patch. Prominent white supercilium from eye backwards, bordered above by a black line. Pale grey brown ear-coverts, cheeks greyish white streaked with black. In female, similar to male but crown and crest black instead of crimson.

Distribution : India : West Bengal (Medinipur and South 24-Parganas districts) : Throughout India except Arunachal Pradesh, Gujarat, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab and Tripura. Nepal, Bangladesh, Sri Lanka, Burma, Thailand, Cambodia and Vietnam.

Remarks : We have observed this species in Port Canning, South 24-Parganas district and in Medinipur district, West Bengal.

253. *Picus flavinucha flavinucha* Gould

1834(1833). *Piccus flavinucha* Gould, *Proc. zool. Soc. Lond.*, (1) : 120 (Himalayas, Darjeeling = Darjiling, Darjiling districts, West Bengal, India).

1970. Ali and Ripley, vol. 4, p. 190.

Common name : Eastern Large Yellownaped Woodpecker (English).

Material examined : Darjiling district : 1 ♂, Shunabhati, coll. R. L. Chowdhury, 25.xi.1980; 1 ♂, Kumani, coll. R. K. Ghose, 18.iii.1985; 1 ♂, Samsing, coll. R. L. Choudhury, 22.xi.1980.

Diagnostic characters : Size equal to a pigeon. In male, back yellow green; wings rufous banded, dark brown and a conspicuous nuchal crest golden yellow. Underparts olive-grey. Tail black, unbarred. Chin and throat bright lemon yellow, fore neck rich brown streaked with white. In female, similar to male, but chin and throat rufous brown instead of yellow.

Measurements : 3 ♂ : Wing 168-172(170), tail 118-112(120), bill 41-43(42).

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Manipur, Mizoram, Nagaland, Orissa and Sikkim. Nepal, Bhutan, Bangladesh and Burma.

254. *Picus chlorolophus chlorolophus* Vieillot1818. *Picus chlorolophus* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 26 : 78 (Bengal).

1970. Ali and Ripley, vol. 4, p. 193.

Common name : East Himalayan Small Yellownaped Woodpecker (English).*Material examined* : Jalpaiguri district : 1 ♂ and 1 ♀, Khuntimari, coll. R. K. Ghose, 12 and 13.iii.1985.*Diagnostic characters* : Size larger than a Myna. In male, back yellowish green; nuchal crest golden yellow. Wings green and maroon red. Forehead, supercilia and a moustachial streak crimson. Tail brownish black. Chin and throat brown barred with whitish; breast olive brown, belly and vent barred brown and white. In female, similar to male, no crimson to forehead and malar stripe, but restricted to a short broad line behind eye to nape.*Measurements* :

	Wing	Tail	Bill
1 ♂	140	90	26
1 ♀	128	78	25

Distribution : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Assam, Bihar, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. Bangladesh, Nepal, Bhutan, Burma and Thailand.Genus *Dinopium* Rafinesque, 1814255. *Dinopium benghalense benghalense* (Linnaeus)1758. *Picus benghalensis* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 113 (Benghala = Chandernagor, Hugli district, West Bengal, India, *vide* Stresemann, 1952, *Ibis* 94 : 517).

1970. Ali and Ripley, vol. 4, p. 197.

Common name : Northern Goldenbacked Woodpecker (English) and Katphora (Hindi).*Material examined* : Birbhum district : 1 ♂, Chandrapura, c 10 km, NW. of Suri, coll. A. K. Mukherjee, 5.i.1981. Jalpaiguri district : 1 ♂ and 1 ♀, Ambari, Baikunthapur Forest Division, Chilapatha, coll. R. K. Ghose, 8 and 22.iii.1985. North 24-Parganas district : 2 ♂ and 1 ♀, Kalikapur, coll. B. Biswas, 30.viii.1964. 31.x.1965, 6.ix.1967.*Diagnostic characters* : Size slightly larger than the preceding bird. In male, back golden yellow and neck black; chin, throat and sides of neck black, finely streaked and stippled with black, more boldly on breast, crown and occipital crest crimson. In female, similar to male, but forehead black stippled with white, only the occipital crest crimson.*Measurements* :

	Wing	Tail	Bill
3 ♂	130-143(135)	77-83(80)	38-41(39)
1 ♀	139	80	38

Distribution : India : West Bengal (Birbhum, Jalpaiguri and North 24-Parganas districts) : Andhra

Pradesh, Assam, Bihar, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan and Uttar Pradesh. Bangladesh and Nepal.

Genus *Picoides* Lacepede, 1799

256. *Picoides darjellensis darjellensis* (Blyth)

1845. *Picus (Dendrocopus) darjellensis* Blyth, *J. Asiat. Soc. Beng.*, 14(1) : 196 (Darjeeling and Nepal).

1970. Ali and Ripley, vol.4, p.218

Common name : Darjeeling Pied Woodpecker (English).

Material examined : Nil.

Diagnostic characters : Size equal to a Myna. In male, back and middle tail feathers black, outer feathers barred with white. Hind crown and nape crimson breast and belly yellowish fulvous streaked with black. Vent crimson. In female, similar to male but hind crown and nape black.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland and Sikkim. Nepal, Bhutan, Burma and Vietnam.

Remarks : Blyth (1845) described this bird for the first time from Darjiling, Darjiling district.

257. *Picoides cathpharius cathpharius* (Blyth)

1843. *Picus (Dendrocopus) cathpharius* 'Hodgson' = Blyth, *J. Asiat. Soc. Beng.*, 12(2) : 1006 (Darjeeling = Darjiling).

1970. Ali and Ripley, vol.4, p.219

Common name : Himalayan Crimsonbreasted Pied Woodpecker (English).

Material examined : Nil.

Diagnostic characters : In male, back, crown and tail black, outer rectrices barred whitish, crimson of hind crown and occipital crest extends to entire sides of neck. Chin and throat fulvous, breast and belly darker and more fulvous, streaked with black, vent crimson. In female, characters similar to male, except entire crown black, sides of neck whitish tinged with crimson.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh and Sikkim. Nepal and Bhutan.

Remarks : Blyth (1845) reported this bird from Darjiling, Darjiling district.

258. *Picoides macei macei* (Vieillot)

1818. *Picus Macei* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 26 : 80 (Bengal).

1970. Ali and Ripley, vol.4, p.224

Common name : Indian Fulvousbreasted Pied Woodpecker (English).

Material examined : Nil.

Diagnostic characters : In male, back and wing black, barred with white. Crown with crest crimson. A black moustachial streak extends behind ear-coverts. Chin, throat, sides of head and foreneck uniform pale rufous brown; breast and belly fulvous, faintly black streaked. In female, characters similar to male, except crown and crest black.

Distribution : India : West Bengal (South 24-Parganas district) : Andhra Pradesh, Arunachal Pradesh, Assam, Himachal Pradesh, Manipur, Mizoram, Nagaland, Orissa, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh and Burma.

Remarks : Blyth (1845) reported this bird from lower Bengal (Probably south 24-Parganas district).

259. *Picoides mahrattensis mahrattensis* (Latham)

1801. *Picus Mahrattensis* Latham, *Index Orn.*, Suppl, xxxi (India=Mahratta country ex. *Gen. Syn.*, Suppl., 2 : 142, No. 7).

1970. Ali and Ripley, vol.4, p.226

Common name : Yellowfronted Pied or Mahratta Woodpecker (English) and Katphora (Hindi).

Material examined : Bankura district : 1 ♂, Baripad dam, Ranibandh, coll. B.C. Saha, 5.ii.1979. Birbhum district : 1 ♂, Chandrapur c 10 km. NW. of Suri, coll. A.K. Mukherjee, 1.i.1981.

Diagnostic characters : Size smaller than a Bulbul. In male, back, wings and tail brownish black, irregularly spotted with white. Forehead and crown brownish yellow; occipital crest scarlet, chin throat and foreneck white, breast fulvous streaked with brown and abdomen with a prominent bright scarlet patch. In female, characters similar to male, extending entire crown golden brown without any scarlet in it.

Measurements :

	Wing	Tail	Bill
2 ♂ :	103-106(104)	63	27-28(27)

Distribution : India : West Bengal (Bankura and Birbhum districts) : Throughout Indian Union except Andaman & Nicobar Islands, Arunachal Pradesh, Lakshdweep, Manipur, Meghalaya, Mizoram and Nagaland, Bangladesh, Pakistan, Nepal and Sri Lanka.

260. *Picoides canicapillus semicoronatus* (Malherbe)

1849 (1848-9). *Picus semicoronatus* Malherbe, *Bull. Soc. Nat.*, Moselle, 5e cahier : 22 in text (Himalayas=Darjeeling=Darjiling, Darjiling district, West Bengal, India).

1970. Ali and Ripley, vol.4, p.229

Common name : East Himalayan Greycrowned Pygmy Woodpecker (English).

Material examined : Darjiling district : 2 ♂, near Gish River, coll. A.K. Mukherjee, dt, of collection not known.

Diagnostic characters : Size less than a sparrow. In male, upper back, wings, lowerback and rump black broadly barred with white. Forehead and crown ashy grey, short occipital crest scarlet, surrounded by black. A board whitish supercilium from eye continued as a wide band down sides of neck. Upper tail coverts and tail black. Chin and throat whitish streaked with ashy, breast and belly fulvous brown, streaked with black. In female, hind crown black.

Measurements : 1 ♂ : Wing 86, tail 44, bill 17.

Distribution : India : West Bengal (Darjiling district) : Assam, Nagaland and Sikkim. Nepal and Bhutan.

261. *Picoides nanus* (Vigors)

1832 (1831-32). *Picoides nanus* Vigors, *Proc. zool. Soc. Lond.*, (1) : 172 (Himalayan).

1970. Ali and Ripley, vol.4, p.231

Common name : Northern Browncrowned Pygmy Woodpecker (English).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. In male, back barred with dark brown and white; crown umber brown with a narrow scarlet streak on both sides of the occiput. A broad white stripe from above the eyes down sides of neck, underparts brownish white streaked with blackish. In female, the scarlet streaks lacking on the sides of hind crown.

Distribution : India : West Bengal (Medinipur and South 24-Parganas districts) : Throughout Indian mainland except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Bangladesh and Sri Lanka.

Remarks : We have noticed this species in Medinipur district and South 24-Parganas district.

Genus *Hemicircus* Swainson, 1837

262. *Hemicircus canente* (Lesson)

1830. *Picus canente* Lesson, *Cent. Zool.* : 215, pl. 73 (Pegu).

1970. Ali and Ripley, vol.4, p.236

Common name : Heartspotted Woodpecker (English).

Material examined : Nil.

Diagnostic characters : Size larger than a sparrow. In male, forehead, crown and crest black. Back black with a broad buff band on either sides over the wings marked with heart-shaped black spots. Rump buffy white. Tail short with broad rounded tail. Foreneck, sides of neck, chin and throat buffy white, breast and belly dusky olive and black. In female, characters similar to male, excepting forehead and crown buffy white.

Distribution : India : West Bengal (Bankura, Bardhaman, Hugli, Medinipur, North 24-Parganas and South 24-Parganas districts) : Andhra Pradesh, Assam, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Orissa and Tamil Nadu. Bangladesh, Burma, Malay Peninsula, Thailand and Indo-chinese countries.

Remarks : We have observed this species in North and South 24-Parganas districts, Haora district, Hugli district, Bardhaman district, Bankura district and Medinipur district.

Genus *Chrysocolaptes* Blyth, 1843

263. *Chrysocolaptes lucidus guttacrastatus* (Tickell)

1833. *Picus Guttacrastatus* Tickell, *J. Asiat. Soc. Beng.*, 2 : 578 (Jungles of Borabhum and Dholbhum=Dhalbhum, Singhbhum district, Bihar, India).

1970. Ali and Ripley, vol. 4, p.243

Common name : Eastern Larger Goldenbacked Woodpecker (English).

Material examined : Darjiling district : 1 ♀, Gorubathan, coll. B. Biswas, 16.v.1950; 1 ♀, coll. A.K. Mukherjee, 13.i.1955; 1 ♀, coll. R.L. Chowdhury, 2.xii.1980.

Diagnostic characters : Size equal to a Pigeon. In male, back and mantle golden olive; crown, chest and rump crimson, nape and hind neck white. Tail and upper tail coverts black. Cheeks and chin white two black lines on each cheek up to the throat, breast very dark with scaly pattern, white spots on a black background. In female, similar characters to male, excepting crown and crest black stippled with white.

Measurements : 2 ♀ : Wing 162,170; tail 88,94; bill 48,49.

Distribution : India : West Bengal (Darjiling district) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa and Sikkim. Bangladesh, Nepal, Bhutan, Burma, Thailand and Vietnam.

Order PASSERIFORMES

Family EURYLAIMIDAE

Genus *Psarisomus* Swainson, 1837264. *Psarisomus dalhousiae dalhousiae* (Jameson)

1835. *Eurylaimus dalhousiae* Jameson, *Edinburgh New Philos. Jour.*, 18 : 589 (Northern India, probably near Simla).

1970. Ali and Ripley, vol.4, p.248

Common name : Longtailed Broadbill (English).

Material examined : Darjiling district : 1 ♀, Chunabhati, coll. A.K. Mukherjee, 21.i.1955; 1 ♀, Tarkholar, coll. A.K. Mukherjee, 15.viii.1958.

Diagnostic characters : Size larger than a Bulbul. Back and wing grass green; tail longish graduated bright blue above, black below. Crown black with on oblong yellow spot on each side and bright blue patch in the centre. Chin and throat bright yellow. A white patch on black underside of wings.

Measurements : 2 ♀ : Wing 97, 100; tail 112,120; bill 24,25.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Nagaland, Sikkim and Uttar Pradesh, Nepal, Bhutan, Bangladesh, Burma, Thailand and the Indo-chinese countries.

Family PITTIDAE

Genus *Pitta* Vieillot, 1816265. *Pitta brachyura brachyura* (Linnaeus)

1766. *Corvus brachyurus* Linnaeus, *Syst. Nat. ed.*, 12,1 : 158 (Moluccas=Ceylon=Sri Lanka).

1970. Ali and Ripley, vol.4, p.252

Common name : Indian Pitta (English), Shumcha (Bengali) and Naorang (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a Quail. Back green; Wings with bright, blue patch. Tail with bright blue. Crimson abdomen and under tail coverts.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Throughout Indian mainland. Pakistan, Nepal, Sikkim, Bangladesh and Sri Lanka.

Remarks : We have observed this species in Jalpaiguri district and Darjiling district, West Bengal.

Family ALAUDIDAE

Key to the genera of the Family ALAUDIDAE

1. 1st primary exceeding primary coverts in length2
 1st primary not exceeding primary coverts in length.....3
2. Nostrils not covered by plumelets.....*Mirafra*
 Nostrils covered by plumelets.....*Ammomanes*
3. Crest absent or short and covering whole crown.....*Eremopterix*
 A crest formed of a few long feathers springing from centre of crown.....*Galerida*

Genus *Mirafra* Horsfield, 1821266. *Mirafra javanica cantillans* Blyth1844. *Mirafra cantillans* Blyth, *J. Asiat. Soc. Beng.*, 13 : 960 (Bengal).

1972. Ali and Ripley, vol.5, p.2

Common name : Singing Bush Lark (English) and Agan (Hindi).*Material examined* : Bankura district : 1 ♂, Susunia Hills, coll. J.M. Dasgupta, 1.ii.1979.*Diagnostic characters* : Size equal to Sparrow. Back brown; wing much rufous or chestnut; inner web of outer rectrices largely white or very pale rufous. Throat, breast and belly fulvous, with the breast streaked with triangular brown marks.*Measurements* : 1 ♂ : Wing 79, tail 53, bill 15.*Distribution* : India : West Bengal (Bankura district) : Found throughout the Indian Union except in Andaman & Nicobar group of Islands, Assam and Kerala. Bhutan, Burma, Nepal, Sri Lanka, Thailand, Vietnam, Borneo, Java and Bali.*Remarks* : Blyth (1844) reported this bird as a "Common in Bengal"267. *Mirafra assamica assamica* Horsfield1839. *Mirafra assamica* Horsfield, *Proc. zool. Soc. Lond.* : 162 (Assam, India).

1972. Ali and Ripley, vol.5, p.4

Common name : Bengal Bush Lark (English); Bhiriri (Bengali) and Aggin (Hindi).*Material examined* : Bankura district : 1 ♂ and 1 ♀, Susunia Hills, coll. J.M. Dasgupta, 1.ii.1979. North 24-Parganas district : 1 ♂, Nalbani, coll. B. Biswas, 6.xi.1968.*Diagnostic characters* : Size equal to the preceding bird. Back ashy-brown streaked with blackish, wings with some chestnut. Inner web of outer rectrices all brown. Inner and outer webs of primaries rufous and separated by a brown band. Underparts fulvous, coarsely streaked with triangular brown marks.*Measurements* :

	Wing	Tail	Bill
1 ♂	80	51	15
1 ♀	77	50	13

Distribution : India : West Bengal (Bankura and North 24-Parganas districts) : Assam, Bihar, Delhi, Haryana, North Madhya Pradesh, Manipur, North Orissa and Uttar Pradesh. Bangladesh and Burma.*Remarks* : Blyth (1844) has reported this bird as a "Common in Bengal"268. *Mirafra erythroptera erythroptera* Blyth1845. *Mirafra erythroptera* Blyth, *J. Asiat. Soc. Beng.*, 13 : 958 (Northern portion of the peninsula of India=northern Deccan).

1972. Ali and Ripley, vol.5, p.7

Common name : Redwinged Bush Lark (English) and Aggia (Hindi).*Material examined* : Birbhum district : 1 ♂, Mollarpur, Suri, coll. A.K. Mukherjee, 11.i.1981.

Diagnostic characters : Size equal to a Sparrow. Back fulvous brown streaked with blackish; wings bright rufous or chestnut. Rufous on inner and outer webs of primaries confluent. Inner web of outer rectrices all brown. Chin and throat whitish, breast and belly fulvous; breast spotted with triangular blackish marks.

Measurements : 1 ♂, Wing 81, tail 48, bill 17.

Distribution : India : West Bengal (Birbhum district) : Andhra Pradesh, Assam, Bihar, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh.

Genus *Eremopterix* Kamp, 1836

269. *Eremopterix grisea* (Scopoli)

1786. *Alauda grisea* Scopoli, *Del. Flor. et Faun. Insubr.*, 2 : 95 (Gingee, S. Arcot district, Madras=Tamil Nadu, India).

1972. Ali and Ripley, vol.5, p.9

Common name : Ashycrowned Finch-Lark (English); Dhula chata (Bengali) and Dabak chiri (Hindi).

Material examined : Bankura district : 2 ♂ and 1 ♀, Susunia Hills, coll. J.M. Dasgupta, 29 and 30.i.1979. Medinipur district : 1 ♀, Jhargram, coll. A.K. Mukherjee 5.x.1979; 2 ♀, Belphari, coll. A.K. Mukherjee, 11.x.1979.

Diagnostic characters : Size smaller than House Sparrow. In male, back sandy brown; crown and forehead ashy-brown. Cheeks whitish and a black streak from chin to eye. Under parts brownish black. In female, underparts ashy-brown.

Measurements :

	Wing	Tail	Bill
4 ♂	74-77(76)	38-47(42)	12-14(13)
4 ♀	72-78(75)	40-43(42)	12-13(12.5)

Distribution : India : West Bengal (Bankura and Medinipur districts) : Throughout Indian Union excepting the Andaman & Nicobar Is., Arunachal Pradesh, Manipur, Mizoram, Nagaland, Rajasthan and Tripura. Bangladesh, Pakistan, Nepal and Sri Lanka.

Genus *Ammomanes* Cabanis, 1851

270. *Ammomanes phoenicurus phoenicurus* (Franklin)

1831. *Mirafra phoenicura* Franklin, *Proc. zool. Soc. Lond.* : 119 (Between Calcutta and Benares).

1972. Ali and Ripley, vol.5, p.14

Common name : Indian Rufoustailed Finch-Lark (English); Lal bharat (Bengali) and Aggia (Hindi).

Material examined : Bankura district : 2 unsexed, Susunia Hills, coll. J.M. Dasgupta, 27 and 31.i.1979.

Diagnostic characters : Size equal to a Sparrow. Back less rufous-brown, more grey; bill stout, tail bright rufous ending in a black band.

Measurements : 2 unsexed : Wing 97,106; tail 54,60; bill 16,17.

Distribution : India : West Bengal (Bankura district) : Throughout North Andhra Pradesh, Bihar,

Dadra, Daman & Nagar Haveli, Delhi, Diu, Goa, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. West Pakistan.

Genus *Calandrella* Kaup, 1829

271. *Calandrella cinerea* (Gmelin)

1903. *Alauda cinerea*, Ehmcke *J. fur. Orn.* : 149 (Barnaul, in W. Siberia).

1982. Ripley, p. 250

Common name : Short-toed Lark (English) and Puhlak (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. Back sandy or greyish brown streaked with blackish; throat, breast and belly less white, more buff. Inner secondaries reaching tip of wing.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian sub continent. Elsewhere : Pakistan, Tibet and Afghanistan. Breeds from southern Russian Altai eastward through northern Mongolia to Transbaikalia, north-eastern Mongolia and north-western Manchuria.

Remarks : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

272. *Calandrella raytal* (Blyth)

1844-1845. *Alauda raytal* 'Buch.-Hamilton'=Blyth, *J. Asiat. Soc. Ital.*, 13 : 962 (Lucknow).

1982. Ripley, p. 251

Common name : Sand Lark (English) and Retal (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than a Sparrow. Back greyish sandy, narrowly streaked with dark brown; cheeks, throat, breast and belly white, sparsely dark streaked on side of breast. A white supercillium. Tail short, black and white.

Distribution : India : West Bengal (Barddhaman district) : Assam, Bihar, Haryana and Uttar Pradesh. Nepal, Bhutan, Bangladesh and Burma.

Remarks : Observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

Genus *Galerida* Boie, 1828

273. *Galerida cristata chendoola* (Franklin)

1831. *Alauda Chendoola* Franklin, *Proc. zool. Soc. Lond.* : 119 (Between Calcutta and Benares).

1972. Ali and Ripley, vol.5, p.37

Common name : Indian Crested Lark (English) and Chandul (Hindi).

Material examined : North 24-Parganas district : 4 ♂, and 3 ♀, Deganga, coll. not known, 23.xi.1966; 1 unsexed, Mitpukur, coll. not known, 8.x.1969, 1 ♀, Nalbani, coll. not known, 23.viii.1969.

Diagnostic characters : Size larger than a Sparrow. Crown with upstanding pointed crest. Back greybrown streaked with blackish. Chin, throat, breast and belly white and fulvous, breast broadly streaked dark brown.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	75-88(83)	53-60(56)	16-17(16.5)
4 ♀	79-83(81)	55-56(55)	15-16(15.5)

Distribution : India : West Bengal (North 24-Parganas district) : Bihar, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh.

Remark : This is a new record from West Bengal.

Genus *Alauda* Linnaeus, 1758

274. *Alauda gulgula* Franklin

1831(1830-1831). *Alauda gulgula* Franklin. *Proc. zool. Soc. Lond.* : 119 (The ganges between Calcutta and Benares).

1982. Ripley, p.255

Common name : Indian Small Skylark (English), Jhunti bharat (Bengali) and Bharat (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. Back brown; each feather centred blackish and edged tawny. Crown with an indistinct tuft, visible more clearly when partially erected. Throat, breast and belly pale fulvous buff, darken fulvous on breast, faintly streaked and spotted with blackish. Tarsus long and stout; hind claw very long and nearly straight. Bill slender.

Distribution : India : West Bengal (Bardhaman, Birbhum and Medinipur districts) : Andhra Pradesh, Assam, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu. Nepal, Bangladesh, Sri Lanka and Burma.

Remarks : We have noticed this species in Bardhaman district, Birbhum district and in Medinipur district.

Family HIRUNDINIDAE

Key to the genera of family HIRUNDINIDAE

Upper plumage unglossed brown; tail feathers without spot.....*Riparia*

Upper plumage glossy blue black, tail with or without spots.....*Hirundo*

Genus *Riparia* Forster, 1817

275. *Riparia riparia diluta* (Sharpe & Wyatt)

1893. *Cotile diluta* Sharpe & Wyatt, *Monogr. Hirund.*, 1 : 63 (Chimkent, north of Tashkent, Russia).

1972. Ali and Ripley, vol.5, p.49

Common name : Siberian Collared Sand Martin (English).

Material examined : North 24-Parganas district : 1 ♀, Duttabad, North Salt Lake, coll. B. Biswas, 12.xii.1964.

Diagnostic characters : Size smaller than a Sparrow. Back smoky grey brown, darker on wing and tail quills. Chin, throat, breast and belly white; a broad smoky grey band across breast. Bill black. Legs and feet dark brown.

Measurements : 1 ♀, Wing 105, tail 43, bill 11.

Distribution : India : West Bengal (North 24-Parganas districts) : Throughout India. Pakistan, SW. Siberia, E. Iran, Afghanistan, Russian Turkestan, N.E. China and Burma.

276. *Riparia paludicola chinensis* (J.E. Gray)

1830. *Hirundo chinensis* J.E. Gray, in Hardwick's *Ill. Indian Zool.*, 1(2), pl. 35, fig. 3(China)

1972. Ali and Ripley, vol.5, p.51

Common name : Indian Greythroated Sand Martin (English), Nakuti (Bengali) and Ababil (Hindi).

Material examined : Nadia district : 2 ♀, Boira, c 3 km North of Phulia, coll. S.S. Saha, 5.xi.1964.

Diagnostic characters : Size smaller than the preceding bird. Back greyish brown; crown darker, rump paler. Chin, throat and breast smoky grey; belly and vent white. Tail darker brown. Tarsus bare.

Measurements : 2 ♀ : Wing 91,92, tail 43(2), bill 9(2).

Distribution : India : West Bengal (Nadia district) : Northern subcontinent and up the Maharashtra. Russian Turkestan, E. Afghanistan, Burma, N. Thailand, S. Yunnan, the Indochinese countries, Formosa and N. Luzon.

Genus *Hirundo* Linnaeus

277. *Hirundo concolor* Sykes

1833. *Hirundo concolor* Sykes, *Proc. Zool. Soc. Lond.* : 83 (Dukhun).

1982. Ripley, p. 257

Common names : Dusky Crag Martin (English) and Chatan ababil (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than a Sparrow. Back unglossed brown, chin and throat dull rufous finely streaked with blackish. Tail feathers, except the middle and outermost pairs with roundish white spot. Under tail coverts and abdomen concolorous.

Distribution : India : West Bengal (Bardhaman district) : Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Sikkim, Tamil Nadu and Uttar Pradesh.

Remark : Gauntlett (1985) has reported this species from Durgapur and Damodar Valley, Bardhaman district.

278. *Hirundo rustica rustica* Linnaeus

1758. *Hirundo rustica* Linnaeus, *Syst. Nat.* ed. 10, 1 : 191 (Sweden).

1972. Ali and Ripley, vol.5, p.57

Common name : Western Swallow (English) and Ababil (Bengali and Hindi).

Material examined : Darjiling district : 1 ♂, Kurseong, coll. P.K. Das, 6.vi.1980, South 24-Parganas, District : Gosaba, 1 ♀, coll. A.K. Mukherjee, 22.xii.1979.

Diagnostic characters : Size larger than the preceding bird. Back glossy steel blue, forehead, chin and throat chestnut. Throat with a blue black pectoral or breast band. Tail deeply forked.

Measurements : 1 ♂ : Wing 118; tail (central) 43, (outer) 85; bill 10.

Distribution : India : West Bengal (Darjiling and South 24-Parganas districts) : Throughout the

Indian mainlands. Bangladesh, Pakistan, Nepal, Sri Lanka, Europe, Asiaminor, Iraq, Arabia, Iran, Afghanistan and Russian Turkestan.

279. *Hirundo rustica gutturalis* Scopoli

1786. *Hirundo (gutturalis)* Scopoli, *Del. Flor. et. Faun. Insubr.*, 2 : 96 (New Guinea, errore, Panay = Philippines Hartert, 1910).

1972. Ali and Ripley, vol.5, p.59

Common name : Eastern Swallow (English) and Ababil (Bengali and Hindi).

Material examined : North 24-Parganas district : 1 ♀, Bantala, coll. B. Biswas, 6.xii.1964; 1 ♂, opp, Bengal Chemical, coll. B. Biswas, 12.iv.1964, 1 ♂, Babu Bheri, coll. B. Biswas, 24.iii.1963; 5 ♂ and 1 ♀, Duttabad, coll. B. Biswas, 5, and 25.iv.1964, 11.x.1964, 29.xi.1964; 23 ♂ and 12 ♀, Near Nalbani, coll. B. Biswas, 14,22 and 24.iv.1963, 25.iv.1964.

Diagnostic characters : Size smaller than the preceding bird. Back glossy blue black; incomplete blue black pectoral band. Chin and throat chestnut, abdomen white. Tail long, forked and with white spot.

Measurements :

	Wing	Tail		Bill
		Central	Outer	
6 ♂	94-112(105)	40-43(42)	43-86(61)	11
6 ♀	105-114(109)	41-43(42)	46-70(58)	11

Distribution : India : West Bengal (North 24-Parganas district) : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Karnataka, Kerala, Lakshadweep, Orissa, Sikkim and Tamil Nadu. Bangladesh, Sri Lanka and Maldives, Burma, Thailand, Malay Archipelago, Indonesia, Philippines and Indochinese countries.

280. *Hirundo rustica tytleri* Jerdon

1864. *Hirundo Tytleri* Jerdon, *Bds. India*, (3) : 870 (Dacca, Bangladesh).

1972. Ali and Ripley, vol.5, p.60

Common name : Chestnutbellied Swallow (English) and Lal ababil (Bengali).

Material examined : North 24-Parganas district : 2 ♂, Duttabad, North Salt Lake, coll. B. Biswas, 25.iv.1964 and 11.x.1964; 2 ♂ and 8 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 22.iv.1963, 25.iv.1964; 3 ♀, Salt Lake, coll. B. Biswas, 31.iii.1963 and 22.iv.1963.

Diagnostic characters : Size equal to preceding bird. Back glossy blue black; incomplete blue black pectoral band. Chin, throat and abdomen deep chestnut. Tail long forked and with spot.

Measurements :

	Wing	Tail		Bill
		Inner	Outer	
2 ♂	110,112	42,43	58,60	12
4 ♀	105-112(108)	42-43(43)	60-81(69)	12

Distribution: India : West Bengal (North 24-Parganas district) : Arunachal Pradesh, Assam, Manipur, Meghalaya and Nagaland. Bangladesh, Bhutan and Burma. Breeds in extreme NE. Asia and Kamchatka.

281. *Hirundo smithii* Leach

1818. *Hirundo smithii* Leach, in *Tuckey's Voy. Congo, App.*, 7 : 407 (Congo R., W. Africa).

1982. Ripley, p. 259

Common name : Indian Wiretailed Swallow (English) and Leishra (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to preceding bird. Back glossy steel blue with a bright chestnut cap. Chin, throat and foreneck pure white. Two long fine "wires" projecting from tail.

Distribution : India : West Bengal (Bardhaman district) : Assam, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Sikkim, Tamil Nadu and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Afghanistan, Burma, Thailand, Vietnam and Russian Turkestan.

Remarks : Gauntlett (1985) has recorded this species from Durgapur and Damodar Valley, Bardhaman district.

282. *Hirundo fluvicola* Blyth

1855. *Hirundo fluvicola* Blyth, *J. Asiat. Soc. Beng.*, 24 : 470 (Bundelkund *ex. Jerdon*).

1982. Ripley, p. 259

Common name : Indian Cliff Swallow (English) and Nahar ababil (Hindi).

Material examined : Nil.

Diagnostic characters : Size smaller than the preceding bird. Back glossy steel blue; forehead and crown dull chestnut, rump pale brown. Underparts fulvous white, profusely streaked with blackish on sides of head, chin, throat and breast.

Distribution : India : West Bengal (Bardhaman district) : Andhra Pradesh : Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. Pakistan, Bangladesh, Sri Lanka and Afghanistan.

Remarks : Recorded this species from Durgapur and Damodar Valley, Bardhaman district (Gauntlett, 1985).

283. *Hirundo daurica erythropygia* Sykes

1832. *Hirundo erythropygia* Sykes, *Proc. Zool. Soc. Lond.* : 83 (Dukhun = Poona = Pune).

1972. Ali and Ripley, vol.5, p.70

Common name : Indian Striated Swallow (English) and Masjid ababil (Hindi).

Material examined : Nil.

Diagnostic characters : Size larger than the preceding bird. Back glistening steely blue black; a narrow supercilium and sides of head, chestnut connected by a chestnut half collar on hindneck. Chin, throat, breast and belly fulvous white, finely streaked with dark brown. Rump chestnut. Tail deeply forked.

Distribution : India : West Bengal (Kochbehar and Malda districts) : Throughout Indian mainland except Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Sri Lanka.

Remarks : We have observed this bird in Kochbehar District and Malda Districts.

Family LANIIDAE

Genus *Lanius* Linnaeus, 1758

284. *Lanius vittatus* Valenciennes

1826. *Lanius vittatus* Valenciennes, *Dict. Sci. Nat.* (Levrault), 40 : 227 (Pondicherry).

1982. Ripley, p.264

Common name : Indian Baybacked Shrike (English), Khayeri karkata (Bengali) and Pachanak (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a Bulbul. Back chestnut; head white and grey; a broad black band across forehead encircling eye and reaching back to ear-coverts; rump white. Tail black and white; white patch on blackwings.

Distribution : India : West Bengal (Bankura, Bardhaman, Birbhum and Medinipur districts) Throughout Indian mainland except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Nepal and Bangladesh.

Remarks : We have observed this species from Bankura, Bardhaman, Birbhum and Midnapur district.

285. *Lanius tephronotus tephronotus* (Vigors)

1831. *Collurio tephronotus* Vigors, *Proc. zool. Soc. Lond.* : 43 (Himalayas, restricted to Gyantse, Tibet, by Baker, 1924, *Faun. Br. India* 22 : 297 : re-restricted to 'Foothills of the Himalayas near Darjeeling = Darjiling, Darjiling dist., West Bengal, India, where breeding birds of the Gyantse dist. may be expected to winter 'by Mayr, 1947, *J. Bombay nat. Hist. Soc.*, 47 : 127).

1972. Ali and Ripley, vol.5, p.92

Common name : Eastern Tibet Greybacked Shrike (English).

Material examined : Jalpaiguri district : 1 ♂, Gish, coll. A.K. Mukherjee, 25.i.1955.

Diagnostic characters : Size larger than the preceding birds. Back slaty; a broad blackband through eyes to ear coverts. Wings black. Rump and upper tail coverts rufous; tail chestnut-brown, chin, throat and breast rufous, abdomen paler.

Measurements : 1 ♂ : Wing 106, tail 112, bill 22.

Distribution : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Sikkim and Uttar Pradesh. Bangladesh, Bhutan, Burma, Thailand, the Indochinese countries and China.

Breeds also in eastern Tibet north to Sikang, South to N. Yunnan, east to W. Szechuan.

286. *Lanius schach tricolor* (Hodgson)

1837. (*Colluris*) *Tricolor* Hodgson, *Ind. Rev.*, 1(10) : 446 (Nepal, restricted to Kathmandu, Nepal Valley, Nepal, by Biswas, 1950, *J. Bombay nat. Hist. Soc.*, 49 : 451).

1972. Ali and Ripley, vol.5, p.96

Common name : Blackheaded Shrike (English).

Material examined : North 24-Parganas district : 6 ♂, Duttabad, coll. B. Biswas, 25.vii.1964,

27.ix.1964, 24.x.1964, 27.xii.1964, 9.i.1965, 5 and 29.xii.1965; 1 ♀, Kalikapur, coll. B. Biswas, 18.i.1867; 1 ♂ and 6 ♀, Nalbani, coll. B. Biswas, 9.xii.1965, 25.xii.1964, 22.xii.1965, 11 and 26.ix.1965, 29.xii.1965, 20.ii.1966.

Diagnostic characters : Size smaller than the preceding bird. Upper back ashy grey, lower back light chestnut. head tail and wings black; a small white patch on wing, crown, sides of head, nape and hindneck black.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	93	110	23
11 ♀	88-98(92)	104-120(111)	21-23(22)

Distribution : India : West Bengal (North 24-Parganas district) : Assam, Bihar, Sikkim, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Sikkim and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Burma, Yunnan, Thailand and Vietnam.

287. *Lanius cristatus cristatus* Linnaeus

1758. *Lanius cristatus* Linnaeus, *syst. Nat. ed.* 10, 1 : 93 (Benghala).

1972. Ali and Ripley, vol.5, p.98

Common name : Brown Shrike (English); Karkata (Bengali) and Kerkheta (Hindi).

Material examined : Bankura district : 5 ♀, Susunia Hills, coll. J.M. Dasgupta, 28,30.i.1979, 11.i.1981. Barddhaman district; 1 ♂, Arrah, coll. P.K. Das, 21.v.1988. Birbhum district, 1 ♀, Mollarpur, coll. A.K. Mukherjee, 11.i.1981. Darjiling district : 1 ♀, Kumani, coll. R.K. Ghose, 18.iii.1985. North 24-Parganas district : 1 ♂, Bantala, coll. B. Biswas, 28.xi.1965; 1 ♂ and 2 ♀, N. Duttabad, coll. B. Biswas, 12 and 5.xii.1965; 1 ♂, Mahisbathan, coll. B. Biswas, 18.iv.1965; 6 ♂ and 5 ♀, Nalbani, coll. B. Biswas, 24.iv.1965, 8.i.1966, 12.x.1966, 18 and 26,27.ix.1969 and 26.xi.1969. South 24-Parganas district : 1 ♀, Raidighi, coll. A.K. Mukherjee, 25.xii.1979.

Diagnostic characters : Size equal to Bulbul. Crown, upper back, rump and upper tail-coverts reddish brown. White forehead and supercilium; a black line through eyes to ear-coverts. Wings brownish black. Tail rufous brown. Chin, cheeks and throat white.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
5 ♂	84-92(89)	80-84(83)	19-20(19)
4 ♀	83-90(86)	78-85(82)	19-21(20)

Distribution : India : West Bengal (Bankura, Barddhaman, Birbhum, Darjiling, North 24-Parganas and South 24-Parganas districts) : Throughout the Indian mainland except Andaman Is., Arunachal Pradesh, Chandigarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Lakshadweep, Punjab and Rajasthan.

Breeds in Siberia from Tomsk to the Kolyma R. and Kamchatka south to Mongolia and N. Amurland. Winters in Burma, Thailand, Malay Peninsula and Indochinese countries.

Family ORIOLIDAE

Genus *Oriolus* Linnaeus, 1766288. *Oriolus oriolus kundoo* Sykes1832. *Oriolus Kundoo* Sykes, *Proc. zool. Soc. Lond.* : 87 (Dukhun, Poona = Pune, India).

1972. Ali and Ripley, vol.5, p.103

Common name : Indian Golden Oriole (English), Sona bau (Bengali) and Peelak (Hindi).*Material examined* : Medinipur district : 1 ♂, Malabati Camp, coll. A.K. Mukherjee, 17.x.1979.

North 24-Parganas district : 1 ♂, Parmadan, coll. P.K. Das, 6.v.1988.

Diagnostic characters : Size equal to a Myna. In male, head, back and underparts bright golden yellow; wings and tail black. A conspicuous black streaked from lores through and behind eye. In female and young male, head and back duller and greenish yellow, chin, throat, breast and belly whitish and streaked with dull brown.*Measurements* : 2 ♂ : Wing 134,143; tail 87(2), bill 32,34.*Distribution* : India : West Bengal (Medinipur and North 24-Parganas districts) : Throughout Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Nagaland and Sikkim. Pakistan, Nepal, Bangladesh and Sri Lanka.289. *Oriolus xanthornus xanthornus* (Linnaeus)1758. *Coracias Xanthornus* Linnaeus, *Syst. Nat. ed.* 10, 1 : 108 (in America = Chandernagar, Hugli district, West Bengal, India).

1972 Ali and Ripley, vol.5, p.108

Common name : North Indian Blackheaded Oriole (English), Bene bau (Bengali) and Zardak (Hindi).*Material examined* : Bankura district : 1 ♀, Susunia Hills, coll. A.K. Mukherjee, 1.ii.1979, Birbhum district : 1 ♂ Juv., Chandrapur c 10 km NW. of Suri, coll. A.K. Mukherjee, 1.i.1981, Haora district; 1 ♂, Botanical Garden, coll. B. Biswas, 21.vi.1967. Medinipur district : 1 ♂, Banspahari, coll. A.K. Mukherjee, 14 and 12.x.1979; 1 ♂, Malabati, coll. A.K. Mukherjee, 14 and 19.x.1979, North 24-Parganas district : 1 ♀, Kalikapur, Salt Lake, coll. B. Biswas, 18.i.1967. South 24-Parganas district : 2 ♂, Raidighi, coll. A.K. Mukherjee, 26 and 27.xii.1979.*Diagnostic characters* : Size equal to preceding bird. In male, entire body brilliant golden yellow excepting head, throat and upper breast jet black and some black in wings and tail. On female, only underparts tinged with olive.*Measurements*

	Wing	Tail	Bill
5 ♂	123-140(134)	84-90(87)	29-31(30)
2 ♀	134,135	84,90	31

Distribution : India : West Bengal (Bankura, Birbhum, Haora, Medinipur, North 24-Parganas and South 24-Parganas districts) : Arunachal Pradesh, Assam, Bihar, Delhi, Himachal Pradesh, Northern Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Burma and Thailand.*Remarks* : Roonwal (1939) reported from Kharibari, Darjiling district, West Bengal.

Family DICRURIDAE

Genus *Dicrurus* Vieillot, 1816290. *Dicrurus adsimilis albirictus* (Hodgson)

1836. (*Bhuchanga*) *Albirictus* Hodgson, *Ind. Rev.*, 1(8) : 326 (Nepal).

1972. Ali and Ripley, vol.5, 914

Common name : North Indian Black Drongo (English); Finga (Bengali) and Bujanga (Hindi).

Material examined : Bankura district : 1 ♀, Ranibandh, coll. B.C. Saha, 5.ii.1979; 1 ♂, coll. A.K. Mukherjee, 5.ii.1982. Darjiling district : 2 ♀, Chunabhati, coll. R.L. Choudhury, 21 and 26.xi.1980. Haora district : 2 unsexed, Botanical Garden, Shibpur, coll. Mus. Collector Anderson, dt. of collection not known. Jalpaiguri district : 1 ♀, Sipchu Beat, upper Tandloo Range, coll. R.K. Ghose, 19.iii.1985. Medinipur district : 1 ♂, Jashpur c. 8 km, from Banspahari, coll. A.K. Mukherjee, 16.x.1979; 1 ♂, Malabati Camp, coll. A.K. Mukherjee, 19.x.1979. North 24-Parganas district : 1 ♂ and 1 unsexed, Duttabad, coll. B. Biswas, 27.xii.1964, 21.ii.1965; 8 ♂ and 7 ♀, Nalbani, coll. B. Biswas, 28.i.1965, 4.ii.1965, 26.xii.1965, 20.ii.1966, 6.xi.1968, 5.xi.1969, South 24-Parganas district : 1 ♂, Bamankhali, coll. D.K. Ghosal, 14.viii.1966; 1 ♀, Raidighi, coll. A.K. Mukherjee, 25.xii.1979.

Diagnostic characters : Size slightly larger than the preceding bird. Entire body, the head and tail glossy jet black. Tail long, deeply forked. White rictal spot present.

Measurements :

	Wing	Tail		Bill
		(Inner)	(Outer)	
9 ♂	139-149 (144)	98-161 (122)	95-146 (126)	24-27 (26)
6 ♀	135-144 (137)	87-112 (103)	125-146 (136)	25-29 (27)

Distribution : India : West Bengal (Bankura, Darjiling, Haora, Jalpaiguri, Medinipur, North 24-Parganas and South 24-Parganas districts) : Assam, Bihar, Chandigerh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, SE. Iran and Afghanistan.

Remarks : Roonwal (1939) reported from Kharibari, Darjiling district, West Bengal.

291. *Dicrurus adsimilis macrocerus* Vieillot

1817. *Dicrurus macrocerus* Vieillot, *Nouv. Dict. d'Hist. Nat. nouv.ed.*, 9: 588, based on 'Le Drongolon' of Levaillant, 1805, *Ois. d'Afr.* 4 pl. 17 : 72 (India restricted to Orissa by Baker, 1924, *Faun. Br. India*, 2 : 355, re-restricted to Madras city, Madras, Tamil Nadu, India, by Vaurie, 1949, : *Bull. Amer. Mus. Nat. Hist.*, 93 : 237.

1972. Ali and Ripley, vol.5, p.117

Common name : South Indian Black Drongo or King Crow (English), Finga (Bengali) and Buchanga (Hindi).

Material examined : Birbhum district: 1♀, Chandrapur c. 10 km NW. of Suri, coll. A.K. Mukherjee, 5.i. 1981. Nadia district: 1♂, Chakdah, coll. A. Rahim, 15.xi. 1926. North 24-Parganas district: 1♂, Salt Lake, coll. A. Rahim, date not known.

Diagnostic characters : Size slightly smaller than the preceding bird. Back browner with little metallic glossy jet black and wings and tail shorter and duller with less gloss.

Measurements

	Wing	Tail		Bill
		(Inner)	(Outer)	
2♂	147(2)	107,110	165,170	26
2♀	139,144	103,108	143-175	24,26

Distribution : India : West Bengal (Birbhum, Nadia and North 24-Parganas districts): Andhra Pradesh, Goa, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu.

292. *Dicrurus leucophaeus longicaudatus* Hay

1845. (*Dicrurus*) *longicaudatus* Lord Arthur Hay, in Jerdon, *Madras J. Lit. Sci.* 13 : 121 nom. nud.

1972. Ali and Ripley, vol.5, p.119

Common name : Indian Grey Drongo (English) and Neel finga (Bengali).

Material examined : Darjiling district : 1 ♂, Gorubathan, coll. H.N. Mitra, 27.i.1955.

Diagnostic characters : Size larger than a Bulbul. Head, back, wings and tail glossy slate black; tail long, deeply forked. Eyes conspicuous, crimson. Throat, breast and belly duller un glossed grey.

Measurements : 1 ♂ : Wing 135; tail (Central) 88, (Outer) 130; bill 30.

Distribution : India West Bengal (Darjiling district) : Throughout India except Arunachal Pradesh, Assam, arid portions of Kutch and Saurashtra of Gujarat, Meghalaya, Mizoram, Nagaland, Tripura and arid zone of Rajasthan. Pakistan, Nepal, Bhutan, Sri Lanka and eastern Afghanistan south of the Hindukush.

293. *Dicrurus leucophaeus hopwoodi* Baker

1918. *Dicrurus leucophaeus hopwoodi* Baker, *Novit. Zool.*, 25 : 294 (Dacca, Bangladesh).

1972. Ali and Ripley, vol.5, p.121

Common name : Assam Grey Drongo (English) and Neel finga (Bengali).

Material examined : Darjiling district : 1 ♂, Gorubathan, coll. H.N. Mitra, 27.i.1955.

Diagnostic characters : Size and colouration similar to preceding bird, but slightly paler above and below. Tail shorter and deeply forked.

Measurements : 1 ♂ : Wing 142; tail (Central), 102 (Outer) 158; bill 26.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Meghalaya and Nagaland. Bangladesh, Bhutan, Burma and Indochinese countries.

294. *Dicrurus caerulescens caerulescens* (Linnaeus)

1758. *Lanius caerulescens* Linnaeus, *Syst. Nat.*, 10 ed. 1 : 95 (Benghala).

1972. Ali and Ripley, vol.5, p.122

Common name : Indian Whitebellied Drongo (English), Dhoul (Bengali) and Pahari buchanga (Hindi).

Material examined : Puruliya district : 1 ♂, Matha, coll. A.K. Mukherjee, 20.ii.1982.

Diagnostic characters : Size smaller than the preceding bird. Head, back, tail and wings glossy indigo; throat, breast and belly brownish grey. Under tail-coverts white. Tail long and deeply forked.

Measurements : 1 ♂ : Wing 120; tail (Central) 15, (outer) 112; bill 24.

Distribution : India : West Bengal (Puruliya district) : Throughout Indian Union except Andaman Nicobar Islands. Haryana, Jammu & Kashmir, Lakshadweep and Rajasthan.

295. *Dicrurus annectans* (Hodgson)

1836. (*Bhuchanga*) *Annectans* Hodgson, *Ind. Rev.*, 1 (8) : 326 (Nepal).

1972. Ali and Ripley, vol.5, p.125

Common name : Crowbilled Drongo (English).

Material examined : South 24-Parganas district : 1 ♂, Shambhunagar, coll. A.K. Mukherjee, 27.ix.1955.

Diagnostic characters : Size larger than the preceding bird. Entire plumage, glossed with steel blue; under wing-coverts dark black with a round and white spot at tip of each feather. Tail less deeply forked and short; outer rectrices curving out-ward. Bill black, large and heavy.

Measurements : 1 ♂ : Wing 146; tail (inner) 110, tail (outer) 153; bill 28.

Distribution : India : West Bengal (South 24-Parganas district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Sikkim, Tripura and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand, Malay peninsula and Indonesian Islands.

296. *Dicrurus aeneus aeneus* Vieillot

1817. *Dicrurus aeneus* Vieillot, *Nouv. Dict. d'Hist. Nat.* 79 : 586. (Bengal, restricted to Dacca, Bangladesh, by Baker, 1924, *Faun. Br. India*, Birds 2 : 368).

1972. Ali and Ripley, vol.5, p.126

Common name : Bronzed Drongo (English), Chhota bhujanga (Bengali) and Chotta kesraj (Hindi).

Material examined : Jalpaiguri district : 1 ♀, Khuntimari, coll. A.K. Mukherjee, 20.i.1955.

Diagnostic characters : Size smaller than the preceding bird. Entire plumage highly glossy black with bronze-green and blue. Bill broad and depressed, width greater than depth at nostrils. Rump and under tail-coverts grey. Tail less deeply forked.

Measurements : 1 ♀ : Wing (-); tail (inner) 88, tail (outer) 115, bill 22.

Distribution : India : West Bengal (Jalpaiguri district) : Throughout Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Daman & Diu, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Burma, Yunnan, Thailand, Indochinese countries and Malay Peninsula.

Remarks : Roonwal (1939) reported from eastern bank of R. Teesta, between Sivok and Bagrakot, Jalpaiguri district, West Bengal.

297. *Dicrurus remifer tectirostris* (Hodgson)

1836. (*Bhringa*) *Tectirostris* Hodgson, *Ind. Rev.*, 1(8) : 325 (Nepal).

1972. Ali and Ripley, vol.5, p.128

Common name : Lesser Racket-tailed Drongo (English) and Chhota bhimraj (Bengali).

Material examined : Darjiling district : 1 ♀, Burikhati, coll. R.L. Chowdhury, 4.xii.1980, 2 ♂, Metelli, coll. R.L. Chowdhury, 10 and 11.xii.1980.

Diagnostic characters : Size larger than Myna. Entire plumage glossy metallic black; a velvety tuft of feathers above base of bill. Two elongated "wires" like outer tail feathers ending in spatulac as "rackets" fully webbed on both sides of shaft.

Measurements :

	Wing	Tail		Bill
		Inner	Outer	
2 ♂	140-145	122	480,492	28,30
1 ♀	42	122	370	26

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand, Indochinese countries and China.

298. *Dicrurus hottentottus hottentottus* (Linnaeus)

1766. *Corvus hottentottus* Linnaeus, *Syst. Nat.*, ed. 12, 1 : 155 (Cape of Good Hope, restricted to Sikkim, India, by Baker, 1919, re-restricted to 'region between Ayuthia and head of the Gulf, Siam by Kloss, 1921, *J. Fed. Malay States Mus.* 10 : 223. Re-restricted to Chandernagor, Hugli district, West Bengal, India by Stresemann, 1952, *Ibis*, 94 : 517, 521).

1972. Ali and Ripley, vol.5, p.131

Common name : Haircrested or Spangled Drongo (English); Keshraj (Bengali) and Krishnaraj (Hindi).

Material examined : Darjiling district : 1 ♂, Jarkhola, coll. H.K. Khajuria, 15.viii.1958; 1 ♀, Gorubathan, coll. A.K. Mukherjee, 21.i.1955; 1 ♂ Reang, coll. T.D. Soota, 29.vi.1974. Puruliya district : 1 ♂, Ajodhya Hills, coll. A.K. Mukherjee, 24.ii.1982.

Diagnostic characters : Size equal to a Myna. Entire plumage iridescent glossed and spangled blue black. A few fine hair like feathers springing from forehead and extending over hind crown and upper back. Bill long, pointed and downcurved. Tail long, square, curled up at the outer ends.

Measurements : 1 ♂ : Wing 170; tail (inner) 126, and (outer) 144; bill 39.

Distribution : India : West Bengal (Darjiling and Puruliya districts) : Throughout Indian mainland except Himachal Pradesh, Jammu & Kashmir, Mizoram and Rajasthan. Nepal, Bhutan and Bangladesh.

299. *Dicrurus paradiseus grandis* (Gould)

1836. *Edolius grandis* Gould, *Proc. zool. Soc. Lond.* : 5 (Nepalia)

1972. Ali and Ripley, vol.5, p.136

Common name : Northern Large Racket-tailed Drongo (English), Bhringraj (Bengali and Hindi).

Material examined : Darjiling district : 2 ♂, Sukna, coll. T.D. Soota, 13.vii.1974.

Diagnostic characters : Size equal to preceding bird. Entire plumage metallic black; a conspicuous backward curving very large tuft or crest feathers on forehead, curving back over the entire crown. Tail with two long "wires" like spatula tipped streamers.

Measurements : 2 ♂ : Wing 165,170; tail 171,207/295; bill 43.

Distribution : India : West Bengal (Darjiling district) : All over India except Haryana, Goa, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Punjab and Rajasthan. Nepal, Bhutan, Bangladesh, Burma, Yunnan and Vietnam.

Family ARTAMIDAE

Genus *Artamus* Vieillot, 1816

300. *Artamus fuscus* Vieillot

1817. *Artamus fuscus* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 17 : 297 (Bengal).

1972. Ali and Ripley, vol.5, p.143

Common name : Ashy Swallow-Shrike (English), Tal charai (Bengali) and Tadi ababeel (Hindi).

Material examined : Bankura district : 1 ♂ and 1 ♀, .Susunia Hills, coll. J.M. Das Gupta. 2.ii.1979. Birbhum district : 3 ♂ and 3 ♀, Chandrapur c. 10 km NW. of Suri, coll. A.K. Mukherjee, 7.i.1981. North 24-Parganas district : 1 ♂ and 1 ♀, Kalikapur, coll. B. Biswas, 23.viii.1964.

Diagnostic characters : Size equal to Bulbul. Entire head and back dark slaty grey; rump paler than back, slaty grey brown. Underparts paler. Tail short slaty black, tipped with white. Bill bluish and heavy, undertail-coverts white.

Measurements :

	Wing	Tail	Bill
5 ♂	125-139(132)	48-59(55)	22
5 ♀	130-137(135)	52-56(54)	21-23(22)

Distribution : India : West Bengal (Bankura, Birbhum and North 24-Parganas districts) : Throughout India except Jammu & Kashmir. Nepal, Bhutan, Bangladesh, Sri Lanka, Burma, the Indo-chinese countries and China.

Remarks : Roonwal (1939) reported this bird from Naksalbari, Darjiling district, West Bengal.

Family STURNIDAE

Key to the genera of the family STURNIDAE

- 1. Distinct white wing-patch on the underparts of the wings.....2
 No wing-patch or patch suffused.....*Sturnus*
- 2. Patch near base of wings.....*Acridotheres*
 Patch at about middle length of wing.....*Gracula*

Genus *Sturnus* Linnaeus, 1758

301. *Sturnus malabaricus malabaricus* (Gmelin)

1789. *Turdus malabaricus* Gmelin, *Syst. Nat.*, 1 : 816 (Malabar, Kerala, India).

1972. Ali and Ripley, vol.5, p.152

Common name : Greyheaded Myna (English), Desi pawei (Bengali) and Pawei (Hindi).

Material examined : South 24-Parganas district : 3 ♂, Bantala, coll. B. Biswas, 6.ix.1964 and 12.vii.1967; 1 ♀ Nalbani, coll. B. Biswas, 6.xii.1968.

Diagnostic characters : Size smaller than a common Myna. Head and back brownish grey; forehead feathers over eyes whitish; cheeks and ear-coverts pale rufous grey; chin, throat and breast pale rufous; belly and vent bright rufous; wings black and grey. Tail ferruginous.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
10 ♂	96-103(100)	58-67(63)	20-23(22)
5 ♀	95-103(99)	59-64(61)	21-24(22)

Distribution : India : West Bengal (South 24-Parganas district) : Throughout Indian mainland except Jammu & Kashmir, Kerala, Manipur, Nagaland. Nepal, Bhutan and Bangladesh.

302. *Sturnus pagodarum* (Gmelin)

1789. *Turdus pagodarum* Gmelin, *Syst. Nat.*, 1 : 816 (Malabar).

1972. Ali and Ripley, vol.5, p.160

Common name : Blackheaded Myna (English), Kalasir myna (Hindi) and Harbola (Bengali).

Material examined : Nil.

Diagnostic characters : Size slightly larger than preceding bird. Back grey; underparts reddish-fawn; forehead glossy black. Crown and neck with long pointed blackcrest. Wings blackish; tail slightly graduated, brown with white edging and tip.

Distribution : India : West Bengal (All districts of West Bengal) : Throughout Indian mainland except Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan and Sri Lanka.

Remarks : We have observed this species in all the districts of West Bengal.

303. *Sturnus roseus* (Linnaeus)

1758. *Turdus roseus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 171 (Lapland, Switzerland).

1972. Ali and Ripley, vol.5, p.163

Common name : Rosy Starling (English), Lal myna (Bengali) and Gulabi myna (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a Myna. Back and abdomen rose-pink; head, neck, upperbreast, wings and tail glistening black. Crown and nape with long pointed crest.

Distribution : India : West Bengal (Darjiling district) : Throughout Indian Union except Arunachal Pradesh, Lakshadweep, Manipur, Meghalaya, Mizoram, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Bangladesh and Sri Lanka.

Breeds in SE. Europe and SW. Asia.

Remarks : We have recorded this species in Darjiling District.

304. *Sturnus contra contra* (Linnaeus)

1758. *Sturnus Contra* Linnaeus, *Syst. Nat.* ed., 10, 1 : 167 (India, restricted to Chandernagore [Hooghly=Hugli, Hugli district, West Bengal] by Stresemann, 1952, *Ibis* 94 : 517).

1972. Ali and Ripley, vol.5, p.172

Common name : Indian Pied Myna (English); Guye salik (Bengali) and Ablaki myna (Hindi).

Material examined : Calcutta district : 1 ♂, Calcutta bazar, coll. J.K. Singh, 8.ix.1945. Jalpaiguri district : 1 ♂, Bagracote, coll. A.K. Mukherjee, 17.i.1955; 1 ♂, Chilapatha, coll. R.K. Ghose,

10.iii.1985; 1 ♀, Khuntimari, coll. R.K. Ghose, 13.iii.1985. Nadia district : 2 ♂ and 3 ♀, Krishnagar, coll. B. Roy, 18 and 19.vi.1957. North 24-Parganas district : 1 ♂, Babu Bheri, coll. P.V. George, 23.i.1963; 4 ♂ and 5 ♀, Nalbani, coll. B. Biswas, 31.v.1964, 2.i.1966, 6.xii.1968, 2 and 30. i.1966, 31.v.1967, 6.xii.1968, 28.i.1970; 1 ♂ and 1 ♀, coll. S.S. Saha, 6.iii.1966, 5.xi.1969; 2 ♂, Parmadan, coll. P.K. Das, 9.v.1988. South 24-Parganas district : 2 unsexed, Sambhunagar, coll. R.L. Fernandez, 27.vii.1955; 1 unsexed, Sambhunagar, coll. A.K. Mukherjee, 27.vii.1955.

Diagnostic characters : Size equal to preceding bird. Entire plumage black and white; orbital skin deep orange-red; bill basal portion bright orange red and terminal pale yellow. Legs and feet yellowish-brown, red. Legs and feet yellowish-brown.

Measurements :

	Wing	Tail	Bill
7 ♂	113-121(118)	65-71(68)	31-33(32)
5 ♀	114-119(116)	66-73(69)	30-33(32)

Distribution : India : West Bengal (Calcutta, Jalpaiguri, Nadia, and North 24-Parganas districts) : Andhra Pradesh, Assam, Bihar, Haryana, Madhya Pradesh, Meghalaya, Orissa, Punjab and Rajasthan. Nepal and Bangladesh.

Genus *Acridotheres* Vieillot, 1816

305. *Acridotheres tristis tristis* (Linnaeus)

1766. *Paradisea tristis* Linnaeus, *Syst. Nat.*, ed. 12, 1 : 167 (Philippines, errore = Calcutta, Calcutta district, West Bengal, India, Vide Baker, 1926, *Faun. Br. India*, 3 : 53 = Pondicherry, India, Vide Stresemann, 1952, *Ibis* : 515).

1972. Ali and Ripley, vol.5, p.177

Common name : Indian Myna (English), Salik (Bengali) and Desi myna (Hindi).

Material examined : South 24-Parganas district : 1 ♂ and 1 ♀, Sambhunagar, coll. B. Biswas, 28.ix.1953 and 26.vii.1955.

Diagnostic characters : Back and lower breast dark brown; head, neck and upper breast glossy black. Legs bright yellow. Bill and naked patch below and behind eye yellow. Wings with a large white patch. Tail brownish black with broad white tips to the restrices.

Measurements :

	Wing	Tail	Bill
2 ♂	134(2)	65,67	27,(-)
4 ♀	133-142(138)	78-83(80)	23-29(26)

Distribution : India : West Bengal (South 24-Parganas district) : Throughout the Indian Union; introduced in Andaman & Nicobar Islands. Pakistan, Nepal, Bhutan, Bangladesh, Sri Lanka, Burma, Thailand, Indo-chinese countries, Russian Turkestan and Afghanistan. Introduced in Australia, New Zealand, Hawaii, South Africa, Seychelles and Mauritius.

Remarks : Roonwal (1939) reported from Sevok Ghat, Darjiling district, West Bengal.

306. *Acridotheres ginginianus* (Latham)1790. *Turdus ginginianus* Latham, *Index Orn.* 1 : 362 (Gingee).

1982. Ripley, p. 282

Common name : Bank Myna (English), Gang Salik (Bengali) and Ganga Myna (Hindi).*Material examined* : Nil.*Diagnostic characters* : Size slightly smaller than a Myna. Back and belly pale bluish grey; head black. Naked orbital skin brick-red. Wings patch and tips of tail feathers pinkish buff. Forehead with black distinct tuft of feathers.*Distribution* : India : West Bengal (Barddhaman district) : Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan and Uttar Pradesh. Pakistan and Bangladesh.*Remarks* : Reported this species from Durgapur and Damodar Valley, Barddhaman district (Gauntlett, 1985).307. *Acridotheres fuscus fuscus* (Wagler)1827. *Pastor fuscus* Wagler, *Syst. Av. Pastor sp.*, 76 (India=East Bengal, Bangladesh, Baker, 1921).

1972. Ali and Ripley, vol.5, p.183

Common name : Northern Jungle Myna (English), Jungli salik (Bengali) and Pahari Myna (Hindi).*Material examined* : Nadia district : 1 ♀, Krishnagar, coll. B. Roy, 18.vi.1957. North 24-Parganas district : 2 ♂ and 1 ♀, Duttaband, coll. B. Biswas, 21.ii.1965; 5 ♂ and 2 ♀, Nalbani, coll. B. Biswas, 12.iii.1968, 6.xii.1968, 18.xii.1968, 15.i.1970, 12.iii.1968 and 6.xii.1968; 4 ♂ and 2 ♀, Parmadan, coll. P.K. Das, 7.v.1988.*Diagnostic characters* : Size equal to common Myna. Back, throat and breast grey-brown. Wing with large white wing patch. Forehead with a prominent tuft of erect black feathers at base of bill. Tail broad white tipped. Bill yellow-orange. Legs and feet yellow-ochre.*Measurements* :

	Wing	Tail	Bill
7 ♂	117-125 (120)	62-74 (70)	25-27 (26)
4 ♀	113-120 (117)	65-73 (69)	26-27 (26.5)

Distribution : India : West Bengal (Nadia and North 24-Parganas districts) : Assam, Bihar, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Orissa, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan and Bangladesh.Genus *Gracula* Linnaeus, 1758308. *Gracula religiosa intermedia* A. Hay1844. *Gracula intermedia* A. Hay, *Madras J. Lit. Sci.*, 13 : 157 (Cachar, Cachar district, Assam. India).

1972. Ali and Ripley, vol.5, p.191

Common name : Northern Hill Myna (English) and Pahari Myna (Bengali and Hindi).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Reang, coll. T.D. Soota, 3 and 6.vii.1974; 2 ♂ and 1 ♀, Jarkhola, coll. R.L. Fernandez, 17, 18 and 20.viii.1958; 1 ♀, Teesta Valley, coll. A.K. Mukherjee, 2.ii.1953. Jalpaiguri district : 1 ♀, Khuntimari, coll. R.K. Ghose, 15.iii.1985.

Diagnostic characters : Size slightly larger than common Myna. Entire plumage jet black. Bright-orange yellow patches of naked skin and fleshy wattles on sides of head and neck. Wing with a broad white patch on primaries.

Measurements :

	Wing	Tail	Bill
3 ♂	160-165(163)	73-76(74)	32-34(33)
4 ♀	160-170(168)	75-84(79)	30-36(34)

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Nagaland, Orissa, Sikkim, Tripura and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Burma, Thailand and the Indochinese countries.

Family CORVIDAE

Key to the genera of the family CORVIDAE

1. Plumage predominantly black or black with ashy nape and central rectrices not elongated .. *Corvus*
Plumage with brilliant or contrasting colours with two central rectrices elongated.....2
2. Plumage with shades of blue.....*Cissa*
Plumage with shades of brown.....*Dendrocitta*

Genus *Cissa* Boie, 1826

309. *Cissa chinensis chinensis* (Boddaert)

1783. *Coracias chinensis* Boddaert, *Table Pl. entum.* : 38 (China, corrected to southern Thailand by Robinson & Kloss, 1923 = Mergui, Burma, *Vide* Stresemann, 1952, *Ibis*, 94 : 516).

1972. Ali and Ripley, vol.5, p.204

Common name : Green Magpie (English) and Sirgang (Bengali).

Material examined : Darjiling district : 1 ♀, Gorubathan, coll. R.L. Chaudhury, 4.xii.1980; 1 ♂, Jakdah, coll. H. Khajuria, 6.viii.1958.

Diagnostic characters : Size equal to a common Myna. Back and underparts bright-leafgreen. Wing chinnamon-red. A broad black band running backward through eyes to meet on nape. Tail long, graduated, black and white tipped. Bill and legs bright coral-red.

Measurements : 1 ♂ : Wing 140, tail 130, bill 33.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand, Vietnam, Cambodia, Malay Peninsula and Indonesian Islands.

310. *Cissa flavirostris flavirostris* (Blyth)

1846. *Ps. (ilorhinus) flavirostris* Blyth, *J. Asiat. Soc. Beng.*, 15 28 (Darjeeling = Darjiling).

1972. Ali and Ripley, vol.5, p.208

Common name : Eastern Yellowbilled Blue Magpie (English).

Material examined : Nil.

Diagnostic characters : Size equal to a Pigeon. Back, wing and tail purplish blue; head, neck and breast black. Belly and vent whitish. Tail long, graduated, black and white tipped; white patch on nape. Bill yellow; legs bright orange.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh and Sikkim. Nepal, Bhutan, Tibet, Burma and China.

Genus *Dendrocitta* Gould, 1833

311. *Dendrocitta vagabunda vagabunda* (Latham)

1790. *Coracias vagabunda* Latham, *Index Orn.* 1 : 171 (India, restricted to Calcutta, Calcutta district, West Bengal, India, by Ticehurst, 1922, *Ibis* : 537).

1972. Ali and Ripley, vol.5, p.218

Common name : Northeastern Tree Pie (English), Handi chacha (Bengali) and Mahalat (Hindi).

Material examined : Bankura district : 1 unsexed, Susunia Hills, coll. J.M. Das Gupta, 31.i.1979; 1 ♀, Ranibandh, coll. A.K. Mukherjee, 4.iii.1982. Birbhum district : 1 ♂, Birbhum, coll. A.K. Mukherjee, 31.xii.1980. Calcutta district : 1 ♂, Indian Museum compound, coll. not known, 25.ix.1981. Haora district : 1 ♂ and 1 ♀, Botanical Garden, Shibpur, coll. B. Biswas, 21.vi.1967 and 7.v.1988. Hugli district : 1 ♂, Telinipara, coll. B. Biswas, 30.vii.1950. Nadia district : 1 ♂, Chakdah, coll. A. Rahim, 28.xii.1966. South 24-Parganas district : 1 ♂ and 1 ♀, Pathar Pratima, coll. D.K. Ghosal, 4.viii.1960 and 14.viii.1966; 1 ♀, Bamankhali, coll. V.G. Gogate, 15.viii.1966; 1 ♂, Sambhunagar, coll. A.K. Mukherjee, 26.ix.1955. North 24-Parganas district : 1 ♂, Parmadan, coll. P.K. Das, 7.v.1988.

Diagnostic characters : Back and scapulars dark brownish rufous. Rump, belly and under tail-coverts fulvous buff. Head, neck and breast dark sooty-grey. Tail long, graduated, greyish with broad black tips. Greyish white and black pattern on wings.

Measurements :

	Wing	Tail	Bill
8 ♂	146-166(156.6)	204-262(233.6)	29-36(31.6)
4 ♀	136-160(144)	210-242(223)	30-33(31)

Distribution : India : West Bengal (Bankura, Birbhum, Calcutta, Haora, Hugli, Nadia, North 24-Parganas and South 24-Parganas districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Madhya Pradesh, Maharashtra, Manipur, Orissa and Uttar Pradesh. Bangladesh and Nepal.

Remarks : Roonwal (1939) reported this bird from Kharibari, Darjiling district, West Bengal.

312. *Dendrocitta frontalis frontalis* Horsfield

1840. *Dendrocitta frontalis* Horsfield, *Proc. zool. Soc. Lond.* : 163 (Assam, India).

1972. Ali and Ripley, vol.5, p.222

Common name : Blackbrowed Tree Pie (English).

Material examined : Darjiling district : 1 ♂, locality not known, coll. G. Masson, 1.viii.1989.

Diagnostic characters : Back, belly and under tail-coverts grey and chestnut. Nape, sides of head and

breast white. Face, throat and foreneck black. Bill heavy, curved and black. Tail entirely black.

Measurements : 1 ♂ : Wing 135, tail 220, bill 32.

Distribution : India West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Bangladesh and Burma.

Remarks : Blyth (1843) reported this bird from Darjiling.

313. *Dendrocitta formosae himalayana* Jerdon

1864. *Dendrocitta himalayana* 'Blyth' = Jerdon, *Bds. India* 3 : 874 (Sikkim, India, restricted by Ticehurst, 1925, *Bull. Br. Orn. Cl.*, 46 : 22).

1982. Ripley, p. 289-

Common name : East Himalayan Tree Pie (English).

Material examined : Darjiling district : 1 ♂, 4 ♀ and 3 unsexed, Darjiling, coll. J. Anderson, date not known; 1 unsexed, Samsing, coll. R.L. Choudhury, 14.xii.1980; 1 ♂, Tekdah, coll. H. Khajuria, 4.viii.1958. Jalpaiguri district : 1 ♂, Khumani, coll. R.L. Chaudhury, 14.xii.1980.

Diagnostic characters : Black forehead; sides of head sooty brown; ashy grey crown, nape and upper mantle; lower mantle and seapulars buffy brown. Rump and upper tail-coverts paler. Black wings with a pure white patch. Chin and throat dark sooty brown, breast and belly rusty brown and whitish.

Measurements :

	Wing	Tail	Bill
3 ♂	133-141(138)	150-208(190)	35-36(35)
3 ♀	138-140(139)	197-208(202)	30-36(33)

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Orissa and Sikkim. Nepal, Bhutan, Bangladesh, Burma, Yunnan, Vietnam, Laos, China, Hainan and Taiwan.

Genus *Corvus* Linnaeus, 1758

314. *Corvus splendens splendens* Vieillot

1817. *Corvus splendens* Vieillot, *Nouv. Dic. d'Hist. Nat.* 8 : 44 (Bengal).

1972. Ali and Ripley, vol.5, p.244

Common name : Indian House Crow (English), Kak (Bengali) and Desi Kowwa (Hindi).

Material examined : Calcutta district : 3 ♂ and 1 ♀, Calcutta, B. Biswas, 20.iii.1980, 23.x.1979, 8.ix.1980; 1 ♀, Calcutta, coll. S. Chattopadhyaya, 13.v.1980; 1 ♂, Ballygunge Lake, coll. S. Chattopadhyaya, 8.ix.1980; 1 ♀, Indian Museum compound, coll. S.S. Saha, 3.ii.1970; 1 ♂, Indian Museum compound, coll. S. Chattopadhyaya, 8.ix.1980; 1 ♂, Indian Museum compound, coll. B. Biswas, 20.iii.1980. Medinipur district : 1 ♂, Malabati Camp, coll. A.K. Mukherjee, 18.x.1979. North 24-Parganas district : 1 ♀, Kalikapur, Budge Budge, coll. S. Chattopadhyaya, 29.i.1980; 1 ♂, coll. B. Biswas, 13.v.1980; 1 ♀, Nalbani, N. Salt Lake, coll. S. Dutta, 19.vi.1966; 1 ♂, Coll. B. Biswas, 1.v.1969.

Diagnostic characters : Glossy black forehead, crown and throat. Nape, neck, upper breast and upperback glossy black with dusky-grey. Bill thick and black.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
6 ♂	261-272(266)	160-167(162)	52-57(55)
5 ♀	250-268(255)	142-162(156)	51-58(52)

Distribution : India : West Bengal (Calcutta, Medinipur and North 24-Parganas districts) : Throughout India except Jammu & Kashmir, Punjab, Himachal Pradesh, Kerala and Laccadive. Andaman Islands (Introduced). Bangladesh and Burma.

315. *Corvus macrorhynchos levaillantii* Lesson

1831. *Corvus levaillantii* Lesson, *Traite d Orn.* : 328 (Bengal).

1972. Ali and Ripley, vol.5, p.254

Common name : Eastern Jungle Crow (English) and Jangli kowwa (Bengali),

Material examined : South 24-Parganas district : 1 unsexed, coll. B. Biswas, 18.vii.1965.

Diagnostic characters : Size larger than a House Crow. Entire plumage glistening jet black. Base of nape feathers dusky-grey. Bill heavy, curved and black.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	280	165	66
1 ♀	288	155	62

Distribution : India : West Bengal (South 24-Parganas district) : Andaman Islands, Assam, Manipur, Meghalaya and Nagaland. Bangladesh, Nepal, Bhutan, Burma and Thailand.

Family CAMPEPHAGIDAE

Key to the genera of the family CAMPEPHAGIDAE

1. Tail square..... *Tephrodornis*
Tail more or less graduated.2
2. Shafts of rump-feathers soft..... *Hemipus*
Shafts of rump-feathers spiny.....3
3. Outer rectrices more than half length of tail *Pericrocotus*
Outer rectrices more than three quarters length of tail..... *Coracina*

Genus *Hemipus* Hodgson, 1844

316. *Hemipus picatus* (Sykes)

1832. *Muscicapa picata* Sykes, *Proc. zool. Soc.*, London : 85 (Dukhun).

1971. Ali and Ripley, vol.6, p.3

Common name : Blackbacked Pied Flycatcher-Shrike (English) and Chhota kala latora (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a Sparrow. In male, head and back glossy black; Chin and throat pure white; Breast and belly pinkish white. White collar round hind neck; rump white. Wings and tail black and white. In female, the black colour replaced by sooty brown colour.

Distribution : India : West Bengal (Haora, Hugli, Malda, Puruliya and South 24-Parganas districts) : Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu. Bangladesh, Thailand, Indochinese countries and Indonesia.

Remarks : We have observed this species in South 24-Parganas district, Haora district, Hugli district, Malda district and Puruliya district.

Genus *Tephrodornis* Swainson, 1832

317. *Tephrodornis virgatus pelvica* (Hodgson)

1837. *Tenthaca pelvica* Hodgson, *Ind. Rev.*, 1(10) : 447 (Nepal).

Common name : Nepal Wood Shrike (English).

Material examined : Darjiling district : 1 ♂, Engo, Samsing, coll. R.L. Choudhury, 11.xii.1980.

Diagnostic characters : Size equal to a Myna. In male, crown and nape ashy grey; back, wings and tail ashy brown. A broad black band from lores through eye to ear-coverts. Rump and upper tail-coverts fluffy, whitish and ashy brown, barred with black and white band across. Chin, throat and breast pale ashy fawn; belly white. Outer rectrices brown, tipped with rufous. In female, eye band brown.

Measurements : 1 ♂ : Wing 122, tail 88, bill 27.

Distribution : India : West Bengal (Darjiling district) : Andhra Pradesh, Assam, Bihar, Manipur, Meghalaya, Nagaland, Orissa and Sikkim. Bangladesh, Nepal and Bhutan.

318. *Tephrodornis pondicerianus pondicerianus* (Gmelin)

1789. *Muscicapa pondiceriana* Gmelin, *Syst. Nat.*, 1 : 939 (Coromandel, Tamil Nadu, India).

1971. Ali and Ripley, vol.6, p.11

Common name : Indian Wood Shrike (English); Chudukka (Bengali) and Keroula (Hindi).

Material examined : Bankura district 1 ♂, Ranibandh, coll. B.C. Saha, 6.xii.1979; 1 ♀, coll. A.K. Mukherjee, 5.iii.1982; 1 ♂, Susunia Hills, coll. J.M. Das Gupta, 27.i.1979. Birbhum district : 3 ♂, 1 ♀, Chandrapur, coll. A.K. Poddar, 12.xii.1985. Puruliya district : 1 ♂ and 1 unsexed, Quilapal, coll. A.K. Mukherjee, 28.ii.1982 and 2.iii.1982.

Diagnostic characters : Size equal to a Bulbul. Back, wings and tail greyish brown; a dark brown stripe below the eye from lores to ear-coverts; supercilium whitish. Rump feathers white at base and at tips; outer rectrices white.

Measurements :

	Wing	Tail	Bill
3 ♂	87-89 (88)	65-66 (65)	20-23 (21)
2 ♀	88, 89	65 (2)	19, 22

Distribution : India : West Bengal (Bankura, Birbhum and Puruliya districts) : Throughout Indian mainland except Himachal Pradesh, Jammu & Kashmir, Gujarat, Punjab and Rajasthan. Elsewhere : Bangladesh.

Genus *Coracina* Vieillot, 1816319. *Coracina novaehollandiae macei* (Lesson)

1830. *Graucalus macei* Lesson, *Traite d'Orn* : 349 (Calcutta, Calcutta district, West Bengal, India).
1971. Ali and Ripley, vol.6, p.14

Common name : Indian large Cuckoo-Shrike (English); Kabasi (Bengali) and Kasya (Hindi).

Material examined : Bankura district : 1 ♂ and 1 ♀, Ranibandh, coll. B.C. Saha, 6.ii.1979; 1 ♂, coll. A.K. Mukherjee, 4.iii.1982. Darjiling district : 1 ♂, Chunabati, coll. R.L. Chowdhury, 28.xi.1980. Jalpaiguri district : 1 ♂, Chilapata, coll. R.K. Ghosh, 4.iii.1982. Medinipur district : 1 ♀, Belpahari, coll. A.K. Mukherjee, 10.x.1979. Puruliya district : 1 ♂, Matha, coll. A.K. Mukherjee, 20.ii.1982.

Diagnostic characters : Size smaller than a Pigeon. In male, head and back grey; underparts whitish; a broad dark eye-streak; wings and tail black. In female, eye-streak less prominent. Underparts are barred grey and white.

Measurements :

	Wing	Tail	Bill
4 ♂	162-182(171)	121-130(126)	30-31(30.5)
2 ♀	160,164	122,130	27(2)

Distribution : India : West Bengal (Bankura, Darjiling, Jalpaiguri, Medinipur and Puruliya districts) : Throughout Indian main land except Arunachal Pradesh, Assam, Haryana, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Sikkim and Tripura. Bangladesh.

320. *Coracina novaehollandiae nipalensis* (Hodgson)

1836. *Graucalus Nipalensis* Hodgson, *Ind. Rev.*, 1(18) : 327. (Nepal).
1971. Ali and Ripley, vol.6, p.16

Common name : Himalayan Large Cuckoo-Shrike (English).

Material examined : Jalpaiguri district : 1 ♂, Chilapata, coll. R.K. Ghose, 8.iii.1985.

Diagnostic characters : Size slightly larger than the preceding bird. In male, chin, throat and breast grey; belly without any barring. In female, chin, throat and breast grey and belly barred.

Measurements : 1 ♂ : Wing 185, tail 132, bill 32.

Distribution : India : West Bengal (Jalpaiguri, Kochbehar and Malda districts) : Assam, Bihar, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan and Nepal.

Remarks : It is observed in Malda and Kochbehar Districts of West Bengal.

321. *Coracina melaschistos melaschistos* (Hodgson)

1836. *Volvocivora Melaschistos* Hodgson, *Ind. Rev.*, 1(8) : 328 (Nepal).
1971. Ali and Ripley, vol.6, p.19

Common name : Dark Grey Cuckoo-Shrike (English) and Kabasi (Bengali).

Material examined : Nil.

Diagnostic characters : Size between Bulbul and Myna. In male, head and back dark bluish grey; eye-stripe dark. Wings and tail black. Central rectrices narrowly and the lateral ones broadly tipped white. In female, similar but paler grey and with barred underparts. Terminal margin of the tail is white.

Distribution : India : West Bengal (Darjiling district) : Andhra Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Nagaland, Orissa, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, Burma, Thailand, Indo-chinese countries, Taiwan and China.

Remarks : We have noticed this species in Darjeeling District.

322. *Coracina melanoptera sykesi* (Strickland)

1844. *Lalage sykesi* Strickland, *Ann. Mag. nat. Hist.*, 13 : 36 (Calcutta, Calcutta district, West Bengal, India, vide Baker=Dukhun, (=Poona=Pune), Sykes, 1832. *Proc. zool. Soc. Lond.*, pt. 2 : 77, 87).

1971. Ali and Ripley, vol.6, p.22

Common name : Peninsular Blackheaded Cuckoo-Shrike (English) and Jungli Kasya (Hindi).

Material examined : Bankura district : 1 ♀, Ranibandh, coll. A.K. Mukherjee, 5.iii.1982.

Diagnostic characters : Size equal to a Bulbul. In male, light grey back; wings and tail black. White tipped on all except middle pair of rectrices, abdomen and vent white. In female, with no black on head, underparts buff white, barred with dark brown except abdomen and vent.

Measurements : 1 ♀ : Wing 101, tail 77, bill 18.

Distribution : India : West Bengal (Bankura district) : Throughout Indian mainland excepting Arunachal Pradesh, Haryana, Himachal Pradesh, Jammu & Kashmir, Mizoram, Punjab and Tripura. Bangladesh and Sri Lanka.

Remarks : It is observed all the districts of West Bengal.

Genus *Pericrocotus* Boie, 1826

323. *Pericrocotus flammeus speciosus* (Latham)

1790. *Turdus speciosus* Latham, *Index Orn.*, 1 : 363 (India, restricted to Darjeeling=Darjiling, Darjiling district, West Bengal, India by Baker).

1971. Ali and Ripley, vol.6, p.25

Common name : North Indian Scarlet Minivet (English), Sayali (Bengali) and Pahari bulalchasam (Hindi).

Material examined : Darjiling district : 1 ♂, and 1 ♀, Kumani, coll. R.K. Ghose, 18.iii.1985

Diagnostic characters : Size larger than a Bulbul. In adult male, head and back glistening black; breast, belly and vent orange red to deep scarlet. In female, crown and back yellowish grey; chin, throat, breast and belly bright yellow and two yellow bars on black wings.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	103	95	21
1 ♀	98	103	18

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Punjab, Sikkim and Uttar Pradesh.

Remarks : It is also observed in the Jalpaiguri District of West Bengal.

324. *Pericrocotus brevirostris brevirostris* (Vigors)

1830. *Muscipeta brevirostris* Vigors, *Proc. zool. Soc. Lond.* : 43 (Himalayas=Sikkim foothills, vide Mayr, 1940).

1971. Ali and Ripley, vol.6, p.30

Common name : Shortbilled Minivet (English).

Material examined : Darjiling district : 2 ♂, Ghoombhanjan, coll. R.K. Ghosh, 15.vi.1974.

Diagnostic characters : Size smaller than a Bulbul. In male, back black and scarlet; a broad scarlet band running through the black wing. Tail steeply graduated, rump scarlet. In female, back grey; throat yellow and all the red parts of male replaced by yellow.

Measurements : 2 ♂ : Wing 87, 88, tail 95(2); bill 14,16.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland and Sikkim. Nepal, Bhutan, Burma, China and Vietnam.

325. *Pericrocotus solaris solaris* Blyth

1846. *Pericrocotus solaris* Blyth, *J. Asiat. Soc. Beng.*, 15 : 310 (Darjeeling = Darjiling).

1971. Ali and Ripley, vol.6, p.36

Common name : Yellowthroated Minivet (English).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. In male, upper tail-coverts deep scarlet. Wings and tail black and red. Chin greyish white. Throat orange-yellow. Breast and belly bright scarlet. In female, crown, neck and upper back ashy grey, lower back olive-green and tail dark-yellow. Wing and tail yellow, chin greyish white; throat, breast and belly yellow.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya and Sikkim. Nepal, Bhutan, Bangladesh and Burma.

326. *Pericrocotus roseus roseus* (Vieillot)

1818. *Muscicapa rosea* Vieillot, *Nouv. Dict. d'Hist. Nat., nouv. ed.*, 21 : 486 (Bengal).

1971. Ali and Ripley, vol.6, p.37

Common name : Rosy Minivet (English).

Material examined : Nil.

Diagnostic characters : Size slightly bigger than the preceding bird. In male, crown and back ashy brown; rump and upper tail-coverts rosy pink. Wings and tail deep pink, underparts rosy pink. In female, like male but rosy and red portion replaced by pale yellow colour.

Distribution : India : West Bengal (24-Parganas district) : Andhra Pradesh, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Sikkim and Uttar Pradesh. Nepal, Burma, China and Vietnam.

Remarks : Blyth (1846) reported this bird from Lower Bengal.

327. *Pericrocotus cinnamomeus vividus* Baker

1920. *Pericrocotus cinnamomeus vividus* Baker, *Bull. Br. Orn. Cl.*, 40 : 114 (Attaran River, Amherst

Dist., Tenasserim Div., Burma restricted to Pabyouk, 22 m. SE. of Moulmein, Burma, by Deignan).

1971. Ali and Ripley, vol.6, p.44

Common name : Eastern Small Minivet (English) and Chhoto sath sayali (Bengali).

Material examined : Bankura district : 1 ♂, Ranibandh, coll. B.C. Saha, 4.ii.1979.

Diagnostic characters : Size smaller than a Sparrow. In male, head and back dark grey, rump orange red. Black wings with yellow-orange patch. Tail long, black above, yellow-orange below. Throat dark grey, breast bright orange and belly yellow. In female, upper parts like male, but paler; below, whitish grey suffused with yellow; wing patch smaller and less bright.

Measurements : 1 ♂ : Wing 71, tail 63, bill 14.

Distribution : India : West Bengal (All districts) : Andaman Islands, Assam, Manipur, Meghalaya, Nagaland, Orissa and Sikkim. Bangladesh, Nepal, Burma, Thailand and Laos.

Remarks : It is observed in all the districts of West Bengal.

Family IRENIDAE

Key to the genera of the family IRENIDAE

1. General colouration yellow.....*Aegithina*
 General colouration not yellow.....2
2. General colouration grass green.....*Chloropsis*
 General colouration deep blue.....*Irena*

Genus *Aegithina* Vieillot, 1816

328. *Aegithina tiphia tiphia* (Linnaeus)

1758. *Motacilla Tiphia* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 186 (Benghala = neighbourhood of Calcutta, Calcutta district, West Bengal, India).

1971. Ali and Ripley, vol.6, p.49

Common name : Common Iora (English); Fatik-jal (Bengali) and Shaubeegi (Hindi).

Material examined : Calcutta district : 3 ♀, Calcutta, coll. J. Anderson, dt. of collection not known. Haora district : 1 ♀, Botanical Garden, coll. Mus. Collector, dt. of collection not known. Jalpaiguri district : 1 ♀, Kharibari, coll. not known, 6.xii.1938. Nadia district : 1 ♀, Chakdah, coll. A. Rahim, 19.vii.1931.

Diagnostic characters : Size equal to a Sparrow. In male, crown, nape and back greenish-yellow; chin, throat and breast yellow. Black wing with two white wing bars. Tail black. In female, yellowish green with wing greenish brown with two white bars. **call-note** : Chee-chit-chit-chit.

Measurements : 3 ♀ : Wing 61-64(62); tail 54-57(56); bill 18-19(18).

Distribution : India : West Bengal (Bardhaman, Birbhum, Calcutta, Jalpaiguri, Nadia and North 24-Parganas districts) : Bihar, Gujarat, Madhya Pradesh, Rajasthan and Uttar Pradesh.

Remarks : Blyth (1844) reported this bird as *Iora tiphia* which is now synonymised to *Aegithina t. tiphia*, from the vicinity of Calcutta. Reonwal (1939) reported from Kharibari, Darjiling district, West Bengal. It is also observed in Bardhaman, Birbhum, North 24-Parganas and Calcutta Districts.

329. *Aegithina tiphia humei* Baker

1922. *Aegithina tiphia humei* Baker, *Fauna Brit. Ind., Bds.*, 1 : 342 (Raipur, Madhya Pradesh, India).
1971. Ali and Ripley, vol.6, p.50

Common name : Central Indian Iora (English) and Shaubeegi (Hindi).

Material examined : Medinipur district : 2 ♀, Banspahari, coll. A.K. Mukherjee, 13.x.1979.

Diagnostic characters : Size equal to the preceding bird. In male (in summer), head and back blackish green. Tail black (in winter), back and head paler, more yellow, tail green. In female, head and back very pale dull greenish yellow.

Measurements : 2 ♀ : Wing 63(2); tail 58,59; bill 18,20.

Distribution : India : West Bengal (Bardhaman, Bankura, Medinipur and Puruliya districts) : Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttar Pradesh.

Remarks : It is also observed in Bankura, Puruliya and Bardhaman districts of West Bengal.

Genus *Chloropsis* Jardine and Selby, 1827330. *Chloropsis aurifrons aurifrons* (Temminck)

1829. *Phyllornis aurifrons* Temminck, *Pl. Col. d'Ois., livr.* 81, pl. 484, fig. 1 (Sumatra, India=Cachar, Cachar district, Assam, India).

1971. Ali and Ripley, vol.6, p.55

Common name : Northern Goldfronted Chloropsis (English); Harewa (Bengali) and Sabz harewa (Hindi).

Material examined : North 24-Parganas district : 1 ♂, North Salt Lake, coll. B. Biswas, 30.x.1951.

Diagnostic characters : Size equal to a Bulbul. Crown, nape, back and tail leaf-green, forehead orange, shoulder with blue patches. Bill black and curved. Lores, eyes, ear-coverts and lower throat black. Cheeks and chin dark blue.

Measurements : 1 ♂ : Wing 97, tail 76, bill 24.

Distribution : India : West Bengal (North 24-Parganas district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and Uttar Pradesh. Nepal, Bhutan and Bangladesh.

Remarks : Blyth (1843) reported this species from Bengal (Probably from North Bengal).

331. *Chloropsis hardwickii hardwickii* Jardine & Selby

1830. *Chloropsis hardwickii* Jardine & Selby, *Ill. Orn., Add.*, 2 : 1 (Nepal).

1971. Ali and Ripley, vol.6, p.59

Common name : Orangebellied Chloropsis (English).

Material examined : Darjiling district : 1 ♂, Darjiling, coll. J. Anderson, date not known.

Diagnostic characters : Size equal to a Bulbul. In male, crown, nape and back leaf-green; shoulder patch blue, wings dark purplish blue and tail blackish. Chin and throat blue-black, belly orange; dark blue moustachial streak on sides of head. In female, head and back green; a shoulder patch-pale blue, underparts orange colour and tail green.

Measurements : 1 ♂, Wing 94, tail 67, bill 25.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Assam, Bihar, Himachal

Pradesh, Manipur, Naga Hills, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Thailand and Indochina.

Remarks : It is also observed in Jalpaiguri district in winter.

332. *Chloropsis cochinchinensis jerdoni* (Blyth)

1844. *Phyllornis Jerdoni* Blyth, *J. Asiat. Soc. Beng.*, 13 : 392 (Central India).

1971. Ali and Ripley, vol.6, p.60

Common name : Jerdon's Chloropsis (English) and Harewa (Hindi).

Material examined : Bankura district : 1 ♂, Susunia Hills, coll. J.M. Dasgupta, 30.i.1979. Medinipur district : 1 ♀, Banspahari, coll. A.K. Mukherjee, 13.x.1979; 1 ♂, Kanaisoli, c 3 km. from Gidni Rly. Stn., coll. A.K. Mukherjee, 7.x.1979. Puruliya district : 1 ♂, Matha, coll. A.K. Mukherjee, 22.ii.1982, 1 and 3.iii.1982.

Diagnostic characters : Size smaller than a Bulbul. In male, crown, nape and back leaf-green, forehead yellowish green, chin and throat large. In female, chin and throat pale bluish green; cheek stripe bright greenish blue.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	92-98(94)	68-75(71)	22-23(22)
3 ♀	85-91(90)	69-78(72)	20-23(21)

Distribution : India : West Bengal (Bankura, Bardhaman, Birbhum, Medinipur and Puruliya districts) : Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh. Sri Lanka.

Remarks : It is observed in Birbhum and Bardhaman districts of West Bengal.

Family PYCNONOTIDAE

Key to the genera of the Family PYCNONOTIDAE

1. Numerous hair springing from nape and hind neck with long pointed crest.....*Criniger*
No numerous hair springing from nape and hind neck without long pointed crest.....2
2. Bill moderately thick usually shorter than length of tarsus.....*Pycnonotus*
Bill slender, longer than tarsus.....*Hypsipetes*

Family PYCNONOTIDAE

Genus *Pycnonotus* Boie, 1826

333. *Pycnonotus melanicterus flaviventris* (Tickell)

1833. *Vanga flaviventris* Tickell, *J. Asiat. Soc. Beng.*, 2 : 573 (Dampara in Dholbhum, Singhbhum, Bihar, India).

1971. Ali and Ripley, vol.6, p.72

Common name : Blackcrested Yellow Bulbul (English) and Zard bulbul (Hindi).

Material examined : Darjiling district : 2 ♂, Tarkhola, Kalimpong Sub-Division, coll. R.A.

Paynter, 12.viii.1958 and 15.iii.1958. Jalpaiguri district : 1 ♂, Burrakhola, Bengal Duars, coll. not known 24.xi.1938.

Diagnostic characters : Entire head with crest glossy black, back olive-yellow. Tail brown. Eyes pale yellow. Breast and belly yellow.

Measurements : 3 ♂ : Wing 89-91(90); tail 85-90(88); bill 17(3).

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttar Pradesh. Nepal, Bhutan and Bangladesh.

Remarks : Roonwal (1939) reported from Barrakhola, Jalpaiguri district, West Bengal.

334. *Pycnonotus jocosus emeria* (Linnaeus)

1758. *Motacill Emerica* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 187 (Benghala).

1971. Ali and Ripley, vol.6, p.79

Common name : Bengal Red Whiskered Bulbul (English) and Sipahi bulbul (Bengali).

Material examined : Calcutta district : 1 ♀, Calcutta, coll. J. Anderson, dt. of coll. not known. Darjiling district : 1 ♂, Terai, coll. J. Anderson, dt. of coll. not known. Jalpaiguri district : 1 ♂, Eastern bank of Teesta River, between Sevok and Bagrakot, coll. J. Anderson, 1938.

Diagnostic characters : Forehead, crown with pointed black crest; back hair-brown. Crimson tufts behind the eyes; chin, throat and belly white with dark collar on breast. Under tail-coverts scarlet.

Measurements :

	Wing	Tail	Bill
2 ♂	86,87	84(2)	19.20
1 ♀	89	85	19 ♀

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Andhra Pradesh, Orissa, Tamil Nadu and Tripura. Bangladesh, Burma and Thailand.

Remarks : Roonwal (1939) reported from eastern bank of Teesta, from Gish and from Barrakhola of Jalpaiguri district and Kharibari, Darjiling district, West Bengal. It is observed in all the districts of West Bengal.

335. *Pycnonotus jocosus monticola* (McClelland)

1840. *Ixos monticola* McClelland, *Proc. zool. Soc. Lond.*, Pt. 7 : 160 ('Kassia mountains', Assam, India).

1971. Ali and Ripley, vol.6, p.80

Common name : Assam Redwhiskered Bulbul (English).

Material examined : Darjiling district : 1 ♂, Chunabhati, coll. R.L. Chaudhury, 24.xi.1980.

Diagnostic characters : Back darker brown; pointed crest black; crimson tufts behind the eyes. Underparts with a dark collar and scarlet under tail-coverts. Tail feathers white tipped.

Measurements : 1 ♂, Wing 94; tail 80; bill 16.

Distribution : India : West Bengal (Darjiling, Jalpaiguri, Kochbehar and West Dinajpur districts) : Arunachal Pradesh, Assam and Meghalaya. Bhutan.

Remarks : It is also observed in Jalpaiguri, West Dinajpur and Kochbehar districts of West Bengal.

336. *Pycnonotus leucogenys leucogenys* (J.E. Gray)

1835. *Brachypus leucogenys* J.E. Gray, in Hardwicke's *Ill. Zool.*, 2, pl. 35 fig. 3 (Himalaya and in Kashmir, Vide Blyth, 1845; *J. Asiat. Soc. Beng.*, 14 : 567, restricted to Kashmir by Vaurie, 1958, *Amer. Mus. Novit.* No. 1968 : 19).

1971. Ali and Ripley, vol.6, p.83

Common name : Whitecheeked Bulbul (English) and Pahari bulbul (Bengali).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Darjiling, coll. J. Anderson, dt. of collection not known; 1 unsexed and 1 ♂, Takdah, coll. H. Khajuria, 1.vi.1958 and 5.viii.1958; 1 ♂, Terai, coll. J. Anderson, dt. of collection not known.

Diagnostic characters : Back greenish olive; with a forwardly curving pointed brown long crest. Superciliary stripe short. Cheek-patches white, throat black, yellow under tail-coverts and tip of the tail white.

Measurements :

	Wing	Tail	Bill
2 ♂	87,90	80,86	20(2)
2 ♀	84,85	80(2)	20(2)

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Punjab, Sikkim and Uttar Pradesh. Pakistan, Nepal and Bhutan.

337. *Pycnonotus cafer cafer* (Linnaeus)

1766. *Turdus Cafer* Linnaeus, *Syst. Nat.*, 12 ed. 1 : 295 (Cape of Good Hope = Pondicherry, India, fide Stresemann, *Ibis* 94 : 515 : 520).

1971. Ali and Ripley, vol.6, p.87

Common name : Redvented Bulbul (English) and Bulbul (Hindi).

Material examined : Puruliya district : 1 ♂, Manoharpur Forest Rest House, coll. not known, 30.i.1955.

Diagnostic characters : Crested head black; back earth brown. Black throat and scale like markings on breast and back. Rump white and vent scarlet. Blackish tail with white tipped.

Measurements : 1 ♂ : Wing 96, tail 84, bill 19.

Distribution : India : West Bengal (Puruliya district) : Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh and Tamil Nadu.

Remarks : This is a new locality record from West Bengal.

338. *Pycnonotus cafer bengalensis* Blyth

1845. *Pycnonotus bengalensis* Blyth, *J. Asiat. Soc. Beng.*, 14 : 566 (Bengal).

1971. Ali and Ripley, vol.6, p.90

Common name : Bengal Redvented Bulbul (English) and Kala bulbul (Bengali).

Material examined : Bankura district : 1 ♀, Ranibandh, coll. B.C. Saha, 6.ii.1979, 1 ♂ and 1 unsexed, Susunia Hills, coll. J.M. Dasgupta, 1.ii.1979, 29.i.1979. Birbhum district : 2 ♀, Mollarpur, coll. A.K. Mukherjee, 11.i.1981. Calcutta district : 1 ♂ and 2 unsexed, Calcutta, coll. J. Anderson.

dt. of collection not known; 1 unsexed, Calcutta, coll. and dt. of collection not known. Darjiling district : 1 ♂, Darjiling, coll. Muller, dt. of collection not known; 1 ♂, coll. B.C. Law, 4.vi.1930; 1 unsexed, coll. Dr. wett, dt. of collection not known; 1 ♂ and 1 unsexed, coll. J. Anderson, dt. of collection not known; 1 ♂ and 2 ♀, Tumtong Khola, c. 18 km NE of Kalimpong, Teesta Valley, coll. B. Biswas, 8.xii.1952; 1 ♀, Takdah, coll. H. Khajurla, 2.viii.1958. Haora district, 1 unsexed, Botanical Garden, Shibpur, coll. B. Biswas, July 1967; 1 unsexed, coll. Mus. Collector, dt. of collection not known. Jalpaiguri district : 1 ♂, Ambari; Baikunthapur Forest Division, coll. R.K. Ghose, 22.iii.1985; 2 ♀, Chilapata, coll. R.K. Ghose, 10.iii.1985; 2 ♂ and 1 ♀, Khuntimari, coll. R.K. Ghose, 12 and 14.iii.1985. Medinipur district : 1 ♀, Kankrajhar, coll. A.K. Mukherjee, 15.x.1979. Puruliya district : 3 ♂, Matha, coll. A.K. Mukherjee, 21.ii.1982. North 24-Parganas district : 2 ♂, Bantala, coll. B. Biswas, 28.xi.1965, 4.v.1967; 4 ♂, Duttabad, N. Salt Lake, coll. B. Biswas, 17.v.1964, 12 and 14.xii.1964; 1 ♂, Hediarrhat; c. 2.9 km N. of Garia Rly. Stn., coll. B. Biswas, 28.vi.1964, 3 ♂, Nalbani, N. Salt Lake, coll. B. Biswas, 25.vii.1965, 23.xi.1966, 18.xii.1969. South 24-Parganas district : 2 ♀, Raidighi, coll. A.K. Mukherjee, 25 and 27.xii.1979.

Diagnostic characters : Head and crest black, back earth-brown, black throat and scale-like markings on back and breast. Feathers of back with narrow pale edges.

Measurements :

	Wing	Tail	Bill
6 ♂	90-106(98)	89-97(92)	22-24(23)
3 ♀	100-105(102)	90-95(92)	22-24(23)

Distribution : India : West Bengal (Bankura, Birbhum, Calcutta, Darjiling, Haora, Jalpaiguri, Medinipur, North 24-Parganas, Puruliya and South 24-Parganas districts) : Arunachal Pradesh, Assam, Bihar, Sikkim and Uttar Pradesh. Bangladesh, Nepal and Bhutan.

Remarks : Roonwal (1939) reported from Siliguri, Darjiling district, West Bengal.

339. *Pycnonotus striatus striatus* (Blyth)

1842. *Trichophorus striatus* Blyth, *J. Asiat. Soc. Beng.*, 11 : 184 (Darjeeling=Darjiling, Darjiling district, West Bengal, India).

1971. Ali and Ripley, vol.6, p.92

Common name : Striated Green Bulbul (English).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Darjiling coll. R.L. Fernandez, 24.vi.1958 and 4.vii.1958.

Diagnostic characters : Back olive-green with white streaked; crest brownish olive. Throat yellow with dark stipples; breast dark grey, belly olive, heavily striped with pale yellow. Wings and tail olive and brown. Tail tipped with yellow on outer rectries.

Measurements :

	Wing	Tail	Bill
1 ♂	109	98	19 +
1 ♀	112	100	20

Distribution : India : West Bengal (Darjiling district) : Assam, Arunachal Pradesh, Manipur, Meghalaya and Sikkim. Nepal, Bhutan, Burma and Indochinese subregion.

Genus *Criniger* Temminck, 1820

340. *Criniger flaveolus flaveolus* (Gould)

1836. *Trichophorus flaveolus* Gould, 1836, *Proc. zool. Soc. Lond.* : 6 (Nepal, vide Koelz, 1954, *Contrib. Inst. Regional Exploration*, No. 1 : 10).

1971. Ali and Ripley, vol.6, p.100

Common name : Whitethroated Bulbul (English).

Material examined : Darjiling district : 1 ♂, Reang, coll. T.D. Soota, 30.vi.1974; 3 ♂ and 1 ♀, Jarkhola, coll. R.A. Paynter, 14,18 and 17.vii.1958.

Diagnostic characters : Back olive-green; crown with crest rufous brown. Wings and tail rufous-brown; supercilium whitish, sides of head grey; chin and throat white, breast and belly lemon-yellow.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	93-100(98)	84-93(89)	21-23(22)
1 ♀	105	90	21

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Sikkim and Tripura. Bangladesh and Burma.

Genus *Hypsipetes* Vigors, 1831

341. *Hypsipetes madagascariensis pasaroides* Vigors

1831. *Hypsipetes pasaroides* Vigors, *Proc. zool. Soc. Lond.* : 43 (Himalayan Mountains=Simla=Shimla, Himachal Pradesh, India).

1971. Ali and Ripley, vol.6, p.110

Common name : Himalayan Black Bulbul (English).

Material examined : Darjiling district : 1 ♂, Takdah, coll. H. Khajuria, 2.vii.1958.

Diagnostic characters : Crown and crest black; red back and under-parts slaty grey. A black streak behind and under the ear-coverts. Bill bright red. Legs and feet bright red, tail forked.

Measurements : 1 ♂ : Wing 130, tail 115, bill 29.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Haryana, Sikkim and Uttar Pradesh. Afghanistan, Pakistan, Nepal and Bhutan.

Remarks : This is a new locality record from West Bengal.

Family MUSCICAPIDAE

Key to the subfamilies of the family MUSCICAPIDAE

1. Juvenal plumage spotted2
- Juvenal plumage unspotted.....3

2. Bill slender and fairly strong.....TURDINAE
 Bill Broad and flat.....MUSCICAPINAE
3. Bill small, slender; legs short and weak..... SYLVIINAE
 Bill very variable; legs and feet strongTIMALIINAE

Key to the genera of the family MUSCICAPIDAE

1. Wing more than 100 mm2
 Wing less than 100 mm.....9
2. Sexes dissimilar.....3
 Sexes alike6
3. Tail graduated and longer than wing.....*Copsychus*
 Tail shorter than wing.....4
4. White on bases of secondaries and part of primaries5
 No white on the bases of primaries and secondaries.....*Turdus*
5. Plumage largely with blue or bluish.....*Monticola*
 Plumage largely with brownish and slaty.....*Zoothera*
6. Tail shorter than wing.....*Myiophoneus*
 Tail longer than wing7
7. Bill very strong and slightly curved with long rictal bristles.....*Garrulax*
 Bill moderate and well curved with very small rictal bristles.....8
8. The colour of head back, wing and tail uniform or concolours.....*Turdoides*
 The colour of head and back with fine streak and broad stripes.....*Megalurus*
9. Wing in between 50 mm-100 mm..... 10
 Wing in between 40 mm-65 mm 23
10. Sexes dissimilar..... 11
 Sexes similar 15
11. Bill short and slender 12
 Bill stout and notched at tip 13
12. Tail chestnut.....*Phenicurus*
 Tail black.....*Saxicoloides*
13. Secondaries narrowly tipped with yellow or chestnut..... 14
 Secondaries edged with black.....*Saxicola*

14. Secondaries edged with yellow *Leiothrix*
 Secondaries tipped with chestnut *Pteruthius*
15. Eye yellow with conspicuous orange yellow eye-rim *Chrysomma*
 Eye not yellow with conspicuous orange yellow eye-rim 16
16. Head with erectile crest *Yuhina*
 Head with no erectile crest 17
17. Bill well-developed and strong 18
 Bill slender 19
18. Rectal bristles, numerous and long bill wide at base *Culicicapa*
 Rectal bristles well developed, bill depressed and wide at base *Muscicapa*
19. Tail shorter than wing *Erithacus*
 Tail equal or longer than wing 20
20. Outer edge of tail brightly coloured *Minla*
 Outer edge of tail not coloured 21
21. Rectal bristles minute and inconspicuous 22
 Rectal bristles moderate *Heterophasia*
22. Rectrices slightly pointed *Locustella*
 Rectrices not pointed, round *Bradypterus*
23. Chin, throat and breast pale yellow *Mixornis*
 No such colour present 24
24. Rectal bristles long, wing feathers narrowly cross barred *Actinodura*
 Rectal bristle short 25
25. Wing equal to tail *Luciniola*
 Wing larger or smaller than tail 26
26. Wing larger than tail. Bill slender and pointed 27
 Wing smaller than tail; rectal bristles (two) *Prinia*
27. Bill as long as head length 28
 Bill shorter than head 30
28. Rectal bristles (three) or (two) well developed 29
 Rectal bristles few and very small *Orthotomus*
29. Rectal bristles (three), tarsus long *Acrocephalus*
 Rectal bristles (two) tarsus moderate *Cisticola*

30. Culmen curved 31
 Culmen sharp and pointed, tail square or slightly forked *Phylloscopus*
31. Bill more pointed, elongated and culmen greatly curved *Stachyris*
 Bill short and stout, culmen slightly curved *Alcippe*

Genus *Pellorneum* Swainson, 1832

342. *Pellorneum ruficeps mandellii* Blanford

1871. *Pellorneum Mandellii* Blanford, *Proc. Asiat. Soc. Beng.*, 9 : 216 (Sikkim).

1971. Ali and Ripley, vol.6, p.116

Common name : Sikkim Spotted Babbler (English).

Material examined : Nil.

Diagnostic characters : Back, wings and tail olive-brown with brown cap. Mantle streaked with black and buff. Ear-coverts light brown. Chin and throat white; breast and belly buff, boldly streaked and spotted with dark brown. Legs pale fleshy.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh and Sikkim. Nepal and Bhutan.

Remarks : We have observed this species in Darjiling District.

Genus *Trichastoma* Blyth, 1842

343. *Trichastoma abbotti abbotti* (Blyth)

1845. *Malacocincla Abbotti* Blyth, *J. Asiat Soc. Beng.*, 14 : 601 (Ramree Island, Arakan, Burma).

1971. Ali and Ripley, vol.6, p.127

Common name : Abbott's Babbler (English).

Material examined : Nil.

Diagnostic characters : Above, head, back and tail olive-brown; chin and throat greyish white; whitish belly, breast and flanks olive; under tail-coverts bright ochraceous.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland, Orissa and Sikkim. Nepal, Bhutan, Bangladesh, Burma and Thailand.

Remarks : We have recorded this bird in Darjiling District.

Genus *Pomatorhinus* Horsfield, 1821

344. *Pomatorhinus schisticeps schisticeps* Hodgson

1836. *Pomatorhinus schisticeps* Hodgson, *Asiat. Res.*, 19 : 181 (Nepal).

1971. Ali and Ripley, vol.6, p.131

Common name : East Himalayan Slatyheaded Scimitar Babbler (English) and Pabdoa (Bengali).

Material examined : Nil.

Diagnostic characters : Back olive-brown, crown slaty grey. Supercilium white. Bill black and yellow curved. Throat breast and belly white bordered with chestnut. Lower flanks and under tail-coverts olive-green.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Himachal Pradesh, Manipur, Nagaland, Sikkim and Uttar Pradesh. Nepal, Bhutan, Bangladesh and Burma.

Remarks : We have observed this species in Darjiling district.

345. *Pomatorhinus erythrogeus haringtoni* Baker

1914. *Pomatorhinus haringtoni* Baker, *Bull. Brit. Orn. Cl.*, 33 : 123 (Darjiling).

1971. Ali and Ripley, vol.6, p.143

Common name : Sikkim Rustycheeked Scimitar Babbler. (English)

Material examined : Nil.

Diagnostic characters : Head, back and tail olive brown, sides of head and neck ferruginous or rusty chestnut; Bill long, curved, brownish flesh. Eyes greyish white, chin, throat and upper breast dusky grey; lower breast, flanks, thigh and under tail-coverts ferruginous.

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal and Bhutan.

Remarks : We have noticed this species in Darjiling District.

346. *Pomatorhinus ferruginosus ferruginosus* Blyth

1845. *Pomatorhinus ferruginosus* Blyth, *J. Asiat. Soc. Beng.*, 14 : 597 (Darjiling).

1971. Ali and Ripley, vol.6, p.145

Common name : Sikkim Coralbilled Scimitar Babbler (English).

Material examined : Nil.

Diagnostic characters : Crown black, back and tail olive-brown. Supercilium white. A broad black band from lores to ear-coverts. Chin and malar stripe white, throat and breast ferruginous. Belly and vent olive-brown.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh and Sikkim. Nepal and Bhutan.

Remarks : We have recorded this species in Darjiling District.

Genus *Spelaeornis* David and Oustalet, 1877

347. *Spelaeornis caudatus* (Blyth)

1845. *Tesia caudata* Blyth, *J. Asiat. Soc. Beng.*, 14 : 588 (Darjiling).

1971. Ali and Ripley, vol.6, p.160

Common name : Tailed Wren-Babbler (English).

Material examined : Nil.

Diagnostic characters : Size smaller than a Sparrow. Back dark brown with scaly appearance. Throat ferruginous; breast and flanks ferruginous spotted with black. Belly slaty with white spots.

Distribution : India : West Bengal (Darjiling district) : Sikkim, Nepal and Bhutan.

Remarks : Blyth (1845) described this species for the first time as *Tesia caudata* Which is now synonymised to *Spelaeornis caudatus* from Darjiling, Darjiling District.

Genus *Stachyris* Hodgson, 1844

348. *Stachyris ruficeps ruficeps* Blyth

1847. *Stachyris ruficeps* Blyth, *J. Asiat. Soc. Beng.*, 16 : 452 (Darjeeling=Darjiling, Darjiling district, West Bengal, India).

1971. Ali and Ripley, vol.6, p.170

Common name : Redheaded Babbler (English).

Material examined : Darjiling district : 2 ♂ and 1 ♀, Selimbong, coll. R.K. Ghose, 25.iii.1975.

Diagnostic characters : Crown rufous-brown; back greyish olive-brown. Lores and orbital area pale yellowish. Chin and throat pale yellow, streaked with black; breast and belly pale yellow, tinged with olivaceous on lower belly and flanks.

Measurements :

	Wing	Tail	Bill
2 ♂	56,59	48(2)	16(2)
2 ♀	55	45	16

Distribution : India : West Bengal (Darjiling district): Arunachal Pradesh, Assam, Manipur, Nagaland, Orissa and Sikkim. Nepal, Burma, China, Taiwan, Hainan and Vietnam.

Genus *Dumetia* Blyth, 1849

349. *Dumetia hyperythra* (Franklin)

1831. *Timalia hyperythra* Franklin *Proc. zool. Soc. Lond.* : 118 (Ganges near Benaras).

1971. Ali and Ripley, vol.6, p.181

Common name : Rufousbellied Babbler (English).

Material examined : Nil.

Diagnostic characters : Back, olive-brown, head with a reddish brown cap. Chin, throat breast and belly clay-coloured.

Distribution : India : West Bengal (Bankura, Birbhum, Malda, Puruliya and South 24-Parganas districts) : Andhra Pradesh, Bihar, Madhya Pradesh, Orissa and Uttar Pradesh. Nepal and Bangladesh.

Remarks : We have observed this species in South 24-Parganas district, Bankura district, Birbhum district, Malda district and Puruliya district.

Genus *Macronous* Jardine and Selby, 1835

350. *Macronous gularis rubricapilla* (Tickell)

1833. *Motacilla rubricapilla* Tickell, *J. Asiat. Soc. Beng.*, 2 : 576 (Borabhum).

1971. Ali and Ripley, vol.6, p.185

Common name : Yellowbreasted Babbler (English).

Material examined : Puruliya district : 1 ♂, Ajodhya Hills, coll. A.K. Mukherjee, 24.x.1982.

Diagnostic characters : Back greyish olive; crown with tawny-olive cap. Supercilium pale yellow Chin, throat and breast pale yellow with dark streaks. Bill slaty, legs pale brown.

Measurements : 1 ♂ : Wing 60, tail 54, bill 15.

Distribution : India : West Bengal (Jalpaiguri and Puruliya districts) : Andhra Pradesh, Assam, Bihar, Karnataka, Madhya Pradesh, Manipur, Nagaland, Orissa, Sikkim and Tripura. Bangladesh and Nepal.

Remarks : Roonwal (1939) reported this bird from Bengal Duars, Jalpaiguri district, West Bengal.

Genus *Chrysomma* Blyth, 1843351. *Chrysomma sinense sinense* (Gmelin)1789. *Parus sinensis* Gmelin, *Syst. Nat.*, 1 : 1012 (China).

1971. Ali and Ripley, vol.6, p.190

Common name : Yellow eyed Babbler (English) and Bulal-Chashm (Hindi).*Material examined* : Bankura district : 2 ♂ and 1 ♀, Susunia Hills, coll. J.M. Dasgupta, 28 and 31.i.1979; 2 ♂, Ranibandh, coll. A.K. Mukherjee, 4.ii.1979 and 5.iii.1982. Medinipur district : 1 ♂, Jhargram, coll. A.K. Mukherjee, 5.x.1979.*Diagnostic characters* : Size smaller than a Bulbul. Back rufescent brown; cinnamon coloured wings. Lores and a supercilium short and white; yellow eyes with orange-yellow eye-rim. Black bill. White and washed with buff on lower belly. Tail long graduated.*Measurements* :

	Wing	Tail	Bill
2 ♂	64(2)	75,80	15,16
1 ♀	63	—	15

Distribution : India : West Bengal (All districts) : Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, Thailand, Malay Archipelago, China and Vietnam.*Remarks* : It is also observed in other districts of West Bengal.Genus *Turdoides* Cretzschmar, 1826352. *Turdoides caudatus caudatus* (Dumont)1823. *Cossyphus caudatus* Dumont, *Dict. Sci. nat.*, (ed. Levrault) 29 : 268 (India).

1971. Ali and Ripley, vol.6, p.215

Common name : Common Babbler (English) and Dumri (Hindi).*Material examined* : North 24-Parganas district : 4 ♂, Nalbani, North Salt Lake, coll. B. Biswas, 13,14 and 27.iv.1963, 12.v.1963; 1 ♂, coll. S.S. Saha, 27.xii.1964; 2 ♂ and 3 ♀, coll. D.S. Mathur, 27.iii.1966, 3 and 10.iv.1966.*Diagnostic characters* : Back and crown earthy brown heavily streaked with dark brown. Tail long graduated narrow cross-barred; throat white, breast and belly creamy buff lightly streaked with dark on sides of breast.*Measurements* : 5 ♂ : Wing 89-93(90); tail 112-122(119); bill 23-25(24).*Distribution* : India : West Bengal (North 24-Parganas district) : Throughout Indian Mainlands except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim and Tripura. Afghanistan, Pakistan, Iran and Iraq.*Remarks* : This is a new locality record from West Bengal.353. *Turdoides earlei earlei* (Blyth)1844. *Malacocercus Earlei* Blyth, *J. Asiat. Soc. Beng.*, 14 : 369 (Vicinity of Calcutta).

1971. Ali and Ripley, vol.6, p.218

Common name : Striated Babbler (English), Dora chhatore (Bengali) and Chilchil (Hindi).

Material examined : Calcutta district : 2 unsexed, Vicinity of Calcutta, coll. E. Willis, 1844.

Diagnostic characters : Back and crown earthy-brown heavily streaked with dark brown. Tail long, graduated and cross-barred. Throat and breast fulvous with dark shaft-streaks.

Measurements : 2 unsexed : Wing 90,92; tail 110,117; bill 23(2).

Distribution : India : West Bengal (Calcutta district) : Arunachal Pradesh, Assam, Bihar, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab and Uttar Pradesh. Nepal, Bangladesh and Burma.

Remarks : Blyth (1844) described this bird for the first time from the vicinity of Calcutta, Calcutta district. These are syntypes.

354. *Turdoides striatus striatus* (Dumont)

1823. *Cossyphus striatus* Dumont, *Dict. Sci. nat.*, (ed. Levrault) 29 : 268 (Bengal).

1971. Ali and Ripley, vol.6, p.230

Common name : Bengal Jungle Babbler (English), Chatarhia (Bengali) and Satbhai (Hindi).

Material examined : Birbhum district : 3 ♂, Chandrapur, coll. A.K. Poddar, 1.i.1981 and 11.xii.1985. Darjiling district : 2 ♂, Khuntimari, coll. R.K. Ghose, 12.iii.1985. Malda district : 1 ♂, Malda, coll. P.K. Das, 27.ii.1979. Puruliya district : 1 ♂ and 1 ♀, Matha, coll. A.K. Mukherjee, 21.ii.1982.

Diagnostic characters : Size equal to a Myna. Back with dark brown streaked; greyish head. Creamy white eyes; yellowish bill and legs. Rump and tail-coverts buff. Tail dark grey-brown. Chin and throat grey, streaked with darker bar. Belly, vent and under tail-coverts fulvous.

Measurements :

	Wing	Tail	Bill
5 ♂	106-117(110)	103-112(105)	24-26(25)
2 ♀	111,117	110,113	23,24

Distribution : India : West Bengal (Birbhum Darjiling, Malda and Puruliya districts) : Assam, Bihar, Sikkim and Uttar Pradesh. Bangladesh, Nepal and Bhutan.

Genus *Garrulax* Lesson, 1831

355. *Garrulax albogularis albogularis* (Gould)

1836. *Ianthocincla albogularis* Gould, *Proc. zool. Soc. Lond.* : 187 (Nepal).

1971. Ali and Ripley, vol.7, p.5

Common name : Eastern Whitethroated Laughing Thrush (English).

Material examined : Darjiling district : 1 ♂, Metalli, Samsing coll. R.L. Chowdhury, 10.xii.1980; 1 ♂ and 3 ♀, and 1 unsexed, Palmajua, coll. R.A. Paynter and R.L. Fernandez, 25 and 26.vi.1958 and 4.vii.1958; 1 ♀, Selimbong, coll. R.K. Ghose, 2.xii.1977.

Diagnostic characters : Back wing and tail olive-brown, fore-head tawny, Black lores and eye-rim. Tail graduated, rectrices except central pair broadly white-tipped. Chin and throat white bordered by olive-brown breast band. Belly and vent ochraceous.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	130	131	26
4 ♀	126-134(129)	130-132(131)	25-27(26)

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal and Bhutan.

356. *Garrulax pectoralis melanotis* Blyth

1843. *Garrulax melanotis* Blyth, *J. Asiat. Soc. Beng.*, 12 : 949 (Arracan, Burma).

1972. Ali and Ripley, vol.7, p.8

Common name : Assam Blackgorgeted Laughing-Thrush (English) and Bada penga (Bengali).

Material examined : Darjiling district : 1 ♀, Juranti, Samsing, coll. R.L. Choudhury, 13.xii.1980; 1 ♂, Tarkhola, coll. R.A. Paynter, 14.viii.1958.

Diagnostic characters : Size larger than a Myna. Back olive-brown and underparts fulvous; nuchal collar rufous; supercilium extends to collar. Throat whitish buff bordered by a black broad necklace.

Measurements : 1 ♂ : Wing 146, tail 124, bill 35.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Nagaland and Sikkim. Bangladesh, Bhutan, Burma and China.

357. *Garrulax striatus sikkimensis* (Ticehurst)

1924. *Grammatoptila striata sikkimensis* Ticehurst, *Bull. Brit. Orn., Cl.*, 44 : 104 (Sikkim, India).

1972. Ali and Ripley, vol. 7, p.12

Common name : Sikkim Striated Laughing Thrush (English).

Material examined : Darjiling district : 2 ♂ and 1 ♀, Selimbong, coll. R.K. Ghose, 3 and 5.xii.1977; 2 ♂, Takdah, coll. H. Khajuria and R.A. Paynter, 1 and 4.viii.1958.

Diagnostic characters : Size larger than a Myna. Entire body with red-brown, prominently white streaked. Bill short and thick; loose mope like crest. Breast and belly brownish grey with paler streaks. Tail chestnut brown.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	128-142(137)	114-127(122)	29-30(30)
1 ♀	134	124	30

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal and Bhutan.

Remarks : This is a new locality record from West Bengal.

358. *Garrulax leucolophus leucolophus* (Hardwicke)

1815. *Corvus leucolophus* Hardwicke, *Trans. Linn. Soc. Lon.*, 11 : 208, pl. 15 (Mts above Hardwar=Haridar, Uttar Pradesh, India).

1972. Ali and Ripley, vol.7, p.14

Common name : Himalayan Whitecrested Laughing Thrush (English) and Rawil-kahy (Hindi).

Material examined : Jalpaiguri district : 2 ♂ and 1 ♀, Dalamthan, coll. A.K. Mukherjee, 6.ii.1955.

Diagnostic characters : Lower back and belly olive-brown; head with white crest and black band through eye. Tail blackish. Throat and breast bordered by a rufous band.

Measurements :

	Wing	Tail	Bill
2 ♂	135,137	125,133	30,32
1 ♀	127	120	30

Distribution : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Assam, and Sikkim. Nepal and Bhutan.

359. *Garrulax ocellatus ocellatus* (Vigors)

1831. *Cinclosoma ocellatum* Vigors, *Proc. zool. Soc. Lond.*, 55 (Himalay Mts, restricted to Darjeeling = Darjiling, Darjiling district, West Bengal, India, by Baker *Faun. Br. India*, 1: 156).

1972. Ali and Ripley, vol.7, p.32

Common name : Whitespotted Laughing Thrush (English).

Material examined : Darjiling district : 1 ♂, Sandakphu, coll. R.A. Paynter, 13.vii.1958.

Diagnostic characters : Crown, ear-covert and throat black; back spotted with white on fulvous. Tail chestnut-brown with black subterminal band and white tip. Underparts buff, breast mottled with black.

Measurements : 1 ♂, Wing 130, tail 98, bill 26.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal, Bhutan and Tibet.

360. *Garrulax caerulatus caerulatus* (Hodgson)

1836. *Cinclosoma caerulatus* Hodgson, *Asiat. Res.* 19, : (Nepal).

1971. Ali and Ripley, vol.7, p.33

Common name : Himalayan Greysided Laughing Thrush (English).

Material examined : Darjiling district : 2 ♂, Darjiling, coll. not known, 30.vii.1889 and 25.ix.1889; 1 ♀, coll. not known, 30.vii.1889.

Diagnostic characters : Head, back and tail rich rufous brown; forehead black and black round the eye. Chin, throat and breast white, flanks grey.

Measurements :

	Wing	Tail	Bill
2 ♂	110, 114	118, 122	26, 27
1 ♀	112	120	27

Distribution : India : West Bengal (Darjiling district) : Assam and Sikkim. Nepal and Bhutan.

361. *Garrulax rufficollis* (Jardine & Selby)

1838. *Ianthocincla ruficollis* Jardine & Selby, *Ill. Orn.* 2, pl. 21 (Himalayas = Sikkim, India, restricted by Meinertzhagen, 1928, *Ibis* : 515).

1972. Ali and Ripley, vol.7, p.36

Common name : Rufousnecked Langhing Trush (English) and Hathgurri-gurri (Bengali).

Material examined : Darjiling district : 1 ♂, Takdah, coll. R.L. Fernandez, 4.viii.1958.

Diagnostic characters : Back, rump and lower breast dark olive-brown; a bright rufous patch on the sides of neck and vent. Tail black throughout.

Measurements : 1 ♂ : Wing 100, tail 103, bill 24.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland Sikkim and Tripura. Bangladesh, Nepal and Bhutan.

362. *Garrulax erythrocephalus nigrimentum* (Oates)

1889. *Trochalopteron nigrimentum* Oates, *Faun. Br. India*, Bds., ed. 1, 1 : 91 (The Himalayas from Nepal to the Dafia Hills in Assam, inferentially restricted to Sikkim, India, by Kinnear, 1937, *Ibis* : 32).

1972. Ali and Ripley, vol.7, p.59

Common name : Sikkim Redhead Laughing Thrush (English).

Material examined : Darjiling district : 3 ♂, Selimbong; coll. R.K. Ghose, 29.xi.1977 and 5.xii.1977.

Diagnostic characters : Back, neck and breast olive-brown with scale-like black markings; crown rufous-chestnut. Wings and tail olive-yellow; underparts deep ferruginous.

Measurements : 3 ♂ : Wing 98-106(103); tail 105-120(113); bill 25-26(25).

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh and Sikkim. Nepal, Bhutan and Tibet.

Genus *Leiothrix* Swainson, 1832363. *Leiothrix argenteauris argenteauris* (Hodgson)

1837. *Mesia Argenteauris* Hodgson, *Ind. Rev.*, 2(2) : 88 (Nepal).

1972. Ali and Ripley, vol.7, p.65

Common name : Himalayan Silvercared Mesia (English).

Material examined : Jalpaiguri district : 2 ♂ and 5 ♀, Sipchu, coll. R.K. Ghose, 20.iii.1985; 5 ♀, Jaldhaka, coll. R.K. Ghose, 20.iii.1985.

Diagnostic characters : In male, back and belly greenish-grey; black crown and moustachial stripe. Ear-coverts silvery patch on yellowish wing; upper and undertail-coverts crimson. In female, characters are similar to male but differs in having the under tail-coverts ochraceous.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♂	80(2)	68,70	18,20
5 ♀	74-75	66-67(66)	18

Distribution : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Bihar, Sikkim and Uttar Pradesh. Nepal and Bhutan.

364. *Leiothrix lutea calipyga* (Hodgson)

1837. *Bahila Calipyga* Hodgson, *Ind. Rev.* 2(2) : 88 (Nepal).

1972. Ali and Ripley, vol.7, p.68

Common name : Eastern Redbilled Leiothrix (English).

Material examined : Darjiling district : 3 ♂ and 2 ♀, Selimbong, coll. R.K. Ghose, 20.iii.1975, 30.xi. and 5.xii.1977.

Diagnostic characters : In male, head and back greyish olive; bill coral-red. Eye patch yellow. Wing black with small orange patch and yellow and crimson edges. Throat and breast bright yellow. In female, the crimson on wing replaced by yellow.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♂	71,72	59,60	15(2)
2 ♀	68,71	56,58	15(2)

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Nagaland and Sikkim. Nepal, Bhutan and Burma.

Genus *Pteruthius* Swainson, 1832365. *Pteruthius flaviscapis validirostris* Koelz

1831. *Lanius erythropterus* Vigors, *Proc. zool. Soc. Lond.* : 22 (Himalaya Mountains = Murree, Punjab = India, vide Baker, 1922, *Faun. Br. India*, Bd, 1 : 331 nec *Lanius erythropterus* Shaw, 1809, preoccupied).

1972. Ali and Ripley, vol.7, p. 74

Common name : Redwinged Shrike-Babbler (English).

Material examined : Darjiling district : 1 ♂, Barch Hill, coll. S.C. Law, 6.vi.1930; 1 ♀, Some Forest, coll. S.C. Law, 10.vi.1930; 1 ♂, Palmajua, coll. H. Khajuria, 21.vi.1958.

Diagnostic characters : In male, back ashy grey; head black with a white post ocular stripe. Black wings with inner secondaries chestnut. Inner edges of primaries white. Tail black. In female, head grey, back brownish grey. Tail green and black, tipped yellow.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
1 ♂	82	58	20
1 ♀	82	62	20

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Mizoram, Nagaland, Punjab and Sikkim. Pakistan, Nepal and Bhutan.

Genus *Gampsorhynchus* Blyth, 1844366. *Gampsorhynchus rufulus rufulus* Blyth

1844. *Gampsorhynchus rufulus* Blyth, *J. Asiat. Soc. Beng.*, 13(1) : 371 (Darjeeling).

1972. Ali and Ripley, vol. 7, p.81

Common name : Whiteheaded Shrike-Babbler (English).

Material examined : Nil.

Diagnostic characters : Back and wing olive-brown. Whole head, nape and belly whitish buff. Throat and breast white, tail graduated and tipped with buff.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Mizoram, Nagaland and Sikkim. Nepal, Bhutan, Bangladesh and Burma.

Remarks : Blyth (1844) reported this bird from Darjiling, Darjiling district.

Genus *Actinodura* Gould, 1836367. *Actinodura nipalensis nipalensis* (Hodgson)

1836. *Cinclosoma ? Nipalensis* Hodgson, *Asiat. Res.*, 19 : 145 (Nepal, restricted to slopes of Kathmandu Valley, Central Nepal, by Ripley, 1950, *Proc. Biol. Soc. Wash.* 63 : 104).

1972. Ali and Ripley, vol.7, p.86

Common name : Nepal Hoary Barwing (English).

Material examined : Darjiling district : 1 ♂ and 1 unsexed, Tonglo, coll. G. Mason, date of coll. not known.

Diagnostic characters : Back and rump rufous-brown. Back streaked with black; black moustachial stripe, wings rufous, narrowly barred. Tail graduated, central restrices narrowly barred. Wing rufous, barred with black. Ear-covert and throat grey.

Measurements : 1 ♂ : Wing 92, tail 80, bill 22.

Distribution : India : West Bengal (Darjiling district) Nepal.

Remarks : Blyth (1843) reported this bird from the vicinity of Darjiling, Darjiling district).

368. *Actinodura nipalensis vinctura* Ripley

1950. *Actinodura nipalensis vinctura* Ripley, *Proc. Biol. Soc.*, Wash, 63 : 104 (Mangalbare, Dankuta District, East Nepal).

1972. Ali and Ripley, vol.7, p.88

Common name : Eastern Hoary Barwing (English).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. H. Khajuria, 2.vii.1958; 2 ♂, Selimbong, coll. R.K. Ghose, 21.iii.1974 and 1.xii.1977.

Diagnostic characters : It is similar to the preceding bird. Differs mainly by the wider black terminal band on upper surface of tail.

Measurements : 2 ♂ : Wing 91,93; tail 80,84; bill 21(2).

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal and Bhutan.

Genus *Minla* Hodgson, 1837

369. *Minla strigula strigula* (Hodgson)

1837. *Siva Strigula* Hodgson, *Ind. Rev.*, 2(2) : 89 (Nepal).

1972. Ali and Ripley, vol.7, p.92

Common name : Eastern Barthroated Siva (English).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Selimbong, coll. R. K. Ghose, 21.iii.1975 and 3.xii.1977; 1 unsexed, Sandakphu, coll. R.A. Paynter, 21.vii.1958; 1 ♂, Palmajua, coll. R.A. Paynter, 25.vi.1958.

Diagnostic characters : Back greyish-olive; crown with orange-brown tufted. Black crecents on the feathers of the whitish throat; black post-ocular stripe. Tail chestnut and black with yellow tips. Wing with orange band. Ear-covert grey.

Measurements :

	Wing	Tail	Bill
2 ♂	67, 69	72 (2)	15 (2)
1 ♀	68	68	15

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal and Bhutan.

370. *Minla cyanouroptera cyanouroptera* (Hodgson)

1837. *Siva Cyanouroptera* Hodgson, *Ind. Rev.*, 2(2) : 88 (Nepal).

1972. Ali and Ripley, vol.7, p.95

Common name : Bluewinged Siva (English).

Material examined : Darjiling district-: 3 ♂ and 1 ♀, Takdah, R.A. Paynter, 31.vii., 8 and 9.viii.1958.

Diagnostic characters : Back fulvous, rump paler; tufted crown dark blue. Supercilium white. Tail long, grey, with blue edges, tipped with white.

Measurements :

	Wing	Tail	Bill
3 ♂	61-63 (62)	60-66 (63)	16
1 ♀	62	61	16

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Manipur, Nagaland, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan and Burma.

Genus *Yuhina* Hodgson, 1836

371. *Yuhina bakeri* Rothschild

1844. *Siva occipitalis* Blyth, *J. Asiat. Soc. Beng.*, 13 : 937 (Darjeeling=Darjiling, Darjiling district, West Bengal, India).

1972. Ali and Ripley, vol.7, p.100

Common name : Whitenaped Yuhina (English).

Material examined : Darjiling district : 2 ♂ and 1 ♀, Tonglu, coll. R.K. Ghose, 7.iii.1975.

Diagnostic characters : Upper back, head and sides of neck brown; head with chestnut crest, posteriorly white. White throat and nape patch. Breast and belly olivaceous.

Measurements :

	Wing	Tail	Bill
2 ♂	73,75	60(2)	18,19
1 ♀	75	60	18

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Bangladesh, Nepal, Bhutan and Burma.

372. *Yuhina flavicollis flavicollis* Hodgson

1836. *Yuhina ? flavicollis* Hodgson, *Asiat. Res.*, 19 : 167 (Nepal, restricted to Central Nepal by Ripley, 1961, Synopsis, 1st ed. : 408).

1972. Ali and Ripley, vol.7, p.102

Common name : Eastern Yellownaped Yuhina (English).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. R.K. Ghose, 13.v.1977; 9 ♂ and 6 ♀, and 2 unsexed, Selimbong, coll. R.K. Ghose, 29.xi.1977, 2 and 3.xii.1977.

Diagnostic characters : Back olive-brown; crested head chocolate-brown. Nuchal collar rusty yellow. Chin white, throat white with dark streaks. Vent and undertail-coverts buff.

Measurements :

	Wing	Tail	Bill
8 ♂	63-65(64)	48-53(50)	14-16(14)
4 ♀	62-65(13)	48-51(49)	14-15(14.5)

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh and Sikkim. Nepal and Bhutan.

Genus *Alcippe* Blyth, 1844

373. *Alcippe chrysotis chrysotis* (Blyth)

1844. *Pr. (oparus) chrysotis* Blyth, *J. Asiat. Soc. Beng.*, 13 : 938. (Himalaya = Nepal).

1972. Ali and Ripley, vol.7, p.110

Common name : Himalayan Goldenbreasted Tit-Babbler (English).

Material examined : Darjiling district : 1 ♀ and 1 unsexed, coll. G. Mason, 31.vii.1989 and 20.ix.1989.

Diagnostic characters : Back olive, crown blackish, orange yellow outer edge and an orange longitudinal patch. Throat grey with silvery tips. Breast and belly yellow.

Measurements : 1 unsexed : Wing 56, tail 50, bill 12.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal, Bhutan, Burma and Vietnam.

374. *Alcippe castaneiceps castaneiceps* (Hodgson)

1837. *Minla Castaneiceps* Hodgson, *Ind. Rev.*, 2(1) : 33 (Nepal), restricted to Chandragiri Pass, Central Nepal, by Ripley, 1950, *J. Bombay nat. Hist. Soc.*, 49 : 397).

1972. Ali and Ripley, vol.7, p.113

Common name : Chestnut-headed Tit-Babbler (English).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Selimbong, coll. R.K. Ghose, 12.iii.1975 and 29.xi.1977.

Diagnostic characters : Back olive-brown; crown and nape chestnut-brown streaked with white, a broad blackish streak through eye; wings with a black shoulder-patch and a rufous patch. Middle portion of underparts white and sides olive-rufous.

Measurements :

	Wing	Tail	Bill
1 ♂	59	45	12
1 ♀	57	42	12

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Nagaland and Sikkim. Bangladesh, Nepal, Bhutan, Burma and Thailand.

375. *Alcippe vinipectus vinipectus* (Hodgson)

1837. *Siva Vinipectus* Hodgson, *Ind. Rev.*, 2 (2) : 89 (Nepal, restricted to Central Nepal by Ripley, Synopsis; 1st ed. 412).

1972. Ali and Ripley, vol. 7, p.115

Common name : Nepal Whitebrowed Tit-Babbler (English).

Material examined : Darjiling district: 3 ♂ and 3 ♀, Selimbong, coll. R.K. Ghose, 21 and 25.iii.1975; 1 ♂, Sandakphu, coll. R.K. Ghose, 25.vi.1974; 1 ♂ and 2 ♀, Tonglu, coll. R.K. Ghose, 2, 5 and 8.iii.1975.

Diagnostic characters : Back, crown and ear-covert brown; white supercilium. Chin and throat white, chest and belly olive-brown.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
5 ♂	58-62(60)	52-55(54)	11(5)
5 ♀	56-59(58)	49-54(53)	10-11(10.5)

Distribution : India : West Bengal (Darjiling district) : Nepal.

Remarks : This is a new locality record from West Bengal.

376. *Alcippe vinipectus chumbiensis* (Kinnear)

1939. *Fulvetta vinipectus chumbiensis* Kinnear, *Ibis* : 751.

1972. Ali and Ripley, vol.7, p.116

Common name : Eastern Whitebrowed Tit-babbler (English).

Material examined : Darjiling district : 11 ♂, 8 ♀ and 2 unsexed, Selimbong, coll. R.K. Ghose, 30.xi.1977 and 2.xii.1977.

Diagnostic characters : It is similar to the preceding bird. But differs in being darker and with dusky streak on throat and upper breast.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
5 ♂	58-62(60)	52-59(55)	11-12(11.5)
5 ♀	54-61(58)	49-57(54)	11-12(11.5)

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal, Bhutan and Burma.

Genus *Heterophasia* Blyth, 1842377. *Heterophasia capistrata capistrata* (Vigors)

1830-31. *Cinclosoma capistratum* Vigors, *Proc. zool.Soc. Lond* : 56 (Himalayas; restricted to Simla, Himachal Pradesh, India by Ripley, 1961, Synopsis).

1972. Ali and Ripley, vol.7, p.129

Common name : Western Blackcapped Sibia (English).

Material examined : Darjiling district : 3 ♂ and 1 ♀, Palmajua, coll. A.K. Mukherjee, 15.v.1977.

Diagnostic characters : Upper back, rump and tail rufous; middle back grey brown. Crown, ear-coverts and crest black. Wings slaty with a white-patch. Tail long, graduated, rufous, tipped with slaty grey; underparts entirely cinnamon.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	104-107(105)	98-104(102)	22-23(22)
1 ♀	102	94	22

Distribution : India : West Bengal (Darjiling district) : Himachal Pradesh, Jammu & Kashmir, Punjab and Uttar Pradesh. Pakistan and Nepal.

Remarks : this is a new locality record from West Bengal.

378. *Heterophasia capistrata bayleyi* (Kinnear)

1939. *Leioptila capistrata bayleyi* Kinnear, *Ibis* : 752 (Taktoo, near Sakdam, E. Bhutan).

1972. Ali and Ripley, vol.7, p.131

Common name : Eastern Blackcapped Sibia (English).

Material examined : Darjiling district: 2 ♂ and 3 ♀, Selimbong, coll. R.K. Ghose, 29.xi. 1977 and 2.xii. 1977.

Diagnostic characters : It is similar to the preceding bird, but differs in having the back sooty brown tinged with grey.

Measurements :

	Wing	Tail	Bill
2 ♂	91.94	98,101	23,25
3 ♀	91,98(94)	97-107(101)	23-25(24)

Distribution : India: West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal and Bhutan.

Genus *Muscicapa* Brisson, 1760

379. *Muscicapa latirostris* Raffles

1822. *Muscicapa latirostris* Raffles, *Trans. Linn. Soc. Lond*, 13 : 312 (Sumatra).

1972. Ali and Ripley, vol. 7, p. 145

Common name : Brown Flycatcher (English) and Zakki (Hindi).

Material examined : Nil.

Diagnostic characters : Head and back ashy brown. Chin and throat white, breast and flanks whitish grey and streaked with ashybrown. A white ring around large eye.

Distribution : India : West Bengal (Barddhaman district): Throughout Indian Union excepting Arunachal Pradesh, Haryana, Mizoram, Nagaland, Rajasthan, Sikkim and Tripura. Bhutan, Bangladesh, Sri Lanka, Burma, Thailand, Indonesia and Philippines. Breeds in southern Siberia from the Yenisey to Sakhalin, Japan and Korea; winters in southeast Asia.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

380. *Muscicapa muttui* (Layard)

1854. *Butalis muttui* Layard, *Ann. Mag. nat. Hist.*, 13 : 127 (Pt. Pedro, Ceylon = Sri Lanka).

1972. Ali and Ripley, vol. 7, p. 148

Common name : Brownbreasted Flycatcher (English).

Material examined : Nil.

Diagnostic characters : Back ruddy brown. A white spot in front of eye, rump and tail rufous

brown. Ring around eye white, chin and throat and centre of belly white; breast and sides of belly pale brown.

Distribution : India : West Bengal (Barddhaman district) : Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram and Nagaland. Sri Lanka, Bangladesh, Burma, Thailand and China.

Remarks : Observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

381. *Muscicapa ruficauda* Swainson

1838. *Muscicapa ruficauda* Swainson, *Nat. Library, Flycatcher* : 251 (India = Kashmir)

1972. Ali and Ripley, vol. 7, p. 150

Common name : Rufoustailed Flycatcher (English).

Material examined : Nil.

Diagnostic characters : Head, back and breast grey brown. Tail rufous. Eye ring pale, throat grey brown; belly whitish.

Distribution : India : West Bengal (Barddhaman district): Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. Pakistan, Nepal, Bangladesh, Afghanistan and Russian Turkestan.

Remarks : Reported this species from Durgapur and Damodar Valley Barddhaman district, West Bengal (Gauntlett, 1985).

382. *Muscicapa parva parva* Bechstein

1794. *Muscicapa parva* Bechstein, *Allg. Ueber Vog.*, 2 : 356 (Thuringerwald).

1972. Ali and Ripley, vol.7, p.154

Common name : Western Redbreasted Flycatcher (English) and Turra (Hindi).

Material examined : Medinipur district: 1 ♂, Jhargram, Coll. A.K. Mukherjee, 5.x. 1979.

Diagnostic characters : In male, back pale brown. Chin and throat orange rufous, belly and vent white. Tail basal half black and sides of rectrices white. In female, throat whitish and breast buffy.

Measurements : 1 ♂ : Wing 70, tail 44, bill 13.

Distribution : India : West Bengal (All districts): Himachal Pradesh, Jammu & Kashmir, Punjab, Gujarat, Karnataka, Madhya Pradesh and Maharashtra. Bangladesh, Pakistan and Afghanistan.

Breeds in eastern Europe and Russia to the Urals and the southern Caspian region.

Remarks : This is also observed in other districts of West Bengal.

383. *Muscicapa parva albicilla* Pallas

1811. *Muscicapa Albicilla* Pallas, *Zoogr. Rosso-Asiat.*, 1 : 462, Aves, pl. 1(Dauria).

1972. Ali and Ripley, vol.7, p.156

Common name : Eastern Redbreasted Flycatcher (English), Chatki (Bengali) and Turra (Hindi).

Material examined : Bankura district : 2 ♂ and 1 ♀, Susunia Hills, coll. J.M. Das Gupta 28.i. 1979 and 1.ii. 1979. Birbhum district : 2 ♂ and 1 ♀, Chandrapur, Suri, coll. A.K. Mukherjee, 2 and 5.i. 1981 and 31.xii. 1981. Darjiling district: 1 ♂, Peshoke, coll. P.K. Das, 17.xii.1979. South 24-Parganas district: 2 ♂ and 2 ♀, Raidighi, Canning, coll. A.K. Mukherjee 17, 24, 25 and 27.xii. 1979.

Diagnostic characters : Back pale brown, throat rufous, breast grey and belly buff. Tail black with white patches on either sides of basal half.

Measurements :

	Wing	Tail	Bill
6 ♂	69-72 (71)	47-53 (51)	12-14 (13)
3 ♀	69-72 (71)	46-51 (48)	12-13 (12.5)

Distribution : India : West Bengal (Bankura, Birbhum, Darjiling, Jalpaiguri and South 24-Parganas districts): Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, Manipur, Maharashtra, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu and Uttar Pradesh. Nepal, Bhutan, Burma, Thailand and Indo-Chinese countries.

Breeds from the Urals to Kamchatka.

Remarks : Roonwal (1939) reported from Barrakhola, Jalpaiguri district, West Bengal.

384. *Muscicapa westermanni collini* Rothschild

1925. *Muscicapa collini* Rothschild, *Bull. Br. Orn. Cl.*, 45:90 (Nepal, Darjeeling = Darjiling, Darjiling district, West Bengal, India).

1972. Ali and Ripley, vol. 7, p.166

Common name : Western Little Pied Flycatcher (English).

Material examined : Darjiling district : 1 ♂, Peshok, coll. P.K. Das, 18.ii. 1979.

Diagnostic characters : In male, crown, nape, rump and tail black. Supercilium white, wing with a large white wing-patch. Basal sides of tail white. In female, head and back olive-brown; upper tail-coverts rufous-brown, chin and throat white; breast and belly smoky white.

Measurements : 1 ♂, Wing 54, tail 40, bill 10.

Distribution : India : West Bengal (Darjiling district) : Bihar, Madhya Pradesh, Sikkim and Uttar Pradesh. Bangladesh and Nepal.

385. *Muscicapa superciliaris* Jerdon

1840. *M. (uscicapa) superciliaris* Jerdon, *Madras J. Lit. Sci.*, 11:16 (Ajunta, N. Ghats).

1972. Ali and Ripley, vol. 7, p. 168

Common name : Whitebrowed Blue Flycatcher (English).

Material examined : Nil.

Diagnostic characters : In male, crown, back, sides of head, wings and tail deep blue. Supercilium eye to nape white; throat, breast and belly white. In female, back mouse-grey. Tail blackish edged with blue. Sides of neck and breast greyish white; breast and belly white.

Distribution : India : West Bengal (Barddhaman district): Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Sikkim and Uttar Pradesh. Pakistan and Nepal.

Remarks : Observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

386. *Muscicapa sapphira* (Blyth)

1843. *Muscicapula sapphira* Blyth, *J. Asiat. Soc. Beng.*, 12:939 (Darjeeling = Darjiling, Darjiling district, West Bengal, India).

1972. Ali and Ripley, vol.7, p.173

Common name : Sapphireheaded Flycatcher (English).

Material examined : Darjiling district: 1 ♀, Palmajua, coll. A.K. Mukherjee, 13.v.1977.

Diagnostic characters : In male, crown, nape, upper back, lower rump and tail bright ultramarine blue. Wing blackish, chin, throat and upper breast orange rufous; belly ashy. In female, back olive brown. Chin and throat orange rufous. Sides of neck and breast olive-brown.

Measurements : 1 ♀: Wing 59, tail 43, bill 13.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts): Assam, Manipur, Meghalaya, Nagaland and Sikkim. Nepal, Bhutan, China and Northern Laos.

Remarks : Roonwal (1939) reported from Barrakhola, Jalpaiguri district, West Bengal.

387. *Muscicapa grandis grandis* (Blyth)

1842. *Chaitaris grandis* Blyth, *J. Asiat. Soc. Beng.*, 11 : 189 (Darjeeling = Darjiling, Darjiling district, West Bengal, India).

1972. Ali and Ripley, vol.7, p.176

Common name : Large Niltava (English).

Material examined : Darjiling district: 1 unsexed, Takdah, coll. H. Khajuria, 1.viii. 1958.

Diagnostic characters : In male, crown, rump and neckpatch brilliant cobalt blue. Sides of head, forehead, forehead and wing black. Throat and breast black. belly purplish blue. In female, forehead, sides of head and back fulvous brown, neckpatch pale blue. Wings and tail rufous brown, chin and throat fulvous, belly fulvous brown.

Measurements : 1 unsexed : Wing 103, tail 81, bill 19.

Distribution : India : West Bengal (Darjiling district): Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. Nepal, Bhutan, Burma, Malaya Peninsula and Indochinese countries.

Remarks : Blyth (1843) described this bird for the first time from Darjiling, Darjiling district.

388. *Muscicapa sundara sundara* (Hodgson)

1837. *Niltava Sundara* Hodgson, *Ind. Rev.*, 1(12) : 650 (Nepal).

1972. Ali and Ripley, vol.7, p.181

Common name : Eastern Rufousbellied Niltava (English).

Material examined : Jalpaiguri district: 1 ♂, Kumari, coll. R.K. Ghose, 17.iii. 1985.

Diagnostic characters : In male, upper back and sides of head purplish blue. Forehead and throat black; crown, rump, shoulders and neckpatch ultramarine blue. Breast, belly and vent orange-rufous. In female, back olive-brown, neckpatch blue, throat white; tail rusty brown. Breast and belly olive brown.

Measurements : 1 ♂: Wing 18, tail 60, bill 17.

Distribution : India : West Bengal (Jalpaiguri district): Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Bangladesh, Nepal, Bhutan, China and Laos.

389. *Muscicapa pallipes* Jerdon

1840. *Muscicapa pallipes* Jerdon, *Madras J. Lit. Sci.*, 11 : 15 (Coonoor Ghat).

1972. Ali and Ripley, vol.7, p.184

Common name : Whitebellied Blue Flycatcher (English).

Material examined : Bankura district : 1 ♂, Ranibandh, coll. A.K. Mukherjee, 5.iii. 1982.

Diagnostic characters : In male, crown, back, throat, breast, wing and tail uniformly indigo-blue. Supercilium brighter blue. Lores black, belly white. In female, back and wing olive brown, tail chestnut, lores white, throat and upper breast orange-rufous; lower breast and belly greyish white.

Measurements : 1 ♂ : Wing 61, tail 72, bill 14.

Distribution : India: West Bengal (Bankura district): Kerala and Tamil Nadu.

Remarks : This is a new locality record from West Bengal.

390. *Muscicapa unicolor unicolor* (Blyth)

1843. *Cyornis unicolor* Blyth, *J. Asiat. Soc. Beng.*, 12 : 1067 (Darjeeling = Darjiling).

1972. Ali and Ripley, vol.7, p.189

Common name : Pale Blue Flycatcher (English).

Material examined : Darjiling district: 1 unsexed, Darjiling, coll. Capt. Charletong, 1843.

Diagnostic characters : In male, entire plumage blue, deeper on tail, brighter on supercilium and shoulder. Undertail-coverts greyish white. In female, crown and back olive – brown. Tail and wings browner; chin, throat, breast and belly pale grey brown.

Measurements : 1 Unsexed, Wing 81, tail 72, bill 16.

Distribution : India : West Bengal (Darjiling district): Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Laos (= Cambodia).

Remarks : Blyth (1843) described this bird for the first time on this specimen from Darjiling, Darjiling district. This is the holotype.

391. *Muscicapa rubeculoides rubeculoides* (Vigors)

1831. *Phoenicurus rubeculoides* Vigors, *Proc. zool. Soc. Lond.* : 35 (Darjeeling = Darjiling, Darjiling district., West Bengal, India).

1972. Ali and Ripley, vol.7, p.190

Common name : Bluethroated Flycatcher (English) and Ghatki (Bengali).

Material examined : Jalpaiguri district: 1 ♂, Khuntimari, coll. R.K. Ghose, 14.iii. 1985.

Diagnostic characters : In male, sides of head, back throat, wings and tail dull ultramarine blue; forehead and supercilium brighter. Breast rufous, belly and under tail-coverts buffish white. Lores white. In female, head, back, wing and tail olive-brown, tinged with rufous on rump. Chin and throat buff. Breast ochraceous. Belly and vent white.

Measurements : 1 ♂ : Wing 73, tail 59, bill 13.

Distribution : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Sikkim, Tamil Nadu and Uttar Pradesh. Bangladesh, Nepal and Burma.

392. *Muscicapa tickelliae* (Blyth)

1843. *C. (yornis) Tickelliae* Blyth, *J. Asiat. Soc. Beng.*, 12 : 941 (Central India = Borabhum).
1972. Ali and Ripley, vol. 7, p. 193

Common name : Tickell's Redbreasted Blue Flycatcher (English).

Material examined : Nil.

Diagnostic characters : In male, head, back and tail indigo-blue, forehead, supercilium and shoulder azureblue. Chin, throat and breast orange rufous and belly white. Face black. In female, head, back, tail and wing bluish grey. Breast pale rufous.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland excepting Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Sikkim and Tripura. Pakistan, Bangladesh, Burma, Thailand, the Indo-chinese countries, Malaysia, Indonesia and Philippines.

Remarks : Reported this species from Durgapur and Damodar Valley Bardhaman district, West Bengal (Gauntlett, 1985).

393. *Muscicapa thalassina thalassina* Swainson

1838. *Muscicapa thalassina* Swainson, *Nat. Library, Flycatchers* 21 : 252 (India).
1972. Ali and Ripley, vol.7, p.198

Common name : Verditer Flycatcher (English) and Nil-katkatia (Bengali).

Material examined : North 24-Parganas district: 1 ♂, Parmadan, coll. B. Biswas, 29.xii. 1969.

Diagnostic characters : In male, entire plumage blue-green. Head and throat brighter; wings and tail darker; lores black. In female, duller and greyer in colouration.

Measurements : 1 ♂: Wing 85, tail 70, bill 14.

Distribution : India : West Bengal (North 24-Parganas district) : Throughout India. Pakistan, Bangladesh, Burma, Indochinese countries, Vietnam and China.

Genus *Culicicapa* Swinhoe, 1871394. *Culicicapa ceylonensis calochrysea* Oberholser

1848. '*Cryptolopha cinereocapilla* (Vieillot)' Hutton. *J. Asiat. Soc. Beng.*, 17 : 689 (Himalaya).
1972. Ali and Ripley, vol.7, p. 202

Common name : Northern Greyheaded Flycatcher (English) and Zard-phutki (Bengali).

Material examined : Darjiling district : 3 ♂, Palmajua, coll. R. A. Paynter, 22.vi.1958; 1 ♂, A. K. Mukherjee 15.v.1957.

Diagnostic characters : Back yellowish green. Head, neck, throat and breast ashy-grey. Wings and tail brown edged with yellow. Rump and belly bright yellow.

Measurements : 4 ♂ : Wing 64-67(66); tail 53-58(56); bill 12-14(13).

Distribution : India : West Bengal (Darjiling district) : Throughout Indian mainland except Kerala and Tamil Nadu. Pakistan, Nepal, Bhutan, Bangladesh, Burma, Indo-chinese countries, Pulawan, Borneo, and the Sunda Islands, Timor and China.

Genus *Rhipidura* Vigors & Horsfield, 1827395. *Rhipidura hypoxantha* Blyth

1843. *Rhipidura hypoxantha* Blyth, *J. Asiat. Soc. Beng.*, 12 : 938. (Darjiling).
1972. Ali and Ripley, vol.7, p. 206

Common name : Yellowbellied Fantail Flycatcher (English).

Material examined : Nil.

Diagnostic characters : In male, back and rump dark greyish olive. Lores black. Forehead and supercilium yellow. Tail brown with white and ear-coverts tips. Underparts bright yellow. In female, lores and ear-coverts blackish olive-brown.

Distribution : India : West Bengal (Darjiling district) : Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Tibet, Indo-china and China.

Remarks : Blyth (1843) described this species for the first time from Darjiling, Darjiling district.

396. *Rhipidura aureola* Lesson

1830. *Rhipidura aureola* Lesson, *Traite d'Orn.*, : 290 (Bengal).

1972. Ali and Ripley, vol. 7, p. 207

Common name : Whitebrowed Fantail Flycatcher (English) and Chakdil (Hindi).

Material examined : Nil.

Diagnostic characters : Crown ear-coverts sides of breast and throat black. Supercilium, chin breast belly and sides of throat white. Tail blackish, outer rectrices white. Back and wings dark grey brown. Wings with two rows of white spot.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland excepting Andhra Pradesh, Arunachal Pradesh, Assam, Karnataka, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Pakistan and Bangladesh.

Remarks : Gauntlett (1985) reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

397. *Rhipidura albicollis* (Vieillot)

1818. *Platyrhynchus albicollis* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 27 :13 (Bengal).

1982. Ripley, p.398

Common name : Whitethroated Fantail Flycatcher (English) and Chakdil (Bengali).

Material examined : Nil.

Diagnostic characters : Crown, sides of head, back, wing and underparts dark slaty brown. White band across the throat. Supercilium white. Outer rectrices tipped with white.

Distribution : India : West Bengal (Barddhaman district) : Sikkim. Nepal and Bangladesh.

Remarks : Observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

Genus *Terpsiphone* Gloger, 1827

398. *Terpsiphone paradisi* (Linnaeus)

1758. *Corvus paradisi* Linnaeus, *Syst. Nat.*, ed 10 : 1 :107 (in India = Chandernagor).

1972. Ali and Ripley, vol.7, p. 218

Common name : Indian Paradise Flycatcher (English) and Sultan bulbul (Hindi).

Material examined : Nil.

Diagnostic characters : In male, entire head with crest and throat black. Supercilium blue, wings black and white; back, tail and underparts silvery white. In female, entire head bluish black; remaining

upper most plumage rufous. Throat and sides of head ashy, belly white.

Distribution : India : West Bengal (Malda, Medinipur and Nadia districts) : Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Tamil Nadu.

Remarks : We have observed this species in Nadia District, Malda District and Medinipur District.

Genus *Hypothymis* Boie, 1826

399. *Hypothymis azurea styani* (Hartlaub)

1898. *Sipia styani* Hartlaub, *Abh. Nat. Ver. Bremen*, 16 : 248 (Harhow, Hainan).

1972. Ali and Ripley, vol.7, p.223

Common name : Indian Blacknaped Flycatcher (English) and Kala katkatia (Bengali).

Material examined : Nil.

Diagnostic characters : In male, most of the plumage azure blue; a black patch on nape and black crescent across throat, belly whitish. In female, head blue, back, wing and tail brown. Underparts ashy-blue fading to whitish on belly.

Distribution : India : West Bengal : (All districts) : Throughout Indian mainland except Himachal Pradesh, Jammu & Kashmir, Nagaland and Rajasthan. Nepal Bhutan, Bangladesh, Indo-china and China.

Remarks : We have observed this bird from throughout West Bengal.

Genus *Pachycephala* Vigors, 1825

400. *Pachycephala grisola* (Blyth)

1843. *Tephrodornis grisola* Blyth, *J. Asiat. Soc. Beng.*, 12 : 180 (Neighbourhood of Calcutta).

1972. Ali and Ripley, vol.7, p.228

Common name : Grey Thickhead Whistler (English).

Material examined : Haora district : 1 ♀, Botanical garden, Shibpur, coll. E. Blyth, 1842.

Diagnostic characters : Back, wing and tail olive-brown, crown ashy. Underparts white with a pale grey brown pectoral band.

Measurements : 1 ♀ : Wing 83, tail 62, bill 15.

Distribution : India : West Bengal (Haora district) : Arunachal Pradesh, Assam, Mizoram and Sikkim. Nepal, Bhutan and Burma.

Remarks : Blyth (1843) described this species from Haora district.

Genus *Bradypterus*, Swainson, 1837

401. *Bradypterus thoracicus thoracicus* (Blyth)

1845. *D. (umeticola) thoracica* Blyth, *J. Asiat. Soc. Beng.*, 14 : 584 (Nepal).

1973. Ali and Ripley, vol.8, p.21

Common name : Eastern Spotted Bush Warbler (English)..

Material examined : North 24-Parganas district : 2 ♂, Nalbani, coll. S. S. Saha, 26.i.1968.

Diagnostic characters : Size smaller than a sparrow. Back dark rufous-brown. Supercilium and sides of head grey. Chin white, throat ashy spotted with blackish brown, grey breast. Centre of belly white, vent olive-brown.

Measurements : 2 ♂ : Wing 52,56; tail 53(2); bill 14(2).

Distribution : India : West Bengal (North 24-Parganas district) : Arunachal Pradesh, Meghalaya, and Sikkim. Bangladesh, Nepal, Bhutan and Tibet.

Genus *Cisticola* Kaup, 1829

402. *Cisticola exilis erythrocephala* Blyth

1851. *Cisticola erythrocephala* Blyth, *J. Asiat. Soc. Beng.*, 20 :523 (Nilgiris, Tamil Nadu, India).

1973. Ali and Ripley, vol.8, p. 30

Common name : Redheaded Fantail Warbler (English).

Material examined : Haora district : 1 ♀, Botanical Garden, coll. not known 19.vii.1967. North 24-Parganas district : 2 ♂ and 1 ♀, Babu Bheri, Salt Lake coll. B. Biswas, 17.iii.1963, 13.iv.1963 and 9.vii.1966.

Diagnostic characters : In male, back rufous-brown boldly with black, crown rufous; underparts ferruginous; whitish abdomen, tail black with buff tips. In female, head rufous streaked with black and underparts less rufous.

Measurements :

	Wing	Tail	Bill
2 ♂	48, 49	54, 56	11, 12
2 ♀	44 (2)	52, 53	11 (2)

Distribution : India : West Bengal (Haora and North 24-Parganas districts) : Madhya Pradesh, Maharashtra and Kerala.

Remarks : This is a first new record from West Bengal.

403. *Cisticola exilis tytleri* Jerdon

1863. *Cisticola Tytleri* 'Blyth' = Jerdon, *Bds. India*, 2 : 176 (Dacca, Bengal = Bangladesh).

1973. Ali and Ripley, vol.8, p.31

Common name : Yellowheaded Fantail Warbler (English) and Lal sir-phutki (Hindi).

Material examined : Haora district : 1 ♀ and 1 unsexed, Botanical Garden, coll. not known, 19.vii.1967. North 24-Parganas district : 1 ♂, Nalbani, coll. B. Biswas, 13.iv.1963, 1 ♂, Sura, coll. S. S. Saha, 13.iv.1963.

Diagnostic characters : In male (in summer), crown orange yellow. In male and female (in winter), crown streaked, black more prominent than rufous; rufous nuchal collar more pronounced, upperparts darker.

Measurements :

	Wing	Tail	Bill
2 ♂	52, 53	38, 43	11, 12
1 ♀	48	37	11

Distribution : India : West Bengal (Haora and North 24-Parganas districts) : Arunachal Pradesh, Assam, Manipur, Meghalaya and Mizoram. Bangladesh, Nepal, Bhutan and Burma.

404. *Cisticola juncidis cursitans* (Franklin)

1831. *Prinia cursitans* Franklin, *Proc. zool. Soc. Lond.*, : 118 (between Calcutta and Benares).

1973. Ali and Ripley, vol.8, p.33

Common name : Streaked Fantail Warbler (English) and Ghaski-pitpiti (Hindi).

Material examined : North 24-Parganas district : 1 ♀, Babu Bheri; Salt Lake, coll. B. Biswas, 17.iii.1963.

Diagnostic characters : Back rufous-brown, boldly streaked with black; whitish throat, breast and belly. Tail marked with black and white tips.

Measurements : 1 ♀ : Wing 48, tail 40, bill 11.

Distribution : India : West Bengal (North 24-Parganas district) : Throughout Indian Union except Manipur, Mizoram, Nagaland. Bangladesh, Pakistan, Nepal and Sri Lanka.

Genus *Prinia* Horsfield, 1821

405. *Prinia hodgsonii hodgsonii* Blyth

1844. *Pr. (inia) Hodgsonii* Blyth, *J. Asiat. Soc. Beng.*, 13 : 367, new name for *Prinia gracilis* Franklin, 1823 (Mirzapur district, Uttar Pradesh).

1973. Ali and Ripley, vol.8, p.42

Common name : Franklin's Ashy-grey Wren-Warbler (English) and Phutki (Hindi).

Material examined : Nil.

Diagnostic characters : Back rufous brown. Tail greyish long, graduated, tipped with white and sub-tipped with dark brown.

Distribution : India : West Bengal : (Medinipur, North 24-Parganas and South 24-Parganas districts) : Throughout Indian mainland excepting Arunachal Pradesh, Assam, Haryana, Himachal Pradesh, Jammu & Kashmir, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim and Tripura. Nepal and Bangladesh.

Remarks : We have observed this species in North 24-Parganas district, South 24-Parganas district and Medinipur district.

406. *Prinia subflava inornata* Sykes

1832. *Prinia inornata* Sykes, *Proc. zool. Soc. Lond.* : 89 (Dukhun, Poona = Pune, India).

1973. Ali and Ripley, vol.8, p.53

Common name : Central India Plain Wren-Warbler (English) and Phutki (Hindi).

Material examined : North 24-Parganas district : 1 ♂ and 1 ♀, Duttabad, N. Salt Lake, coll. B. Biswas, 29.xi.1964 and 17.i.1965; 1 ♂, Mahisbathan, coll. B. Biswas, 28.vi.1964; 12 ♂ and 8 ♀, Nalbani, Salt Lake, coll. B. Biswas, 23.i.1963, 5.viii.1963, 22.iii.1964, 28.vi.1964, 13.ix.1964, 18.iv.1965, 6 and 20.vi.1965, 8 and 23.i.1966, 2.iii.1967, 10.iv.1968 and 18.xii.1969.

Diagnostic characters : Back sandy brown, creamy-white underparts; white tipped tail. Bill black (in summer), brown (in winter).

Measurements .

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
5 ♂	45-49(48)	68-73(72)	13-14(14)
6 ♀	45-50(47)	65-79(71)	13-14(14)

Distribution : India : West Bengal (North 24-Parganas district) : Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh.

407. *Prinia subflava fusca* (Hodgson)

1845. *Drymoica fusca* Hodgson, *Proc. zool. Soc. Lond.* : 29 (Nepal).

1973. Ali and Ripley, vol.8, p.55

Common name : Eastern Plain Wren-Warbler (English).

Material examined : Bankura district : 1 ♂, Susunia Hills, coll. J. M. Dasgupta, 7.i.1979. Birbhum district : 1 ♂, Chandrapur, coll. A. K. Mukherjee, 5.i.1981.

Diagnostic characters : Back darker and below more pronounced fulvous wash; no terminal spots on tail.

Measurements : 2 ♂ : Wing 52,53; tail 50,62; bill 14,15.

Distribution : India : West Bengal (Bankura and Birbhum districts) : Arunachal Pradesh, Assam, Manipur and Sikkim. Bangladesh, Nepal and Bhutan.

408. *Prinia socialis* Sykes

1832. *Prinia socialis* Sykes, *Proc. zool. Soc. Lond.*, : 89 (Dukhun).

1982. Ripley, p. 414

Common name : Ashy Wren-Warbler (English) and Phutki (Hindi).

Material examined : Nil.

Diagnostic characters : Back slaty; fulvous white below, longish graduated black and white tipped tail. Plumage less slaty (in winter), more brown (in summer).

Distribution : India : West Bengal (Bardhaman district) : Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

409. *Prinia sylvatica gangetica* (Blyth)

1867. *Suya gangetica* Blyth, *Ibis* : 23 (Upper Ganges).

1973. Ali and Ripley, vol.8, p.62

Common name : Gangetic Jungle Wren-Warbler (English) and Tot rungi (Hindi).

Material examined : Nil.

Diagnostic characters : Size less than a Sparrow. Back earthy brown; longish graduated tail, buffy whitish below. In summer outer tail feathers white tipped.

Distribution : India : West Bengal (Jalpaiguri and Kochbehar districts) : Bihar, Himachal Pradesh, Madhya Pradesh, Punjab and Uttar Pradesh. Nepal and Bangladesh.

Remarks : We have observed this species in Kochbehar district and Jalpaiguri district.

410. *Prinia flaviventris flaviventris* (Delessert)

1840. *Orthotomus flaviventris* Delessert, *Rev. Zool.* : 101 (North Bengal = North Bengal, India).

1973. Ali and Ripley, vol.8, p. 67

Common name : Assam Yellowbellied Wren-Warbler (English).

Material examined : North 24-Parganas district : 7 ♂ and 6 ♀, Duttaband, coll. B. Biswas, 9.i.1965, 8.v.1965, 20.vi.1965, 2 and 13.i.1966, 24.i.1968, 20.xi.1968.

Diagnostic characters : Size equal to the preceding birds. Back and tail olive green. Longish graduated tail tipped whitish and subtipped brown. Whitish throat and breast, abdomen and vent bright lemon-yellow.

Measurements :

	Wing	Tail	Bill
7 ♂	47-53 (49)	65-80 (74)	14-15 (15)
6 ♀	46-49 (48)	58-74 (67)	14-17 (15)

Distribution : India : West Bengal (North 24-Parganas district) : Assam, Manipur and Nagaland. Bangladesh and Nepal.

Genus *Orthotomus* Horsfield, 1821

411. *Orthotomus sutorius patia* Hodgson

1845. *Orthotomus patia* Hodgson, *Proc. zool. Soc. Lond.*, : 29 (Nepal, restricted to Kathmandu by Ripley, 1950, *J. Bombay nat. Hist. Soc.*, 49 : 402.

1973. Ali and Ripley, vol.8, p.84

Common name : Bengal Taylor Bird (English) and Tuntuni (Bengali).

Material examined : Birbhum district : 1 ♂, Chandrapur, Suri, coll. A.K. Mukherjee, 2.i.1981. Hugli district : 1 ♀, Chinsura Rice Research Centre Campus, Chinsura, coll. S.S. Saha, date not known; 1 ♂, Telinipara, near Chandernagar, coll. B. Biswas, 30.vii.1950. Medinipur district : 1 ♂, Jhargram, coll. A.K. Mukherjee, 5.x.1979. North 24-Parganas district : 1 ♂, Bantala, coll. B. Biswas, 26.i.1968; 1 ♂, Kalikapur, coll. B. Biswas, 8.viii.1964; 3 ♂, Nalbani, North Salt Lake, coll. B. Biswas, 2.iii.1967, 24.i.1968 and 25.ii.1968.

Diagnostic characters : Size equal to a Sparrow. Back yellow-green. Whitish buff underparts, rust-coloured crown; tail long, and middle feather pointed.

Measurements :

	Wing	Tail	Bill
7 ♂	48-52 (50)	42-52 (46)	14-17 (16)
4 ♀	43-52 (48)	40-46 (43)	16

Distribution : India : West Bengal (Birbhum, Hugli, Medinipur and North 24-Parganas districts) : Assam, Bihar and Uttar Pradesh. Bangladesh, Nepal, Bhutan and Burma.

Genus *Locustella* Kaup, 1829412. *Locustella certhiola rubescens* Blyth

1845. *Locustella rubescens* Blyth, *J. Asiat. Soc. Beng.*, 14 : 582 (Near Calcutta, West Bengal, India).

1973. Ali and Ripley, vol.8, p.89

Common name : Pallas's Siberian Grasshopper Warbler (English).

Material examined : North 24-Parganas district : 22 ♂ and 9 ♀, Nalbani; Salt Lake, coll. B. Biswas, 21.i.1963., 23.i.1963., 9.ii.1963., 8.iii.1964., 14.iii.1964, 22.iii.1964, 28.ii.1965., 10.iv.1965., 16.v.1965, 8.i.1966., 25.ix.1966.

Diagnostic characters : Back streaked with dark brown; crown streaked grey and dark brown, throat whitish breast and flanks pale brown; tail rounded, tipped with whitish; under tail-coverts buff.

Measurements :

	Wing	Tail	Bill
8 ♂	60-65(63)	50-58(55)	16-17(17)
7 ♀	60-64(61)	51-55(53)	15-16(15)

Distribution : India : West Bengal (Calcutta and North 24-Parganas districts) : Andaman Islands, Assam, Kerala and Madhya Pradesh. Bangladesh, Nepal, Sri Lanka, Burma, Indochinese countries, Malaysia and Indonesian Islands.

Remarks : Blyth (1845) described this bird for the first time from vicinity of Calcutta.

Genus *Chaetornis* Gray, 1848413. *Chaetornis striatus* (Jerdon)

1841. *Megalurus? Striatus* Jerdon, *Suppl. Cat. Bds.* : 88 (Nilgiris).

1982. Ripley, p. 421

Common name : Bristled Grass Warbler (English).

Material examined : Nil.

Diagnostic characters : Back fulvous brown boldly streaked with black; wing fulvous brown; tail graduated, tipped whitish, throat, breast and belly cream buff.

Distribution : India : West Bengal (Bardhaman district) : Throughout India mainland except Arunachal Pradesh, Himachal Pradesh, Jammu & Kashmir, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. Pakistan and Bangladesh.

Remarks : Observed this species from Durgapur and Damodar Valley Bardhaman district, West Bengal (Gauntlett, 1985).

Genus *Megalurus* Horsfield, 1821414. *Megalurus palustris toklao* (Blyth)

1843. *Turdus toklao* Blyth, *J. Asiat. Soc. Beng.*, 12 : 179 (Calcutta, Calcutta district, West Bengal, India), *ex* 1842, *J. Asiat. Soc. Beng.* 11 : 603.

1973. Ali and Ripley, vol.8, p.96

Common name : Striated Marsh Warbler (English).

Material examined : North 24-Parganas district : 4 ♂ and 5 ♀, Dattabad, coll. B. Biswas, 17.v.1964, 25.vii.1964, 27.ix.1964, 9.i.1965, 6.iii.1966; 1 ♀, Hediathat near Garia Rly. Stn., coll. B. Biswas, 8.vi.1964, 10 ♂ and 14 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 20.v.1964, 10.iv.1965, 12 and 20.ii.1966, 2.iii.1967, 4.vi.1967, 6 and 26.xi.1968, 5.x.1969; 1 ♂, coll. D.S. Mathur, 9.viii.1966; 1 ♀, Salt Lake, near Beliaghata, coll. P.V. George, 23.i.1963.

Diagnostic characters : Size larger than a Bulbul. Back and wings fulvous brown with broad black stripes; underparts whitish, tinged with fulvous and finely brown streaked on breast, flanks and under tail-coverts. Tail long, pointed and graduated.

Measurements :

	Wing	Tail	Bill
11 ♂	91-100(95)	105-122(113)	21-23(22)
12 ♀	80-88(83)	97-107(103)	20-23(21)

Distribution : India : West Bengal (North 24-Parganas district) : Arunachal Pradesh, Assam, Bihar, Haryana, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Orissa and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Bhutan, Burma, Thailand, China, Indochinese countries, Philippines and Indonesian Islands.

Genus *Acrocephalus* Naumann, 1811

415. *Acrocephalus aedon aedon* (Pallas)

1776. *Muscicapa Aedon* Pallas, *Reise Russ. Reichs*, 3 : 695 (Dauria).

1982. Ripley, p. 422

Common name : Thickbilled Warbler (English).

Material examined : Bankura district : 1 ♀, Susunia Hills, coll. A.K. Mukherjee, 31.i.1979. North 24-Parganas district : 3 ♀, coll. B. Biswas, 19.iv.1964, 29.xi.1964 and 5.xii.1964; 1 ♂ and 2 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 3.ix.1963 and 8.iii.1964.

Diagnostic characters : Head, back and tail fulvous olive-brown, underparts fulvous white. First primary being longer than the primary coverts. Tail feathers narrow and deeply graduated.

Measurements :

	Wing	Tail	Bill
1 ♂	90	82	27
4 ♀	78-90(86)	76-85(81)	25-26(26)

Distribution : India : West Bengal (Bankura and North 24-Parganas districts) : Andhra Pradesh, Assam, Gujarat, Karnataka, Kerala, Maharashtra, Nicobar Islands, Orissa: Nepal (Terai), Bhutan (Duars), Burma, Indo-Chinese countries, Malaya Peninsula, Breeds in southern Siberia from the Ob river to northeastern China and Japan.

416. *Acrocephalus stentoreus brunnescens* (Jerdon)

1839. *A. (grobates) brunnescens* Jerdon, *Madras J. Lit. Sci.*, 10 : 269 (Carnatic, near Trichinopoly, Tamil Nadu, India).

1973. Ali and Ripley, vol.8, p.101

Common name : Indian Great Reed Warbler (English).

Material examined : North 24-Parganas district : 3 ♂, and 4 ♀, Babu Bheri, North Salt Lake 23.i.1963, 23.iii.1963, 15.iv.1963; 2 ♂ and 2 ♀, Bantala, coll. B. Biswas, 6.xii.1964, 28.xi.1965, 26.i.1968; 1 ♂ and 1 ♀, Dattabad, coll. B. Biswas, 19.iv.1964 and 3.v.1964; 3 ♂ and 4 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 2.i.1966, 20.iii.1966, 5.x.1967 and 21.i.1968; 1 ♂, Parmadan, Salt Lake, coll. B. Biswas, 31.xii.1969; 2 ♂ and 2 ♀, Salt Lake, coll. B. Biswas, 13.22 and 27.iv.1963. South 24-Parganas district : 2 ♀, Raidighi, coll. A.K. Mukherjee, 25.xii.1979.

Diagnostic characters : Size equal to a Bulbul. Head and back olive-brown; chin and throat white, throat and belly fulvous. Supercilium whitish. Calls : Karra-Karra-kareet-kareet-kareet.

Measurements :

	Wing	Tail	Bill
12 ♂	84-97(86)	70-85(76)	23-26(24)
8 ♀	80-87(84)	68-80(74)	23-26(24)

Distribution : India : West Bengal (North 24-Parganas and South 24-Parganas districts) : Haryana, Himachal Pradesh, Jammu & Kashmir, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh. Pakistan, Sri Lanka and Iran.

417. *Acrocephalus orientalis* (Temminck & Schlegel)

1847. *Salicaria turdina orientalis* Temminck & Schlegel, in Siebold. *Faun. Japon., Aves*; 50-51, pl. 21B [=20B] (Japan).

1973. Ali and Ripley, vol. 8, p. 106

Common name : Eastern Great Reed Warbler (English).

Material examined : North 24-Parganas district : 2 ♂, and 7 ♀, Babu Bheri, North Salt Lake, coll. B. Biswas, 23.i.1963, 23.iii.1963, 6.iv.1963, 15.iv.1963; 2 ♂, Bantala, Salt Lake, coll. B. Biswas, 6.xii.1964; 4 ♂ and 2 ♀, Dattabad, North Salt Lake, coll. B. Biswas, 4 and 19.iv.1964 and 3.v.1964; 12 ♂ and 5 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 6 and 13.iv.1963, 2.i.1966, 3,20 and 27.iii.1966, 2.x.1966, 5.x.1967, 21.i.1968.

Diagnostic characters : It is similar to the preceding bird but having distinctly streaked throat instead of plain white.

Measurements :

	Wing	Tail	Bill
6 ♂	74-87(84)	68-76(74)	21-23(22)
5 ♀	74-82(81)	68-70(69)	21-23(22)

Distribution : India : West Bengal (North 24-Parganas district) : Andaman Island, Assam and Manipur. Breeds in China and southeastern Siberia and winters in the Malaysia, Indonesia and Indo-chinese countries.

418. *Acrocephalus bistrigiceps bistrigiceps* Swinhoe1860. *Acrocephalus bistrigiceps* Swinhoe, *Ibis* : 51 (Amoy)

1973. Ali and Ripley, vol. 8, p. 107

Common name : Blackbrowed Reed Warbler (English).*Material examined* : North 24-Parganas district : 11 ♂, Nalbani, coll. B. Biswas, 14 and 29.iii.1964, 25.xii.1964, 28.ii.1965, 6 and 27.ii.1966, 9.xi.1966, 6.iv.1967, 29.iii.1968; 1 ♀, Bantala, North Salt Lake, coll. B. Biswas, 26.iv.1968; 1 ♂, Salt Lake, coll. B. Biswas, 6.iv.1967.*Diagnostic characters* : Size smaller than a sparrow. Head and back olive-brown conspicuous blackish brown stripe over the pale supercilium; chin and throat white, breast and belly fulvous.*Measurements* : 11 ♂ : Wing 53-58(56); tail 47-58(50); bill 14-15(15).*Distribution* : India : West Bengal (North 24-Parganas district) : Assam and Manipur. Bangladesh, Burma, Thailand, the Indochinese countries and China.419. *Acrocephalus dumetorum* Blyth1849. *Acrocephalus dumetorum* Blyth, *J. Asiat. Soc. Beng.*, 18 : 815 (No locality = Calcutta, Calcutta, Calcutta district, West Bengal, India, see Biswas, 1962, *J. Bombay nat. Hist. Soc.* 59 : 410).

1973. Ali and Ripley, vol.8, p.109

Common name : Blyth's Reed Warbler (English), Tikra (Bengali) and Tiktiki (Hindi).*Material examined* : Bankura district : 1 ♂, Ranibandh, coll. B.C. Saha, 7.ii.1979; 3 ♀, Susunia Hills, coll. J.M. Dasgupta, 28 and 29.i.1979., 2.ii.1979. Birbhum district : 1 ♂, Chandrapur, c 10 km. North West of Suri, coll. A.K. Mukherjee, 3.i.1981; 1 ♀, Chandrapur, coll. A.K. Poddar, 11.xii.1985. Haora district : 1 ♂ and 1 ♀, near Bally Rly. Stn., coll. P.V. George, 5.xi.1962. North 24-Parganas district : 1 ♂, Babu Behari, coll. B. Biswas, 15.iv.1963; 1 ♂ and 1 ♀, near Babu Bheri, coll. B. Biswas, 6.iv.1963; 2 ♀, Bantala, coll. B. Biswas, 28.xi.1965, 6.xii.1964; 1 ♂ and 1 ♀, Duttabad, coll. B. Biswas, 11.xii.1965, 17.v.1964; 1 ♀, coll. P.K. Das, 8.v.1965; 1 ♂ and 1 ♀, Kalikapur, coll. B. Biswas, 29.ii.1968; 1 ♂, near Mahishbathan, coll. B. Biswas, 18.iv.1965; 5 ♂ and 7 ♀, Nalbani, coll. B. Biswas, 10 and 24.iv.1965., 23.i.1966, 6.iii.1966, 10.iv.1966, 4.ii.1968. South 24-Parganas district : 1 unsexed, Raidighi, coll. A.K. Mukherjee, 26.xii.1979.*Diagnostic characters* : Head and Back olive-brown. A pale supercilium. Chin and throat white. Breast and belly buffish.*Measurements* :

	Wing	Tail	Bill
8 ♂	61-65(63)	52-55(54)	16-18(17)
12 ♀	60-64(62)	50-56(52)	15-18(17)

Distribution : India : West Bengal (Bankura, Birbhum, Haora, North 24-Parganas and South 24-Parganas districts) : Throughout Indian mainlands except Himachal Pradesh and Jammu & Kashmir. Bangladesh, Pakistan, Nepal, Bhutan and Burma.420. *Acrocephalus agricola agricola* (Jerdon)1845. *Sylvia (acrocephalus) agricola* Jerdon, *Madras J. Lit. Sci.*, 13 : 131 (neighbourhood of Nellore, Nellore district, Andhra Pradesh).

1973. Ali and Ripley, vol.8, p.112

Common name : Indian Paddyfield Warbler (English).

Material examined : North 24-Parganas district : 16 ♂ and 10 ♀, Babu Bheri, North Salt lake, coll. P.V. George, 21.i.1963, 9 and 24.ii.1963, 17 and 23.iii.1963; 1 ♂, coll. B. Biswas, 17.iii.1963; 2 ♂, 2 ♀ and 1 unsexed, Duttabad, coll. B. Biswas, 12.iv.1964, 17.i.1965, 17.ii.1965, 27.xii.1965; 12 ♂ and 7 ♀, Nalbani, coll. B. Biswas, 25.xii.1964., 28.ii.1965., 14 and 28.iii.1965, 26.xii.1965, 2, 16 and 23.i.1966, 20.ii.1966; 1 ♀, coll. D.S. Mathur, 10.iv.1966.

Diagnostic characters : Head and back rufous, rump slightly paler and brighter. Supercilium pale and indistinct. Chin and throat whitish; breast and belly ochraceous buff.

Measurements :

	Wing	Tail	Bill
12 ♂	57-61(59)	54-59(56)	14-16(15)
10 ♀	53-61(57)	52-58(59)	15-16(15)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout India mainlands except Himachal Pradesh and Jammu & Kashmir. Bangladesh, Pakistan, Burma and Iran.

Genus *Hippolais* Baldenstein, 1827

421. *Hippolais caligata* (Lichtenstein)

1823. *Sylvia caligata* Lichtenstein, in Eversmann's Reise Orenburg Buchara : 128 (Ilek River, near Orenburg).

1982. Ripley, p. 426

Common name : Booted Tree Warbler (English).

Material examined : Nil.

Diagnostic characters : Head and back darker, fulvous brown. Supercilium whitish, short, extend upto eye. Whole lower plumage buffy white.

Distribution : India : West Bengal (Barddhaman district) : Andhra Pradesh, Assam, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Sikkim and Tamil Nadu. Pakistan, Nepal, Bangladesh and Sri Lanka. Breeds in southern Siberia from the Yenisey to the Leningrad region.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal. (Gauntlett, 1985).

Genus *Phylloscopus* Boie, 1826

422. *Phylloscopus collybita tristis* Blyth

1843. *P. (hylloscopus) tristis* Blyth, *J. Asiat. Soc. Beng.*, 12 : 966. (Calcutta, Calcutta district, West Bengal, India).

1973. Ali and Ripley, vol.8, p.137

Common name : Brown Chiffchaff (English).

Material examined : North 24-Parganas district : 1 ♂, Duttabad, Salt Lake, coll. B. Biswas, 21.ii.1965; 6 ♂ and 1 ♀, Nalbani, Salt Lake, coll. B. Biswas, 21.ii.1965, 12.ii.1966, 8.iii.1964, 24.i.1968; 3 ♂, Salt Lake, coll. B. Biswas, 14.ii.1965.

Diagnostic characters : Head, back, wing and tail pale olive-brown. Supercilium whitish and short.

Lower plumage buff. Chin and throat whitish; breast and belly whitish buff.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	60-63(62)	45-50(48)	11
1 ♀	57	47	11

Distribution : India : West Bengal (Calcutta and North 24-Parganas districts) : Throughout Indian mainland except Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Manipur, Meghalaya, Mizoram, Nagaland and Tamil Nadu. Bangladesh, Pakistan, Nepal, Bhutan, Iran and Iraq.

Remarks : Blyth (1843) reported this bird from the vicinity of Calcutta.

423. *Phylloscopus affinis affinis* (Tickell)

1833. *Motacilla affinis* [sic] Tickell, *J. Asiat. Soc. Beng.*, 2 : 576 (Borabhum, Puruliya district, West Bengal and Dholbhum = Dhalbhum, Singhbhum district, India).

1973. Ali and Ripley, vol.8, p.142

Common name : Tickell's leaf Warbler (English).

Material examined : Birbhum district : 1 ♂, Chandrapur, coll. A.K. Mukherjee 3.xii.1980.

Diagnostic characters : Head, back and tail dark olive-brown; distinct, long and yellow supercilium; under parts bright yellow.

Measurements : 1 ♂ : Wing 52, tail 48, bill 9.

Distribution : India : West Bengal (Birbhum district) : Throughout Indian mainlands except Rajasthan, Gujarat, Nagaland and Mizoram. Bangladesh, Pakistan, Nepal, Bhutan, Tibet, Burma and Thailand.

424. *Phylloscopus affinis arcanus* Ripley

1950. *Phylloscopus subaffinis arcanus* Ripley, *Proc. Biol. Soc. Washington* 63 : 105 (Tikapur, Kailali district, Western Nepal).

1973. Ali and Ripley, vol.8, p.144

Common name : Buffbellied Leaf Warbler (English).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. R.K. Ghose, 3.viii.1974.

Diagnostic characters : It is similar to the preceding bird. But differs in having the underparts paler yellow strongly washed with buff.

Measurements : 1 ♂ : Wing 63, tail 49, bill 12.

Distribution : India : West Bengal (Darjiling district) : Nepal, Burma, Indochinese countries and China.

Remarks : It is a new locality record from West Bengal.

425. *Phylloscopus griseolus* Blyth

1947. (*Phylloscopus*) *griseolus*, Blyth, *J. Asiat. Soc. Beng.*, 16 : 443 (banks of the Hoogly = Hugli River, near Calcutta, Calcutta district, West Bengal, India).

1973. Ali and Ripley, vol.8, p.145

Common name : Olivaceous Leaf Warbler (English).

Material examined : Bankura district : 1 unsexed, Ranibandh, coll. B.C. Saha, 4.ii.1979.

Diagnostic characters : Head and back grey-brown. Supercilium yellow. Lower plumage oil yellow tinged with dusky on breast and flanks.

Measurements : 1 unsexed : Wing 58, tail (-), bill 11.

Distribution : India : West Bengal (Bankura district) : Throughout Indian mainlands except eastern part of India beyond West Bengal, Karnataka, Kerala and Tamil Nadu. Bangladesh, Pakistan and Nepal.

426. *Phylloscopus fuscatus fuscatus* (Blyth)

1842. *Phyllopneste fuscata* Blyth, *J. Asiat. Soc. Beng.*, 11 : 113. (neighbourhood of Calcutta, West Bengal, India).

1973. Ali and Ripley, vol.8, p.149

Common name : Siberian Dusky Leaf Warbler (English).

Material examined : Bankura district : 1 ♂, Ranibandh, coll. A.K. Mukherjee, 5.iii.1982. Birbhum district : 1 ♂, Chandrapur, coll. A.K. Poddar, 13.xii.1985; 1 ♂, coll. A.K. Mukherjee, 5.i. 1981. North 24-Parganas district: 1 ♂, and 1 ♀, Babu Bheri, coll. P.V. George, 20. and 23.i. 1963; 1 ♀, Bantala, coll. S.S. Saha, 26.i. 1968; 2 ♂ and 1 unsexed near Duttabad, coll. B. Biswas, 21.ii. 1965, 5.xii. 1965, 6 ♂, near Duttabad, coll. B. Biswas, 9.i.1965., 21.ii.1965; 1 ♀, Kalikapur, coll.B. Biswas, 29.ii.1968; 7 ♂, Nalbani, North Salt Lake, coll. B. Biswas, 2.i.1965, 2,8 and 23.i.1966, 20.ii.1968; 11 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 25.xii.1964, 7.iii.1965, 16.i.1966, 20 and 27.ii.1966, and 23.xi.1966, 24.xii. 1967, 24.i.1968. South 24-Parganas district : 1 ♀, Raidighi, coll. A.K.Mukherjee, 26.xii.1979.

Diagnostic characters : Head, back and tail dusky olive-brown; a dark streak through eye; supercilium fulvous. Chin and throat whitish, with a grey wash on breast; flanks and under tail-coverts fulvous.

Measurements :

	Wing	Tail	Bill
8 ♂	57-65(62)	42-55(49)	11-12(12)
9 ♀	55-61(57)	47-55(51)	12-14(13)

Distribution : India : West Bengal (Bankura, Birbhum, North 24-Parganas and South 24-Parganas districts): Andaman Islands, Assam, Bihar, and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Tibet, Burma, Indochinese countries and China.

Remarks : Blyth (1843) reported this bird from the vicinity of Calcutta.

427. *Phylloscopus inornatus humei* (Brooks)

1878. *Reguloides humei* Brooks, *Str. Feath.* 7: 131 (Northwest India).

1973. Ali and Ripley, vol.8, p.153

Common name : Hume's Yellowbrowed Leaf Warbler (English).

Material examined : North 24-Parganas district: 1 ♂, Mahisbathan, Salt Lake, coll. B. Biswas, 5.xii.1953.

Diagnostic characters : Head yellow and back greenish olive, supercilium pale yellowish. Entire

lower plumage whitish tinged with yellow. Two wings bars buffish white.

Measurements : 1 ♂ : Wing 60, tail 44, bill 12.

Distribution : India : West Bengal (North 24 Parganas district) : Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh and Maharashtra.

428. *Phylloscopus inornatus mandellii* (Brooks)

1879. *Reguloides Mandellii* Brooks, *Str Feath*, 8 : 389 (Sikkim)

1973. Ali and Ripley, vol. 8, p. 155

Common name : Mandelli's Yellowbrowed Leaf Warbler (English).

Material examined : Nil.

Diagnostic characters : Differs from the preceding bird in having the upperparts darker and browner; rump greenish. Supercilium and underparts dirty yellowish white; centre of belly more yellowish. Upper wing bars buffish and less distinct.

Distribution : India : West Bengal : (South 24-Parganas district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Burma, Tibet and China.

Remarks : Chattopadhyay (1986) has recorded this species from Bajbaj, South 24-Parganas district, West Bengal.

429. *Phylloscopus inornatus inornatus* (Blyth)

1842. *Regulus inornatus* Blyth, *J. Asiat. Soc. Beng.*, 11 : 191 (Darjeeling = Darjiling, Darjiling dist., West Bengal, (India).

1973. Ali and Ripley, vol. 8, p. 156

Common name : Siberian Yellowbrowed Leaf Warbler (English).

Material examined : Darjiling district : 1 ♂, Peshoke, coll P. K. Das, 18.ii.1979.

Diagnostic characters : Wings and tail brown edged with greenish two white bars on wings; entire lower plumage sullied white.

Measurements : 1 ♂ : Wing 57, tail 43, bill 12.

Distribution : India : West Bengal (Darjiling district) : Assam, Manipur, Nagaland and Sikkim. Bangladesh, Nepal, Indochinese countries, China and Taiwan. Breeds in Siberia.

430. *Phylloscopus magnirostris* Blyth

1843. *Ph. (ylloscopus) magnirostris* Blyth, *J. Asiat. Soc. Beng.*, 12 : 966 (Calcutta).

1982. Ripley, p. 437

Common name : Largebilled Leaf Warbler (English).

Material examined : Nil.

Diagnostic characters : Head and back brownish olive; supercilium yellowish; dark streak through eye; underparts yellowish white sullied with grey on breast and throat.

Distribution : India : West Bengal (Calcutta and Barddhaman districts) : Throughout Indian Union except Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Lakshadweep, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan and Tripura. Pakistan, Nepal, Bhutan, Indochinese countries and Burma.

Remarks : Blyth (1843) reported this species from the vicinity of Calcutta. Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

431. *Phylloscopus trochiloides viridanus* Blyth

1843. *Ph. (ylloscopus) viridanus* Blyth, *J. Asiat. Soc. Beng.*, 12 : 967 (Calcutta, Calcutta district, West Bengal India).

1973. Ali and Ripley, vol. 8, p. 166

Common name : Western Greenish Leaf Warbler (English).

Material examined : Bankura district : 1 ♂, Susunia Mills, coll. J. M. Dasgupta, 30.i.1979.

Diagnostic characters : Back dull greenish; underparts yellowish white. Wing with single pale wing-bar; and a pale dark streak through eye.

Measurements : 1 ♂ : Wing 61, tail 48, bill 11.

Distribution : India : West Bengal (Bankura district) : Throughout Indian mainland except Rajasthan. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, and Indochinese countries.

432. *Phylloscopus trochiloides trochiloides* (Sundevall)

1838. *Acanthiza trochiloides* Sundevall, *Fysiogr. Sallskap. Tidskr. Lund.*, 1 : 76 (Calcutta, Calcutta district, West Bengal, India).

1973. Ali and Ripley, vol. 8, p. 169

Common name : Eastern Greenish Leaf Warbler (English).

Material examined : Birbhum district : 1 ♂ and 1 ♀, Chandrapur, coll. A. K. Poddar, 14.xii.1985.

Diagnostic characters : Back dull greenish; yellowish supercilium; single indistinct wing bar. Bill dark brown. Legs and feet yellowish brown to greenish brown.

Measurements :

	Wing	Tail	Bill
1 ♂	65	53	12
1 ♀	57	43	13

Distribution : India : West Bengal (Birbhum district) : Andaman Islands, Arunachal Pradesh, Assam, Bihar, Kerala, Nagaland and Uttar Pradesh. Bangladesh and Sri Lanka.

Remarks : Blyth (1843) described this species for the first time from vicinity of Calcutta.

433. *Phylloscopus trochiloides nitidus* Blyth

1843. *Ph. (ylloscopus) nitidus* Blyth, *J. Asiat. Soc. Beng.*, 12 : 965. (Vicinity of Calcutta).

1973. Ali and Ripley, vol. 8, p. 170

Common name : Bright Green Leaf Warbler (English).

Material examined : Nil.

Diagnostic characters : Back brighter green; underparts distinctly yellow. Bill upper mandible brown, lower yellowish brown. Legs and feet greyish brown.

Distribution : India : West Bengal (Calcutta district) : Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Sikkim and Tamil Nadu. Pakistan. Breeds in the mountains of northern Afghanistan, Central and northern Iran West to the Caucasus Mts.

Remarks : Blyth (1843) reported this species from the vicinity of Calcutta.

434. *Phylloscopus occipitalis* (Blyth)

1845. *Ph. (yllopneuste) occipitalis* Blyth, *J. Asiat. Soc. Beng.*, 14 : 593 (Southern India).

1982. Ripley, p. 438

Common name : Large Crowned Leaf Warbler (English).

Material examined : Nil.

Diagnostic characters : Back light greenish olive dark streak through eye. Supercilium yellow; shoulder yellow. Underparts yellow on breast and belly.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland except Arunachal Pradesh, Assam, Haryana, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Sikkim and Tripura. Pakistan, Nepal and Bangladesh. Breeds also in northwest Afghanistan and north Uzbekistan.

Remark : Observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

435. *Phylloscopus reguloides reguloides* (Blyth)

1842. *Phyllopneuste reguloides* Blyth, *J. Asiat. Soc. Beng.*, 11 : 191 (Darjeeling).

1982. Ripley, p. 439

Common name : Blyth's Leaf Warbler (English).

Material examined : Nil.

Diagnostic characters : Similar to the preceding bird but smaller in size.

Distribution : India : West Bengal (Barddhaman : Assam, Bihar, Sikkim and Uttar Pradesh. Nepal, Bhutan, Bangladesh and Burma.

Remarks : Blyth (1843) reported this species on the vicinity of Calcutta and Gauntlett (1985) observed this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal.

Genus *Seicercus* Swaison, 1837436. *Seicercus affinis* (Hodgson)

1854. *Abornis affinis* Hodgson, Horsfield & Moor, *Cat. Bds. E.I. Co.*, 1 : 341 (Nepal).

1973. Ali and Ripley, vol. 8, p. 180

Common name : Allied Flycatcher-Warbler (English).

Material examined : Nil.

Diagnostic characters : Back and wings olive-green; lowerparts bright yellow; a yellow wing-bar; a conspicuous but incomplete white-eye ring. Inner webs of outer rectrices white.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Nepal, Bhutan, Burma, Thailand, Vietnam and Fukien.

Remarks : We have observed this species in Darjiling District.

437. *Seicercus burkii* (Burton)

1836. *Sylvia burkii* Burton, *Proc. zool. Soc. Lond.* : 153 (Himalaya Mts. restricted to Sikkim by Ticehurst, 1925, *Bull. Brit. Orn. cl.*, 46 : 22).

1973. Ali and Ripley, vol. 8, p. 183

Common name : Blackbrowed Flycatcher-Warbler (English).

Material examined : Nil.

Diagnostic characters : Back, rump and sides of head olive-green; eye-ring yellow; conspicuous and complete supercilium olivegreen. Lower plumage deep yellow.

Distribution : India : West Bengal (Burdhaman district and Calcutta districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, Burma, Thailand, Indochinese countries and China.

Remarks : Blyth (1843) reported this species from Calcutta. Gauntlett (1985) has also reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal.

438. *Seicercus poliogenys* (Blyth)

1847. *C. (ulicipeta) poliogenys* Blyth, *J. Asiat. Soc. Beng.*, 16 : 441 (Darjeeling = Darjiling).

1973. Ali and Ripley, vol. 8, p. 188

Common name : Greycheeked Flycatcher-Warbler (English).

Material examined : Nil.

Diagnostic characters : Back olive-green, salty head and nape; a conspicuous white eye-ring; chin and throat pale grey, breast and belly bright yellow.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya and Sikkim. Nepal, Bhutan, Bangladesh, Indochinese countries and China.

Remarks : Blyth (1847) reported this species from Darjiling, Darjiling District.

439. *Seicercus castaniceps* (Hodgson)

1845. *Abornis castaniceps* Hodgson in Blyth, *J. Asiat. Soc. Beng.* 14 : 593 (Nepal).

1973. Ali and Ripley, vol. 8, p. 189.

Common name : Chestnut-headed Flycatcher-Warbler (English).

Material examined : Nil.

Diagnostic characters : Back and wing yellowish olive, chestnut crown. Yellow wing-bar, bluish ashy throat and upper breast; lower breast and belly bright yellow. Rump bright yellow.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Burma and China.

Remarks : We have observed this species from Darjiling district.

Genus *Abroscopus* Baker, 1930

440. *Abroscopus hodgsoni* (Moore)

1854. *Abornis ? hodgsoni* Moor, in Horsfield & Moore, *Cat. Bds. Mus. E.I.Co.*, 1 : 412 (Nepal).

1973. Ali and Ripley, vol. 8, p. 195

Common name : Broadbilled Flycatcher-Warbler (English).

Material examined : Nil.

Diagnostic characters : Back olive-green; forehead and crown chestnut. Chin, throat and breast dark grey; rest of underparts bright yellow.

Distribution : India : West Bengal (Darjiling district) : Nagaland and Sikkim. Nepal, Bhutan and Burma.

Remarks : We have observed this species in Darjiling District.

Genus *Brachypteryx* Horsfield, 1822

441. *Brachypteryz leucophrys nipalensis* Hodgson

1854. *Brachypteryx nipalensis* Hodgson, In Horsfield and Moore, *Cat. Bds. Mus.*, E. I. Co., 1 : 397 (Nepal).

1973. Ali and Ripley, vol.8, p.207

Common name : Lesser Shortwing (English).

Material examined : Jalpaiguri district : 1 unsexed, Gish, coll. M. L. Roonwal, 22.ix.1938.

Diagnostic characters : In male, back dark slaty blue; throat and centre of belly white; breast band and flanks smoky grey; supercilium white. In female, back rusty olive-brown; band and flanks rusty brown.

Measurements : 1 unsexed : Wing 70, tail 45, bill 15.

Distribution : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. Nepal, Burma and China.

Remarks : Roonwal (1939) reported this subspecies from Jalpaiguri district.

Genus *Erithacus* Cuvier, 1800

442. *Erithacus calliope* (Pallas)

1776. *Motacilla Calliope* Pallas, *Reise Russ. Reichs*, 3 : 697 (Yenesei).

1973. Ali and Ripley, vol.8, p.215

Common name : Rubythroat (English) and Gunpigora (Bengali).

Material examined : Bankura district : 1 ♀ and 1 unsexed, Susunia Hills, coll. J. M. Dasgupta, 28 and 31.i.1979. Birbhum district : 1 unsexed, Chandrapur, c. 10 km. NW. of Suri, coll. A. K. Mukherjee, 31.xii.1980; 1 ♂, Jorabeat area, off Chandrapur Camp, coll. A. K. Poddar, 14.xii.1985. North 24-Parganas district : 3 ♂, Bantala Salt Lake, coll. B. Biswas, 6.xii.1964, 23.i.1965, 28.xi.1965, 1 ♂, Near Duttabad, North Salt Lake, coll. B. Biswas, 5.xii.1965, 2 ♂ and 1 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 21.i.1968, 23.i.1966. South 24-Parganas district : 2 ♂ and 1 ♀, Raidighi, coll. A. K. Mukherjee, 25 and 26.xii.1979.

Diagnostic characters : Back olive-brown; white supercilium. Chin and throat scarlet bordered with a black line on sides of chin. Breast and flanks pale buffish brown, belly white. In female, throat colour of male replaced by white and buff.

Measurements :

	Wing	Tail	Bill
6 ♂	47-80 (77)	58-62 (60)	15, 18 (17)
2 ♀	74, 79	58, 59	15, 18

Distribution : India : West Bengal (Bankura, Birbhum, North 24-Parganas and South 24-Parganas districts) : Throughout northern India, south upto Andhra Pradesh through Madhya Pradesh. Nepal, Bhutan, Bangladesh, Burma, Indochinese countries and southern China to Formosa (=Taiwan) and Philippines. Breeds in Siberia from the Ural Mts. to Anadyr, Kamachka and Hokkaido.

443. *Erithacus svecicus svecicus* (Linnaeus)

443. *Erithacus svecicus svecicus* (Linnaeus)

1758. *Motacilla svecica* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 187 (Sweden).

1973. Ali and Ripley, vol. 8, p. 217

Common name : Northern Bluethroat (English), Gurpeorah (Bengali) and Husaini pidda (Hindi).

Material examined : Birbhum district : 1 unsexed, Chandrapur, coll. A. K. Mukherjee, 31.xii.1980. North 24-Parganas district : 2 ♂, Babu Bheri, North Salt Lake, coll. B. Biswas, 6.iv.1963 and 21.iii.1965; 4 ♂ and 10 ♀, Nalbani, North Salt Lake, coll. B. Biswas 6.iv.1963. 28.ii.1965, 2.i.1966, 27.ii.1966, 24.i.1968.

Diagnostic characters : In male, back brown; supercilium long buffish; chin to upper breast bright blue with a rusty red central spot; rest of underparts whitish. Orange-chestnut rump; tail rufous at base. In female, throat and breast buffish white and brown streaks on sides of throat.

Measurements :

	Wing	Tail	Bill from feathers
6 ♂	66-78(71)	55-58(56)	10-12(11)
10 ♀	63-73(68)	54-56(55)	10-11.5(10)

Distribution : India : West Bengal (Birbhum and North 24-Parganas districts) : Throughout Indian Union except Nicobar Islands, Arunachal Pradesh, Gujarat, Kerala, Maharashtra Manipur, Meghalaya, Mizoram, Nagaland, Rajasthan and Tripura. Bangladesh, Pakistan, Burma, Indochinese countries, China, North Africa, Iraq and Iran.

444. *Erithacus pectoralis* (Gould)

1837. *Calliope pectoralis* Gould, *Icones Avium*, pl. 4. text (Himalayas = Western Himalayas vide Hartert, 1909, *Vog. pal. Fauna*, 1 : 739.

1973. Ali and Ripley, vol. 8, p. 221

Common name : Himalayan Ruby throat (English).

Material examined : Nil.

Diagnostic characters : In male, back deep blackish slate. Forehead and supercilium white. Chin and throat scarlet; breast jet black, abdomen and under tail-coverts white, a blackish brown tail with white base and tips, wings brown. In female, back grey-brown, tail blackish brown with white tips; breast smoky grey, lower abdomen white.

Distribution : India : West Bengal (South 24-Parganas district) : Himachal Pradesh, Jammu & Kashmir, Karnataka (rare) and Uttar Pradesh. Pakistan, Nepal, Tibet and USSR.

Remarks : Chattopadhyay (1986) has recorded this species from Sagar Island, South 24-Parganas district, West Bengal.

445. *Erithacus cyanurus rufilatus* (Hodgson)

1845. *N. (emura) rufilatus* Hodgson, *Proc. zool. Soc. Lond.* : 27 (Central and northern regions of hills, Nepal).

1973. Ali and Ripley, vol. 8, p. 232

Common name : Eastern Redflanked Bush Robin (English).

Material examined : Darjiling district : 2 ♀, Selimbong, coll. R. K. Ghose, 3 and 4.xii.1977.

Diagnostic characters : In male, back deep blue; forehead, supercilium, shoulder, patch and rump sky blue. Centre of throat white, sides dark blue; belly orange ochraceous. In female, back olive brown; Eye-ring pale. Rump and tail bluish. Throat white but sides grey-brown.

Measurements : 2 ♀ : Wing 80,83; tail 59,67; bill 15.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya and Sikkim. Nepal and Bhutan and Indochinese countries.

446. *Erithacus indicus indicus* (Vieillot)

1817. *Sylvia indica* Vieillot, *Nouv. Dict. d'Hist. Nat.*, Nouv. ed., 11 : 267 (India, ex Sonnerat=Darjeeling=Darjiling district, West Bengal, India).

1973. Ali and Ripley, vol. 8, p. 236

Common name : Whitebrowed Bush Robin (English).

Material examined : Darjiling district : 1 ♂, Phalut, coll. B. Biswas, 30.xii.1952.

Diagnostic characters : In male, back slaty blue. Supercilium white; underparts orange-ochraceous. In female, back olive-brown, Eye - ring pale. Underparts dull rufous-ochre; belly paler.

Measurements : 1 ♂ : Wing , tail 70, bill 14.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Maghalaya, Nagaland, Sikkim and Uttar Pradesh. Nepal and Bhutan.

Genus *Copsychus* Wagler, 1827

447. *Copsychus saularis saularis* (Linnaeus)

1758. *Gracula Saularis* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 109 (Asia=Bengal, India).

1973. Ali and Ripley, vol. 8, p. 239

Common name : Indian Magpie-Robin (English) and Dhaiyal (Bengali and Hindi).

Material examined : Birbhum district : 1 ♂ and 1 ♀, Chandrapur, coll. A. K. Mukherjee and A. K. Poddar, 29.xii.1980, 11.xii.1985. Darjiling district : 1 ♂, Gorubathan coll. R. L. Chowdhury, 1.xii.1980. North 24-Parganas district : 1 ♂, Nalbani, coll. B. Biswas, 26.xi.1968; 1 ♀, Duttabad, coll. B. Biswas, 6.xii.1965; 1 ♀, Bantala, coll. B. Biswas, 6.xii.1964; 1 ♀, Parmadan, coll. P. K. Das, 6.v.1988. Puruliya district : 1 ♂, Quilipal, coll. A. K. Mukherjee, 28.ii.1982. South 24-Parganas district : 2 ♂, Raidighi, coll. A. K. Mukherjee, 26.xii.1979; 1 ♀, Canning, coll. A. K. Mukherjee, 16.xii.1979.

Diagnostic characters : In male, head, throat, breast, back and tail glossy blue-black. Wings blackish brown with a prominent long white-patch. Tail graduated black with white outer rectries. In female, back slaty and grey on throat and breast.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	88-100(96)	80-85(83)	20-24(24)
5 ♀	87-94(91)	74-81(76)	23-25(24)

Distribution : India : West Bengal (Birbhum, Darjiling Jalpaiguri, North 24-Parganas and Puruliya and South 24-Parganas districts) : Throughout Indian mainland except eastern India beyond West Bengal and Kerala. Pakistan, Nepal and Bangladesh.

Remarks : Roonwal (1939) reported from Naksalbari, Kharibari, Darjiling district and Eastern bank of R. Tista, Jalpaiguri district, West Bengal.

Genus *Phoenicurus* Forster, 1817

448. *Phoenicurus ochruros* (S. G. Gmelin)

1774. *Motacilla ochruros* S. G. Gmelin, *Reise Russland*, 3 : 101, pl. 19. fig. 3 (Persia).

1982. Ripley, p. 457

Common name : Black Redstart (English), Lal-girdi (Bengali) and Thirthir-kampa (Hindi).

Material examined : Nil.

Diagnostic characters : In male, crown and back entirely black. Rump and tail rufous. Wings brown. Throat and breast black, belly and vent rufous. In female, back dark brown. Eye-ring pale. Belly and flanks tinged with orange-brown.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland. Pakistan, Nepal, Bhutan, Bangladesh, Vietnam, NE Africa and Arabia. Breeds in Europe, NW Africa, Middle East, Transcaspia, Iraq, Iran, Afganistan, Altai, Tienshan, Kazakhstan to Sinkiang, Mongolia and northern China.

Remarks : Observed this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

449. *Phoenicurus hodgsoni* (Moore)

1854. *Ruticilla Hodgsoni* Moore, in Horsfield & Moore, *Cat. Bds. Mus. E.I. Co.*, 1 : 303 (Bootan = Bhutan).

1973. Ali and Ripley, vol. 8, p. 257

Common name : Hodgson's Redstart (English).

Material examined : Darjiling district : 1 ♀, Palmajua, coll. A. K. Mukherjee, 13.v.1977.

Diagnostic characters : In male, crown and nape uniformly grey, back black. Wings brown marked with a broad white patch. Entire throat and breast black; breast and belly rufous. In female, back greyish brown. Throat and breast pale grey-brown. Wing patch absent.

Measurements : 1 ♀ : Wing 82, tail 68, bill 15.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Manipur, Meghalaya, Nagaland, Sikkim and Uttar Pradesh. Nepal, Bhutan, Tibet, Burma and China.

450. *Phoenicurus frontalis* (Vigors)

1832. *Phoenicura frontalis* Vigors, *Proc. zool. Soc. Lond.* : 172 (Himalayas = Garhwal, Uttar Pradesh, India).

1973. Ali and Ripley, vol. 8, p. 258

Common name : Bluefronted Redstart (English).

Material examined : Darjiling district : 6 ♂ and 5 ♀, Selimbong, coll. R. K. Ghose, 19 and 21.iii.1975, 29 and 30.xi.1977 and 3.xii.1977; 1 ♂ and 1 ♀, Tonglu, coll. R. K. Ghose, 2 and 4.iii.1975; 1 ♂ and 1 ♀, Sandakphu, coll. R. K. Ghosh, 13 and 15.iii.1975.

Diagnostic characters : In male, crown back and throat darker blue; forehead and supercilium bright blue. Wings brown. Rump and tail rufous. Rectrices with a broad terminal black band. Belly and vent orange-chestnut.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	85-90(87)	65-70(69)	14-15(15)
4 ♀	83-86(85)	65-68(67)	15-16(15)

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Burma, Vietnam, Tibet and China.

451. *Phoenicurus schisticeps* (G. R. Gray)

1846. *Ruticilla schisticeps* G. R. Gray, *Cat. Mamms. Bds. Nepal* : 69, 153 (Nepal).

1973. Ali and Ripley, vol. 8, p. 260

Common name : Whitethroated Redstart (English).

Material examined : Darjiling district : 6 ♂ and 7 ♀, Sandakphu, coll. R. K. Ghose, 11,12,13 and 15.iii.1975.

Diagnostic characters : In male, back and head black; wing blackish brown with a large white patch. Chin and throat black with a large white patch on centre of throat, belly and vent chestnut. In female, back dark brown; under parts olive-brown with a white throat patch. Wings marked with a white patch; rump and tail chestnut.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
6 ♂	85-89(87)	65-71(69)	15-17(16)
7 ♀	81-86(84)	64-70(68)	14-16(15)

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, and Sikkim.

Remarks : This is a new locality recorded from West Bengal.

Genus *Cinclidium* Blyth, 1842452. *Cinclidium frontale frontale* Blyth

1842. *Cinclidium frontale* Blyth, *J. Asiat. Soc. Beng.*, 11 : 181 (Sikkim).

1973. Ali and Ripley, vol. 9, p. 3

Common name : Bluefronted Robin (English).

Material examined : Darjiling district : 1 unsexed, Darjeeling (=Darjiling), coll. Pearson, 1842.

Diagnostic characters : In male, upper back, lores and frontal band round the eye black short supercilium and shoulder cobalt-blue. Lower back deep slaty blue. Under parts deep slaty blue; centre of belly and under tail-coverts whitish. In female, whole upper plumage rufous-brown.

Measurements : 1 unsexed : Wing 86, tail 84, bill 16.

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal.

Remarks : Blyth (1842) described this bird from Darjiling.

Genus *Saxicola* Bechstein, 1803453. *Saxicola torquata indica* (Blyth)

1847. *Pratincola indica* Blyth, *J. Asiat. Soc. Beng.*, 16 : 129 (India = Calcutta, Calcutta district, West Bengal, India).

1973. Ali and Ripley, vol. 9. p. 28

Common name : Indian Collard Bush Chat (English) and Kharpidda (Hindi).

Material examined : North 24-Parganas district : 2 ♂, Babu Bheri, Salt Lake, coll. B. Biswas, 29.iii.1965 and 6.xi.1968.

Diagnostic characters : In male, back and throat black. Rump and wing patch white. A white patch on sides of neck and breast; breast rufous chestnut, belly and vent paling to buff. In female, back rufous-brown streaked with dark brown. Tail blackish brown. Rump pale rufous; underparts pale rufous, breast rufous.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♂	69-72(70)	49-50(49)	14-15(14)

Distribution : India : West Bengal (Darjiling, Jalpaiguri and North 24-Parganas districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal and Bhutan.

Remarks : Roonwal (1939) reported from Mongpong, Jalpaiguri district, and Naksalbari, Darjiling district, West Bengal.

454. *Saxicola ferrea* G. R. Gray

1846. *Saxicola ferrea* G. R. Gray, *Cat. Mamms. Bds. Nepal* : 71, 153 (Nepal).

1973. Ali and Ripley, vol. 9, p. 37

Common name : Dark-grey Bush Chat (English).

Material examined : Darjiling district : 1 ♂, Selimbong, coll. R. K. Ghose, 19.v.1980; 1 ♂ and 1 unsexed, Palmajua, coll. A. K. Mukherjee, 13.v.1977. Jalpaiguri district : 1 ♂ and 1 ♀, Chilapatha, coll. R. K. Ghose, 9.iii.1985; Sipchu Forest Beat, upper Tandloo Forest Range, coll. R. K. Ghose, 19.iii.1985.

Diagnostic characters : Size equal to a Sparrow. In male, apparently pied black and white plumages. Supercilium white. Black tail with whitish outer edges. Throat and belly white. Breast and plants pale grey. In female, crown, back and tail rufous brown faintly streaked with darker brown. Supercilium pale; sides of head dark brown. Chin and throat white, vent and belly fulvous.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♂	68-72(70)	60-62(61)	16
1 ♀	75	60	16

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Arunachal Pradesh,

Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya Mizoram, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Burma, Thailand, Indochinese countries and China.

Genus *Chaimarrornis* Hodgson, 1844

455. *Chaimarrornis leucocephalus* (Vigors)

1831. *Phoenicurus leucocephala* Vigors, *Proc. zool. Soc. Lond.*, 35 (Himalaya = Simla Almora area, India).

1973. Ali and Ripley, vol. 9, p. 57

Common name : Whitecapped Redstart (English) and Gir-chaondia (Hindi).

Material examined : 1 unsexed, Bengal Duars (=Jalpaiguri district), coll. M. L. Roonwal, Nov-Dec., 1938.

Diagnostic characters : Size equal to Bulbul. Forehead, back, chin, throat, wings and tips of tail black. Crown and nape white. Rump, tail, vent and abdomen rich chestnut.

Measurements : 1 unsexed : Wing 92, tail 80, bill 18.

Distribution : India : West Bengal (Jalpaiguri district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Punjab, Sikkim and Uttar Pradesh. Pakistan, Afghanistan, Tibet, China and Burma.

Remarks : Roonwal (1939) reported this species from Jalpaiguri district.

Genus *Saxicoloides* Lesson, 1832

456. *Saxicoloides fulicata erythrura* (Lesson)

1832. *Turdus (Saxicoloides) erythrurus* Lesson, in Belanger, *Voy. Ind. Orient. Zool.*, pt. 4 : 270 (Bengale = Bengal).

1973. Ali and Ripley, vol. 9, p. 61

Common name : Bengal Black Robin (English) and Kalchuri (Bengali).

Material examined : Bankura district : 1 ♂, Ranibandh, Susunia Hills, Coll. A. K. Mukherjee, 28.i.1979; 1 unsexed, coll. J. M. Dasgupta, 5.iii.1982. Medinipur district : 1 ♂, Joshpur c 8 km from Bansphari, coll. A. K. Mukherjee, 16.x.1979.

Diagnostic characters : Size equal to house sparrow. In male, the crown, back, wing, chin and breast darker brown. A conspicuous white patch on wing. Tail black. Vent and under tail coverts chestnut. In female, like male but lacks of wing patch, ear-coverts tinged with rufous. Chin and breast grey-brown, under tail coverts chestnut.

Measurements : 2 ♂; Wing 71, 72; tail 61, 65; bill 16, 18.

Distribution : India : West Bengal (Bankura and Medinipur districts) : Bihar. Bangladesh.

Genus *Monticola* Boie, 1822

457. *Monticola cinclorhynchus* (Vigors)

1832. *Petrocincla cinclorhyncha* Vigors, *Proc. zool. Soc. Lond.* : 172 (Himalayan Mountains = Simla).

Common name : Blueheaded Rock Thrush (English).

Material examined : Nil.

Diagnostic characters : Size equal to Bulbul. A male with blue head throat and nape, wing with a white wing patch, shoulders blue; rump rufous, tail blackish blue. Breast and belly orange rufous. Female-head, back and tail olive brown; throat, breast and belly squamated whitish and dark brown.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian mainland except Andhra Pradesh, Haryana, Manipur, Mizoram, Orissa, Punjab and Tripura. Pakistan, Nepal, Bhutan and Burma. Breeds in adjacent parts of northeastern Afghanistan.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

458. *Monticola rufiventris* (Jardine & Selby)

1832. *Turdus erythrogaster* Vigors, *Proc. zool. Soc. Lond.* : 171 (Himalayan mountains).

1973. Ali and Ripley, vol.9, p.70

Common name : Chesnutbellied Rock Thrush (English).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. R.L. Fernandez, 26.vi.1958.

Diagnostic characters : Size equal to Myna. Male-crown and mantle bright cobalt-blue with some blackish. Sides of neck and ear-coverts black. Throat blackish blue; breast and belly chestnut. In female back and rump olive brown with dark crescent shaped bar. Sides of neck with buff patch. Dark grey-brown ear coverts. Centre of throat whitish; sides of head dark grey mottled with buff. Breast and belly squamated dark brown and buff.

Measurements : 1 ♂; Wing 123, tail 99, bill 28.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Haryana, Himachal Pradesh, Jammu & Kashmir, Manipur, Mizoram, Nagaland, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal and China.

459. *Monticola solitarius pandoo* (Sykes)

1832. *Petrocincla Pandoo* Sykes, *Proc. zool. Soc. Lond.* : 87 (Ghauts, Dukhun = Poona=Pune, India).

1973. Ali and Ripley, vol.9, p.73

Common name : Indian Blue Rock Thrush (English).

Material examined : Darjiling district : 1 ♂, Chunabhati, coll. R.L. Chowdhury, 25.xi.1980. Jalpaiguri district : 1 ♀, sub adult, Kumani, coll. R.K. Ghose, 17.iii.1985.

Diagnostic characters : Size equal to Bulbul. In male, very bright, almost azure blue plumage in summer. Tail and wings brown. In summer plumage are fringed with fulvous above, breast brown, belly white. In female grey-brown on back. Throat and breast with fine dark shaft-streaks. Rump barred with blackish.

Measurements :

	Wing	Tail	Bill
1 ♂	132	93	28
1 ♀	120	80	28

Distribution : India : West Bengal (Darjiling district) : Andaman Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Maharashtra, Punjab, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Sri Lanka, Turkestan, Tibet and Burma.

Genus *Myiophonus* Temminck, 1822460. *Myiophonus caeruleus temminckii* (Vigors)

1832. *Myiophonus Temminckii* Vigors, *Proc. zool. Soc. Lond.* : 171 (Himalayan Mountains = Simla Almora district, India).

1973. Ali and Ripley, vol.9, p.79

Common name : Himalayan Whistling Thrush (English).

Material examined : Darjiling district : 2 ♂, and 1 ♀, Reang, coll. T.D. Soota, 29 and 30.vi.1974; 1 ♂, Takdah, coll. H. Khajuria, 4.viii.1958; 1 ♂, Paparkhati, coll. R.L. Chowdhury, 1.xii.1980; 1 ♂, Samsing, coll. R.L. Chowdhury, 13.xii.1980.

Diagnostic characters : Equal to pigeon. Upper and below plumages entirely dark purple-blue spotted with glistening blue. Forehead, shoulders edge of wings and tail brighter blue. White spots on median wing-coverts (half-dozen). Yellow bill.

Measurements : 3 ♂ : Wing 177-185 (180); tail 126-133(129); bill 36-38(37).

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Afghanistan, Turkestan, Indochinese countries, Indonesian Islands, China and Japan.

Remarks : It is a new locality record from West Bengal.

Genus *Zoothera* Vigors, 1832461. *Zoothera citrina* (Latham)

1790. *Turdus citrinus* Latham, *Index Orn.*, 1 : 350 (India, Cachar).

Common name : Orangeheaded Ground Thrush (English) and Dama (Bengali).

Material examined : Nil.

Diagnostic characters : Size less than a Myna. In male, entire head, nape, throat and breast orange-chestnut. Wing with white patch. Back and rump bluish-grey. Vent and under tail-coverts white. In female, the mantle strongly tinged with olive-brown.

Distribution : India : West Bengal (Barddhaman district) : Throughout Indian Union except Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra and Nagaland. Pakistan, Nepal, Bangladesh, Indochinese countries, Indonesia and China.

Remarks : Recorded this species from Durgapur and Damodar Valley Barddhaman district, West Bengal (Gauntlett, 1985).

462. *Zoothera mollissima mollissima* (Blyth)

1842. *T. (urdus) mollissimus* Blyth, *J. Asiat. Soc. Beng.*, 11 : 188 (Darjeeling = Darjiling).

1973. Ali and Ripley, vol.9, p.94

Common name : Eastern Plainbacked Mountain Thrush (English).

Material examined : Darjiling district : 3 unsexed, coll. Webb, 1842.

Diagnostic characters : Size slightly bigger than Myna. Crown, back and tail rufescent olive-brown. Pale eye-ring conspicuous, tips of tail feathers white. Throat, sides of neck, breast and flanks buff, belly whitish, boldly marked with dark brown crescentic spots.

Measurements : 3 unsexed : Wing 132-145(140), tail 92-98(95), bill 24-26(25).

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya and Sikkim. Nepal, Bhutan and China.

463. *Zoothera dauma* (Latham)

1790. *Turdus dauma* Latham, *Index, Orn.*, 1 : 362 (India=Kashmir).

Common name : Golden Mountain Thrush (English).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. Entire body olive-brown with buff and black crescent-shaped markings. Wings with buff and dark brown bars. Throat and belly whitish, breast and flanks buff.

Distribution : India : West Bengal (Barddhaman district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Orissa, Sikkim and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Burma, Thailand, Vietnam and China.

Remarks : Reported this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal (Gauntlett, 1985).

464. *Zoothera monticola monticola* Vigors

1832. *Zoothera monticola* Vigors, *Proc. zool. Soc. Lond.* : 172 (Himalaya=Simla-Almora district, India).

1973. Ali and Ripley, vol.9, p.101

Common name : Large Brown Thrush (English).

Material examined : Darjiling district : 1 ♂, Phalut, coll. B. Biswas, 30.xii.1952.

Diagnostic characters : Size slightly bigger than Myna. Crown, back and tail dark slaty-brown. Bill curved, very large. Throat whitish with a few dark brown spots. Belly white with dark brown spots.

Measurements : 1 ♂ : Wing 148, tail 90, bill 44.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Uttar Pradesh. Nepal, Bhutan and Burma.

Genus *Turdus* Linnaeus, 1758

465. *Turdus unicolor* Tickell

1833. *T. (urdus) unicolor* T. (ickell). *J. Asiat. Soc. Beng.*, 2 : 577.

1973. Ali and Ripley, vol.9, p.108

Common name : Tickell's Thrush (English), Machasah (Bengali) and Desi Pawai (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to Myna. In male, crown, back and tail ashy-grey. Breast paler-grey, belly whitish. In female, crown, back and tail olive-brown, eye-ring buff, whitish throat, upper breast streaked with brown, belly and under tail-coverts white.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Orissa, Sikkim and Uttar Pradesh. Pakistan, Nepal and Bangladesh.

Remarks : We have observed this species in Jalpaiguri district and Darjiling district.

466. *Turdus bouboul* (Latham)

1790. *Lanius bouboul* Latham, *Index Orn.*, 1 : 80 (India=Darjeeling=Darjiling, Darjiling district, West Bengal).

1973. Ali and Ripley, vol.9, p.112

Common name : Greywinged Blackbird (English), Pahariya Masaicha (Bengali) and Kasturi (Hindi).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. A.K. Mukherjee, 15.v.1977; 1 unsexed, coll. R.K. Ghose, 3.vii.1974. Jalpaiguri district : 1 ♂ and 1 ♀, Lalitabari c 4 km. N. of Ambari, coll. R.K. Ghose, 23.iii.1985; 1 ♀, Chilapatha, coll. R.K. Ghose, 8.iii.1985.

Diagnostic characters : Size bigger than Myna. In male, entire plumages black, grey wing with patch; belly and under tail-coverts with whitish fringes. Yellow eye-rim. Bill orange. In female, entire plumage ashy tinged with olivaceous. Wing patch rufous-brown.

Measurements : 1 unsexed : Wing 139, tail 100, bill 33.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Arunachal Pradesh, Assam, Haryana, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Burma, Thailand, Vietnam and Kwangsi.

467. *Turdus ruficollis atrogularis* Jarocki

1819. *Turdus atrogularis* Jarocki, *Spis, Ptakow Kvol.* Warszawa : 14 (Poland).

1973. Ali and Ripley, vol.9, p.127

Common name : Blackthroated Thrush (English) and Mach-reycha (Bengali).

Material examined : Darjiling district : 1 ♂, Selimbong, coll. R.K. Ghose, 30.xi.1977. Jalpaiguri district : 2 ♂, Chilapatha, Sipchu beat, coll. R.K. Ghose, 8 and 19.iii.1985.

Diagnostic characters : Size equal to Myna. In male, crown, back and tail grey-brown; lores and supercilium black, size of neck black. Ear-coverts grey-brown. Throat and breast black. Vent and belly white. In female, throat whitish and streaked dark brown. Breast-band blackish with whitish fringes. Vent and belly white and sides with a few pale brown streaks.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	132-136(134)	92-97(95)	24-26(25)

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Arunachal Pradesh, Assam, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan.

Breeds in eastern Russia and eastward through the Siberian taiga to the Yenisey.

468. *Turdus naumanni eunomus* Temminck

1831. *Turdus eunomus* Temminck, *Pl. Col.* 5, livr. 87, Pl. 514 (Japan).

1973. Ali and Ripley, vol. 9, p. 130

Common name : Dusky Thrush (English).

Material examined : Darjiling district : 1 ♂, Lish, Chunabhati, coll. R.L. Chowdhury, 28.xi.1980.

Diagnostic characters : Size equal to preceding bird. In male, head, back blackish brown with rufous-brown margins. Rump rufous. Supercilium long whitish. Ear patch large blackish. Wings rufous, tail blackish. Breast and flanks blackish brown with broad white margins. Belly white. In female, head and back grey brown. Rump rufous brown.

Measurements : 1 ♂ : Wing 135, tail 94, bill 24.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Meghalaya. Pakistan, Nepal, Burma, China, Southeastern Asia from Japan and Hopeh south to Taiwan.

Breeds in Siberia from the Yenisey river to Kamchatka.

Family TROGLODYTIDAE

Genus *Troglodytes* Vieillot, 1807

469. *Troglodytes troglodytes nipalensis* Blyth

1845. *Troglodytes nipalensis* 'Hodgson'=Blyth, *J. Asiat. Soc. Beng.*, 14 : 589 (Nepal).

1973. Ali and Ripley, vol.9, p.137.

Common name : Nepal Wren (English).

Material examined : Darjiling district : 1 ♀, Phalut, coll. B. Biswas, 30.xii.1952.

Diagnostic characters : Size smaller than sparrow. In male, head, back, chin and throat rufous-brown, narrowly barred with dark brown on wings, lower back and tail. Belly whitish with more closely barred.

Measurements : 1 ♀ : Wing 52, tail 29, bill 14.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Sikkim and Uttar Pradesh. Nepal, Bhutan and Tibet.

Family PRUNELLIDAE

Genus *Prunella* Vieillot, 1816

470. *Prunella himalayana* (Blyth)

1842. *Acentor Himalayanus* ? Blyth, *J. Asiat. Soc. Beng.*, 11 : 187 (Himalaya range).

1973. Ali and Ripley, vol 9, p.148

Common name : Altai Accentor (English).

Material examined : Darjiling district : 1 unsexed, Darjiling (=Darjiling), coll. J.T. Pearson, 1842.

Diagnostic characters : Back rufous-brown with dark brown streaks; head greyish brown with dark streaks, supercilium greyish; wing rufous-brown with two narrow white bars. Rump greyish brown, tail dark brown, terminal spot white. A white gorget on chin and throat.

Measurements : 1 unsexed : Wing 83, tail ----, bill 16.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Tibet, north through Turkestan to the Lake Baikal region.

471. *Prunella immaculata* (Hodgson)

1845. *Acc. (entor) immaculatus* Hodgson, *Proc. zool. Soc. Lond.* : 34 (Central and northern regions of the Hills, Nepal).

1973. Ali and Ripley, vol.9, p.160

Common name : Maroonbacked Accentor (English).

Material examined : Darjiling district : 1 ♂, Phalut, coll. B. Biswas, 30.xii.1952.

Diagnostic characters : Back, rump and breast olive-brown and maroon. Forehead scalloped with white. Wing with a large slaty shoulder patch. Throat, breast and belly dark grey; vent and under tail-coverts chestnut.

Measurements : 1 ♂ : Wing 85, tail 58, bill 14.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal, Bhutan, Tibet and China.

Family PARIDAE

Key to the subfamilies of the family PARIDAE

- Tail longer than wing and graduated.....AEGITHALINAE
- Tail shorter than the wing and not graduated..... PARINAE

Key to the genera of the family PARIDAE

- 1. Tail longer than wing, much graduated..... *Aegithalos*
- Tail shorter than wing.2
- 2. Slightly forked tail..... *Sylviparus*
- Slightly rounded tail..... *Parus*

Family PARIDAE

Genus *Parus* Linnaeus, 1758

472. *Parus major nipalensis* Hodgson

1837. *Parus Nipalensis* Hodgson, *Ind. Rev.*, 2(1) : 31 (Nepal).

1973. Ali and Ripley, vol.9, p.168

Common name : Nepal Grey Tit (English) and Ram-ganga (Bengali).

Material examined : Darjiling district : 1 ♂, Darjiling, coll. Mr. Webb and Mr. Bonnevie in between 1845-47.

Diagnostic characters : Back grey, crown black; cheeks and nuchal patch white. Wings dark brown with wing-bar. Black throat ended in a broad black band running down the middle of white underparts.

Measurements : 1 ♂ : Wing 61, tail 48, bill 12.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Manipur, Nagaland, Punjab, Sikkim and Uttar Pradesh. Bangladesh, Nepal and Burma.

473. *Parus monticolus monticolus* Vigors

1831. *Parus monticolus* Vigors, *Proc. zool. Soc. Lond.* : 22 (Himalayan Mountains = Simla, India).

1973. Ali and Ripley, vol.9, p.174

Common name : Greenbacked Tit (English).

Material examined : Darjiling district : 1 unsexed, Lebong, coll. T. Bentham, date not known; 1

unsexed, Ghoom, coll. T. Bentham, date not known; 1 ♀, Darjiling, coll. T. Bentham, date not known, 2 unsexed, Darjiling, coll. Webb and Bonnevie, between 1845-1847; 2 ♂ and 2 ♀, Takdah, coll. R.A. Paynter, 7 and 9.viii.1958; 1 unsexed, Palmanjua, coll. H. Khajuria, 21.vii.1958; 1 ♀ and 1 unsexed, coll. A.K. Mukherjee; 12 and 13.v.1977; 1 ♂ and 1 ♀, Selimbong, coll. R.K. Ghose, 29.xi.1977, 5.xii.1977; 1 unsexed, Lebong, coll. T. Bentham; 1 unsexed, Ghoom, coll. T. Bentham, date not known.

Diagnostic characters : Back yellowish olive. Crown and sides of neck black; cheeks and nuchal patch white; rump grey, wings bluish with two white bars; tail bluish with white tips on outer rectrices. Throat black and a broad black band running down the middle of yellow belly.

Measurements :

	Wing	Tail	Bill
2 ♂	66,69	54(2)	12(2)
2 ♀	64,67	49,56	12,13

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Punjab, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, China, Taiwan, Japan and Vietnam.

474. *Parus ater aemodius* Hodgson

1844. *P. (arus) aemodius* Hodgson, in Blyth, *J. Asiat. Soc. Beng.*, 13 : 943 (Nepal).

1973. Ali and Ripley, vol.9, p.179

Common name : Himalayan Coal Tit (English).

Material examined : Darjiling district : 2 ♂ and 1 ♀, Sandakphu, coll. R.A. Paynter, 21 and 22.vii.1958.

Diagnostic characters : Back dark grey; crown, crest, sides of neck and throat black. Cheeks and nuchal patch white. Double whitish spotted wings bars. Breast and belly fulvous buff.

Measurements : 2 ♂, Wing 56,58; tail 42,44; bill 9,10

Distribution : India : West Bengal (Darjiling district) : Sikkim; Nepal and Bhutan.

Remarks : This is a new locality record from West Bengal.

475. *Parus rubidiventris beavani* (Jerdon)

1836. *Lophophanes Beavani* 'Blyth' = Jerdon, *Bds. India* 2 : 275 (Mount Tonglo, Sikkim = Sikkim).

1973. Ali and Ripley, vol.9, p.183

Common name : Sikkim Black Tit (English).

Material examined : Darjiling district : 2 ♂ and 1 ♀, Sandakphu, coll. R.A. Paynter, 20 and 22.vii.1958.

Diagnostic characters : Back slaty; crown, crest, sides of neck and throat black. A white nuchal spot near neck; cheeks pale buff. Breast and upper belly black, abdomen grey tinged with rufous.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♂	67,68	47,50	10,11
1 ♀	63	46	11

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal, Bhutan, Tibet and China.

476. *Parus dichrous dichrous* Hodgson

1844. *P.(arus) dichrous* Hodgson, in Blyth, *J. Asiat. soc. Beng.*, 13:943 (Nepal, restricted to north central Nepal by Biswas, 1955, *Bull. Brit. Orn. cl.*, 75:88).

1973. All and Ripley, Vol. 9, p. 185

Common name : Eastern Brown Crested Tit (English).

Material examined : Darjiling district : 1 ♂ and 1 ♀ Sandakphu, coll. G. Masson, 21.vii. 1958 : 2 ♂, coll. R.A. Paynter, 21.vii. 1958.

Diagnostic characters : Back, crown and pointed erect crest brownish grey. A whitish collar on neck. Underparts brownish buff excepting greyish fulvous throat.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
3 ♂	67-70 (69)	43-50 (47)	11(3)
1 ♀	70	49	11

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh and Sikkim. Nepal.

Remarks : This is a new locality record from West Bengal.

477. *Parus spilonotus spilonotus* Bonaparte

1850. *P. (arus) spilonotus* 'Blyth' = Bonaparte, *Consp. Gen. Av.*, 1 : 228, (Himalaya, restricted to N. Cachar by Backer)

1973. Ali and Ripley, vol. 9, p. 190.

Common name : Himalayan Blackspotted Yellow Tit (English).

Material examined : Darjiling district : 2 unsexed, coll. C. S. Bonnevie, 1847.

Diagnostic characters : Back streaked with black crown and a band behind eye, black. Feathers of pointed erect crest are tipped with yellow. Forehead and lore yellow; supercilium long and yellow. Nape-patch yellow. A white longitudinal wing patch is found on yellow and black spotted wings white tipped and outer edged blackish slate tail. A broad black median band from chin to vent on bright yellow underparts.

Measurements : 2 unsexed : Wing 68, 70; tail 30+, 35+; bill 13(2).

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Mizoram and Sikkim. Nepal, Bhutan and Burma.

Genus *Sylviparus* Burton, 1836 (1835)478. *Sylviparus modestus modestus* Burton

1836 (1835). *Sylviparus Modestus* Burton 1836 (1835). *Proc. zool. Soc. Lond.* : 154 (apud, Montes Himalayensis = Nepal vide Baker, 1920, Handlist : 8).

1973. Ali and Ripley. vol. 9, p. 193.

Common name : Eastern Yellowbrowed Tit (English).

Material examined : Darjiling district : 3 ♂, palmajua, coll. R. A. Paynter, 22.vi.1958, 4.vii.1958, 3.viii.1958; 1 ♂, Selimbong, coll. R. K. Ghose 5.xii.1977.

Diagnostic characters : Back olive-green, a pale eye-ring and a short but bright yellow supercilium. Underparts olivebuff.

Measurements :

	Wing	Tail	Bill
3 ♂	57-59 (58)	36-37 (37)	—

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Nagaland and Sikkim. Nepal.

Remarks : This is a new locality record from West Bengal.

Genus *Aegithalos* Hermann, 1804479. *Aegithalos concinnus iredalei* (Baker)

1920. *Aegithaliscus concinna iredalei* Baker, *Bull. Br. Orn. Cl.*, 41 : 8, new name for *Parus erythrocephalus* Vigors, 1831, nec *P. erythrocephalus* Linnaeus (Himalayas, restricted to Simla, India).

1973. Ali and Ripley, vol. 9, p. 200.

Common name : Western Redheaded Tit (English).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. H. Khajuria, 22.vi.1958.

Diagnostic characters : Back grey; crown pale rufous-chestnut, white supercilium, lores to ear-coverts black. Dark brown shoulder patch on brown wings. Brown tail, outer edged and tipped with white. Underparts ochraceous buff excepting white chin and sides of throat and black centre of throat.

Measurements : 1 ♂, Wing 51, tail 45, bill 8.

Distribution : India : West Bengal (Darjiling district) : Himachal Pradesh and Jammu & Kashmir; Pakistan and Nepal.

Remarks : This is a new record from West Bengal.

480. *Aegithalos concinnus rubricapillus* (Ticehurst)

1925. *Aegithaliscus concinna rubricapillus* Ticehurst, *Bull. Br. Orn. Cl.*, 46 : 22 (Sikkim).

1973. Ali and Ripley. vol. 9, p. 202

Common name : Eastern Redheaded Tit (English).

Material examined : Darjiling district : 1 ♀, Palmajua, coll. R. A. Paynter, 27.vi.1958.

Diagnostic characters : Back more slaty; crown dark rufous-chestnut. Supercilium white and lores to ear-coverts black. Brown shoulder patch on wings. Tail brown, outer edges and tip white. Underparts ochraceous buff excepting white chin and sides of throat and black centre of throat.

Measurements : 1 ♀; Wing 49, tail 47, bill 8.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal, Bhutan and Tibet.

Family SITTIDAE

Genus *Sitta* Linnaeus, 1758

481. *Sitta castanea cinnamoventris* Blyth

1842. *Sitta cinnamoventris* Blyth, *J. Asiat. Soc. Beng.*, 11 : 459 (Darjeeling = Darjiling, Darjiling district, West Bengal, India).

1973. Ali and Ripley, vol. 9, p. 213

Common name : Eastern Chestnutbellied Nuthatch (English) and Chor-Parki (Bengali).

Material examined : Nil.

Diagnostic characters : In male, back and crown bluish slaty; a black band from lores to upper back and a white malar patch. Tail black with white subterminal spots. Underparts chestnut brown excepting white chin and white and chestnut under tail coverts. Bill blunt, heavy and long. In female, like male, but underparts cinnamon.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram and Sikkim. Nepal, Bhutan and Bangladesh.

Remarks : We have observed this bird in Darjiling district.

482. *Sitta himalayensis himalayensis* Jardine & Selby

1835. *Sitta himalayensis* Jardine & Selby, *Ill. Orn.* 3, pl. 144 (Himalaya Mts. = Simla fide Meinertzhagen).

1973. Ali and Ripley, vol. 9, p. 219

Common name : Himalayan Whitetailed Nuthatch (English).

Material examined : Darjiling district : 2 ♂, Takdah, coll. R. A. Paynter, 5 and 7.viii.1958; 1 ♀, Palmajua, coll. R. A. Paynter, 4.viii.1958; 1 ♂, coll. A. K. Mukherjee, 15.v.1977.

Diagnostic characters : Back bluish slaty. A black eye strip from lores to nape. Throat buff, breast ochraceous; and belly and vent deep rufous. A white patch at base of tail. Rectrices black with white spots.

Measurements :

	Wing	Tail	Bill
3 ♂	72-76(74)	38-42(40)	15-17(16)
1 ♀	73	38	18

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Punjab, Sikkim and Uttar Pradesh. Nepal, China, Burma, Thailand, Malaya Archipelago and Indochinese countries.

483. *Sitta formosa* Blyth

1843. *Sitta formosa* Blyth, *J. Asiat. Soc. Beng.* 12 : 938 (Darjeeling = Darjiling) Darjiling district, West Bengal, India)

1973. Ali and Ripley, vol. 9, p. 223.

Common name : Beautiful Nuthatch (English).

Material examined : Nil.

Diagnostic characters : Size equal to a sparrow. Upper back and crown black with brilliant blue and lilac streaks; black wing with white bars and blue outer edge and shoulders. Rump pale blue, blue black tail with white sub terminal spots. Chin and upper throat creamy white, rest of lower parts rufous.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Sikkim. Nepal, Bangladesh, and extends last to Vietnam.

Remarks : Blyth (1843) described this species for the first time from Darjiling, Darjiling district.

484. *Sitta frontalis frontalis* Swainson

1820. *Sitta frontalis* Swainson, *Zool. Ill.* (1), pl. 2 (Ceylon = Sri Lanka).

1973. Ali and Ripley, vol. 9, p. 224.

Common name : Velvetfronted Nuthatch (English).

Material examined : Nil.

Diagnostic characters : Back purplish blue, forehead velvety black, Orbital skin orange yellow. Eye yellow, bill red; supercilium black. Female similar to male but without black supercilium.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Andhra Pradesh, Arunachal Pradesh, Assam, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tamil Nadu and Uttar Pradesh. Nepal, Bhutan, Bangladesh, Burma, Indo-chinese countries, Hainan and Indonesia.

Remarks : We have observed this species in Jalpaiguri district and Darjiling district.

Family CETHIIDAE

Genus *Certhia* Linnaeus, 1758

485. *Certhia discolor discolor* Blyth

1845. *C. (erthia) discolor* Blyth, *J. Asiat. Soc. Beng.*, 14 : 580 (Darjeeling = Darjiling, Darjiling district, West Bengal, India).

1973. Ali and Ripley, vol. 9, p. 238

Common name : Sikkim Tree Creeper (English)

Material examined : Darjiling district : 1 ♂, Palmajua, coll. H. Khajuria, 22.vi.1958.

Diagnostic characters : Size smaller than a sparrow. Crown and back dark brown streaked with fulvous, fulvous supercilium. Rump ferruginous. Wing with a short bar and an oblique buff band. Tail rufous brown. Throat and breast earth-brown, belly pale greyish-buff. Undertail-coverts ochraceous.

Measurements : 1 ♂ : Wing 75, tail 80, bill 19.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, and Sikkim. Nepal.

Remarks : It is a new locality record from West Bengal.

Family MOTACILLIDAE

Key to the genera of the family MOTACILLIDAE

- Tail shorter, upper plumage streaked.....*Anthus*
 Tail longer, upper plumage unstreaked.....*Motacilla*

Genus *Anthus* Bechstein, 1805486. *Anthus hodgsoni hodgsoni* Richmond

1907. *Anthus trivialis hodgsoni* Richmond, 1907, in Blackwelder, Res. in China, (2) : 493, new name for *Anthus maculatus* Jerdon, 1864. *Bds. India* 3 : 873. [Type locality from 1863, *ibid.* 2 : 228 Calcutta, Calcutta district, West Bengal, India]. nec. *Anthus maculatus* Vieillot.
 1973. Ali and Ripley, vol. 9, p. 243.

Common name : Indian Tree Pipit (English), Muchassi (Bengali) and Musarichi (Hindi).

Material examined : Bankura district : 4 ♂ and 2 ♀, Ranibandh, coll. B. C. Saha, 4,5,6 and 7.ii.1979; 2 ♂ and 8 ♀, Susunia Hills, coll. J. M. Dasgupta, 28, 29 and 31.i.1979. Birbhum district : 1 ♂ and 2 ♀, Chandrapur, coll. A. K. Mukherjee, 31.xii.1980 and 8.i.1981. Darjiling district. 3 ♀, Sandakphu, coll. R. A. Paynter, 14, 15 and 17.vii.1958.

Diagnostic characters : Size equal to a preceding bird. Crown and back greenish brown with dark brown streaks, supercilium whitish; wing-bars (two) and outer rectrices white. Throat, breast and belly whitish with broad and dark brown streaks.

Measurements :

	Wing	Tail	Bill
6 ♂	78-83 (82)	56-62 (60)	15-16 (15)
8 ♀	82-89 (85)	57-62 (60)	15-17 (16)

Distribution : India : West Bengal (Bankura and Darjiling districts) : Throughout India excepting Kashmir. Nepal, Bhutan, Bangladesh, Burma, Malayasia, Philippines, Indochinese countries, China Korea and Japan.

487. *Anthus hodgsoni yunnanensis* Uchida & Kuroda

1916. *Anthus maculatus yunnanensis* Uchida & Kuroda, *Annot. Zool. Jap.*, 9 : 134 (Yunnan).
 1973. Ali and Ripley, vol. 9, p. 245

Common name : Siberian Tree Pipit (English), Muchassi (Bengali) and Musarichi (Hindi).

Material examined : Darjiling district : 1 ♂ and 1 ♀, Sandakphu, coll. R. L. Fernandez, 13.vii.1958; R. A. Paynter, 16.vii.1958.

Diagnostic characters : Size and colouration is similar to the preceding bird but the streaks on back obsolete.

Measurements :

	Wing	Tail	Bill
2 ♂	88, 90	58, 64	14, 15
1 ♀	83	59	14

Distribution : West Bengal (Darjiling district) : Throughout Indian mainland excepting Kashmir; Nepal, Bangladesh, Burma, China, Kamchatka and Japan.

488. *Anthus trivialis trivialis* (Linnaeus)

1758. *Alauda trivialis* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 116 (Sweden).

1973. Ali and Ripley, vol. 9, p. 246

Common name : European Tree Pipit (English), Muchassi (Bengali) and Charchari (Hindi).

Material examined : Birbhum district : 2 ♀, Chandrapur, Suri, coll. A. K. Mukherjee, 31.xii.1980 and 8.i.1981. Darjiling district : 1 unsexed, Sandakphu, coll. R. L. Fernandez, 13.vii.1958.

Diagnostic characters : Size equal to the preceding bird. Crown and back deep olive brown with clear streaking on head and mantle. Underparts light buff and the dark streak on breast. Rectrices usually pointed.

Measurements : 2 ♀ : Wing 86; 88; tail 59, 64; bill 14,15

Distribution : India : West Bengal (Birbhum and Darjiling districts) : Andhra Pradesh, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Sikkim, Tamil Nadu and Uttar Pradesh. Pakistan, Afghanistan, Iran, Mediterranean countries and Africa south to the Transvaal.

489. *Anthus novaeseelandiae richardi* Vieillot

1818. *Anthus Richardi* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 26 : 494 (Bengal).

1973. Ali and Ripley, vol. 9, p. 253.

Common name : Richard's Pipit (English) and Charchari (Hindi).

Material examined : Bankura district : 1 unsexed, Susunia Hills, coll. J. M. Dasgupta, 30.i.1979.

Diagnosis characters : Size slightly larger than a Sparrow. Back and head dark brown marked with fulvous. Tail dark brown with white outer rectrices. Breast buff with brown streaks. Tarsus very long.

Measurements : 1 unsexed : Wing 90; tail 73, bill 17.

Distribution : India : West Bengal (Bankura district) : Andaman Islands, Andhra Pradesh, Assam, Bihar, Karnataka, Madhya Pradesh, Manipur, Orissa, Tamil Nadu and Uttar Pradesh. Bangladesh, Nepal, Bhutan and Sri Lanka.

Breeds from Western Siberia east to Korea and the sea of Okhotsk.

490. *Anthus novaeseelandiae rufulus* Vieillot

1818. *Anthus rufulus* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 26 : 494 (Bengal).

1973. Ali and Ripley, vol. 9, p. 253

Common Name : Indian Paddyfield Pipet (English) and Charchari (Hindi).

Material examined : Bankura district : 1 ♀ and 1 unsexed, Susunia Hills, coll. J. M. Dasgupta, 27.i.1979 and 1.ii.1979. Medinipur district : 1 ♂, Belpahari, coll. A. K. Mukherjee, 10.xii.1979; 1 ♀, Malabati Camp, Coll. A. K. Mukherjee, 18.ii.1979. North 24-Parganas district : 1 ♂ and 2 ♀, Deganga, coll. B. Biswas, 23.xi.1966; 1 ♂, Mahishbathan, coll. D. K. Ghosal, 5.vi.1966; 1 ♂, Bantala, coll. B. Biswas, 4.v.1967.

Diagnostic characters : Similar to the preceding bird but being paler and having smaller streaks on back and shorter legs.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
4 ♂	81-92(82)	55-75(61)	18-19(18.5)
3 ♀	82-90(87)	54-70(65)	16-20(18)

Distribution : India : West Bengal (Bankura, Medinipur and North 24-Parganas district); all India except Gujarat, Himachal Pradesh, Haryana, Jammu & Kashmir, Kerala, Punjab, Rajasthan, Uttar Pradesh, Nepal, Bhutan, Bangladesh, Burma, Thailand, Vietnam and China.

491. *Anthus campestris* (Linnaeus)

1758. *Alauda campestris* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 166 (in Europa = Sweden).

Common name : Tawny Pipit (English) and Chillu (Hindi).

Material examined : Nil.

Diagnostic characters : Size equal to a sparrow. Crown and back pale brown with indistinctly streaked. Tail deep brown with white outer rectrices. Chin, throat, breast and belly pale buff sometime with dark streaks on breast.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland except Arunachal Pradesh, Jammu & Kashmir, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu and Tripura. Pakistan Bangladesh, Middle-East countries, NE & N. Africa.

Breeds from Mongolia, Turkestan and northeastern Afghanistan West to France and Morocco.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985).

492. *Anthus roseatus* (Blyth)

1847. *Anthus roseatus* Blyth, *J. Asiat. Soc. Beng.*, 16 : 437 (Nepal).

Common name : Vinaceousbreasted Pipit (English).

Material examined : Nil.

Diagnostic characters : Size equal to the preceding bird. In summer, the crown and back grey with dark brown streak. Supercilium buff. Brown wings with green edges and two pale wing bars. Tail brown with whitish outer edges. Throat and breast pink or vinaceous buff, belly and vent buffish. In autumn, crown and back olivebrown. Supercilium tinted yellow. Vinaceous on throat and breast, breast with heavy streaks.

Distribution : India : West Bengal (Bardhaman district) : Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Manipur, Nagaland, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan, Bangladesh, Indochinese countries and China.

Remarks : Recorded this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett 1985).

493. *Anthus similis similis* (Jerdon)

1840. *Anthus similis* Jerdon, *Madras J. Lit. Sci.*, 11 : 35 (Jalna, restricted by whistler & Kinnear, 1934, *JBNHS*, 37 : 99 vide Jerdon, 1847, *Ill. Ind. Orn.*, pl. 45).

1973. Ali and Ripley, vol. 9. p. 266

Common name : Brown Rock Pipit (English).

Material examined : Nil.

Diagnostic characters : Size equal to a Bulbul. Head and back pale brown faintly streaks on head and back. Supercilium buff. Tail long, whitish outer edged. Wings dark brown. Throat whitish, breast pinkish buff with faintly brown streaks.

Distribution : India : West Bengal (Bardhaman district) : Throughout Indian mainland except Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Pakistan, Burma, Iran, Lebanon, Arabia and Africa south of the Sahara.

Remarks : Reported this species from Durgapur and Damodar Valley, Bardhaman district, West Bengal (Gauntlett, 1985). From previous record it is evident that this species is available only in Western Ghat area.

Genus *Motacilla* Linnaeus, 1758

494. *Motacilla indica* Gmelin

1789., *Motacilla indica* Gmelin, *Syst. Nat.* 1 : 962 (India, ex. Sonnerat, restricted to Malabar, Kerala, India, by Ripley, 1961, *Synopsis*, 1st ed. : 574).

1973. Ali and Ripley, vol. 9, p. 273

Common name : Forest Wagtail (English) and Khanjan (Bengali).

Material examined : North 24-Parganas district : 5 ♂ and 4 ♀, Nalbani, coll. B. Biswas and S. S. Saha, 12.ii.1966, 2,5,12 and 20.x.1966; 1 ♂ and 5 ♀, Duttabad, coll. B. Biswas, 27.ix.1964, 4.x.1964 and 12.xii.1964; 6 ♂ and 6 ♀, Salt Lake, coll. B. Biswas, 13.iv.1963 and 12.xii.1964.

Diagnostic characters : Size equal to a Sparrow. Back olive-brown. Tail dark brown, the outer rectrices white. Supercilium and eye-ring pale. Blackish brown wing with two yellow bands. Chin white; a blackish brown collar across throat and another interrupted band on breast.

Measurements :

	Wing	Tail	Bill
2 ♂	81,82	72,74	16,17
2 ♀	76,79	69,70	16(2)

Distribution : India : West Bengal (North 24-Parganas district) : Throughout India. Pakistan Nepal, Bhutan, Bangladesh, Burma, Thailand, Vietnam, Cambodia, Malay Peninsula, Java and Sumatra.

495. *Motacilla flava thunbergi* Billberg

1828. (*Motacilla*) *Thunbergi* Billberg, *Synops. Faun. Scand.* 1(2) : 50 (Lapland).

1973. Ali and Ripley, vol. 9, p. 276.

Common name : Greyheaded Yellow Wagtail (English) and Pilkya (Hindi).

Material examined : North 24-Parganas district : 2 ♂ and 2 ♀ Nalbani, coll. B. Biswas, 12.xii.1964, 5 and 20.x.1966 and 13.xi.1967; 3 ♂ and 5 ♀, Babu Bheri, coll. B. Biswas, 6 and 15.iv.1963 and 21.iii.1965; 1 ♂ and 2 ♀, Salt Lake, coll. B. Biswas, 13.iv.1963. 31.v.1963 and 12.xii.1964; 1 ♀, Dutta-bad, coll. B. Biswas, 12.xii.1964.

Diagnostic characters : Size equal to the preceding bird. Back olive; head, nape and ear-coverts dark slaty-grey. Brown wings with two yellowish bars. Underparts bright yellow.

Measurements :

	Wing	Tail	Bill
6 ♂	78-85 (82)	68-76 (73)	16-18 (17)
8 ♀	74-84 (77)	60-70 (66)	15-17 (16)

Distribution : India : West Bengal (North 24-Parganas district) : Andaman & Nicobar Islands, Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Maldives, Sri Lanka, and Africa south of Sahara.

Breeds from Scandinavia to north western Siberia.

496. *Motacilla flava beema* (Sykes)

1832. *Budytes Beema* Sykes, *Proc. zool. Soc. Lond.* : 90 (Dukhun = Pune, Maharashtra, India).

1973. Ali Ripley, vol. 9, p. 278.

Common name : Blueheaded Yellow Wagtail (English) and Pilkya (Hindi).

Material examined : North 24-Parganas district : 3 ♂, Palta water works; c 17 miles N. of Calcutta, coll. M. L. Roonwal, 4 and 6.x.1939.

Diagnostic characters : Size equal to a sparrow. Back olive; head pale grey. Supercilium prominent; chin and malar streak white. Wings and underparts similar to the preceding bird.

Measurements : 1 ♂ : Wing 81, tail 70, bill (-).

Distribution : India : West Bengal (North 24-Parganas district) : Andhra Pradesh, Assam, Bihar, Gujarat, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nicobar Islands, Orissa, Punjab, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Maldives, eastern Africa south to Kenya and Uganda.

Breeds in the central Palaearctic from the Volga to Baikal.

497. *Motacilla citreola citreola* Pallas

1776. *Motacilla citreola* Pallas, *Reise Russ. Reichs* 3 : 696 (Siberia, U.S.S.R.).

1973. Ali and Ripley, vol. 9, p. 282

Common name : Northern Yellowheaded Wagtail (English) and Pani-ka-pilkya (Hindi).

Material examined : North 24-Parganas districts : 6 ♂ and 6 ♀, Babu Bheri, coll. B. Biswas and P. V. George 9.ii.1963, 6 and 15.iv.1963, 21.iii.1965 and 23.xi.1966; 1 ♂ and 12 ♀, Salt Lake, coll. B. Biswas, 25 and 27.v.1965 and 12.xii.1964; 4 ♂, Nalbani, coll. B. Biswas and S. S. Saha, 12.x.1960, 23.xi.1966, 1.v.1969 and 3.xi.1969; 2 ♂, Duttabad, coll. B. Biswas, 27.ix.1964.

Diagnostic characters : Size equal to the preceding bird. Back rump and tail coverts grey. Head, neck and underparts rich lemon-yellow. A prominent black hind-collar on nape separating yellow head from grey back.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
6 ♂	78-94 (83)	67-76 (71)	17-20 (19)
5 ♀	76-88 (81)	68-73 (71)	18-20 (18.5)

Distribution : India : West Bengal (North 24-Parganas district) : Andhra Pradesh, Assam, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Sri Lanka, Burma, Thailand, Malay Archipelago, Indochinese countries and China.

498. *Motacilla citreola calcarata* Hodgson

1836. *Motacilla (Budytes) Calcarata* Hodgson, *Asiat. Res.*, 19 : 190 (Nepal).

1973. Ali and Ripley, vol.9, p.284

Common name : Blackbacked Yellowheaded Wagtail (English) and Pilkya (Hindi).

Material examined : North 24-Parganas district; 4 ♂ and 1 ♀, Salt Lake, coll. B. Biswas, 27.v.1963, 12.xii.1963, 12.xii.1964 and 10.iv.1965; 5 ♂ and 2 ♀, Babu Bheri, coll. B. Biswas, 6.iv.1963 and 21.iii.1965; 1 ♂, Nalbani, coll. B. Biswas, 31.i.1966; 2 ♀, Duttabad, coll. B. Biswas, 10.v.1964 and 8.v.1965.

Diagnostic characters : Size equal to a sparrow. Back and rump jet black. Head and underparts lemon-yellow sides of breast black. In winter, the back is dark grey.

Measurements : 7 ♂ : Wing 83-93 (88); tail 76-86(79) bill 17-21(19).

Distribution : India : West Bengal (North 24-Parganas district) : Assam, Bihar, Gujarat, Himachal Pradesh. Bangladesh, Pakistan, Nepal, Burma and Afghanistan.

499. *Motacilla cinerea cinerea* Tunstall

1771. *Motacilla Cinerea* Tunstall, *Orn. Brit.* : 2 (type locality fixed as Wycliffe, Yorkshire, England by Clancey, 1946, *Bull. Orn. Cl.*, 66 : 28).

1973. Ali and Ripley, vol.9, p.285

Common name : Grey Wagtail (English).

Material examined : Darjiling district : 1 ♂, Palmajua, coll. A.K. Mukherjee, 16.v.1977. North 24-Parganas dist. 1 ♀, Gosaba, coll. A.K. Mukherjee, 22.xii.1979.

Diagnostic characters : Size equal to the preceding bird. In male, back and head grey; uppertail-coverts greenish yellow. Blackish brown tail with white outer edges. Dark brown wings with whitish margins to tertials showing as a prominent 'V' on back (in summer), 'V' indistinct (in winter). Chin and throat black, breast and belly bright yellow (in summer), throat buffish, belly pale yellow (in winter).

In female, similar to male, except throat mottled with black (in summer), buff (in winter) and paler underparts.

Measurements : 1 ♀ : Wing 80, tail 92, bill 15.

Distribution : India : West Bengal (Darjiling and North 24-Parganas district) : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Nagaland, Orissa, entire Peninsular India, Sikkim and Uttar Pradesh. Pakistan, Afghanistan, Nepal, Bangladesh,

Maldive Islands, Kamchatka, Japan, China, British Isles, Burma, Sri Lanka, Mediterranean region, Africa, Iran, Turkestan, Taiwan, Indochinese countries, Indonesia and the Philippines.

500. *Motacilla alba dukhunensis* Sykes

1832. *Motacilla Dukhunensis* Sykes, *Proc. Zool. Soc. Lond.* : 91 (Dukhun, Poona = Pune, India).

1973. Ali and Ripley, vol.9, p.288

Common name : Indian White Wagtail (English), Khanjana (Bengali) and Dhoban (Hindi).

Material examined : North 24-Parganas district : 2 ♂, Shambhunagar, coll. A.K. Mukherjee, 27.ix.1955; 1 ♀, Nalbani, coll. B. Biswas, 9.xi.1966. Puruliya district : 1 unsexed, Tulin, coll. B. Biswas, 14.x.1951.

Diagnostic characters : Size equal to a Bulbul. Back and rump grey; Forehead, ear-coverts and round eyes white. Hind crown and nape black. Wings brown, quills margined with white. Blackish brown tail, outer rectrices white. Chin throat and upper breast black, lower breast, belly and vent whitish; sides of breast ashy.

Measurements : 1 ♂ : Wing 86; tail 90; bill 17.

Distribution : India : West Bengal (North 24-Parganas and Puruliya districts) : Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Orissa, Punjab, Tamil Nadu and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Burma, Thailand and Indochinese countries, the Philippines, Congo, Kenya and Arabia.

501. *Motacilla alba personata* Gould

1861. *Motacilla personata* Gould, *Bds. Asia* 4, pl. 63 (Bengal).

1973. Ali and Ripley, vol.9, p.291

Common name : Masked Wagtail (English) and Khanjana (Bengali).

Material examined : Darjiling district : 1 ♀, Tarkhala, coll. B. Biswas, 8.xii.1952. North 24-Parganas district : 1 ♂ and 1 ♀, Nalbani, coll. B. Biswas, 5 and 12.x.1966, 1 ♂, Nalbani, coll. S.S. Saha, 2.x.1966.

Diagnostic characters : Size equal to the preceding bird. Back grey; neck, ear-coverts, chin and throat black. Forehead, round eyes, breast and belly white. White on wings more extensive.

Measurements :

	Wing	Tail	Bill
2 ♂	85,92	85,90	15,17
1 ♀	90	89	14

Distribution : India : West Bengal (Darjiling and North 24-Parganas districts) : Throughout Indian mainlands. Bangladesh, Pakistan and Nepal.

Breeds in Afghanistan and Tarkistan.

502. *Motacilla alba leucopsis* Gould

1838 (1837). *Motacilla leucopsis* Gould, *Proc. zool. Soc. Lond.* : 78 (India).

1973. Ali and Ripley, vol.9, p.293

Common name : Whitefaced Pied Wagtail (English).

Material examined : North 24-Parganas district : 1 ♂, Palta water works, Palta, coll. M.L. Roonwal, 5.x.1939.

Diagnostic characters : Size equal to a Bulbul. Back black; forehead, side of neck and ear-coverts white. Others character similar to the preceding birds.

Measurements : 1 ♂ : Wing 94, tail 90, bill 18.

Distribution : India : West Bengal (North 24-Parganas district) : Andaman Islands, Assam, Manipur, Nagaland and Uttar Pradesh. Bangladesh and Nepal, Burma, Indochinese countries and China.

503. *Motacilla alba baicalensis* Swinhoe

1871. *Motacilla baicalensis* Swinhoe, *Proc. zool. Soc. Lond.* : 363 (Eastern Asia = Lake Baikal).

1973. Ali and Ripley, vol.9, p.295

Common name : Swinhoe's Pied Wagtail (English).

Material examined : Jalpaiguri district : 2 ♀, Eastern bank of Teesta river, between sevok and Bagrakot, coll. not known, 17 and 24.xi.1938.

Diagnostic characters : Size equal to the preceding bird. Back grey; fore head, sides of head, ear-coverts chin and throat white. White in wing-coverts more extensive.

Measurements : 2 ♀, Wing 93,94; tail 89,92; bill 17(2).

Distribution : India : West Bengal (Jalpaiguri district) : Assam, Bihar, Himachal Pradesh, Sikkim and Uttar Pradesh. Bangladesh, Pakistan, Nepal, Burma, Indochinese countries, China, Afghanistan and Iran.

Remarks : Roonwal (1939) has reported from eastern bank of R. Teesta (between Sevok and Bagrakot) and from Barrakhola, Jalpaiguri district, West Bengal.

504. *Motacilla maderaspatensis* Gmelin

1789. (*Motacilla*) *maderaspatensis* Gmelin, *Syst. Nat.*, 1 : 961 (India = Madras = Tamil Nadu, India *Vide*, Whistler & Kinsear 1933, *J. Bombay Nat. Hist. Soc.*, 36 : 842).

1973. Ali and Ripley, vol.9, p.296

Common name : Large Pied Wagtail (English) and Khanjan (Hindi).

Material examined : Darjiling district : 1 ♂, Mongbong, Bengal Duars, coll. not known, 18.xi.1938.

Diagnostic characters : Size equal to a Bulbul. Back, rump, tail, head, chin throat and breast black. Supercilium white. Blackish grey wings with a large white band. Outer rectrices white. Belly white, vent ashy. Females sometimes duller and browner.

Measurements : 1 ♂; Wing 102, tail 106, bill 20.

Distribution : India : West Bengal (Darjiling district) : Throughout India except Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Mizoram and Nagaland. Nepal and Bangladesh.

Remarks : Roonwal (1939) reported from Mongpong, Jalpaiguri district, West Bengal.

Family DICAETIDAE

Genus *Dicaeum* Cuvier, 1817505. *Dicaeum agile agile* (Tickell)1833. *Fringilla Agilis* Tickell, *J. Asiat. Soc. Beng.*, 2 : 578 (Borabhum and Dholbhum).

1974. Ali and Ripley, vol.10, p.2

Common name : Indian Tickbilled Flowerpecker (English).*Material examined* : Nil.*Diagnostic characters* : A small olive-green bird with a tail having a terminal white band. Bill very short, thick and horny grey coloured. Breast with greyish white faintly brown streaked.*Distribution* : India : West Bengal (All district of West Bengal) : Throughout Indian mainland except Punjab and Rajasthan. Pakistan, Nepal, Bhutan, Bangladesh and Burma.*Remarks* : We have recorded this species in all the districts of West Bengal.506. *Dicaeum erythrorhynchos erythrorhynchos* (Latham)1790. *Certhia erythrorhynchos* Latham, *Index Orn.* 1 : 299.*Common name* : Tickell's Flowerpecker (English) and Phoolchuki (Hindi).*Material examined* : Nil.*Diagnostic characters* : A small olive brown bird with greyish white underparts. Bill shorter and flesh coloured.*Distribution* : India : West Bengal (All districts of West Bengal) : Throughout Indian mainland excepting Arunachal Pradesh, Haryana, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan, Sikkim and Tripura. Nepal, Bhutan, Bangladesh and Burma.*Remarks* : We have noticed this bird almost in all the districts.

Family NECTARINIIDAE

Key to the genera of the family NECTARINIIDAE

1. Central rectrices elongated *Aethopyga*
 Central rectrices not elongated 2
2. Plumage non-metallic in both sexes *Arachnothera*
 Plumage in male metallic, female greenish below *Nectarinea*

Genus *Nectarinia* Illiger, 1811507. *Nectarinia zeylonica sola* (Vieillot)1819. *Cinnyris sola* Vieillot, *Nouv. Dict. d'Hist. Nat.*, 31 : 512.

1974. Ali and Ripley, vol.10, p.22

Common name : Indian Purplerumped Sunbird (English), Man choongi (Bengali) and Shakar khora (Hindi).*Material examined* : Nil.*Diagnostic characters* : Male with yellow abdomen, throat, metallic purple red and upper tail

coverts metallic purple. Back deep chestnut. Female with brown back, more rufous on wing. Throat and flanks greyish white, breast and centre of belly lemon yellow.

Distribution : India : West Bengal (Haora, Hugli, Medinipur, North and South 24-Parganas districts) : Andhra Pradesh, Bihar, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu. Bangladesh and Burma.

Remarks : We have observed this bird in North and South 24-Parganas, Haora district, Hugli and Medinipur districts.

508. *Nectarinia asiatica asiatica* (Latham)

1790. *Certhia asiatica* Latham, *Index Orn.* 1 : 288 (India = Gurgaon, Gurgaon district, Punjab)

1974. Ali and Ripley, vol.10, p.35

Common name : Indian Purple Sunbird (English) and Phul soongni (Hindi).

Material examined : Nil.

Diagnostic characters : Male with metallic dark blue and purple on back. Throat and breast metallic purple, sides blue-green. Abdomen dark purple separated from breast by a narrow, inconspicuous reddish brown band. Pectoral tufts bright yellow and scarlet. Female olive brown; throat, chest and abdomen dull yellow.

Distribution : India : West Bengal (Medinipur and Puruliya districts) : Throughout Indian mainland except Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Sri Lanka.

Remarks : We have recorded in the Medinipur and Puruliya districts.

Genus *Aethopyga* Cabanis, 1851

509. *Aethopyga nipalensis nipalensis* (Hodgson)

1836. *Cinnyris Nipalensis* Hodgson, *Ind. Rev.* 1(7) : 273 (Nepal, restricted to Chandragiri Pass, Central Nepal, by Ripley, 1961, *Synopsis* 1st ed. : 588)

1974. Ali and Ripley, vol.10, p.43

Common name : Nepal Yellowbacked Sunbird (English)

Material examined : Darjiling district; 1 ♂, Selimbong, coll. R.K. Ghose, 3.xii. 1977.

Diagnostic characters : Male with metallic blue-green crown and nape. A maroon band on upper back and sides of neck. Rump bright yellow; tail metallic blue-green. Cheeks black, throat metallic blue-green. Breast and abdomen bright yellow streaked with scarlet. Female olive green on back and light green below, outer rectrices tipped with white.

Measurements : 1 ♂ : wing 54, tail 57, bill 52.

Distribution : India : West Bengal (Darjiling district): Sikkim, Nepal.

510. *Aethopyga saturata saturata* (Hodgson)

1836. *Cinnyris Saturata* Hodgson, *Ind. Rev.* 1(7): 273(Nepal).

1974. Ali and Ripley, vol.10, p.44

Common name : Himalayan Blackbreasted Sunbird (English).

Material examined : Nil.

Diagnostic characters : Male with crown and nape metallic purple; back and sides of neck crimson

brown. Throat and breast dull blackish, rump with a narrow yellow band. Tail metallic purple, two central rectrices elongated. Female olive-green with underparts greyish olive, rump with a yellow band.

Distribution : India : West Bengal (Darjiling district): Sikkim and Uttar Pradesh. Nepal and Bhutan.

Remarks : We have observed this bird in Darjiling district.

511. *Aethopyga siparaja seheriae* (Tickell)

1833. *Nectarinia seheriae* Tickell, *J. Asiat. Soc. Beng.*, 2:577 (near Seheria in Borabhum, Bihar, India)

1974. Ali and Ripley, vol.10, p.47

Common name : Indian Yellowbacked Sunbird (English).

Material examined : Nil.

Diagnostic characters : Male with metallic green on crown, dark crimson on back and sides of neck, rump bright yellow; tail metallic green, the two central rectrices elongated. Chin, throat and breast scarlet, belly yellowish olive. Female entirely olive, more yellowish below.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts): Bihar, Himachal Pradesh, Madhya Pradesh, Orissa, Sikkim and Uttar Pradesh. Nepal, Bhutan and Bangladesh.

Remarks : We have observed this bird in Jalpaiguri and Darjiling districts.

512. *Aethopyga ignicauda ignicauda* (Hodgson)

1836. (*Cinnyris*) *Ignicauda* Hodgson, *Ind. Rev.* 1(7) : 273 (Nepal).

1974. Ali and Ripley, vol. 10, p.50

Common name : Firetailed Yellowbacked Sunbird (English).

Material examined : Nil.

Diagnostic characters : Male with metallic purple crown; sides of crown from eye and back as well as tail coverts and tail scarlet. Rump yellow, wings olive in colour. Throat metallic purple, breast and abdomen yellow washed with orange. Elongated central pair of rectrices bright crimson. Female olive, more yellow on rump and belly.

Distribution : India : West Bengal (Darjiling district): Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland, Sikkim and Uttar Pradesh. Bangladesh and China.

Remarks : Blyth (1843) has described this bird as *Cinnyris rubricaudata* which is now synonymised to *Aethopyga i. ignicauda* from Darjiling, Darjiling District.

Genus *Arachnothera* Temminck, 1826

513. *Arachnothera magna magna* (Hodgson)

1836. (*Cinnyris*) *Magna* Hodgson, *Ind. Rev.*, 1(7): 272 (Nepal).

1974. Ali and Ripley, vol.10, p.54

Common name : Streaked Spiderhunter (English).

Material examined : Darjiling district: 1 ♂, and 1 unsexed, Khumani, Samsing, coll. R.L. Chaudhury, 14.xii. 1980.

Diagnostic characters : A small bird with streaked yellowish olive in colour. Bill very long, stout

and curved; black. Legs yellow, tail tipped with a blackish subterminal band. Throat, breast and abdomen very pale yellow with bold black shaft-streaks.

Measurements : 1 ♂: Wing 89, tail 49, bill 46.

Distribution : India: West Bengal (Darjiling district): Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Bangladesh, Nepal, Bhutan and China.

Family ZOSTEROPIDAE

Genus *Zosterops* Vigors and Horsfield, 1827

514. *Zosterops palpebroso palpebroso* (Temminck)

1824. *Sylvia palpebroso* Temminck, *Pl. Col. d'Ois*, 49, pl. 293, fig. 3 (Bengal).

1974. Ali and Ripley, vol.10, p.57

Common name : Indian White-eye (English) and Baboona (Hindi).

Material examined : Darjiling district : 1 ♀, Jarkhola; Kalimpong Sub-division, coll. R.A. Paynter, 19.viii. 1958.

Diagnostic characters : A yellow-olive bird with a very distinct white eye-ring. Throat and undertail coverts bright yellow; breast greyish white and belly whitish.

Measurements : 1 ♀: Wing 45, tail 33, bill 10.

Distribution : India : West Bengal (Darjiling district): Throughout India excepting Andhra Pradesh, Kerala and Tamil Nadu. Pakistan, Nepal, Bangladesh, Sri Lanka, Burma, Indo-chinese Peninsula, Tibet and China.

Family PLOCEIDAE

Key to the subfamilies of the family PLOCEIDAE

1. 1st primary long, much exceeding the greater wing coverts..... PASSERINAE
- 1st primary minute, never exceeding the wing coverts.....2
2. Bill longer than the width at base..... PLOCEINAE
- Bill shorter than the width at base..... ESTRILDINAE

Key to the genera of the family PLOCEIDAE

1. Bill short and stout, culmen slightly curved.....2
- Bill broad at base, stout, culmen not curved.....4
2. Both sexes exhibit a double half hour glass shaped rufous patch on the base of primaries.... *Passer*
- No double half hour-glass shaped patch.....3
3. 1st primary minute, 3rd and 4th longest..... *Estrilda*
- 1st primary minute, 2nd 3rd, 4th 5th longest *Ploceus*
4. Wing long, almost reaching end of tail *Petronia*
- Wing reaching almost in the middle part of tail *Lonchura*

Genus *Passer* Brisson, 1760515. *Passer domesticus indicus* Jardine & Selby

1835. *Passer indicus* Jardine & Selby, *Ill. Orn.* 3 pl. 118 (India, restricted to Bangalore, Bangalore district, Karnataka by Kinnear, 1925, *Ibis* 751).

1974. Ali and Ripley, vol.10, p.63

Common name : Indian House Sparrow (English), Choti charai (Bengali) and Churi (Hindi).

Material examined : Bankura district: 1 ♂, Susunia Hills, coll. J.M. Dasgupta, 31.i.1979. Jalpaiguri district: 1 ♂ and 1 ♀, Kumani, coll. R.K. Ghose, 17 and 18.iii.1986. Medinipur district: 1 ♀, Bansphari, coll. A.K. Mukherjee, 14.x.1979. North 24-Parganas district: 3 ♂, Bantala, coll. S.S. Saha and B. Biswas, 24.x.1965 and 28.xi.1965; 1 ♂, Mitpukur, coll. B. Biswas, 13.xi.1965; 1 unsexed, Salt Lake, coll. B. Biswas, not known; 1 ♀, Nalbani, coll. B. Biswas 14.x.1979.

Diagnostic characters : Male with crown grey; sides of crown behind eye, sides of neck and upper back chestnut. Rufous-chestnut with black streaks on back. Shoulder patch white, wing rufous. Rump grey-brown, tail dark brown. Sides of throat white; centre of throat and breast black. Abdomen greyish white. Female with greyish brown streaked with fulvus and dark brown on back. Throat, breast and abdomen brownish white.

Measurements :

	Wing	Tail	Bill
4 ♂:	74-77(75)	55-57(55)	14-15(15)
4 ♀:	70-77(74)	49-53(51)	13-14(14)

Distribution : India : West Bengal (Bankura, Jalpaiguri, Medinipur and North 24-Parganas districts): Throughout India including Andaman, except Jammu & Kashmir and Sikkim. Pakistan, Bangladesh, Sri Lanka, Burma, Arabia, introduced in South Africa, Comoro and Mascarene Islands.

516. *Passer montanus malaccensis* Dubois

1885. *Passer malaccensis* Dubois, *Faune Ill. Vert. Belg.*, Ois, 1 : 572 (Malacca).

1974. Ali and Ripley, vol.10, p.71

Common name : Malay Tree Sparrow (English) and Chhoti gouriya (Hindi).

Material examined : Darjiling district: 1 ♂, Darjiling, coll. S.C. Law, 17.vi. 1930.

Diagnostic characters : Crown and nape chocolate-brown; upperparts brown streaked with black on back, chin and centre of throat black, rest of underparts greyish white.

Measurements : 1 ♂: Wing 74, tail 55, bill 13.

Distribution : India : West Bengal (Darjiling district): Assam, Bihar, Meghalaya, Sikkim and Uttar Pradesh. Bangladesh, Nepal, Bhutan, Burma, the Indo-chinese countries and Indonesian Islands.

Genus *Petronia* Kaup, 1829517. *Petronia xanthocollis xanthocollis* (Burton)

1838. *Fringilla xanthocollis* Burton, *Cat. Bds. Mus. Fort Pitt*, Chatham: 23, new name for *Fringilla flavicollis* Franklin, 1831 (Ganges between Calcutta and Benares = Varanasi, India).

1974. Ali and Ripley, vol.10, p.80

Common name : Indian Yellowthroated Sparrow (English), Ban-charai (Bengali), and Jangli-chiria (Hindi).

Material examined : Bankura district: 1 ♂, Susunia Hills, coll. J.M. Dasgupta, 27.i.1979.

Diagnostic characters : Male grey brown on back with a chestnut shoulder-patch. Two whitish wing-bars on wings. Throat with a yellow patch, chin and belly whitish, tail slightly forked. Female with a much paler throat patch and shoulder patch rufous.

Measurements : 1 ♂: Wing 78, tail 48, bill 60.

Distribution : India : West Bengal (Bankura district): throughout Indian Mainlands except Arunachal Pradesh, Assam, Haryana, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Punjab, Rajasthan and Sikkim.

Genus *Ploceus* Cuvier 1816

518. *Ploceus philippinus philippinus* (Linnaeus)

1766. *Loxia Philippina* Linnaeus, *Syst. Nat.*, ed.12, 1 : 305 (Philippines, errore=Ceylon=Sri Lanka).

1974. Ali and Ripley, vol.10, p.88

Common name : Indian Baya (English), Babui (Bengali) and Baya (Hindi).

Material examined : Birbhum district: 2 ♂ and 1 ♀, Chandrapur, coll. A.K. Mukherjee, 1,2 and 3.i. 1981; 1 ♂, Mollarhat, coll. A.K. Mukherjee, not known. North 24-Parganas district: 23 ♂, 14 ♀ and 2 unsexed, Salt Lake coll. B. Biswas, 31.iii. 1963, 25 and 27.v. 1963 and 25.vii. 1965; 7 ♂, 7 ♀ and 1 unsexed, Duttabad, coll. B. Biswas, 3 and 17.v. 1964, 25.vii. 1964, 27.ix. 1964 and 21.ii. 1965; 40 ♂, 25 ♀ and 5 unsexed, Nalbani, coll. B. Biswas and S. Mathur, 29.iv. 1963, 14.iii. 1964, 3.17 and 31.v. 1964, 8.viii. 1964, 6 and 27.ix. 1964, 6.vi. 1965, 4 and 25.vii. 1965, 11.ix. 1965, 8 and 30.i. 1966, 6.ii. 1966, 10.iv. 1966, 9.viii. 1966, 5.x. 1966, 6.iv. 1967, 12.iii. 1968, 25.v.1968, 10.x. 1968, 6.xi. 1968 and 3.ix. 1969; 2 ♂, and 2 ♀, Bantala, coll. B. Biswas, 4 and 6.ix. 1964; 2 ♀, Babu Bheri, coll. B. Biswas, 23.v. 1964 and 15.iv. 1965; 3 ♀, Hedarhat, coll. B. Biswas, 19.vii. 1974; South 24 Parganas district: 4 ♂ and 3 ♀; Kalikapore, 8, 23 and 30.viii. 1964, 4 and 6.ix. 1964.

Diagnostic characters : In breeding male, crown yellow, upper parts dark brown streaked with yellow on back. Breast yellow, abdomen cream buff. Female; crown and back yellowish buff streaked with dark brown. Throat white, tinged with yellow. Yellowish buff breast, belly cream buff.

Measurements :

	Wing	Tail	Bill
13 ♂	71-79(74)	51-56(53)	19-22(20)
7 ♀	69-77(72)	45-53(48)	19-20(20)

Distribution : India : West Bengal (Birbhum, Darjiling, North 24-Parganas and South 24-Parganas districts): Throughout India except Arunachal Pradesh, Bihar, Manipur, Himachal Pradesh, Jammu & Kashmir, Kerala, Meghalaya, Nagaland, Sikkim and Tripura. Sri Lanka.

Remarks : Blyth (1844) reported this bird as "Common in Bengal" Roonwal (1939) reported from Naksalbari, Darjiling district, West Bengal.

519. *Ploceus philippinus burmanicus* Ticehurst

1932. *Ploceus infortunatus burmanicus* Ticehurst, *Bull. Brit. Orn. Cl.*, 52 : 105 (Akyab, Burma).

1974. Ali and Ripley, vol.10, p.93

Common name : Eastern Baya (English).

Material examined : North 24-Parganas district: 9 ♂ and 2 ♀, Salt Lake, coll. B. Biswas 31.iii. 1963, 15 and 22.iv. 1963, 27.v. 1963 and 10.vi. 1966; 3 ♂ and 1 ♀, Babu Bheri, coll. B. Biswas, 15.iv. 1963, 29.iii. 1965 and 12.vi. 1966; 11 ♂, Nalbani, coll. B. Biswas, 5.vii. 1964, 4.ix. 1964, 14.iii. 1965, 4.iv. 1965, 16.v. 1965, 8.iii. 1968 and 6.xi. 1968; 1 ♂, Hediathat, coll. B. Biswas, 19.vii. 1964.

Diagnostic characters : Crown of male yellow. Upperparts dark brown streaked with yellow. Female like the preceding ones, but lacks yellow on breast.

Measurements :

	Wing	Tail	Bill
4 ♂	75-81(77)	48-59(52)	20-21(205)
1 ♀	75	48	20

Distribution : India : West Bengal (North 24-Parganas district): Assam, Bihar and Sikkim. Bangladesh and Nepal.

520. *Ploceus megarhynchus megarhynchus* Hume

1869. *Ploceus megarhynchus* Hume, *Ibis* : 356 ('terai' = Kaladoongi (Sometimes Kaladhungi) below Naini Tal, Uttar Pradesh, India).

1974. Ali and Ripley, vol.8, p.94

Common name : Finn's Baya (English).

Material examined : North 24-Parganas district; 3 ♂ and 1 ♀, Nalbani, coll. B. Biswas and S. Mathur 14.iii.1965, 10.iv.1966 and 14.vi.1967; 1 ♀, Salt Lake, coll. B. Biswas, 27.v.1963; 1 ♀, Duttabad, coll. B. Biswas, 27.iv.1964; 1 ♀, Mahishbathan coll. D. K. Ghosal, 8.iii.1966. South 24-Parganas district; 1 ♂, Kalikapore, coll. B. Biswas, 4.ix.1964.

Diagnostic characters : In male, head and nape bright yellow; back and upperparts dark brown, broadly streaked. Rump and throat yellow. Undertail coverts white. Female less bright than male.

Measurements :

	Wing	Tail	Bill
4 ♂	74-78(77)	58-60(59)	22-23(22)
3 ♀	67-72(71)	53-54(53)	21-22(21)

Distribution : India : West Bengal (North 24-Parganas and South 24-Parganas districts) : Uttar Pradesh.

521. *Ploceus megarhynchus salimalii* Abdulali

1960. *Ploceus megarhynchus salimalii* Abdulali, *J. Bombay nat. Hist. Soc.*, 57 : 660. (Bhutan Duars, Bhutan).

1974. Ali and Ripley, vol.10, p.96

Common name : Eastern Finn's Baya (English).

Material examined : North 24-Parganas district : 3 ♀, Nalbani, coll. B. Biswas, 23.iii.1967, 14.vi.1967 and 29.iii.1968; 1 ♀, Duttabad, coll. B. Biswas, 27.ix.1964. South 24-Parganas district : 5 ♂, Kalikapore, coll. B. Biswas, 4.ix.1964 and 6.iv.1967.

Diagnostic characters : In male head and neck bright yellow. Dark brown, broadly streaked on back. Undertail coverts yellow. Female less dull in colour.

Measurements :

	Wing	Tail	Bill
4 ♂	70-76(74)	46-50(47)	19-21(20)
4 ♀	70-77(74)	46-50(47)	18-20(19)

Distribution : India : West Bengal (North 24-Parganas and South 24-Parganas districts) : Assam.

522. *Ploceus benghalensis* (Linnaeus)

1758. *Loxia benghalensis* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 175 (Benghala).

1974. Ali and Ripley, vol.10, p.96

Common name : Blackthroated Weaver Bird (English), Kantawala baya (Bengali) and Sarbo baya (Hindi).

Material examined : Calcutta district : 1 ♂, Bagmari, coll. B. Biswas, 17.ix.1963. North 24-Parganas district : 4 ♂, Duttabad, coll. B. Biswas, 5.iv.1964, 25.vii.1964 and 27.ix.1964; 3 ♂ and 2 ♀, Bantala, coll. B. Biswas, 6.ix.1964; 5 ♂ and 1 ♀, Nalbani, coll. B. Biswas, 2 and 5.x.1966, 23.iii.1968 and 10.x.1968; 1 ♂ and 2 ♀, Salt Lake, coll. B. Biswas, 16 and 25.v.1963; 1 ♀, Babu Bheri, coll. B. Biswas, 21.iii.1965; 7 ♂ and 1 ♀, Hediarrhat, coll. B. Biswas, 28.ix.1964. South 24-Parganas district : 1 ♀, Kalikapore, coll. B. Biswas, 4.ix.1964.

Diagnostic characters : In breeding male, golden yellow crown surrounded by a black band. Dark brown with pale edges on back, underparts whitish with a broad dark-brown band across breast. Female, dark brown with fulvus streaks on back, Ear coverts brown, yellow patch on each side of neck. Chin and upper throat pale yellow, breast buff with blackish brown tinge. Rest of underparts buff.

Measurements :

	Wing	Tail	Bill
7 ♂	72-73(72.5)	42-46(44)	18
5 ♀	68-71(70)	40-44(43)	17-18(17)

Distribution : India : West Bengal : (Calcutta, North 24-Parganas and South 24-Parganas districts). Assam, Bihar, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Manipur, Orissa, Sikkim and Uttar Pradesh. Pakistan, Nepal and Bangladesh.

523. *Ploceus manyar peguensis* Baker

1925. *Ploceus manyar peguensis* Baker, *Bull. Br. Orn. Cl.*, 45 : 58(Pegu).

1974. Ali and Ripley, vol.10, p.101

Common name : Burmese Streaked Weaver Bird (English) and Tal chata (Bengali).

Material examined : North 24-Parganas district : 5 ♂, and 5 ♀, Nalbani, coll. B. Biswas, 29.iii.1964, 16.v.1965, 4.vii.1965, 3.vii.1966, 23.iii.1967, 6.iv.1967 and 29.iii.1968; 3 ♂ and 5 ♀, near Duttabad, coll. B. Biswas, 17.v.1964, 25.x.1964, 27.xii.1964 and 8.v.1965; 1 ♂, Salt Lake, coll. B. Biswas, 22.iii.1963; 1 ♂, Krishnapur, coll. P. V. George, 20.v.1962; 2 ♂ and 1 ♀, Mahishbathan coll. B. Biswas, 18.vii.1965.

Diagnostic characters : In breeding male, Crown golden yellow, sides of head dark brown. Dark brown streaked with fulvus on back, throat brown, breast and abdomen buff streaked with dark brown. Female, dark brown with fulvus streaks on back, yellow supercilium and dark brown ear-coverts. Yellow patch on sides of neck. Breast dark brown, throat and belly whitish.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
5 ♂	70-73 (72)	43-46 (44)	18-19 (19)
4 ♀	69-73 (71)	40-44 (43)	19-20 (19)

Distribution : India : West Bengal (North 24-Parganas district) : Assam and Bihar. Bangladesh and Burma.

Genus *Estrilda* Swainson, 1827

524. *Estrilda amandava amandava* (Linnaeus)

1758. *Fringilla Amandava* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 180. (eastern India, restricted to Calcutta, Calcutta district, West Bengal, India, by Baker, 1921, *J. Bombay nat. Hist. Soc.*, 27 : 725.

1974. Ali and Ripley, vol.10, p.101

Common name : Red Munia (English) and Lal Munia (Bengali and Hindi).

Material examined : North 24-Parganas district : 3 ♂, Nalbani, N. Salt Lake, coll. B. Biswas, 25.iv.1964 and 29.iii.1968, 1 ♂, Duttabad, North Salt Lake, coll. B. Biswas.

Diagnostic characters : Male brownish crimson. Wings dark brown with a few small white spots. Tail dark brown with whitish tip. Throat and upper breast crimson, spotted with white. Female brown with white spots on wings, upper tail-coverts crimson spotted with white. Throat and breast greyish buff.

Measurements : 4 ♂ : Wing 46-49(48); tail 36-37(37); bill 11-12(11).

Distribution : India : West Bengal (North 24-Parganas district) : throughout Indian main lands except Kerala, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Bangladesh, Pakistan, Nepal, China, Indo-Chinese countries and Sunda Islands.

Genus *Lonchura* Sykes, 1832

525. *Lonchura malabarica malabarica* (Linnaeus)

1758. *Loxia malabarica* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 175 (in Indiis = India).

1974. Ali and Ripley, vol.10, p.105

Common name : Whitethroated Munia (English), Sar Munia (Bengali) and Charakka (Hindi).

Material examined : Bankura district : 2 ♂, Susunia Hills, coll. J. M. Dasgupta, 7 and 27.i.1979.

Diagnostic characters : Earthy brown thick-billed with a pointed blackish tail. Rump white, wings and tail dark brown. Throat and breast creamy white.

Measurements : 2 ♂ : Wing 52,53 : tail 42(2); bill 11,12.

Distribution : India : West Bengal (Bankura district) : Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Uttar Pradesh.

526. *Lonchura punctulata punctulata* (Linnaeus)

1758. *Loxia punctulata* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 173 (Asia = Calcutta, Calcutta district, West Bengal, India).

1974. Ali and Ripley, vol.8, p.113

Common name : Indian Spotted Munia (English), Tiley Munia (Bengali) Telia Munia (Hindi).

Material examined : Bankura district : 4 ♀, Susunia Hills, coll. J. M. Dasgupta, 30.i.1979. Medinipur district : 2 ♂, Chilkigarh, coll. A. K. Mukherjee, 8.x.1979. North 24-Parganas district; 3 ♂ and 2 ♀, Nalbani, coll. B. Biswas, 3.vii.1966, 3.x.1966, 23.xi.1966, 23.iii.1967 and 3.viii.1969; 4 ♂ and 6 ♀, Duttabad, coll. B. Biswas, 25.iv.1964, 18 and 25.x.1964 and 25.x.1965; 2 ♂ and 1 ♀, Salt Lake, coll. B. Biswas, 31.iii.1963. 27.v.1963 and 25.x.1964; 1 ♂ and 3 ♀, Babu Bheri, coll. B. Biswas, 21 and 29.iii.1965.

Diagnostic characters : Size-less than a House sparrow, chocolate-brown with faint pale shaft-streaks above. Undertail coverts fulvus, rump barred with white. Tail tawny-olive. Sides of head, neck and throat chestnut. Breast speckled black and white; belly white.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
6 ♂	54-56(55)	34-42(38)	13
7 ♀	53-57(55)	36-42(37)	12-14(12.5)

Distribution : India : West Bengal (Bankura, Medinipur and North 24-Parganas districts) : Andhra Pradesh, Bihar, Gujarat, Goa, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu and Uttar Pradesh.

527. *Lonchura malacca rubroniger* (Hodgson)

1836. *M. (unia) Rubroniger* Hodgson, *Asiat. Res.*, 19 : 153 (Nepal).

1974. Ali and Ripley, vol.10, p.116

Common name : Nepal Blackheaded Munia (English).

Material examined : North 24-Parganas district : 1 ♂ and 1 ♀, near Duttabad, North Salt Lake, coll. B. Biswas, 10.v.1964; 1 ♂, North Salt Lake, coll. B. Biswas, 12.v.1963; 1 ♀, Nalbani, North Salt Lake, coll. B. Biswas, 16.v.1965.

Diagnostic characters : About the size of the preceding one. Crown black and rest of upper parts rufous-chestnut, rump darker. Throat and breast black; upper and sides of belly chestnut while the centre and undertail coverts black.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
2 ♂	56(2)	37(2)	13,14
2 ♀	55,56	34,35	13,14

Distribution : India : West Bengal (North 24-Parganas district) : Bihar, Haryana and Uttar Pradesh. Nepal.

Remarks : This is a new locality record from West Bengal.

528. *Lonchura malacca atricapilla* (Vieillot)

1807. *Loxia atricapilla* Vieillot *Hist. nat. Ois. Chanteurs* : 84, pl.53.

1974. Ali and Ripley, vol.10, p.117

Common name : Eastern Blackheaded Munia (English) and Nakalnur (Bengali).

Material examined : Nil.

Diagnostic characters : It is similar to preceding bird excepting the rump golden yellow, tail deep reddish brown and back slightly paler.

Distribution : India : West Bengal (Nadia district) : Assam, Bihar, Manipur, Meghalaya and Orissa. Nepal, Bangladesh and China.

Remarks : We have observed this bird in Nadia District.

Family FRINGILLIDAE

Key to the genera of family FRINGILLIDAE

1. Rump white *Pyrrhula*
Rump not white.....2
2. Tail forked.....3
Tail square..... *Coccothraustes*
3. Bill sparrow-like but slender and more pointed..... *Leucosticte*
Bill not sparrow-like, thick at base, conical nearly straight *Carpodacus*

Genus *Coccothraustes* Brisson, 1760529. *Coccothraustes affinis* (Blyth)

1855. *Hesperiphona affinis* Blyth, *J. Asiat. Soc. Beng.*, 24 : 179 (Alpine Punjab, restricted to Hazara by Whistler, 1925, *J. Bombay nat. Hist. Soc.*, 30 : 700).

1974. Ali and Ripley, vol.10, p.126

Common name : Allied Grosbeak (English).

Material examined : Darjiling district; 1 ♂, Rungbei, coll. Anderson, dt. of collection not known.

Diagnostic characters : Male, about the size of a common Myna. Head, wings and tail deep black. The back, breast and belly yellow, hind collar ochraceous yellow. Female head dark grey, back olive green, collar and rump yellow, wings and tail blackish. Throat grey, breast and belly yellowish olive.

Measurements : 1 ♂ : Wing 128, tail 85, bill 25.

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam, Sikkim and Uttar Pradesh. Nepal, Bhutan, China and Southern Kansu.

Genus *Leucosticte* Swainson, 1832

530. *Leucosticte nemoricola nemoricola* (Hodgson)

1836. *F. (ringilauda) Nemoricola* Hodgson, *Asiat. Res.*, 19 : 158 (Nepal).

1974. Ali and Ripley, vol.10, p.150

Common name : Eastern Plaincoloured Mountain Finch (English).

Material examined : Darjiling district : 3 ♂, and 3 ♀, Sandakphu, coll. R. K. Ghose, 9, 12 and 14.iii.1975.

Diagnostic characters : Crown and back brown streaked with darker brown, wings dark brown with a buff bar. Rump grey, upper tail-coverts with white tips. Tail dark brown and distinctly forked. Throat pale grey brown, sides of breast and abdomen streaked with dark brown.

Measurements :

	Wing	Tail	Bill
3 ♂	100-102(101)	70-72(71)	13-14(14)
3 ♀	90-96(94)	64-68(66)	14(3)

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal, Bhutan, Tibet, China and Kausu.

Genus *Carpodacus* Kaup, 1829

531. *Carpodacus erythrinus roseatus* (Blyth)

1842. *Pyrrhula roseata* 'Tickell' = Blyth, *J. Asiat. Soc. Beng.*, 11 :461 ('sold..... in Calcutta, Calcutta district, West Bengal, India).

1974. Ali and Ripley, vol.10, p.164

Common name : Indian Rosefinch (English) and Lal tuti (Bengali and Hindi).

Material examined : Darjiling district : 1 ♂ Sandakphu, coll. R. K. Ghose, 14.iii.1975. North 24-Parganas district 1 ♂, Nalbani, coll. B. Biswas, 10.x.1966; 3 ♀, near Duttabad, coll. B. Biswas, 21.ii.1965.

Diagnostic characters : In male, crown crimson, back and wings crimson and brown. Rump dark crimson. Cheeks pink; chin, throat and breast crimson becoming paler on flanks and belly. In female, olive brown back with two pale wing bars. throat whitish with brown streaks. Breast streaked with brown; belly whitish.

Measurements :

	Wing	Tail	Bill
2 ♂	82,83	57(2)	14,15
3 ♀	77-82(80)	54-57(56)	14-15(14.5)

Distribution : India : West Bengal (Darjiling and North 24-Parganas districts) : Throughout Indian mainland except Himachal Pradesh, Jammu & Kashmir. Nepal, Bangladesh, Burma, Indo-Chinese countries, China and Tibet.

532. *Carpodacus nipalensis nipalensis* (Hodgson)

1836. *C. (arduelis) Nipalensis* Hodgson, *Asiat. Res.* 19 : 157 (Nepal, Central and Northern regions).

1974. Ali and Ripley, vol.10, p.168

Common name : Nepal Dark Rosefinch (English).

Material examined : Darjiling district : 14 ♂ Sandakphu, coll. R. A. Paynter, 21 and 22.vii.1958; 1 ♂, R. L. Fernandez; 13.vii.1958, 1 ♂ and 1 ♀; Palmajua, coll. A. K. Mukherjee, 13.v.1977; 4 ♂, 1 ♀ and 1 unsexed, Selimbong, coll. R. K. Ghosh, 30.xi.1977, 2 and 5.xii.1977.

Diagnostic characters : Size equal to a House Sparrow. In male, forehead, forecrown and supercilium vinaceous crimson. the back dark brown washed with crimson. Throat vinaceous pink, a maroon band across breast. Flanks dark, crimson - brown, belly vinaceous pink.

Measurements :

	<i>Wing</i>	<i>Tail</i>	<i>Bill</i>
9 ♂	86-95(89)	59-67(63)	14-16(15)
2 ♀	88,90	60(2)	15,16

Distribution : India : West Bengal (Darjiling district) : Arunachal Pradesh, Assam and Sikkim. Nepal, Bhutan and Tibet.

533. *Carpodacus rhodochrous* (Vigors)

1831. *Fringilla rodochroa* [sic] Vigors, *Proc. zool. Soc. Lond.* : 23 (Himalayan Mountains = Simla-Almora district, India).

1974. Ali and Ripley, vol.10, p.171

Common name : Pinkbrowed Rosefinch (English).

Material examined : Darjiling district : 1 ♀, Sandakphu, coll. R. L. Fernandez, 23.vii.1958.

Diagnostic characters : In male, crown and eye band crimson-brown. Forehead and supercilium rose pink. Back streaked with dark brown, rump rose pink. Wing bar pale. In female, back olive-brown streaked with dark brown. Supercilium pale and conspicuous, underparts ochraceous buff streaked with dark brown.

Measurements : 1 ♀ : Wing 70, tail 57, bill 13.

Distribution : India : West Bengal (Darjiling district) : Himachal Pradesh, Jammu & Kashmir, Punjab, Sikkim and Uttar Pradesh. Pakistan, Nepal and Tibet.

534. *Carpodacus rhodopeplus rhodopeplus* (Vigors)

1831. *Fringilla rodopepla* [sic] Vigors, *Proc. zool. Soc. Lond.* : 23 (Himalayan Mountains, restricted to Simla-Almora district, India).

1974. Ali and Ripley, vol.10, p.175

Common name : Spottedwinged Rosefinch (English).

Material examined : Darjiling district : 3 ♂ and 1 ♀, Sandakphu, coll. R. A. Paynter, 14 and 16.vi. and 22.vii.1958.

Diagnostic characters : Size-equal to a House Sparrow. In male crown and eye band dark crimson brown. Back crimson-brown streaked with dark brown, rump pink. Two wing bars pinkish buff. Sides of head and throat pale pink, rest of underparts rosy-red. In female, back ochraceous brown streaked with dark brown. Supercilium conspicuous and whitish. Throat, breast and belly ochraceous - buff streaked with dark brown.

Measurements :

	Wing	Tail	Bill
3 ♂	79-84(82)	63-73(68)	15-17(16)
1 ♀	79	63	17

Distribution : India : West Bengal (Darjiling district) : Sikkim and Uttar Pradesh. Nepal, Tibet and China.

535. *Carpodacus thura thura* Bonaparte & Schlegel

1850. *Carpodacus thura* Bonaparte & Schlegel, *Monogr. Loxiens* : 21, pl. 23 (Himalayas = Sikkim).
1974. Ali and Ripley, vol.10, p.177

Common name : Sikkim Whitebrowed Rosefinch (English).

Material examined : Darjiling district : 1 ♂, Phalut, coll. R. V. Sherard, 29.xii.1952; 1 ♀, Singalila, coll. B. Biswas, 31.xii.1952; 1 ♀, Sandakphu, coll. R. K. Ghose, 15.iii.1975.

Diagnostic characters : Size slightly bigger than a House Sparrow. In male, crown and back brown streaked with blackish. Behind eye, dark brown stripe, supercilium ending with white. Pink rosy rump. Tail brown, wing with two bars, underparts rosy pink. Female, back brown streaked with darker brown. Whitish broad supercilium. Rump golden yellow.

Measurements :

	Wing	Tail	Bill
1 ♂	87	80	15
1 ♀	83	75	14

Distribution : India : West Bengal (Darjiling district) : Sikkim. Nepal and Bhutan.

Remarks : This is a new locality record from West Bengal.

Genus *Pyrrhula* Brisson, 1760

536. *Pyrrhula erythrocephala* Vigors

1832. *Pyrrhula erythrocephala* Vigors, *Proc. zool. Soc. Lond.* : 174 (Himalayan Mountains = Simla Almora district, India).

1974. Ali and Ripley, col.10, p.201

Common name : Redheaded Bullfinch (English).

Material examined : Darjiling district : 2 ♂ and 2 ♀, Sandakphu coll. R. A. Paynter, 21 and 22.vii.1958.

Diagnostic characters : Size equal to preceding bird. In male, area around base of bill and eye black. Crown red, back grey and rump white; wing glossy purplish black with a large ashy patch. Chin black. Throughout breast and flanks dull rusty red. Belly ashy. Undertail coverts white. Female like male except crown - yellow olive. Back and lower part brown.

Measurements :

	Wing	Tail	Bill
2 ♂	76,78	60(-)	14,15
2 ♀	80,82	61,62	14,15

Distribution : India : West Bengal (Darjiling district) : Himachal Pradesh, Jammu & Kashmir, Sikkim and Uttar Pradesh. Nepal and Bhutan.

Remarks : This is a new record from West Bengal.

Family EMBERIZIDAE

Genus *Emberiza* Linnaeus, 1758

537. *Emberiza rutila* Pallas

1776. *Emberiza rutila* Pallas, *Reise, Russ. Reichs* 3 : 698 (Onon R. SE. Transbaikalia).

1974. Ali and Ripley, vol. 10, p. 211.

Common name : Chestnut Bunting (English) and Lal gandam (Hindi).

Material examined : Nil.

Diagnostic characters : Size more or less equal to sparrow. In male, crown, back and rump deep chestnut. Shoulder-patch white and a narrow white wing bar. Tail dark brown, outer rectrices white. Chin and upper throat blackish brown; throat and sides of neck yellow; collar chestnut. Female back brown streaked with dark brown; rump chestnut, wing bar buff; breast brown and belly yellow.

Distribution : India : West Bengal (Darjiling and Jalpaiguri districts) : Scarcely winter visitor to Assam, Jammu & Kashmir, Manipur, Sikkim. Pakistan, Nepal, Burma, S. China and northern Indochinese countries.

Breeds in southeastern Siberia from Lake Baikal to Amurland and Manchuria.

Remarks : We have observed this species in Jalpaiguri and Darjeeling districts.

538. *Emberiza pusilla* Pallas

1776. *Emberiza pusilla* Pallas, *Reise, Reichs* 3 : 697 (Transbaikalian Alps).

1974. Ali and Ripley, vol. 10, p. 228

Common name : Little Bunting (English).

Material examined : Nil.

Diagnostic characters : Size slightly smaller than a House Sparrow. In male, two broad black stripes on either side of crown, a rufous median coronal stripe in between; outer rectrices white. Back rufous brown, streaked with blackish. Chin rufous; throat, and belly white streaked with black. Female similar to male but dull in colour.

Distribution : India : West Bengal (Darjeeling, Jalpaiguri and Kochbehar districts) : Andaman Islands. Arunachal Pradesh, Assam, Manipur, Meghalaya, Nagaland and Sikkim. Nepal, Bhutan, Bangladesh, Burma, Southern China and northern Indochinese countries.

Breeds in tundra of Eurasia from Finland to the sea of Okhotsk.

Remarks : We have observed this species in Darjeeling, Jalpaiguri and Kochbehar districts.

Genus *Melophus* Swainson, 1837

539. *Melophus lathami*(Gray)

1831. *Emberiza lathami* Gray, *Zool. Misc.*, 1 : 2 (Canton, Kwanglung).

1982. Ripley, p. 575

Common name : Crested Bunting (English) and Patthar-chiria (Hindi).

Material examined : Nil.

Diagnostic characters : In male, crown with long pointed black crested. Back and tail black. Wings chestnut. In female, crest shorter. Back olive brown with dark brown streaks. Wing edges and outer rectrices rufous.

Distribution : India : West Bengal (Barddhaman district) : Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Rajasthan, Sikkim and Uttar Pradesh. Pakistan, Nepal, Bhutan and Bangladesh.

Remarks : Recorded this species from Durgapur and Damodar Valley, Barddhaman district, West Bengal. (Gauntlett, 1985).

SUMMARY

1. A list of 540 species and subspecies based on collection as well as from literature is given from West Bengal. It belongs to 210 genera, 60 families and 16 orders.
2. 21 species and subspecies are recorded for the first time from West Bengal.
3. The family Muscicapidae with 128 species and subspecies forms the largest group in the bird fauna of West Bengal.

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WILDLIFE AND ITS CONSERVATION IN WEST BENGAL

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INTRODUCTION

The concept of wildlife came into being not very long ago. In the Indian context, the term wildlife became a household word only after the promulgation of the Indian Wild Life (Protection) Act in 1972. Though wildlife broadly includes all living species of flora and fauna, its immediate implications do not cover each and every species of plants and animals. As a priority it takes into account only those species which were designated earlier as wild game or of high economic value, and those which are rare, or threatened with extinction.

Wild animals include mammals, birds, reptiles, fishes and also some insects like butterflies and beetles which were considered as hunters pride. Some of these animals were killed for their meat, hide, horns, antlers and tusks. Others were at one time abundant but due to destruction of habitat and human interference have now become scarce and, hence, need protection before they are completely wiped off from the earth. All this knowledge comes from detailed accounts of natural history, accounts of hunters and their games, and literature on flora and fauna by both specialists and naturalists.

Many floral elements are concerned with wildlife, but in the context of West Bengal the Orchids are most concerned, and they are mostly spread over the montane region. The floral diversity in Himalayan region, sub Himalayan Terai, Gangetic plains to Mangrove forest in Sundarbans, provided unique habitat conditions for faunal elements. The recently published series of Red Data Book of Indian Plants by Botanical Survey of India contain references to some of the endangered flora of West Bengal. The large scale deforestation of Ajoydha hills in Purulia, clearing of Sal forest in Bardhaman and sub himalayan forest in West Bengal have undoubtedly disturbed the terrestrial faunal habitat to a great extent.

PHYSIOGRAPHY

The State of West Bengal is varied in its topography, climate and soil conditions. This geophysical diversity can be broadly divided into the following conspicuous ecological zones-namely, the northern montane Darjeeling Himalaya, alluvial tracts of north and south, plateau of the West, and the estuarine coastal plain of the south. Each of these zones have their characteristic vegetation pattern.

FOREST TYPES

The higher reaches of Darjeeling Himalaya are covered by the Moist Temperate Forest tracts, while Sub-tropical Wet Forest make up the major Darjeeling Himalaya and the Tropical Semi-evergreen Forest tracts which occupy the foothills. The Tropical Moist Deciduous Forest tract is found in the northern and southern plains, the Tropical Dry Deciduous Forest tract in the Western Plateau, and the Tidal or Mangrove Forest tract occupy the estuarine coastal plain. The Tropical Moist Deciduous Forests tract also contain Wet Sal Forest and Tropical Valley Freshwater Swamp Forest. The Tropical Dry Deciduous Forest contain Dry Sal Forest sub-types.

BIOGEOGRAPHY

West Bengal comes under the general realm of the Oriental region and in particular to the Indian sub-region. However, both flora and fauna of this state also contain elements of the Palearctic region, Indo-Chinese sub-region and Malaysian sub-region, and some species even have Ethiopian affinity.

HABITATS

The wildlife of West Bengal is found both in terrestrial and aquatic habitats. The terrestrial system includes habitats from the sea level to an altitude of about 3000 m corresponding to different forest types and subtypes. The aquatic system includes both freshwater and marine habitats including riverine, swampy, estuarine, etc.

All these habitats once contained the very rich and viable fauna. At that time the natural resources exploitation was at a very negligible level. However, a century and half ago large tracts of forests were exhaustively exploited and land use changed for mining, extension of agriculture and human settlement; large tracts in some parts were cleared for industrial township after independence. Though forest management took care of replenishing the areas, the original richness and associated fauna were largely lost and much of the virgin forests totally wiped off. Despite this, many species took asylum in the neighbouring untouched forest tracts. Similarly the aquatic system especially the freshwater habitats were squeezed out of size due to high silting rate. Further, due to pollution the lentic system was affected both qualitatively and quantitatively.

STATUS OF WILDLIFE

The present chapter is devoted to those animals which have been enlisted in the schedules of the Wildlife Act. The schedules are based on the status of the species namely rare, endangered, threatened, vulnerable, etc. According to the threat of extinction Schedule I contains those species which need topmost priority, while Schedule II, III, IV and V have accordingly lesser degree of threat.

The Wildlife in West Bengal has been briefly dealt with below.

MAMMALS

The Mammalian fauna of West Bengal embraces nearly 200 species and subspecies of which about 70 species require special attention from the conservation point of view.

Of the Primates, the Rhesus Macaque, the Assamese Macaque and the Hanuman Langur are comfortable although their previous abundance have been squeezed. Hoolock Gibbon and Capped langur have been introduced in Sukhna wildlife sanctuary Darjeeling district.

Of the carnivores, the Tiger, the Leopard, the Leopard Cat, the Fishing Cat, the Jungle Cat; Hyena; Jackal, Fox, Wild Dog; Sloth Bear and Himalayan Black Bear; Red Panda; Large Civet, Small Civet, Palm Civet, Himalayan Palm Civet, Common Mongoose, Small Indian Mongoose, Crab-eating Mongoose; Common Otter, Smooth Otter, Clawless Otter, Stone Marten, Yellow-throated Marten, are thriving well. Wolf, Snow Leopard, Marbled Cat, Golden Cat and Clouded Leopard are becoming exceedingly rare if not exterminated.

Elephants are strictly confined to the foothills. In recent times, elephants from neighbouring states also occasionally invade the southwestern part of West Bengal, especially Medinipur and Purulia districts.

The Great One-horned Rhinoceros is precariously thriving in northern West Bengal Terai region in the Jaldapara and Gorumara sanctuaries only. Javan Rhino was exterminated a century ago.

Of the artiodactyls, Gaur, Wild Buffalo, Bharal, Serow, Goral, Sambar, Hog Deer, Barking Deer, etc., are all found in northern West Bengal while Sambar, Chital, Barking Deer and Wild Boar are widely distributed. The Nilgai and Black Buck have been exterminated from West Bengal.

The Indian Pangolin and the Chinese Pangolin are rare species in West Bengal, the former in the plateau of the west and the latter in the montane regions of the north.

Of the lagomorphs, the Mouse Hare is confined to higher hills, Common Hare is wide-spread both in the hills and the plains and the Hispid Hare is exceedingly rare and confined to Terai grasslands.

Of the rodents, the Malayan Giant Squirrel, many species of Flying Squirrels, Hodgson's Porcupine are found in the northern montane region while the Indian Porcupine is widely distributed.

The Gangetic Dolphin inhabits the Ganga river system.

BIRDS

Avian fauna of West Bengal embraces nearly 540 species and subspecies and almost all of them are included in one or the other Schedules of the Act. A majority of the avian species are migratory, coming into West Bengal at the onset of winter and leaving before summer while many are local migrants, their movement depend on availability of congenial foraging grounds.

Grebes, Cormorants, Pelicans, Herons, Egrets, Bitterns, Ibises, Spoonbill, Storks, etc. are widespread in the inland waters and marshy places. Of them Pelicans, Spoonbills and Storks are scarce. Adjutant storks, large adjutant and lesser adjutant are exterminated from wide areas, a small population of them are occasionally met with in the northern plains.

Geese, Teals, Ducks, Pochards and Goosanders are well marked during the winter months when they swarm in thousands in larger water bodies. Of them the Goosander is confined to the hill streams of northern part. The Pinkheaded Duck has been exterminated from West Bengal several decades ago.

Partridges, Quails, Spur-fowls, Blood Pheasants, Tragopans, Monal Pheasants, Kalij Pheasants, Jungle Fowls and Peafowls are found in well forested tracts. Of them, the Snow Partridge, Tragopan, Monal Pheasant and the Blood Pheasant are confined to higher reaches of Darjeeling Himalaya. Hill Partridges, and Kalij Pheasants are found in montane region of northern west Bengal. Peafowl which was once wide-spread has been driven into the well-forested tracts in northern and western West Bengal. Spur-fowl has become exceedingly rare in the plateau region of the west. So also the Phasianids of higher Himalayas have become rarer.

Bengal Florican has become rare in the Terai grassland. Saras Crane and Lesser Florican have been exterminated long back. Gulls, Rails, Crakes and Moorhens are common in the swamps and marshes. During winter, the migratory species increase in their quality as well as quantity.

Button-Quails are resident birds associated with the forest as well as agricultural tracts.

Snipes, Sandpipers, Plovers, Jacanas, Lapwings are marsh birds team in thousands during winter.

Common Sand-Grouse is rare in the dry western plateau region.

Green Pigeon, Imperial Pigeons, Wood Pigeons, and doves are all associated with forested tracts. Of them, the Snow Pigeon is confined to the extreme higher region of the north; Wood Pigeons are rare; Purple Wood Pigeon is exceedingly rare in the plateau region; Cuckoo-Dove, all Imperial Pigeons, except the Green Imperial, and many of the Green Pigeons, are confined to northern montane forests; while most of the other columbids are wide-spread and species like the Blue Rock Pigeon, and doves are thriving well even beyond the forested tracts.

Kingfishers are widespread but the Brown-Winged Kingfisher is confined to mangroves of Sundarbans and Blyth's Kingfisher in the foothills of the north.

Of the Hornbills, Grey Hornbill is spread over the western part, while Rufous-Necked, Wreathed, Pied and Great Hornbills are all found in the northern montane and foothill region.

Kites, Eagles, Bazas, Falcons, Hawks, Vultures, Parakeets, Cuckoos, Owls, Frogmouths, Nightjars, Swifts, Trogons, Bee-eaters, Roller, Hoopoe, Barbets, Woodpeckers and Honeyguide among the non-passerine Birds and Broadbills, Pittas, Larks, Swallows, Shrikes, Orioles, Drongos, Wood-swallow, Mynas, Nutcracker, Magpies, Crows, Cuckoo-shrikes, Minivets, Ioras, Bulbuls, Babblers, Flycatchers, Warblers, Thrushes, Dipper, Accentors, Titmices, Nuthatches, Wall Creeper, Tree Creepers, Pipits, Wagtails, Flowerpeckers, Sunbirds, White-eyes, Weaver Birds, Sparrows, Avadavats, Finches and Buntings among the passerine birds also represented in the avifauna of West Bengal. Of them, most of the birds of prey namely, Eagles, Bazas, Falcons, Hawks and Owls are becoming threatened and vulnerable largely due to the use of pesticides.

REPTILES

Of the reptilian fauna, Crocodiles, Monitor Lizards, Snakes and Turtles and Tortoises form major components in West Bengal. The Salt-water Crocodile, Marsh Crocodile, Gharial, Common Monitor, Clouded Monitor, Yellow Monitor, Water Monitor, Rock Python, King Cobra, Cobras, Rat Snakes, etc., have become vulnerable or threatened due to hunting pressure and Turtles and Tortoises have become vulnerable due to the careless fishing methods. However, captive breeding programme or Crocodile farming and Marine Turtle hatchery have replenished the number of some species in particular.

AMPHIBIA

Himalayan Newt found in Darjeeling Himalayas, is a rare and unique Salamander, confined to the montane part. Bull-Frog and its allies found in West Bengal are much sought for export trade.

FISHES

Of the innumerable species of fish-fauna of West Bengal, a few, namely, Goonch, Common Mahaseer, Tor Mahaseer, Mosal Mahaseer, Katli and Indian Trout of the hill streams of the north were treated as game fishes. But native angling include many species of Cyprinidae and Sisoridae.

INVERTEBRATES

Many invertebrate species require special attention due to their rarity and uniqueness. Of them, the Horse-Shoe Crabs *Carcinoscorpius rotundicauda* and *Techypleas gigus* are found in the beach of the southern coasts; Ludlow's Dragon Fly *Ephiophlabia ludlowi* discovered from Darjeeling Himalaya is unique and rare; while many species of Moths, Butterflies and Beetles have become rare and vulnerable due to excessive exploitation; of them Blue Peacock, Kalimia and Papilio species are exceedingly rare.

REGULATIONS AND ACTIONS

To regulate over exploitation, the Game Act of 1912 was imposed for West Bengal to curb legal hunting and trapping. To check trade, the Sea Custom Act of 1878 was in use to prevent the export of skins and feathers. Besides the Indian Fishing Act of 1897 which controlled game fishing, the Rhino Protection Act of 1932 and the Elephant Protection Act of 1932 (Bengal Amendments) were brought about to control of exploitation of Rhinos and Elephants by hunting and trapping. The Arms Act of 1878 regulated arms and ammunitions while the Forest Act of 1927 regulated activities in the forest land.

In order to protect wildlife habitats, a number of Sanctuaries were declared. In 1938 Senchal and Monpong came into being, in 1939, Chapramari, in 1940 Jaldapara and subsequently Gorumara, Sukna and Lothian Islands were brought under control. Many more have been added to the list. In 1973, the Sundarban Tiger Reserve was declared and the Buxa Tiger Reserve followed soon. Two National Parks namely, Singalila and Neora Valley were declared. The latest is the Biosphere Reserve in Sundarbans, which is also now listed as 'World Heritage Site' by UNESCO.

The original strategies of conservation was drafted in 1938 at Delhi Conference. The Indian Board for Wild Life was formed in 1952. In 1955 the State Wildlife Board of West Bengal came into existence. All these were finally brought under one umbrella - the Wildlife (Protection) Act No. 53 of 1972 (amended from time to time till 1988). The Act encompasses protection and preservation not only in Conservation areas but also all over the country. It even regulates/prevents the unauthorised possession of wildlife products as well.

DISCUSSION

Participation of public in afforestation and forest protection programmes has helped in reducing pressure on existing wildlife habitats on the one hand and the creation of newer habitats on the other. Paradoxically it is the very population of people which is largely responsible for the rise in degraded forest areas. West Bengal with its 80,752 sq. km. area bears the burden of 5,458,064 human beings. This is nearly 615 persons/sq. km. in comparison to 215 persons/sq. km. for India as a whole. The urban population is 26.5%; 22% of scheduled tribe people have only 11,879 sq. km. of forests which is only 13.4% in comparison to 22.8% in India. The per capital extant of forest is only 0.02 hectare. The area of available reserve forest is only 7,054 km² of which 3772 km² are protected forests. Nearly 17,908 ha were encroached upon as on 31st December 1987. The situation becomes alarming when the livestock is taken into account. Out of a total of 17 million livestock 16 million are cattle and the remaining buffaloes. This adds to the grazing areas being encroached upon year after year. To this one should add the major component of energy utilization - 12.210 million tons fire wood being consumed annually.

A brief account of selected few threatened and vanishing species of major faunal groups are given below to bring about particular attention. Some of them are included in Schedule I and some in Schedules II - IV of the Wildlife (Protection) Act of India 1972, others are equally important and need attention. The distribution of all major wildlife species of West Bengal is tabulated conservation area wise. The Schedule I animals of West Bengal and the list of conservation areas are given in the Appendices.

Mammals

Caprolagus hispidus (Pearson)

Hispid Hare

This species is confined to a habitat that is in early successional riverine communities typically comprising tall grassland commonly known as elephant grass or thatch grass. In West Bengal this type of habitat is only available in the north of river Ganga.

The Hispid hare has been recorded in recent times in Jaldapara Wildlife Sanctuary and Buxa Tiger Reserve in northwestern part of the State. The population size of the species is reduced drastically as a loss of its habitat.

The species is protected under Schedule I of the I.W.L.P. Act, 1972 and in the Appendix I of the CITES.

***Sus salvanius* (Hodgson)**
Pygmy Hog

The smallest species of the known Wild Pigs, the Pygmy Hog, is an inhabitant of terai and duars of Himalaya, as far west of Siwalic foot hills of Nepal. Very likely habitat is available in the northern part of the lower gangetic plain biogeographical area in West Bengal. No authentic data is available of its existence in the State till 1989 when the State Forest department officials recorded the nest of this species in Gorumara Wildlife Sanctuary in North Bengal. Although no individual has been encountered so far, a thorough Survey and detailed study on its ecology may be recommended to ascertain the existence of this unique species in the State for its future propagation.

***Macaca mulatta* Zimmerman**
Rhesus macaque

Basically a forest dweller, the Rhesus macaque has also turned urban. Common in protected forests like the Sundarban Biosphere Reserve and sanctuaries in northern West Bengal, trapping in the past has reduced the population which has been brought under control. This macaque is now included in Schedule II. Except for the shrinkage of habitat it faces no imminent danger after the ban of export was imposed towards its survival.

***Macaca assamensis* M'clelland**
Assamese macaque

It occurs in the Central Himalayas and the northern Gangetic plains which includes Mahananda (northern part), Senchal, Neora and Singalila. In West Bengal, it is less prone to be urbanised. This macaque is included in Appendix II of the CITES and Schedule II of the Wildlife protection Act thereby reducing any form of exploitation. Apart from shrinkage of habitat there is no threat to its survival.

***Presbytes entellus* Dufresne**
Common Langur

Formerly, it was the most common primate of West Bengal and was distributed almost throughout the state except the coastal biographical regions. It was killed in large numbers till 1977 as it was treated as a pest. Now its population is severely reduced but still surviving in most parts. Many groups have turned into urban populations. Three other primates to be mentioned in contact of West Bengal State are its Bonnet Macaque, the Hoolark Gibbon and the Capped Langur. Escape and pet individuals are still encountered and it is a matter of serious concern that often pet specimens are turned into conservation areas for rehabilitation as a group was set free in Sajinakhali Sanctuary.

***Nemorhaedus goral* (Hardwicke)**
Goral

A denizen and supremely adapted for the life in rugged hill, the Goral occurs in the state in Neora Valley, Singalila National Park, Senchal Wildlife sanctuary and the Buxa Tiger Reserve. Prized for its flesh, the species was often hunted. No authentic data is available regarding their population in West Bengal, but they are now scarce.

***Hemitragus jemlahicus* (H. Smith)**
Himalayan Tahr

A heavy-bodied mountain goat, the Himalayan Tahr inhabits well wooded parts along the steep slopes in Singalila and Neora Valley National Parks. Often hunted for its flesh and skin, the species is now totally protected under I.W.P. Act, 1972.

***Panthera tigris* (Linnaeus)**
Tiger

The Tiger is the supreme lord of the jungle. Its immense power and majestic movements command respect. And its magnificent coat always alured the hunters. The trophy of the Tiger pronounces the pride and prestige and thus the animal was persecuted in an uncalculated number so much so that the population size all over its range became alarmingly low. Despite various regulations on hunting and trapping, the decline was steady until the promulgation of the Wildlife Protection Act in 1972 and the launching of the Project Tiger in 1973. Since then Tiger population has been restored and in many places increased satisfactorily, and are being monitored regularly through thorough census. The enumeration in 1984 reveals a total of 352 tigers in West Bengal which has now increased to about 450. Traditional cattle lifting and man-eating incidents have been minimised. And in Sundarban where the entire population was alleged to be man-eaters, rate of man-eating by tigers has now been controlled through several measures taken. The tiger in a jungle is an indicator of the health of the biota. And thus a healthy population of tiger in an area readily reveals the good health of the habitat. Trade in trophy, hunting and trapping has been totally prohibited. Vigilance on criminal offence are carried out by appropriate authorities in the tiger land as well as in cities and trade centres. Tiger is included in the Schedule I of the Indian Wildlife (Protection) Act and also included in Appendix I of the CITES.

***Panthera pardus* (Linnaeus)**
Leopard

The Leopard is yet another big carnivore that alured hunters for its range has appreciated reduced despite its much wider distributional range and greater adaptability to different habitats. Trapping and hunting together with widespread destruction of habitat are responsible for the decline in its population. It is include in Schedule I of the act and Appendix I CITES. Now the conservation areas offer asylum to this species and are thriving well specially in northern West Bengal.

Other Cats

Clouded Leopard, *Neofelis nebulosa*, Golden Cat, *Felis temmincki*, Fishing Cat, *Felis viverrina*, Leopard Cat, *Felis bengalensis*, and Jungle Cat, *Felis chaus*, are the other members of the cat-family that fall prey to hunting and trapping largely for their pelt in fur trade. All these species are now adequately protected, and the trade completely controlled. Clouded Leopard and the Golden Cat were always excedingly scarce in West Bengal being in the northwestern fringe of their range and also due to rapid habitat loss over a long period. Fishing Cat was always elusive and poorly known animal but in recent years many wildlife enthusiasts have reported them in different locations in 24 Parganas district, while Leopard Cat and Jungle Cat are widespread and live beyond forest land.

Other Carnivores

Of the other carnivores, Large Indian Civet, *Viverra zibetha*, Small Indian Civet, *Viverricula indica*, Common Palm Civet, *Paradoxurus harmaphroditus*, and Himalayan Palm Civet, *Paguma*

larvata were in great demand in fur and musk trade and thus were severely persecuted in large numbers. They were also persecuted as a revenge for their notoriety in damaging the poultry. But now they are adequately protected and their trade severely controlled. Grey Mongoose, *Harpestes edwardsi*, Small Mongoose, *H. auropunctatus*, and Marsh Mongoose, *H. palustris* were all much sought for their fur used in brush industry. The Common Otter, *Lutra lutra*, Smoothcoated Otter, *L. perspicillata*, Clawless Otter, *Aonyx cinerea*, Jackal, *Canis aureus*, Bengal Fox, *Vulpes bengalensis*, were also fetched for fur trade and persecuted largely. Sloth Bear, *Melursus ursinus* and Himalayan Black Bear, *Selenarctos thibetana*, were largely hunted for their fat and bezour and traded for medicinal values. Red Panda, *Ailurus fulgens*, is a unique species with beautiful coat and sought after for fur trade. Stone Marten, *Mustella foina*, Yellowthroated Marten, *Martes flavigula*, are small carnivores and much sought after for their fur in brush industry. All of the above mentioned species are protected under one or the other schedules of the act.

***Elephas maximus* (Linnaeus)**
Elephant

The Elephant was much sought after by trappers as well as by hunters. It was hunted in large numbers for the ivory, and the youngs were trapped for use as a beast of burden. Moreover shrinkage of its habitat and obstacles in its migration routes caused bitter conflict between man and elephant, and damage to either side became evident. Until recently elephants were confined to Northern West Bengal but these days elephants are invading southwestern districts of West Bengal from the neighbouring states. Elephant depredation which causes severe damage to crops and hutments including loss of human life is a serious problem in the elephant-country. Launching of a Project on elephants throughout the country will certainly take care of all of the problems and help healthy regeneration of the elephant population as evident from the Project Tiger, which helped to restore the Tiger population. Elephant is now adequately protected and ivory trade is banned. But still remains clandestine hunting and trading which will be take up more severely when the Project on Elephant will work in full swing.

***Rhinoceros unicornis* (Linnaeus)**
Great One-horned Rhino

The Rhinoceros once widely distributed in grassy swamps of West Bengal has become restricted in its range and now confined to some isolated pockets only. In West Bengal Rhino is confined to Jaldapara and Gorumara sanctuaries and its population does not seem comfortable and viable specially when wanton killing by poachers over the recent years have taken away the potential breeding animals. Although rhino is totally protected and the trade in its horn is legally banned but clandestine traders are criminally assaulting the animal for its horn. There are frequent instances of rhino killing by poachers and it is a serious problem for the survival of Rhino, particularly in West Bengal. It may be recalled that the Javan Rhino, *Rhinoceros sondaicus*, which once used to roam in West Bengal has been exterminated, not only from West Bengal but from the entire range of its distribution within this century.

***Bubalus bubalis* (Linnaeus)**
Wild Buffalo

The wild Buffalo is majestic bovid now confined to Terai region in West Bengal. Not long ago this animal was common in swampy areas, but exterminated from many localities except those in Northern West Bengal. Natural calamities in the form of epidemic, and the shrinkage of habitat are largely responsible for its decline.

Other Ungulates

Serow, *Capricornis sumatraensis*; Goral, *Nemorhaedus goral*; Himalayan Tahr, *Hemitragus jemlahicus*, are the other bovid animals that occur in West Bengal and are sought after for their flesh. They are all adequately protected now. Of the deer family, Sambar, *Cervus unicolor*; Spotted Deer, *Axis axis*; Hog Deer, *Axis porcinus*; Barking Deer, *Muntiacus muntjak*, are all animals of sports and now are protected under Schedule III.

Cetaceans

The Gangetic Dolphin, *Platanista gangetica* inhabits the river Ganga. Other Cetaceans are marine but often found in the estuary or coastal waters of West Bengal. Often deep sea whales were recorded from the coast. All the members of the cetaceans found in the Bay of Bengal may arbitrarily be included in the West Bengal list. Modern fishing in the open seas, specially in the sea mouth and Ganga system apprehended to be injurious to marine life. Besides, higher degree of pollution in the Ganga drainage also influence the marine life at large.

Rodents

Of the rodents, at least five species of Flying Squirrels, *Petaurista nobilis*, *P. magnificus*, *P. petaurista*, *Hylopetes alboniger* and *Belomys pearsoni*, the Malayan Giant Squirrel, *Ratufa bicolor*, and the Himalayan Porcupine, *Hystrix hodgsoni*, are all protected from over exploitation.

Birds

Ardea goliath Cretzchmar Giant Heron

The Giant Heron is basically a bird of marshy land. It sometimes invades inland lakes also. Though it could rarely be found and was uncommon in West Bengal yet Mr. Blyth procured live specimens from Calcutta market in 1845 and 1846. Thereafter he even shot one each in 1878 and 1879 and observed one in 1880, most probably in the Salt Lake area. In course of Avifaunal survey conducted by Dr. B. Biswas and his team from ZSI during the period between 1962 and 1968 not a single specimen of this species was encountered in that area. At a later date in December 1983 one bird was sighted near Raidighi in course of faunal survey in the Sundarbans. Its inclusion in the Schedule I of W.L. Protection Act may therefore, be recommended.

Leptoptilos dubius (Gmelin) Adjutant Stork

The Adjutant, the largest and most conspicuous among Indian Storks, inhabits wet land areas and near human habitation. It was a common scavenger bird in West Bengal. Even during the late nineteenth century it was plentiful in Calcutta proper. Many paintings of that period show the Adjutants perched on mansions. It became the emblem of the Calcutta Municipal Corporation in appreciation of their scavenging service.

Unfortunately by the end of World war II its population started dwindling, and suddenly disappeared not only from Calcutta and suburbs but also from West Bengal. This bird is also becoming very rare in its entire range of occurrence. Probably, it is one of the most rare in India and needs stringent protection.

***Leptoptilos javanicus* (Horsefield)**
Lesser or Haircrested Adjutant

The lesser or Haircrested Adjutant is a resident/nomadic bird of fallow land and semiaquatic areas. Formerly reported to occur in West Bengal especially in the southern part but now it is extremely rare. Alteration in habitat and presumably increased use of pesticide might have caused the depletion of its population. The lesser Adjutant should also be included in Schedule I.

Among Ciconiformes, practically all large storks i.e. Blacknecked Stork, *Ephippiorhynchus asiaticus* (Latham); Whitenecked Stork, *Ciconia episcopus* (Boddaert) and the White Stork, *Ciconia ciconia* (Linnaeus), except the Openbill Stork, *Anastomus oscitans* (Boddaert), have become rare in West Bengal in recent years. To assess the cause and rate of their population depletion, census of all species of large storks is needed for future protection.

***Threskiornis aethiopica* (Latham)**
White Ibis

The White Ibis is a bird of marshland. Fairly healthy population were recorded in all the major wetland areas in West Bengal. It was stated to be fairly common in Salt Lake near Calcutta. During early sixty's its population started dwindling due to the shrinkage of habitat and hunting pressure. During October 1982, a pair was observed near Bracebridge Swamp in Calcutta. Though, this bird still occurs in many parts of West Bengal it is not common and is a protected species.

It may also be mentioned that the other two species of Ibises, the Black Ibis, *Pseudibis papillosa* (Temminck) and the Glossy Ibis, *Plegadis facinellus* (Linnaeus), are also becoming exceedingly rare in the State and need immediate steps for their protection and propagation.

***Dendrocygna bicolor* (Vieillot)**
Large Whistling Teal

A wetland inhabiting bird, the Large Whistling Teal is a resident nomadic bird. Inside Indian Territory, this bird was stated to be very common in West Bengal (in Nadia Dist.). Till mid seventies, a flock of even 30-40 individuals used to visit the Alipur Zoo garden, right in the heart of Calcutta city. But its population is on the decline. Shrinkage of habitat and non availability of nesting sites may be attributed to their decimation. The species is accorded stringent protection as it has been included in the Schedule I of I.W.L.P. Act, 1972 and its subsequent amendments.

Falconiformes Accipitridae

Majority of the birds of prey especially the larger ones except probably the Pariah Kite, *Milvus migrans*; the Serpent Eagle, *Spilornis cheela* and the Honey Buzzard, *Pernis ptilorhynchus*, are becoming scarce in the State. Though no detailed survey has been made to ascertain their population or cause of their depletion but destruction of habitat and increased use of pesticide lead to the thinning of their eggshell along with probable senility factor may be the cause of their present sorry state of affairs. The same holds good in case of scavenging birds of prey except the White Backed or Bengal Vulture, *Gyps bengalensis* and many species of small and medium-sized Hawks. However, the following species needs immediate attention.

***Aviceda leuphotes* (Dumont)**
Indian Blackcrested Baza

A denizen of well wooded countryside, the Indian Blackcrested Baza, is an uncommon bird of prey in northern West Bengal. The bird is included in Schedule I and thereby completely protected.

Accipiter gentilis (Linnaeus)
Eastern Goshawk

The Eastern Goshawk inhabits Oak-Rhododendron forests in the High Himalayas. In the State, the bird is likely to occur in the Singlila National Park. No recent authentic data is available regarding its occurrence in the State. The bird is protected by its inclusion in Schedule I.

Rhodonessa caryophyllacea (Latham)
Pinkheaded Duck

A relict species of the gangetic Plain especially of the Terai swamp. With a probable origin in Tethys Sea Swamp, the Pinkheaded duck used to occur in West Bengal also. But it is now extinct in India. Last authentic sight record of this bird is in June 1935 by C.M. Inglis in Bihar. Disturbances in habitat and hunting may be attributed to its extinction. It is also included in Schedule I.

Haliaeetus leucogaster (Gmelin)
Whitebellied Sea Eagle

This large grey and white Eagle is an inhabitant of the coastal region of West Bengal. Formerly, the species was distributed along the entire Hoogli-matla estuary system, which includes the Sundarban Biosphere Reserve. During the course of avifaunistic survey in Sundarban Tiger Reserve by ZSI and Prakriti Samsad during 1988 and 1989 the species was encounter in very small number only in the north of South Canning, South 24-Pgs, district. The species is included in Schedule I of the I.W.L.P. Act. 1972.

Sarcogyps calvus (Scopoli)
Black or King Vulture

One of the commonest scavenging birds of prey in West Bengal till the early sixty's. This timid and most docile bird among all other vultures was well known in the State as 'Bratning Shakoon' and its 'goose step ceremony' was a well observed/known fact. In the recent times no authentic data is available on its occurrence in the State. Immediate steps should be taken to ascertain its present status in the State. It is also becoming rare in its entire range of occurrence.

Accipiter badius (Gmelin)
Shikra

An efficient lesser bird of prey inhabiting a diverse habitat ranging from well wooded country, hill and plain and also inside human habitation. A resident bird in West Bengal, still occurring in fairly good numbers. But occasional trapping for keeping as pet and destruction of habitat is very likely to affect this bird of prey. The others like Sparrow Hawk, *Accipiter nissus* and the Besra Sparrow Hawk, *Accipiter virgatus* Hodgson, that occur in the State are also becoming scarce. These birds are also included in Schedule I.

Gypaetus barbatus (Hablizl)
Lammergier, Himalayan Bearded Vulture

The majestic eagle-like vulture is exclusively a montane species. The suitable habitat is only available in the part of Central Himalayan biogeographical region of the State. The area includes

Singalia and Neora Valley National Park. Though there is no authentic data available regarding their population status in the State, there are indications that they are on the decline. The species is included in the Schedule I.

***Pandion haliaetus* (Linnaeus)**

Osprey

An elegant moderate sized fish-eating hawk, the Osprey is a winter migrant, frequenting wetland, rivers and littoral areas in the State. Even during mid-seventies it was observed to soar down the river Hugli in Calcutta (B. Biswas, pers. comm.) But now they are very rare. Included in Schedule I.

Of the birds, the following species are included under Schedule I. They are : White Stork, *Ciconia ciconia*; Spoonbill, *Platalea leucorodia*; Large Whistling Teal, *Dendrocygna bicolor*; Pinkheaded Duck, *Rhododessa caryophyllacea*; Blyth's Baza, *Aviceda jerdoni*; Blackcrested Baza, *A. leuphotes*; Lammergeier, *Gypaeus barbatus*; Black Eagle, *Ictinopus malayensis*; Whitbellied Sea-Eagle, *Haliaetus leucogaster*; Perigrine Falcon, *Falco perigrinus*; Osprey, *Pandion haliaetus*; Swamp Partridge, *Fracoinus qualaris*; Spurfowl, *Galloperdix spadicea*; Blood Pheasant, *Ithaginis cruentus*; Crimson Tragopan, *Tragopan satyra*; Monal Pheasant, *Lophophorus impejanus*; Peacock Pheasant, *Polyplectron bicalcarum*; Common Crane, *Grus grus*; Bengal Florican, *Eupodotis bengalensis*; Rufousnecked Hornbill, *Aceros nipalensis*; Wreathed Hornbill, *Ryticeros undulatus*; Indian Pied Hornbill, *Anthracoseros malabaricus*; Great Pied Hornbill, *Buceros bicornis*; and many species of falcons and hawks (family Falconidae and Accipitridae, which are though not defined clearly). Of the above species, the Pink headed Duck has not only been exterminated from West Bengal but from the entire Indian sub-continent, about four decades ago.

Reptiles

Of the reptiles, Marsh Crocodile, *Crocodylus palustris*; Estuarine Crocodile *C. porosus*; the Marine Turtles, *Dermochelis coriacea*; *Lepidochelis olivacea*; *Eretmochelis imbricata*; *Chelonia mydas*; *Careta careta*; Flap shelled, *Lissymys punctata*; Tent Turtle, *Kachuga tecta*; Softshelled, *Trionyx gangeticus*; Monitor Lizards, *Varanus flavescens*; *V. bengalensis*; *V. salvator*; Rock Python, *Python molurus*; King Cobra, *Ophiophaga hannah*; and Cobra, *Naja naja*; are included in Schedule I.

***Batagur basaka* (Gray)**

Batagur River Terrapin

This is a well known species in the estuarine ecosystem of Sunderbans in West Bengal. The meat and fat (for soap industry in Calcutta) of this unique species has been responsible for its exploitation and decline even as early as the 19th century in the then undivided Bengal. Ghosh and Mandal (1990) have reported their decline over the years in the entire range of its distribution. Though it has been included in the IUCN Red list of threatened animals as an 'Endangered' species, till now it has not been included either in Schedule I or II of the Indian Wildlife (Protection) Act of 1972. Hardly any information is available on the abundance and population density of the species within the territorial limits of India.

AMPHIBIA

Order Urodela, Family – Salamandridae

***Trilotriton verrucosus* (Anderson)**

Himalayan Newt or Salamandar

A denizen of the Himalayan region this is the only representative of the Order Urodela in India. It

occurs in montane lakes and freshwater puddles in the altitudinal range between 126 and 222 m in Northeastern India. Darjeeling district is its stronghold. A solitary individual was recorded in 1989 in Siliguri during late monsoon by North Bengal Nature Club - a N.G.O. body working in that district. The specimen was possibly washed away during heavy rain. The Jorpokri/Salamander Sanctuary was established in Darjeeling district, during 1989 to protect this animal. This Sanctuary supposedly contains maximum known concentration of this species and is seen to occur during pre-monsoon for breeding. Included in Schedule II.

INVERTEBRATES

Phylum : Arthropoda, Order : Xiphosura

Carcinocarpus rotundicaudata (Latrielle), *Tachypleus gigas* (Muller)

Horseshoe crabs

The Horseshoe crabs are considered "living fossils", since they have not changed morphologically significantly since the devonian period. Of the four species available in the world, two are recorded from the coastal waters of the Bay of Bengal. Of these *Carcinocarpus rotundicaudata* (Latrielle) is more common in the district of South 24 Parganas of West Bengal. During a detailed investigation (Ghosh, 1991), it was observed that there was an alarming imbalance in the sex ratio of the natural populations – where the number of males appear to far outnumber the females. This and the ratio of exploitation, habitat distribution and observations based on catches during trawling operations amply justify for these Horseshoe crabs to be included in the Schedule I of the Indian Wildlife (Protection) Act of 1972.

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Wildlife and its Conservation in West Bengal

			Bio-sphere Reserve	National Parks		Tiger Reserve	Wildlife Sanctuaries 7													Other Areas				
	1	2		3	4		5	6	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	8
	Status in Schedule of Indian Wildlife (Protection) Act	Status in Appendix of CITES	Sundarban	Singalila	Neora Valley	Buxa	Salamandar/ Jore Pokri	Senchal	Mahananda	Jaldapara	Gorumara	Chapramari	Raiganj	Bethuahari	Bibhutibhushan	Ballavpur	Lothian Island	Halliday Island	Sajinakhali	Narendrapur	Ramnabagan	Santragachi Waterfowl Sanctuary	Bracebridge Ecological Park	Nayachar Conservation Area

Class MAMMALS

Order PRIMATES

Family Cercopithecidae

Subfamily Cercopithecine

Macaca mulatta (Zimmerman)
(Rhesus Monkey)

II I + + + + + + + + + + + + + + +

Macaca assamensis McLelland
(Assamese Monkey)

II I + + + + + +

Subfamily Colobine

Presbytes entellus (Dufresne)
(Common Langur)

II I + + + + + + + + + + + + + + + + +

Order Carnivora

Family Canidae

Canis aureus Linnaeus
(Jackal)

II I +

	1	2	3	4	5	6	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	8	9	10	
<i>Canis lupus pallipes</i> (Sykes) (Wolf)	I	IV		+	+			+							?										
<i>Vulpes bengalensis</i> (Shaw) (Common Fox)	II	IV	+			+		+	+	+	+	+	+			+	+								
<i>Vulpes vulpes</i> (Linnaeus) (Red fox)	II	IV		+	+			+	+																
Family Ursidae																									
<i>Melursus ursinus</i> (Shaw) (Sloth Bear)	II	II		+	+	+		+	+		+	+	+												
<i>Selenarctos thibetanus</i> (Cuvier) (Himalayan Black Bear)	II	II		+	+			+	+																
Family Procyonidae																									
<i>Ailurus fulgens</i> F. Cuvier (Red Panda)	I	I		+	+			+																	
Family Mustelidae																									
<i>Arctonyx collaris</i> F. Cuvier (Hog Badger)	I				+					+	+	+	+	+											
<i>Mellivora capensis</i> (Schreber) (Honey Badger)	I										+	+	+												
<i>Martes flavigula</i> (Boddaert) (Yellow-throated Marten)	II			+	+	+	+																		
<i>Mustela altaica</i> Pallas (Alpine Weasel)	II			+	+																				
<i>Mustela sibirica</i> Pallas (Siberian Weasel)	II			+																					
<i>Lutra lutra</i> (Linnaeus) (Common Otter)	II	I		+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Lutra perspicillata</i> Goffroy (Smooth Indian Otter)	II	II		+	+			+	+	+	+						+	+	+	+				+	
<i>Aonyx cinerea</i> (Illiger) (Small clawed Otter)	I	II			+																				
Family Viverridae																									
<i>Viverra zibetha</i> Linnaeus (Large Civet)	II	IV		+	+	+		+	+	+	+			+	+		+	+	+						

	1	2	3	4	5	6	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	8	9	10	
<i>Viverricula indica</i> (Desmarest) (Small Indian Civet)	II	II	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Paradoxurus hermaphroditus</i> (Pallas) (Palm Civet)	II	IV	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Paguma larvata</i> Hamilton-Smith (Himalayan Civet)	II	IV		+	+	+	+	+																	
Family Felidae																									
<i>Felis chaus</i> Guldenstaedt (Jungle Cat)	II	I		+	+	+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>F. marmorata</i> Martin (Marbled Cat)	I	I		+	+			+																	
<i>F. bengalensis</i> Kerr (Leopard Cat)	I	I		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Felis viverrina</i> Bennett (Fishing Cat)	I	I		+		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Neofelis nebulosa</i> (Griffith) (Clouded Leopard)	I	I			+																				
<i>Panthera pardus</i> (Linnaeus) (Leopard)	I	I		+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Panthera tigris</i> (Linnaeus) (Tiger)	I	I		+	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Order PROBOSCIDEA																									
Family Elephantidae																									
<i>Elephas maximus</i> (Linnaeus) (Indian Elephant)	I	II			+	+		+	+	+	+														
Order PERISSODACTYLA																									
Family Rhinocerotidae																									
<i>Rhinoceros unicornis</i> (Linnaeus) (Rhinocerotidae)	I	I									+	+	+												
Order ARTIODACTYLA																									
Family Suidae																									
<i>Sus salvanius</i> (Hodgson) (Pygmy Hog)	I	I				+					+	+	+												

	1	2	3	4	5	6	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	8	9	10	
Family Cervidae																									
<i>Axis porcinus</i> (Zimmermann) (Hog Deer)	III	III	?			+					+	+	+	+											
Family Bovidae																									
<i>Bos gaurus</i> H. Smith (Bison or Gaur)	I	I			+	+					+	+	+	+											
<i>Bubalus bubalis</i> (Linnaeus) (Indian Buffalo)	I	I			+						+	+	+												
<i>Naemorhedus goral</i> (Hardwicke) (Goral)	III	I		+	+			+	+																
<i>Hemitragus jemtahicus</i> (H. Smith) (Himalyan Tahr)	I	I		+																					
Order LAGOMORPHA																									
Family Leporidae																									
<i>Caprolagus hispidus</i> (Pearson) (Hispid Hare)	I	II				+								+	+	+									
Order RODENTIA																									
Family Sciuridae																									
<i>Belomys pearsoni</i> (Gray) Hairyfooted Flying Squirrel	II	II		+	+	+		+	+																
<i>Petaurista petaurista</i> (Pallas) Common Giant Flying Squirrel	II	II			+	+																			
<i>P. elegans</i> (Muller) Lesser Giant Flying Squirrel	II	II		+	+					+	+														
<i>P. magnificus</i> (Hodgson) Hodgson's Flying Squirrel	II	II		+	+					+	+														
<i>Hylopetes alboniger</i> (Hodgson) Particoloured Flying Squirrel	II	II		+	+	+				+	+														
<i>Ratufa bicolor</i> (Sparmann) (Malayan Giant Squirrel)	II	II		+	+					+	+	+	+	+	+										
Family Hystricidae																									
<i>Hystrix hodgsoni</i> (Gray) (Chinese Porcupine)	II	II		+	+					+	+	+													

	1	2	3	4	5	6	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	8	9	10	
<i>Accipiter nisus</i> (Linnaeus) (Sparrow Hawk)	I			+	+	+	+	+		+	+														
<i>Accipiter virgatus</i> (Temminck) (Besra Sparrow Hawk)	I			+	+	+	+	+																	
<i>Haliaeetus leucogaster</i> (Gmelin) (Whitebellied Sea Eagle)	I	I	+														+	+	+						
<i>Sarcogyps calvus</i> (Scopoli) (King Vulture)				+		+	+											+	+	+					
Family Falconidae																									
<i>Falco peregrinus</i> Tunstall (Peregrine Falcon)	I		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Falco chicquera</i> Daudin (Redheaded Marlin)	I		+	+	+	+		+								+	+				+				
Family Pandionidae																									
<i>Pandion haliaetus</i> (Linnaeus) (Osprey)	I		+			+			+								+	+	+						
Order GALLIFORMES																									
Family Phasianidae																									
<i>Ithaginis cruentus</i> (Hardwicke) (Blood Pheasant)	I			+																					
<i>Lophophorus impejanus</i> (Latham) (Monal)	I	I		+	+																				
<i>Pavo cristatus</i> (Linnaeus) (Pea-fowl)	I	I				+		+	+	+															
Order STRIGIFORMES																									
Family Strigidae																									
<i>Bubo bubo</i> (Linnaeus) (Eagle-Owl)	IV		+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+		+			
<i>Bubo zeylonensis</i> (Gmelin) (Fish Owl)	IV		+			+																			
<i>Bubo nipalensis</i> (Hodgson) (Forest Eagle-Owl)	IV			+	+	+		+																	

	1	2	3	4	5	6	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	8	9	10
--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----

Order CORACIIFORMES

Family Bucrotidae

Aceros nipalensis (Hodgson) I I + + +

Order TESTUDINES

Chelonia mydas (Linnaeus) (Green Sea Turtle) + + +

Lepidochelys olivacea (Eschscholtz) (Olive Ridley) I I + + +

Order CROCODYLIA

Crocodylus palustris (Lesson) (Marsh Crocodile) I I +

C. porosus (Schneider) (Estuarine Crocodile) I I + + +

Gavialis gangeticus (Gmelin) (Gharial) + + +

Order SQUAMATA

Python molurus (Linnaeus) (Indian Rock Python) I I + + + + + + + + + +

Ophiophagus hannah (King Cobra) I I + + + + + + + + +

Class REPTILIA

Varanus flavescens (Gray) (Yellow Monitor) I I + + + + + + +

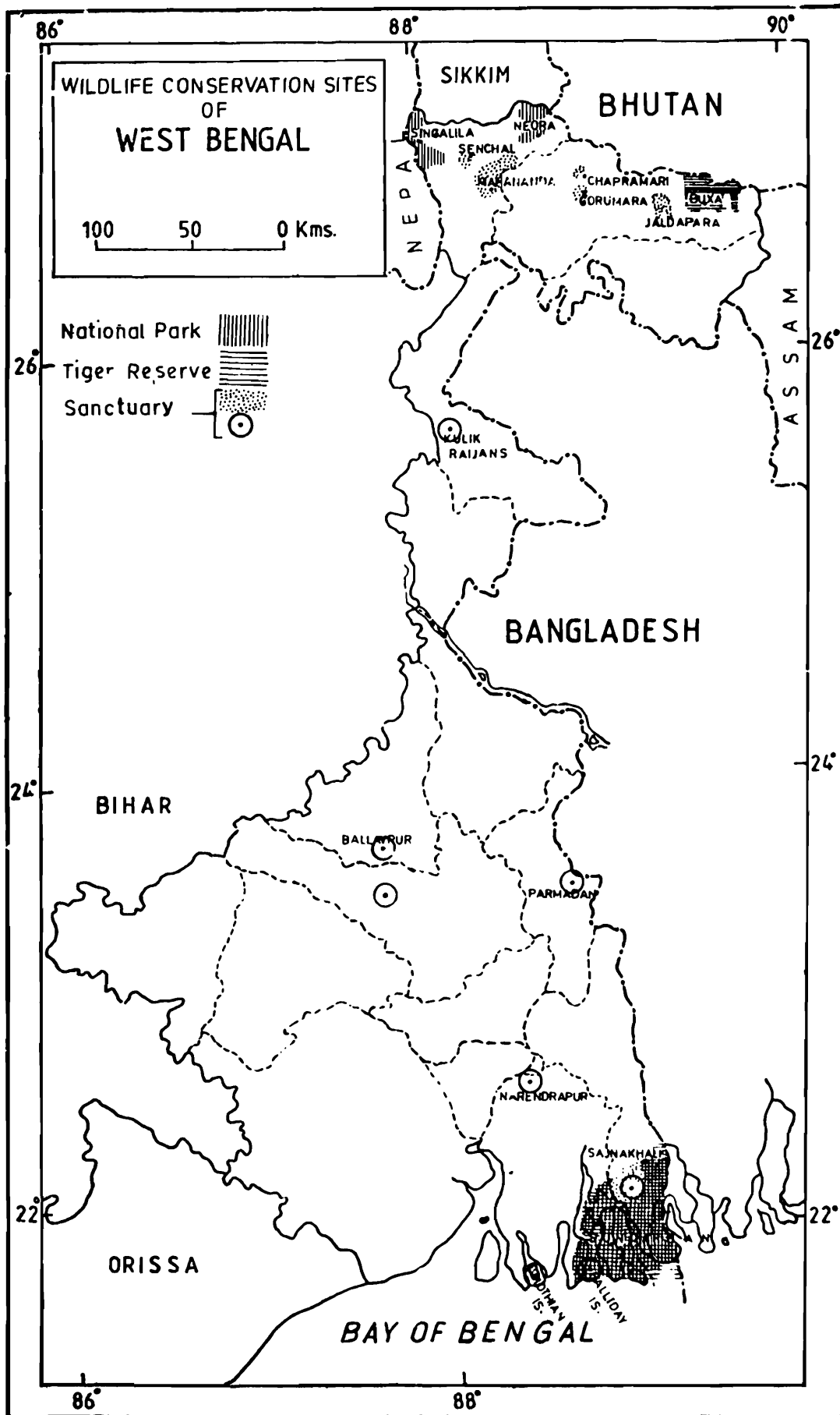
V. bengalensis (Daudin) (Bengal Monitor) I I + + + + + + + + + + + + + + +

Varanus salvator (Laurenti) (Water Monitor) I I + + + + + + + + + + + + + + +

Class AMPHIBIA

Order URODELIA

Trilotriton verrucosus (Anderson) (Himalayan Newt) II + + +



Appendix I

Wildlife species represented in West Bengal that are listed in the Schedule I of Indian Wild Life (Protection) Act.

MAMMALS

- Bharal *Pseudois nayur*
 Binturong *Arctictis binturong*
 Chinese Pangolin *Manis pentadactyla*
 Clouded Leopard *Neofelis nebulosa*
 Elephant *Elephas maximus*
 Fishing Cat *Felis viverrina*
 Gangetic Dolphin *Platanista gangetica*
 Gaur *Bos gaurus*
 Great One horned Rhino *Rhinoceros unicornis*
 Himalayan Tahr *Hemitraqus jemlahicus*
 Hispid Hare *Caprolagus hispidus*
 Hog Badger *Arctonyx collaris*
 Hoolock Gibbon *Hylobates hoolock* (introduced)
 Indian Pangolin *Manis crassicaudata*
 Indian Wolf *Canis lupus pallipes*
 Leopard *Panthera pardus*
 Leopard Cat *Felis bengalensis*
 Lesser Panda *Ailurus fulgens*
 Little Indian Porpoise *Neomeris phocoenoides*
 Marbled Cat *Felis marmorata*
 Mouse Deer *Tragulus meminna*
 Pygmy Hog *Sus salvanius*
 Ratel *Mellivora capensis*
 Serow *Capricornis sumatraensis*
 Sloth Bear *Melursus ursinus*
 Small Clawed Otter *Aonyx cinerea*
 Snubnosed Dolphin *Orcaella brevirostris*
 Spotted Linsang *Prionodon pardicolor*
 Swamp Deer *Cervus duvauceli*
 Takin *Budorcas taxicolor*
 Tibetan Wolf *Canis lupus chanco*

Tiger *Panthera tigris*

Wild Buffalo *Bubalus bubalis*

BIRDS

Blyth's Baza *Aviceda jerdoni*

Blackheaded Baza *Aviceda leuphotis*

Bengal Florican *Eupodotis bengalensis*

Blood Pheasant *Ithaginis cruentus*

Eastern White Stork *Ciconia ciconia boyciana*

Great Pied Hornbill *Buceros bicornis*

Hawks *Various species of Accipitridae*

Rufous-necked Hornbill *Aceros nipalensis*

Rhythbilled Hornbill *Rhyticeros undulatus*

Indian Pied Hornbill *Anthracoceros malabaricus*

Lammergeier *Gypaetus barbatus*

Shahin Falcon *Falco peregrinus*

Redheaded marlin *Falco chicquera*

Large Whistling Teal *Dendrocygna bicolor*

Monal Pheasant *Lophophorus impejanus*

Sclater's Monal *Lophophorus sclateri*

Osprey *Pandion haliaetus*

Peacock Pheasant *Polyplectron bicalcaratum*

Peafowl *Pavo cristatus*

Crimson Tragopan *Tragopan satyra*

White bellied Sea Eagle *Haliaetus leucogaster*

Spoonbill *Platalea leucorodia*

REPTILES

Crocodiles *Crocodylus palustris, Crocodylus porosus*

Gharial *Gavialis gangeticus*

Ganges Softshelled Turtle *Trionyx gangeticus*

Green Sea Turtle *Chelonia mydas*

Indian Flapshelled Turtle *Lissymys punctata*

Indian Tent Turtle *Kachuga tecta*

Logger-head Turtle *Carena caretta*
 Olive Loggerhead Turtle *Lepidochelis olivacea*
 Rock Python *Python molurus*
 Water Lizard *Varanus salvator*
 Bengal Monitor Lizard *Varanus bengalensis*
 Yellow Monitor Lizard *Varanus flavescens*

Appendix II

Wildlife conservation areas in W.B.

Name	Area	Remarks
Ballavpur Birbhum Dist.	2.02 sq. km.	Deer Park
Bethuadahari Nadia Dist.	.67 sq. km.	Deer Park
Buxa Jalpaiguri Dist.	7.45 sq. km.	Tiger Reserve
Chapramari Jalpaiguri Dist	9.60 sq. km.	Sanctuary
Gorumara Jalpaiguri Dist.	8.62 sq. km.	Sanctuary
Halliday Island 24-Pgs. Dist.	3.50 sq. km.	Sanctuary
Jaldapara Jalpaiguri Dist.	115.62 sq. km.	Sanctuary
Jore Pokhri Darjeeling Dist	.04 sq. km.	Pond for Himalayan Newt
Lothian Island 24-Pgs Dist.	32.99 sq. km.	Sanctuary
Mahananda Darjeeling Dist.	129.32 sq. km.	Sanctuary
Narendrapur 24-Pgs Dist.	20.50 sq. km.	Bird Sanctuary

Name	Area	Remarks
Bibhutibhusan		
Parmadan 24-Pgs. Dist.	.55 sq. km.	Deer park
Raiganj West Dinajpur Dist.	.32 sq. km.	Bird Sanctuary
Ramnabagan Burdwan Dist.	1.45 sq. km.	Sanctuary
Sajinakhali 24-Pgs. Dist.	362.36 sq. km.	Sanctuary
Senchal Darjeeling Dist.	38.88 sq. km.	Sanctuary
Neora Valley Darjeeling Dist.	.88 sq. km.	National Park
Singalila Darjeeling Dist.	78.60 sq. km.	National Park
Sundarban 24-Pgs. Dist	2586.00 sq. km.	Tiger Reserve & Biosphere Reserve

Appendix III

Central Funds released towards development of conservation areas in West Bengal :

Under National Park Scheme : Rs. 6.63 lakh during 1986-87

For Tiger Reserves :

Buxa : Rs. 40.87 lakh during 1982-1988

Sundarban : Rs. 74.54 lakh during 1980-1988

Under Sanctuary Scheme : Rs. 15.52 lakh during 1980-1988