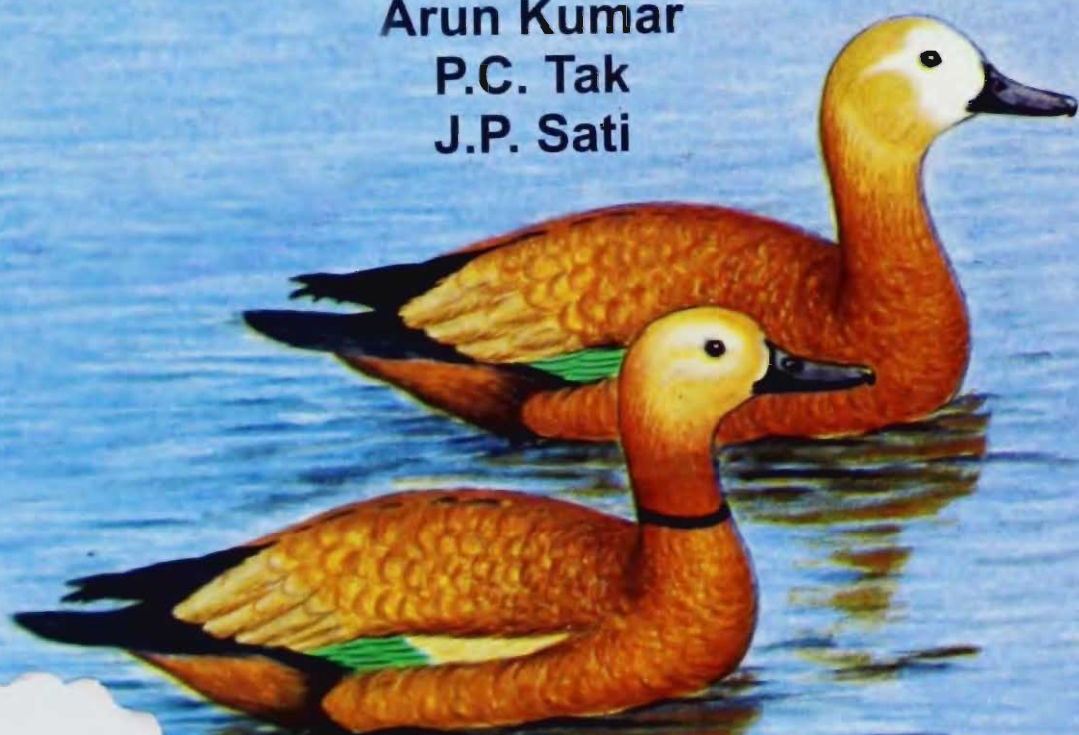


# Waterbirds of Northern India

J.R.B. Alfred  
Arun Kumar  
P.C. Tak  
J.P. Sati



**Biological Survey of India**  
**Ministry of Environment & Forests**  
**Govt. of India**





1



1



2



2



2



5



6



6



6



7



8



11



12



12



13



18



19



20



21



22



25



26



27



27



31



31



32



33



36



37



38



38



*Numbers given next to the drawings refer to the plates*



# Waterbirds of Northern India

**J.R.B. ALFRED  
ARUN KUMAR\***

**P.C. TAK\***

**J.P. SATI\***

*Zoological Survey of India, M-Block, New Alipore, Kolkata*

*\*Northern Regional Station, Zoological Survey of India, Dehra Dun*



**Zoological Survey of India  
Ministry of Environment & Forests**



**CITATION**

Alfred, J.R.B.; Kumar, A.; Tak, P.C. and Sati, J.P. 2002. *Waterbirds of Northern India, Rec. zool. Surv. India, Occ. Paper No. 190* : i-xxiv, 1-227 (Published - Director, ZSI, Kolkata).

Ist Edition : January, 2001

IInd Edition : May, 2002

**ISBN** 81-85874-66-2

*Colour Plates by* : Manoj Rawat

© *Government of India*, 2001

**ALL RIGHTS RESERVED**

No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.

This book is sold subject to the condition that it shall not by way of trade, be lent, re-sold out or otherwise disposed of without the publisher's consent, in any form of binding or cover other than that in which it is published.

The correct price of this publication is the price printed on this page. Any revised price indicated by a rubber stamp or by a sticker or by any other means is incorrect and should be unacceptable.

**PRICE**

**Indian : Rs. 300.00**

**Foreign : \$ (U.S.) 20 £ 12**

Published at the Publication Division by the Director, Zoological Survey of India, 234/4, A.J.C. Bose Road, Nizam Palace (13th Floor), Kolkata-700020 and printed at Shiva Offset Press, Dehra Dun.



# CONTENTS

|                                                          |                  |
|----------------------------------------------------------|------------------|
| <i>Preface</i> .....                                     | v                |
| <i>Foreword</i> .....                                    | ix               |
| <i>Acknowledgements</i> .....                            | xi               |
| <b><i>How to use the book</i></b> .....                  | <b>xiii-xxii</b> |
| <i>Characteristics of a waterbird</i> .....              | xiii             |
| <i>Terms and abbreviations used</i> .....                | xiv              |
| <i>Glossary</i> .....                                    | xvi              |
| <b>1. Introduction</b> .....                             | <b>1-17</b>      |
| 1.1 Waterbirds and their values .....                    | 1                |
| 1.2 Watching waterbirds .....                            | 3                |
| 1.3 Migration of waterbirds .....                        | 6                |
| 1.4 Conservation of waterbirds .....                     | 10               |
| 1.5 Management of wetlands .....                         | 12               |
| 1.6 Ramsar Sites in India .....                          | 14               |
| <b>2. Physiography</b> .....                             | <b>19-23</b>     |
| 2.1 Climate .....                                        | 19               |
| 2.2 Wetlands .....                                       | 20               |
| <b>3. Waterbirds</b> .....                               | <b>25-173</b>    |
| 3.1 Systematic list .....                                | 25               |
| 3.2 Descriptions .....                                   | 31               |
| 3.3 Population status .....                              | 158              |
| 3.4 Threatened species .....                             | 160              |
| 3.5 List of thresholds for waterbird<br>population ..... | 170              |
| <b>4. Wetland Dependent Birds</b> .....                  | <b>175-187</b>   |
| <b>5. Selected Readings</b> .....                        | <b>189-192</b>   |
| <b>Annexures</b> .....                                   | <b>193-217</b>   |
| I. Checklist of Indian waterbirds .....                  | 193              |

II. Conventions on Conservation of Birds,  
Wildlife Trade and  
Related Legislature ..... 202

**Index** ..... **219-228**  
Scientific names ..... 219  
Common English names ..... 223

**Folio:** *Field Census Data Sheets for Waterbirds as per  
Wetlands International*



## **PREFACE**

Waterbirds are generally synonymous with ducks and geese—a group of birds which use wetlands as home. These birds have attracted man since time immemorial and find mention in many ancient epics. Besides their aesthetic and economic value, waterbirds are the best indicators of the health of wetland habitat, of which India has about 4.1 million hectares, both natural and man-made.

Wetlands are one of the most valuable and fascinating ecosystems of our environment and have therefore naturally received attention from managers, researchers, as well as conservationists all over the world including developing countries such as India.

It is well documented that earlier civilisations of our country were closely associated with wetland habitats such as floodplains of the Indus, Ganga and Brahmaputra rivers. Besides their significance for food, livelihood and security of the human habitations near them, wetlands are rich stores of biodiversity, providing in particular excellent habitat for waterbirds. This has resulted in many national and international agreements on the conservation of wetlands. The Ramsar Convention, *Convention on Wetlands of International Importance, Especially as Waterfowl Habitat*, makes it obligatory on the member nations to preserve the ecological functions of the wetlands and their economic, cultural, scientific and recreational values. India signed this convention in 1981. Nevertheless, like the tropical forests, the wetlands in tropical countries are also one of the most threatened habitats due to unrelenting human activities and development.

However, during the last three decades or so, increasing attention to the conservation of wetlands in India has resulted in immense research, especially on the ecology of waterbirds—one of the best indicators of the health of a wetland habitat. This has been instrumental in the publication of many books on the waterbirds of many countries in Europe, Asia and the Americas. The treatise of Salim Ali and Ripley (1968-78) on the *Birds of the Indian Subcontinent* gives an exhaustive account of Indian birds in ten volumes. Subsequently, many books by the Bombay Natural History Society further augment our knowledge on Indian birds. Recently, Grimmett *et al.* (1998) updated the account of Indian birds. However, so far there is an absence of any exclusive field guide to Waterbirds of India. This need has been felt more and more due to the considerable awareness and interest created in wetlands and their importance in India. The mid-winter waterfowl count, initiated by Wetlands International on a region-wise basis including “The Asian Waterfowl Census” in 1987, caught the fancy of hundreds of bird watchers in India, as in many other Asian countries, and has become a prominent annual event for them. This zeal can be an effective tool for monitoring and protection of wetlands and waterbirds, especially the migratory species, of which about three million birds visit India annually. Due to innumerable variations in colour pattern and plumage of adult (male and female) and juvenile waterbirds during their breeding and non-breeding seasons, changes in their flight pattern, behaviour and season of occurrence, it is at times difficult to identify these birds, especially when observed from a distance or under unfavourable light conditions. Therefore, the Zoological Survey of India undertook to prepare a handbook on the “Waterbirds of Northern India”, which includes the states of Jammu and Kashmir, Himachal Pradesh, Punjab, Chandigarh, Haryana, Uttaranchal, Delhi and Uttar Pradesh.

This book proposes to be a well-illustrated field guide. It provides readers with adequate information on bird plumage,

both in breeding and non-breeding forms (male and female), behaviour, their status and distribution. Thus it intends to be an aid to wetland managers, wildlifers, tourists, beginners and professional bird watchers to identify waterbirds in the field. It is hoped that this comprehensive and up-to-date field guide will serve the intended purpose and also be a source of information for wetland conservation projects in the region.

A total of 767 waterbirds (as recognised by the Ramsar Convention) are recorded globally, of which 328 are known from Asia, 245 from India. This book covers 180 forms of waterbirds (resident as well as migratory) from Northern India.

In addition, the present book incorporates those birds that do not truly fall into the category of waterbirds but are frequently encountered at wetlands. Since they are mainly dependent on the wetlands for food, these forms (36, including one Globally Threatened and two near threatened taxa) are listed as Wetland Dependent Birds in the text.

As far as possible each waterbird has been illustrated with one or more coloured drawings showing diagnostics-male, female, male in eclipse, pair in flight, and their behaviour. In addition, residence and winter distribution range maps have been provided for all species in the northern India.

Of the listed waterbirds from Northern India, 16 are Globally Threatened (GT) including the Pinkheaded Duck which has possibly become extinct in India (Cr) and ten are near-threatened (NT). Threatened waterbirds of Northern India (listed under Red Data Books of *BirdLife International*, *IUCN*, *ZSI*, *CITES* and *Wildlife (Protection) Act (1972)*, etc.) have been detailed in a separate sub chapter.

To serve the primary objective of the book, which is waterbird and wetland conservation, the Zoological



Survey of India has decided to subsidise the cost of this book.

The readers are requested to give feedback on their bird-watching activities on the census data sheet provided at the end of the book, which would be invaluable in identifying the Important Bird Areas (IBA) in India.

**J. R. B. Alfred**

**Arun Kumar**

**P. C. Tak**

**J. P. Sati**

**SURJIT SINGH BARNALA**  
Governor, Uttaranchal



**RAJ BHAWAN**  
Dehra Dun - 248003



## **FOREWORD**

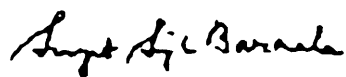
In a tropical country such as India, wetlands comprise invaluable and very productive environment for all living creatures including man. Undoubtedly, wetlands are therefore part of our national heritage resulting in great interest in their conservation in Asia as a whole in the recent past. One of the best pointers to the status of wetlands are the waterbirds.

Since our earlier civilisations we have been aware of the seasonal arrival and departure of waterbirds at the onset and end of the winter season in India. Now it is well studied that an en masse north-south migration of waterbirds takes place every year between Eurasia and south and South-east Asia across the Himalayas, thus passing through many countries. We are well aware of the migration of the Siberian Crane, now visiting India only at Bharatpur. We also know that the population of this species has dwindled drastically in the last few decades not only due to its habitat loss, but also because of poaching, as the species undertakes a long and tedious journey from its breeding grounds in Siberia. The case in instance highlights the essentiality of international cooperation between various countries to conserve birds and their habitats throughout the world.

As we know, the first step in any Conservation Programme is to comprehend what exists. It is therefore praiseworthy

that the scientists of the Zoological Survey of India, Dehra Dun resolved to prepare a comprehensive field guide to the “Waterbirds of Northern India” This region of the country is extensively dotted with wetland habitats in the sub-Himalayan terai and Indo-gangetic plains, thus providing home to millions of waterbirds.

It is hoped that this book will be gainfully used for field research, management, and wetland conservation in India.



( **Surjit Singh Barnala** )

**Dehra Dun**  
December, 2000

## **ACKNOWLEDGEMENTS**

*Inspiration for writing this book came from many comprehensive accounts of waterbirds across the globe. The treatise of Salim Ali and Ripley (1968-78) provided the baseline data on waterbirds described in the present book, this was further updated from Grimmett et al. (1998).*

*Thanks are due to many fellow ornithologists, wildlifers, and amateurs, school teachers and students for their several suggestions. Prof. AS Rahmani and Ms Supriya Jhunjhunwala from BNHS provided much input. Drs. SK Mukherjee and SA Hussain from Wildlife Institute of India went through the draft and suggested improvements. Shri Dhananjai Mohan from Indira Gandhi National Forest Academy gave many useful suggestions.*

*Shri P. Padmanaban assisted in formatting the text.*

*The painstaking efforts of Shri Rati Ram, Publication and Production Officer, Zoological Survey of India, in over seeing the printing of the book are gratefully acknowledged.*

*Various colleagues at the Northern Regional Station, Zoological Survey of India rendered scientific, technical and administrative support. We are thankful to all of them.*

**J.R.B. Alfred, Arun Kumar, P. C. Tak and J.P. Sati**



## HOW TO USE THE BOOK

### Characteristics of a waterbird

The identification of a bird is generally based on a combination of various characters. Even experts do not depend on plumage alone but also take into account many other characters, such as overall colour, habitat, season and behaviour when feeding, flying, displaying or flocking. This handbook displays and gives information on as many as possible of these essential clues for identifying waterbirds.

The description of each bird begins with its serial number in the present book, followed by its serial number in *Handbook of the Birds of India and Pakistan* (Salim Ali and Ripley, 1978, '69a and '69b), its common English name, followed by the scientific name in italics; additionally, the local name, if known, is mentioned after the scientific name. This is followed by indication of size, length in centimetres (*which refers to length from tip of bill to tip of tail*), the season of its occurrence, residential and population status, and food habits.

Though many nomenclatures are in use on the birds of the Indian subcontinent, the present authors have followed that of Salim Ali and Ripley (1968-78) in their '*Handbook of the Birds of India and Pakistan*'. However, for working convenience of readers, the recent nomenclature of Indian birds [Inskipp, Lindsey and Duckworth, 1996 (*An Annotated Checklist of the Birds of the Oriental Region*)] has also been provided where it differs from Ali and Ripley (*l.c.*).

At least one profile of every species is illustrated to a marked scale. This standard illustration shows the bird in a

characteristic pose; in some cases the flight posture of the species, showing both dorsal and ventral views, is painted in a smaller scale. Important variations in the appearance of the species are included, whether between male and female, adult or juvenile. In case of commonest *vi* winter migrants, non-breeding male and female and male in eclipse have been illustrated to facilitate their identification in India, including their behavioural drawings. Distribution maps have also been provided for these migratory species, which indicate the breeding range, homing range during winter months, months in which the bird is present but not breeding, months in which it is present and breeding, and months in which it is not present. All these criteria are in context to Northern India, though in some cases they are true for the whole country. This information is provided in composite plates for each such species. Additionally seasonal distribution status maps in Northern India are provided for each species. Line drawings with key parts of the waterbirds have been provided to facilitate understanding of the common scientific terms used in diagnostics of each species. The symbols and abbreviations used are explained as below.

### **Terms and abbreviations used**

**2(3). Great Crested Grebe** 2 denotes the serial number of the species in this book, (3) denotes the serial number of the species listed in the *Handbook of the Birds of India and Pakistan*, volumes 1-3, by Salim Ali and Ripley (1978, '69a and '69b respectively).

(I) Inskipp, T. *et al.* (1996) *An Annotated Checklist of the Birds of the Oriental Region*.

**R/LM** denotes a species resident in Northern India throughout the year, which however, undertakes local movements depending on water conditions.

**R/AM** denotes a species resident in Northern India throughout the year, which however, undertakes altitudinal migration from plains of Northern India to Himalayas in different seasons.

**R/WM** or **WM/R** denotes a species, which is also resident in Northern India, however, influx of the migratory population from the Palaearctic takes place in winter

**WM** a winter migrant to Northern India, which breeds in Eurasia and visits Northern India in winter

**Cr** taxons facing an extremely high risk of extinction in the wild in the immediate future.

**GT** a species known by IUCN to be Globally threatened with extinction as per the list compiled and maintained by the World Conservation Monitoring Centre (WCMC).

**NT** a species that falls just outside the threat criteria but which requires monitoring for early evidence of deteriorating status.

**E** endemic to the area.

**En** a taxon is Endangered when it is not Critical but facing a very high risk of extinction in the wild in the near future.

**Ex** a taxon is Extinct when there is no reasonable doubt that its last individual has died.

**Vu** a taxon is Vulnerable when it is not Critical or Endangered but is facing a high risk of extinction in the wild in the medium-term future.

**Va** a very rare or vagrant species, which has been recorded from Northern India only on a few occasions in the last more than fifty years or so.

**VRa** only very few birds recorded regularly.

**Ra** flocks of 5-20 birds recorded regularly.

**UnCom** flocks of 20-50 birds recorded regularly.

**LCom** flocks of more than 50 birds recorded regularly.

**Com** flocks of more than 50 birds recorded regularly.

**V Com** flocks of hundreds/thousands of birds, though sometimes, seasonally recorded regularly.

**C** Carnivorous

**H** Herbivorous

**O** Omnivorous

## Key to distribution maps in composite plates

-  Months during which a bird is present and breeding /Summer quarter months
-  Months during which a resident bird is present but not breeding
-  Winter quarter months (do not breed).
-  Months in which bird not present in Northern India.

## Key to distribution maps

-  Wintering areas
-  Summer areas
-  Passage areas
-  Breeding areas
-  Critical
-  Vagrant
-  Rare
-  Isolated records/ populations (winter)
-  Isolated records/populations (resident)
-  Isolated records/populations (passage)
-  Isolated records/populations (summer)

## Symbols used in drawings

-  Globally threatened species (GT)
-  Near-threatened species (NT)

## Glossary

**G:** male.

**E:** female.

**Adult:** a bird that has attained its definitive plumage.

**Altitudinal migrant:** a species that breeds in high altitudes and moves to lower altitudes in non-breeding season.

**Alula:** the small 'bastard' wing on the leading edge of the wing used to control stall tendency at very low speed.

**Aquatic:** frequenting water.

**Axillaries:** feathers of the 'armpit' at the base of the underwing or under the wings near the body.

**Biotope:** an area with uniform environment, flora and fauna.

**Breeding plumage:** a different plumage acquired by many species during the breeding season.

**Cap:** a well-defined patch of colour or bare skin on the top of the head.

**Carpal joint:** the small bones of the 'wrist' joint.

**Circumpolar:** of or inhabiting the Arctic (or Antarctic) regions in both the Eastern and Western hemisphere.

**Collar:** a well-defined band of colour which encircles or partly encircles the neck.

**Colonial:** nesting in groups or colonies rather than in isolated pairs.

**Contour feather:** any feather forming part of the outer surface of the bird's plumage.

**Cosmopolitan:** worldwide in distribution, or at least occurring on all continents except Antarctica.

**Coverts:** the contour feathers that overlap the main wing or tail feathers.

**Crepuscular:** active at dusk.

**Crest:** a tuft of elongated feathers on the crown.

**Crown:** the top of the head.

**Cryptic:** of form or colouring that serve to conceal.

**Culmen:** the ridge of the upper mandible.



**Cursorial:** adapted to running, a ground-dwelling species.

**Decurved** or **downcurved:** curved downward.

**Dimorphic:** of species or sexes having two colour forms.

**Diurnal:** active during the day.

**Eclipse:** dull female-like plumage of male ducks (drakes) for a period after the breeding season.

**Edges:** outer feather margins, which can frequently result in distinct colour on wings or tail.

**Endemic:** restricted to certain area or region.

**Eyebrow** or **supercilium:** a conspicuous stripe of colour running above but not through the eye.

**Eye ring:** feathered ring immediately surrounding the orbital ring.

**Eye stripe:** a stripe that runs horizontally from the base of the bill through the eye and beyond.

**Feral:** escaped from captivity and now established and self-supporting in the wild.

**Filoplume:** a thin, hair like feather.

**Flight feathers:** the long well developed feathers of the wings and tail used during flight. The flight feathers of the wings are divided into primaries and secondaries of wings.

**Fringes:** complete feather margins, which can frequently result in a scaly appearance to body feathers or wing coverts.

**Frontal shield:** a fleshy, featherless and often brightly coloured area on the forehead.

**Fulvous:** tawny, dull yellowish-red or red wine coloured.

**Gape:** the mouth and fleshy corner of the bill, which can extend back below the eye.

**Gregarious:** a species often found in flocks when feeding in the non-breeding period, etc.

**Gular pouch:** a loose and pronounced area of skin extending from the throat.

**Holarctic:** occurring in both the Palaearctic and Nearctic regions, i.e., in northern and temperate regions of both New and Old Worlds.

**Immature:** a bird in a plumage in between juvenile and adult.

**Iris:** the coloured membrane which surrounds the pupil of the eye and which can be brightly coloured.

**Jheel:** a shallow lake in a low-lying natural depression, usually with floating and submerged vegetation, reed beds and partially submerged trees.

**Juvenile:** a bird in its first plumage that replaces the downy one.

**Leading edge:** the front edge of the forewings.

**Leg projection:** indicates that part of the legs project beyond the tail when the bird is in flight.

**Local:** occurring or common within a small or restricted area.

**Lores:** the area between the eye and the base of the bill sometimes distinctively coloured.

**Mandible:** the lower or upper half of the bill.

**Mantle:** the back of a bird together with the upper surface of the wings.

**Mask:** a dark area of plumage surrounding the eye and often covering the ear-coverts.

**Migrant:** a bird that regularly passes through an area on its way to or from its normal breeding range.

**Mirrors:** white spots or areas in the black wing tips.

**Moult:** the process of shedding and replacing feathers.

**Nape:** back of neck.

**Nocturnal:** a species active at night.

**Nomadic:** wandering or erratically occurring species, which has no fixed territory when not breeding.

**Non-breeding plumage:** plumage worn by birds when not breeding.

**Nuchal:** relating to the hind neck, used with reference to a patch or collar.

**Nuptial:** pertaining to breeding season.

**Ochre:** yellowish-brown.

**Omnivorous:** eating almost any kind of plant and animal food.

**Ornithology:** the study of birds.

**Palearctic:** the zoogeographical region of Eurasia.

**Passage migrant:** a species that regularly passes through an area during migration without remaining there for either breeding or non-breeding season.

**Pelagic:** frequenting the deep or open ocean.

**Phase:** also **morph:** denotes a particular form of the species where a colour variation exists, e.g. dark phase, grey phase.

**Plume:** a feather larger or longer than the feathers around it, generally used in display.

**Polygamy:** the formation of a sexual bond between one male and more than one female.

**Primaries:** the outermost and longest flight feathers on a bird's wing, usually numbering 11.

**Race or subspecies:** a geographical population of a species that is slightly different from other populations of that species.

**Range:** the geographical area or areas inhabited by a species.

**Rectrices:** the tail feathers.

**Recurved** or **upcurved:** bent upwards.

**Remiges:** the primary and secondary wing feathers.

**Resident:** staying in one place all the year, non-migratory.

**Ringling:** the marking of bird by placing rings of metal or coloured plastic on their legs for future recognition as individual.

**Roosting:** the bird is said to be roosting when either actually sleeping or resting for more than a brief nap.

**Rufous:** reddish-brown.

**Rump:** lower back and base of tail.

**Scapulars:** a group of feathers on the shoulder.

**Secondaries:** the large flight feathers along the rear edge of the wing, inward from the primaries.

**Sedentary:** resident, but scarcely moving from the immediate vicinity of its birthplace.

**Spatulate:** spoon-shaped.

**Speculum:** a distinctively coloured area on the wings of a bird, especially the metallic-coloured patch on the secondaries of some ducks.

**Subadult:** young birds, with a mixture of immature and adult plumage, the last stage before full adult plumage.

**Subarctic:** superficially arctic regions (not necessarily within the Arctic Circle) where the ground is not permanently frozen and which can support small trees.

**Subterminal band:** a dark or pale band, usually broad, at the tip of a feather or feather tract (especially the tail).

**Tarsus:** the lower, usually featherless, part of a bird's leg above the feet.

**Taxonomy:** the science of classification of organisms.

**Tertials or tertiaries:** the innermost flight feathers on a bird's wing, immediately adjacent to the body.

**Trailing edge of wing:** the rear edge of an extended wing.

**Tundra:** vast, treeless regions that make up most of N Russia, with arctic climate and vegetation.

**Underparts:** under surface of body from throat to undertail-coverts.

**Upperparts:** upper surface of body including wings and tail.

**Vagrant or accidental:** a definition of scarcity applied to birds which leave their normal range to make infrequent visits to the area in question.

**Vent:** the area around the cloaca (anal opening) just behind the legs (should not to be confused with the under-tail-coverts).

**Vermiculation:** irregular, wavy marking, reminiscent of tracks made by worms.

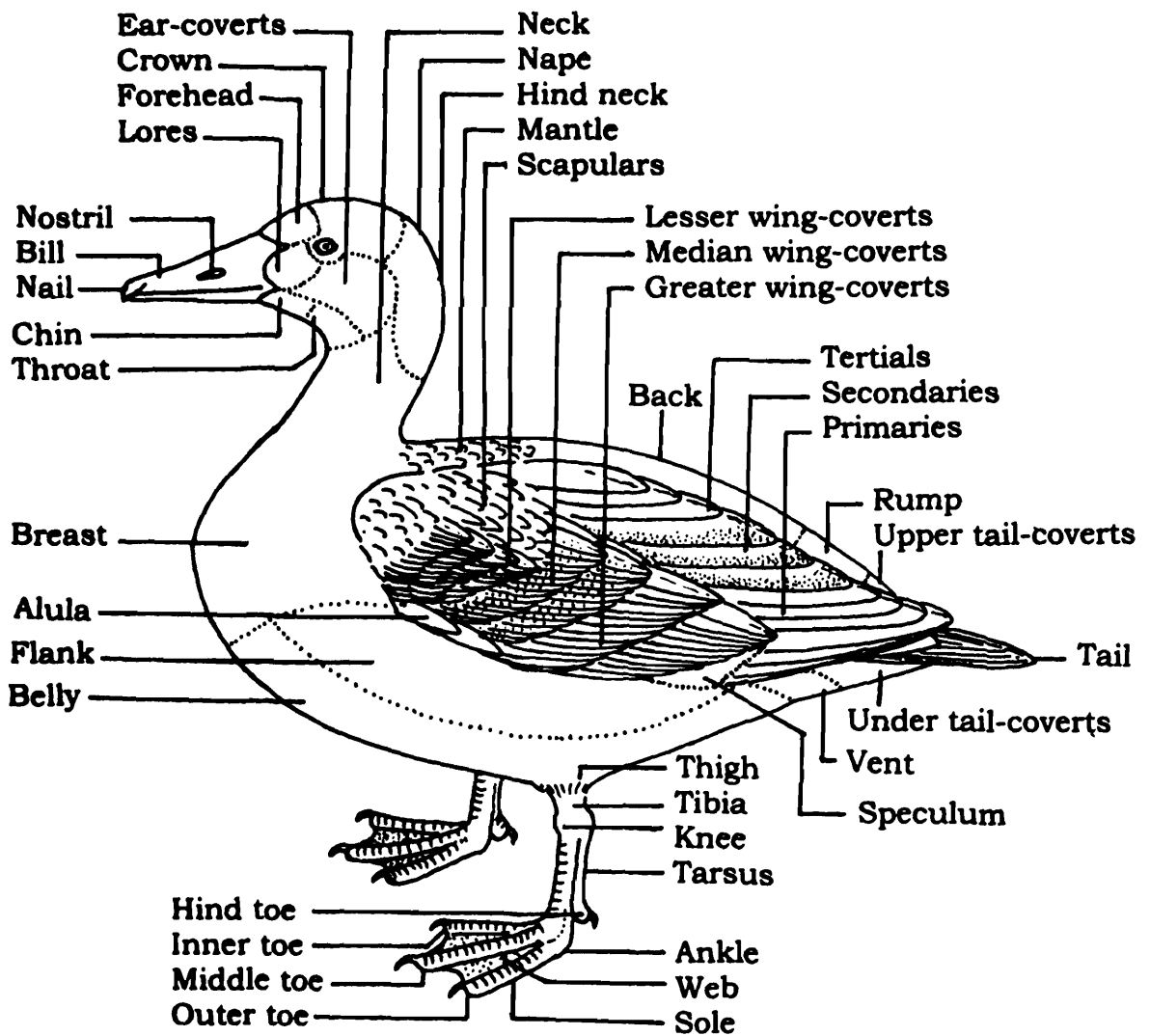
**Vinaceous:** red wine-coloured.

**Wattle:** a lobe of bare, often brightly coloured skin attached to the head.

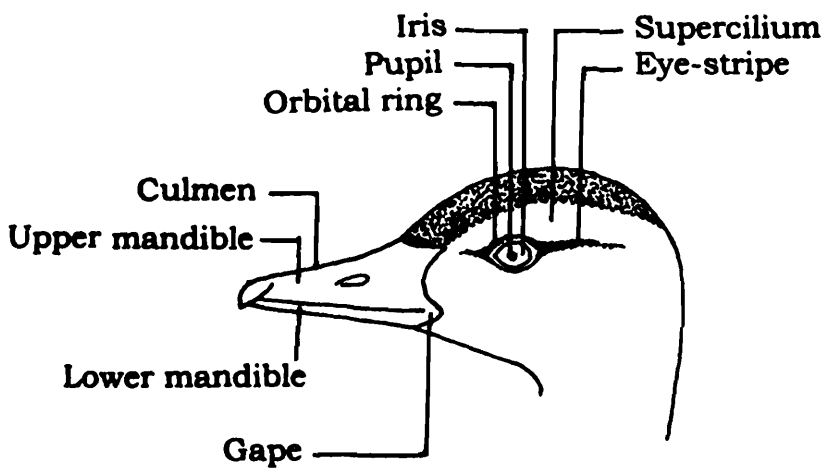
**Wing-bar:** a line across the wing contrasting in colour with the rest of it.

**Wing projection:** used to describe the projection of the tip of the primaries beyond the tail when a bird is at rest.

## Bird Topography

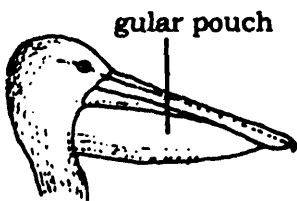


## Head

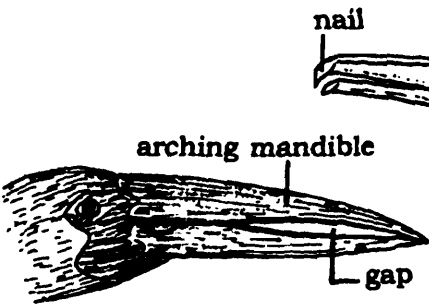




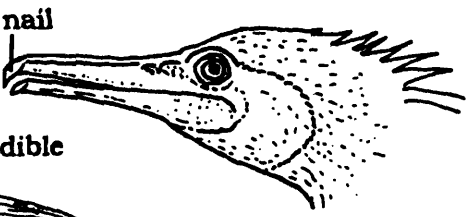
**Types of beaks and feet**



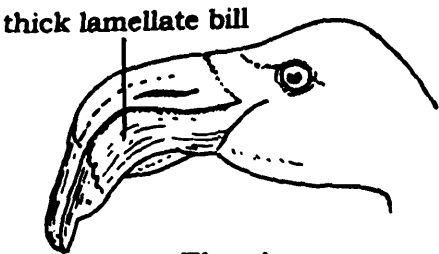
Pelican



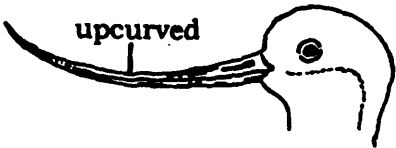
Openbill Stork



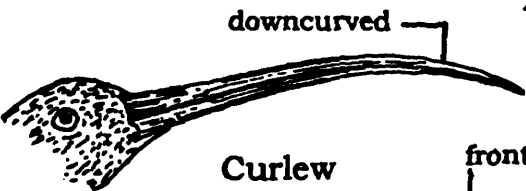
Cormorant



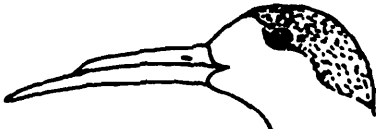
Flamingo



Avocet



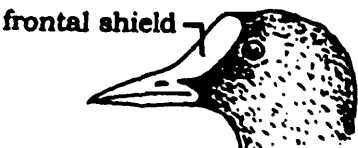
Curlew



Scissor-bill



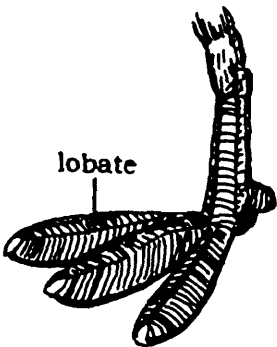
Plover



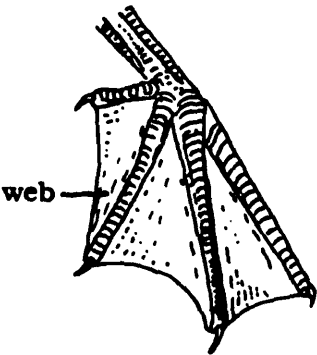
Coot



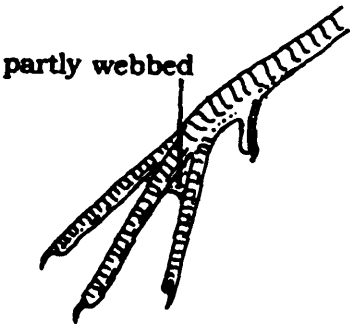
Lapwing



Grebe



Cormorant



Redshank



Plover



Jacana

# **1. INTRODUCTION**

## **1.1 Waterbirds and their values**

Waterbirds are of great importance for their aesthetic, sporting and economic values. Of the major waterbird families *the ducks, swans and geese* (family Anatidae) are among the most extensively studied and hold the greatest attraction to man. Illustrations of geese are found in five-thousand-year-old Egyptian tombs. Many legends evolve around wildfowl; especially the swans have been regarded, since ancient times all over the world, as sacred and possessing magical qualities. It is believed that the swan sings just before it dies and Aristotle mentions swans flying to sea to die. These beliefs in many countries of Europe made these birds most sacred and they are completely protected for emotional reasons. Most of us remember the famous story of the eleven princes and swan by Hans Christian Andersen.

We Indians have always held the geese in greatest reverence and our ancient scriptures mention the birds' long migratory flight and family loyalties. The Trans-Himalayan migration of the '*hamsa*' (Hans), the *Barheaded Goose*, is mentioned as a religious pilgrimage, though the translation of Sanskrit scripture generally indicates that a hamsa is a swan or flamingo, though neither of them is common in India.

Ducks and geese have been very popular subjects for paintings, photography and occur very frequently in children's stories. Of course, pride of place undoubtedly goes to Walt Disney's *Donald Duck* (domestic Mallard), who has

been entertaining children and adults all over the world for many decades.

Since waterfowl are large birds they have been a major source of food and clothing for man, especially in the temperate regions of the world. It is well known that Canadian Eskimos and the Samoyeds of Siberia extensively poach on eggs and moulting geese and swans and stock the goose meat in enormous quantities, resulting in major loss to their populations.

The pelts and feathers of waterfowl are used extensively for clothing in cold-inhabiting human populations. For instance, the people of Siberia extensively make jackets of waterfowl (swan) down, sewn into cloth for insulation.

Though with the enforcement of various wildlife protection acts all over the world waterbird harvesting during breeding season and moulting has largely stopped, a very large number of waterfowl are still poached by shooting either in migration or in their winter homes. Most of the waterbirds are treated as a delicacy and favorite food item. In Europe, waterfowl shooting for sport is still a popular and favorite pastime.

The taming and domestication of anatids has been recorded for several thousand years, and perhaps the Greylag Goose was the first species domesticated by man. The other popular species are the Mallard, Swan, Goose and the Mute Swan. Waterfowl farming is thus a common practice in many European countries.

In south Asian countries like India, the waterbirds are accused of damaging large quantities of arable winter crops such as wheat and grams by migrating populations of anatids. The Cormorants are known to cause considerable damage to fish fries in the reservoirs of sub-Himalayan terai and Indo-Gangetic plains, the favourite wintering areas of these birds.

In the light of the above, the waterfowl conservation all over the world is well accepted through International

cooperation and conventions such as the '*Convention on Wetlands of International Importance Especially as Waterfowl Habitat-Ramsar Convention (1971)*'

Similarly, waterfowl conservation activities throughout the world are coordinated through the *International Waterfowl and Wetlands Research Bureau (IWRB)*, which besides funding research projects on waterbirds, holds International Conferences to discuss waterbird conservation problems and to make recommendations for national and international actions.

## **1.2 Watching waterbirds**

Birds are also known as 'glorified reptiles with feathers'. The birds were not the first group of flying creatures. However, with the development of feathers, their true unique feature, the birds were able to evolve flexible and effective wings from the forelimbs alone, thus making the hindlimbs free and in the process they over-came the most serious impediment of their predecessors such as pterosaurs.

The true ability to fly gave birds immense value in escaping danger from predators; thus they are therefore able to carry on their activities in broad daylight in full view of the observer. Though many other animals, such as mammals, are much more varied and fascinating in their behaviour, at the same time they are secretive and generally nocturnal and therefore their study remains a specialised activity. In contrast the birds can be observed, studied and enjoyed anywhere, be it a woodland or a wetland, by both amateurs and experts alike, thus making bird-watching such a popular activity all over the world.

The key to fruitful and satisfactory bird watching lies in their identification. Therefore, the first step lies in learning the basic techniques of bird observation (identification), though some species are always difficult to name even for an experienced bird watcher. The major problem is that the bird watcher either fails to record the diagnostic features

which are present or observe the ones that are not there, when one gets only a fleeting glimpse of the bird in nature. Observing birds correctly therefore needs a lot of patience, and basic knowledge of bird plumage, habits, habitats and season.

The first step towards the right determination of the bird species would be therefore to study its important features like size, shape, profile, colour, bill, legs, plumage pattern, etc. The pattern and style of flight including its landing behaviour are also very important for identification. At the same time the habitat and the flight season must always be noted for cross-checking the identification. In addition to the physical appearance the song or call, flight pattern and behaviour are also useful clues in identification.

A well-equipped bird watcher should always carry with him a good binocular (preferably 8x40); a telescope along with illustrated field guides, notebook, pencil and census data sheets, etc. Waterproof dull olive green/khaki clothing is also desirable. Waterfowl watching becomes easier by using 'hides' quietly along an embanked road or footpath out of the sight of birds. An enthusiastic bird watcher, especially for migratory anatids, should venture out at night in adjoining fallows and arable cropland around the wetlands to watch these birds foraging nocturnally on crops since many a species like Ruddy Shelduck and Barheaded Goose disperse daily from the wetland at the fall of dusk.

The practice of regularly recording observations in the field itself, which may include the habits, habitat and outline sketch of the bird showing major features will be handy in the lab or library for such species where field identification is not possible. The size estimation, where the chances of error are always high, must be done very carefully and it is advisable that one should develop a habit of comparing the size with a known familiar species.

Regular seasonal counts of birds are often of immense value in monitoring a wetland and formulating the

management plan for conservation of the species, though these studies should preferably be undertaken in consultation with an experienced ornithologist.

Lakes, jheels, reservoirs, tanks, rivers and marshes provide main wetland habitats in varying proportions. During the breeding season waterside reeds like *Typha* and *Ipomea* together with scattered trees furnish the main area of activities like nesting, etc. Though these niches are most difficult to approach, provide excellent cover for inhabitant activities. Use of hide and 'sit and watch' are the best techniques for bird-watching in such areas, since most of such species are skulkers, though sometimes they may betray their presence with loud calls.

For study of migratory species (N-S), especially during winters (November to March), open water and sand banks of lakes, reservoirs and rivers become areas of major interest to bird watchers. A variety of ducks and waders suddenly appear in very large numbers, as they either pause in their long migratory journeys to feed and rest or use the wetland as a winter home for longer duration. Therefore, during winters the large flocks of ducks and geese will be of major interest to bird watchers, though the persistent ones may also be rewarded by the sighting of rare and/or vagrant species. Thus, in a tropical country like ours the best season to watch waterbirds is winter when one can see both the resident and migratory species in plenty, though bird-watching in India is a rewarding experience any time of the year. In high altitudes of the Himalayas, where many waterbird species breed in May and June are good times for bird-watching; in Ladakh region which falls in the rain-shadow zone, the SW monsoon July to September could be an ideal time to explore birds.

Photographing birds is a very challenging and painstaking job in the field. This involves not only thorough knowledge of photographic techniques but also of bird behaviour. Special equipment like Zoom lenses (from 300 mm to 1000-mm focal lengths) are often needed in addition to single lens reflex

cameras to overcome the distance problem between the bird and the photographer. Since these lenses are not only heavy but also have limited depths of field, no aperture adjustment and there is limited control over exposure time. To overcome this handicap it is advisable to use Converters (1.5X or 2X) at least during daytime. Invariably a sturdy tripod must be carried along in the field.

### **1.3 Migration of waterbirds**

Since time immemorial we are aware of the seasonal arrival and departure of birds in India, generally from the north. Until recently the mystery of this annual coming and going of these birds was not uncovered.

Each year, when wetlands in Europe and N and C Asia become frozen due to the onset of winter, and the food disappears under snow cover, a large number of waterfowl that breed in these areas in summer undertake migratory journeys along major river valleys to spend the winter in more hospitable shelters in southerly latitudes.

Recent studies have shown that the continent of Asia and the Western Pacific region are on the major migratory passages of these birds, especially the waterbirds, often covering thousands of kilometres.

Since South and South-East Asia are located in more ambient southern latitudes they attract a mass influx of birds during winters that breed in Europe and northern Asia. This results in the arrival of millions of waterbirds with the onset of autumn (August to December) to spend the winter in warm subtropical wetlands of the Indian subcontinent. They return again northwards (from March onwards) towards their homing grounds in Eurasia as it warms up again.

Ornithological studies indicate that of the 2060 taxa known from the Indian subcontinent, about 350 are migrants that include both terrestrial and waterbirds. Mostly these birds breed outside the subcontinent in the Palaearctic region. The most abundant and spectacular winter migrants



to the Indian subcontinent are the ducks and the geese (Anatidae) [which constitute about 85% of migrant winter bird populations of approximately three million birds], wading or shorebirds (Charadriidae) and cranes (Gruidae). In addition to these numerous extralimital migrants, there are some species of waterbirds whose southernmost Palaearctic breeding range extends into our boundaries in Ladakh, Kashmir (Ruddy Shelduck, Pintail and Barheaded Goose) and sometimes in central and eastern Himalayas. Nevertheless they behave like a true winter migrant in spreading over northern and peninsular India. Like many other migrants from beyond, they also depart to their northern breeding grounds before the onset of summer. Despite such a massive influx of migratory waterbirds in India it is amazing that very little precise information is available about the migration of waterbirds in our country. The credit for the available knowledge on their migratory behaviour goes primarily to the Bombay Natural History Society, which has been carrying out field studies on these aspects since the beginning of the twentieth century.

The continent of Asia, the largest on the planet earth, has all the major ecosystems from arctic tundra to deserts, temperate to tropical rain forests and coral reefs. These extremely variable climatic conditions in Asia play the fundamental role in determining the suitability of waterbird habitat and their annual to- and fro- movements from their breeding grounds.

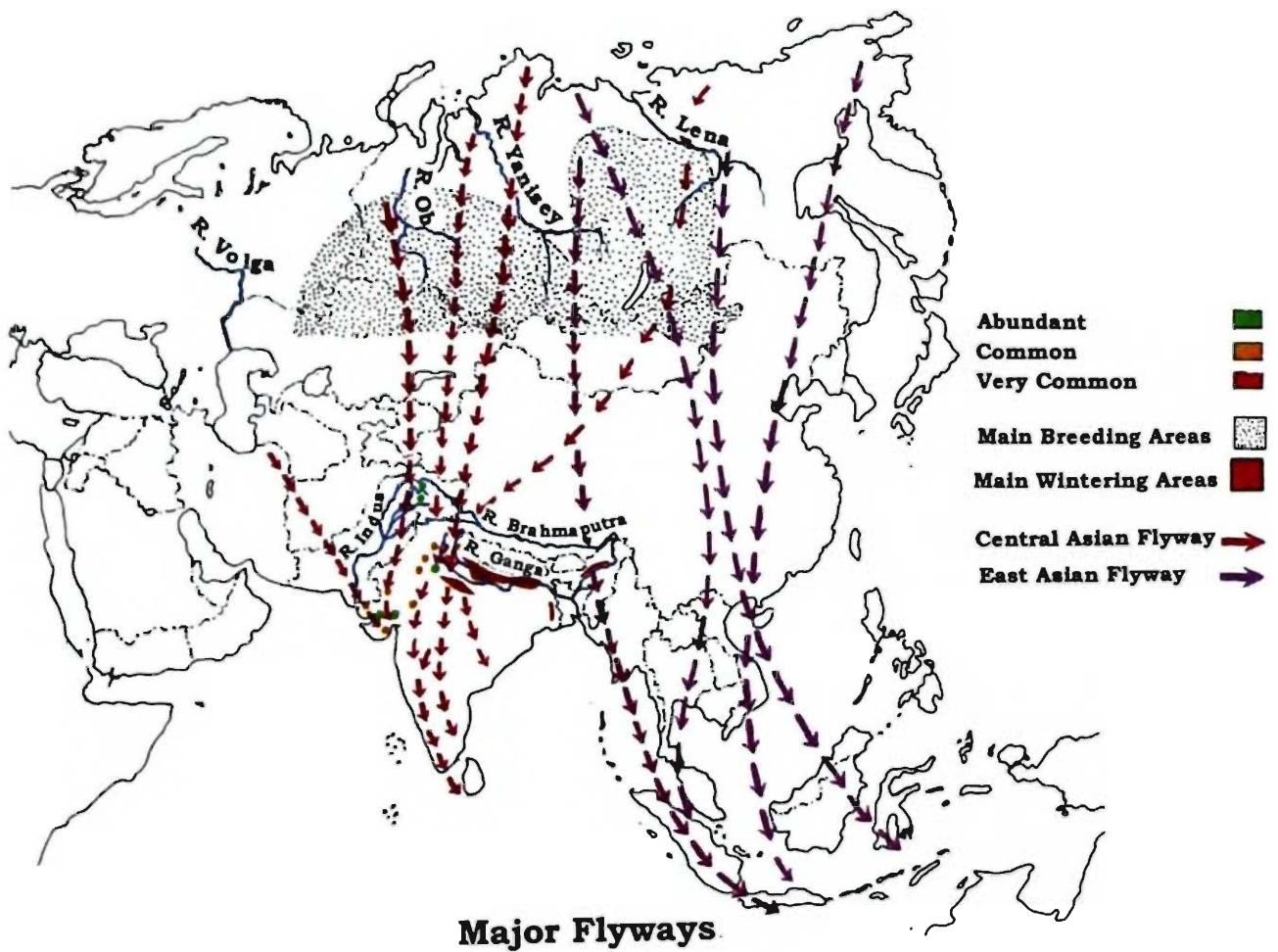
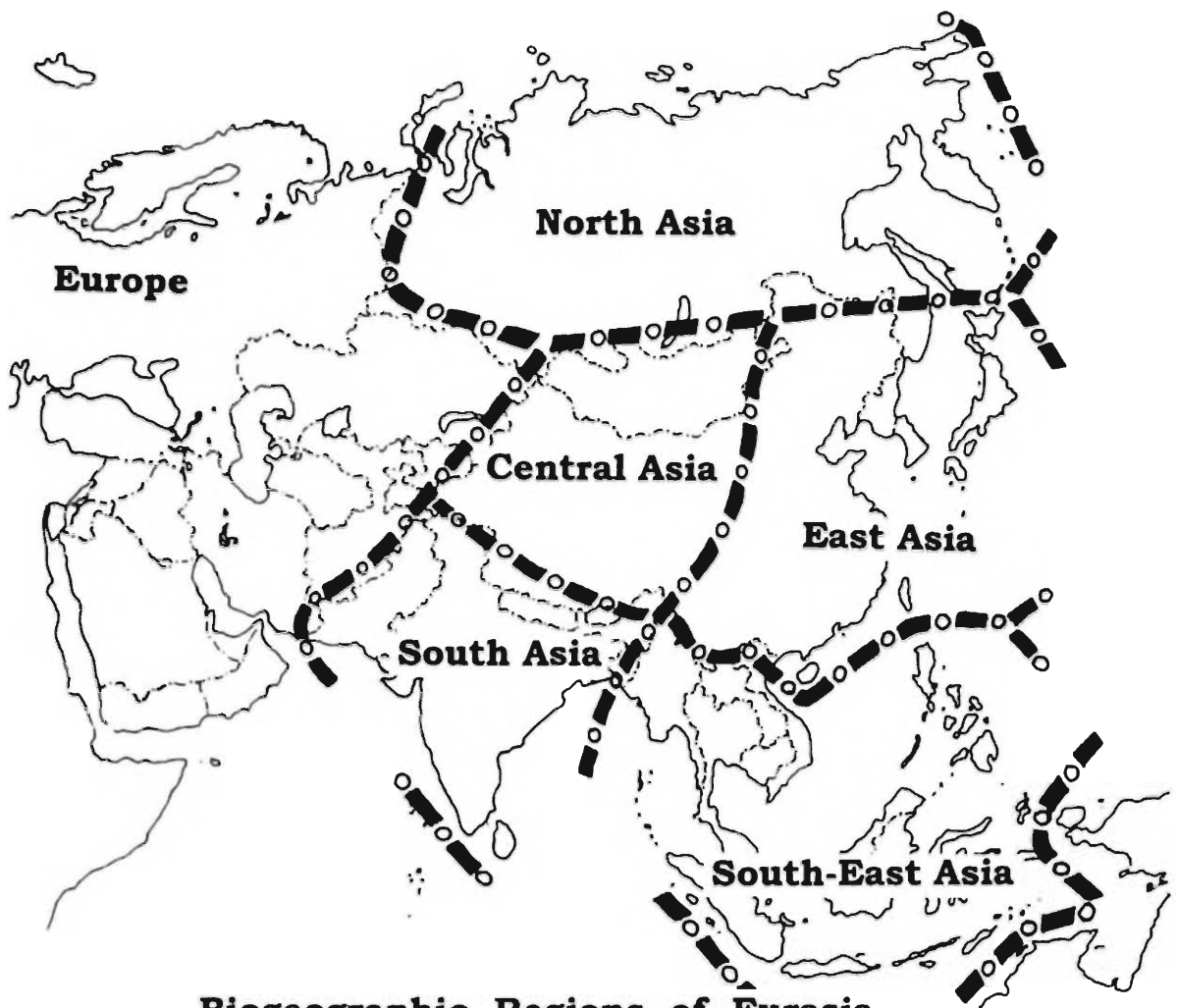
The migratory waterbirds breed in Europe and northern Asia in early summer, when the days are long and food abundant, and raise their young during the short temperate summer. With the approach of autumn, the wetlands where they have bred start freezing and become unsuitable for shelter and adequate food supply. This results in their long southward journeys into warmer tropical conditions until the climate becomes ambient again for their return. This annual movement of the waterbirds is very taxing and obligatory involving many complicated processes.

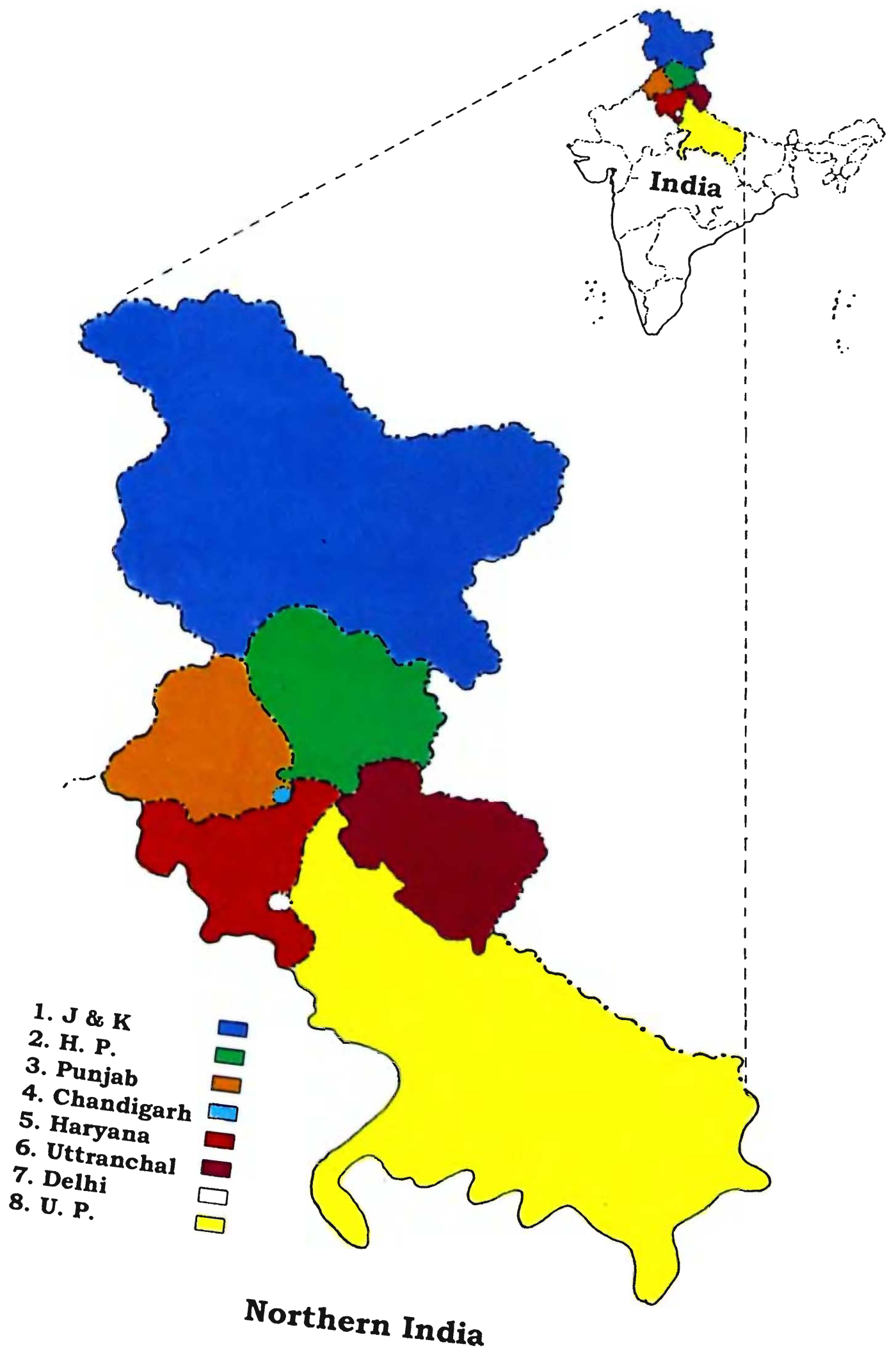
To undertake these long flights, which often last many days at altitudes of several kilometres, they feed excessively to accumulate reserve fat before undertaking the journey. To economise on the high cost of migration, these birds fly under model weather conditions and mostly make good use of the tail wind. The migration starts when the winds are favourable, mostly at dusk though early morning departures are not unknown in species like cranes and pelicans. The exodus is a spectacular sight as hundreds of birds rise from their breeding grounds, slowly arrange themselves in a V-shape and then disappear towards their destination.

It is known that birds use many natural clues for migration, *viz.*, the position of the sunset to the moon and stars and even changes in earth's magnetic field to simple geographic features on the ground. It is further believed that the general migration patterns are hereditary as many times the juveniles depart from the breeding ground many weeks after their parents. A very fascinating migratory character of some waterbirds is the predisposition of the individual to use the same wetland during winters over the years.

The annual replacement of their plumage by birds by shedding the old feathers and replacement by new ones is one of the most important physiological functions. This phenomenon is often associated with their migration. Some species moult immediately after breeding, while others moult rapidly before undertaking migration. In still others the process of moulting is delayed during the period of migration and is completed at their winter homes, a process called suspended moult. Some species moult halfway between their breeding and non-breeding areas while a few species moult leisurely over many weeks only on reaching their non-breeding areas. Thus, the locations of such wetlands, which are used for moulting, are critically important for survival of waterbirds and need to be protected.

One of the most important and common techniques used by scientists to study bird migration is 'banding'. It involves





tying of a numbered or coded light metal band on the leg of a bird. Each band contains a unique number with information regarding the date and place of banding of the bird. Another popular method is the use of colour markers as leg bands and flags, neck collars or wing tags. Sometimes more than one colour band is tagged to a bird. The advantage of this method is that these markers are very conspicuous and can be sighted even when the bird is in flight. Details of the name of the species, date and location of sighting and the colour combination are coded by the 'Wetlands International' (IWRB), which maintains all such records of the sightings of waterbirds all over Asia.

The importance of conventional radio telemetry in documenting the migratory routes of birds like cranes is well known. The use of satellite telemetry Transmitters with very high frequency receiving their signals from weather satellites have been found very effective since they can locate the position of a migratory bird with an accuracy of 150 m. Satellite telemetry is now used extensively for conservation of cranes in Asia. The end-user can receive his data from an earth station through the processing center. The earth station gets the signals from a weather satellite that uses the signal from 'Platform Transmitter Terminals' (PTTs) attached to the birds.

The waterbirds of Asia as we know are true international travelers and undertake long and sustained north-south movements annually. The available data on their regular seasonal movements indicate that the main migratory routes between Eurasia on the one hand, and South and South-East Asia on the other, have two well-defined pathways, viz., the Central Asian flyway and the East Asian flyway. The first is the major route between Siberia and central Asia on the northern side and the Indian peninsula in the south through the Indus valley in the north-west. Similarly the Tsangpo or Brahmaputra River provides the route which connects North-East Asia to South-East Asia.

The flyways enter from either side of the Himalayas and

almost converge again at the tip of the subcontinent, advancing farther though in a weak movement across South-East Asia. Many species also cut across the Himalayan peaks for shortening their journey.

The birds using the Central Asian flyway enter the Indian subcontinent from the north-west through the Indus valley. The influx branches off partly and deviates in a south-easterly direction into the plains of Northern India, through Kashmir and Punjab. The remaining continue southwards down into the India peninsula through the Great Rann of Kutch and north Gujarat but avoid the Thar Desert. This inflow is further joined and augmented by the winter migrants from Mediterranean and Middle East regions-recognised as the fourth most important bird flyway on the earth.

Due to such large scale and long-distance waterbird migration across Eurasia, crossing many international boundaries, the efforts of one country alone to protect their wetland habitats is not possible. It was felt that active cooperation between Eurasian and Pacific countries is needed if the waterbirds are to fly continually and unhindered UP and down in their flyways. This resulted in the promulgation of 'Convention on Wetlands of International Importance Especially as Waterfowl Habitat'– the Ramsar Convention. It came into force in December 1975 with 70 countries as state parties. The convention lays down specific guidelines for the conservation of wetlands within the territory of individual states and cooperation for their management.

#### **1.4 Conservation of waterbirds**

India has about 4.5 million ha of wetlands, of which 1.5 m ha is natural and 2.6 m ha is man-made. The wetlands are part of our National Heritage and earlier civilizations of our country were closely associated with wetland areas such as the floodplains of the rivers Indus and Ganga.



Besides their significance for the food, livelihood and security for the human populations living near them, wetlands are rich stores of biodiversity; especially they provide excellent habitat for waterbirds in India. It is well documented that the wetlands of the Indo-Gangetic plains and Sub-Himalayan terai together provide a winter home to millions of migratory waterfowl moving annually across the Himalayas. If managed with appropriate conservation measures, coupled with generation of sufficient public awareness, the wetlands can become very productive and useful ecosystems both economically and ecologically (especially for waterbirds).

Though for many centuries people have observed the regular seasonal arrival and departure of waterbirds, it is only recently that the mystery of this annual movement of birds is being uncovered. It is now well known that Asia and particularly S Asia falls on important route maps of waterbird migration and both the Central and East Asian Flyway pass through India, traversing through many other Eurasian countries as well. Since the waterbirds are such international travelers the efforts of one country alone to protect them and their habitat is not practical and needs collaboration at the international level.

The awareness of the importance of such cooperation has resulted in tremendous interest in wetland conservation in recent years among the Asian countries and resulted in many important publications, e.g. *Directory of Wetlands of International importance (1987)*, *A Directory of Asian Wetlands (1989)* and *Directory of Indian Wetlands (1993)*. These studies indicate that a fair amount of research has been carried out on the ecology of waterbirds. Similarly the Asian Waterfowl Census which started on a region-wise basis in 1987 caught the imagination of hundreds of bird watchers in India, who took up the task of conducting annual mid-winter waterfowl counts with true zeal.



## **1.5 Management of wetlands**

It is imperative to recognise that populations are subject to variations resulting from reproductive success or changes in their 'homing' grounds. Therefore, one of the very important functions the wetlands perform is to provide suitable habitat for the breeding of residential birds as well as wintering grounds for migratory waterfowl. Since migration is essential for survival of these species, availability of suitable habitats, both on migratory route as feeding/moulting areas, as well as on the final destination as wintering sites, is critical to these migratory birds.

On a conservative estimate more than three million waterfowl migrate in India from across the Himalayas from Eurasia during winters. Management of their population, distribution and habitats is very important to check depletion in their numbers. However, these ecologically vital systems are under constant threat due to ever increasing anthropogenic pressure such as agriculture, land reclamation, as well as uncontrolled silting and weed infestations, making wetlands the most threatened habitats all over the world. The wetlands of the Indo-Gangetic plains and Himalayan terai region which provide a winter home to millions of waterfowl are being lost at an alarming rate due to neglect and lack of management.

Management of wetlands, especially for migratory waterfowl, requires a thorough knowledge of not only the ecology of that particular wetland, but also the migration, feeding ecology and behaviour of the species that utilize the wetland. Management of the wetland by manipulating the water flow system may be quite simple and straight forward to retain its character, but providing appropriate shelter and food to a variety of species arriving and departing at different parts of the year is rather complex. Thus, the ground realities as well as base-line information of the components of the system will determine the management of the habitat. In a wetland it will depend on the water regime and flow system,

therefore the knowledge of hydrology and related vegetation, succession system along with the population ecology of the species of the waterfowl will help in understanding the process. Evaluating the need of the consumer communities (waterfowl) which will depend on the season or succession of these components for their food and shelter may follow this.

In view of the above, the basic requirements of the migratory waterfowl at their wintering sites can be summarised as under (after Hussain, 1995):

- i. Suitable habitat.
- ii. Adequate food supply, and
- iii. Safety from predators including disturbance from man.

Therefore, for the effective management of wetlands it is imperative to have base-line data of the following components for each wetland including the ecology of the waterfowl.

### **Habitat**

- Vegetation
- Micro and macrofauna

### **Waterfowl**

- Seasonality and population dynamics
- Morphometrics
- Food and feeding habits

Berwick and Saharia (1995) have discussed in detail the need for a 'National Waterfowl Management Plan' for accomplishing waterfowl conservation which should define the policies for the same. They emphasise that the basic legislation in the form of the Wildlife Protection Act (1972) along with the treaty on migratory birds with the former USSR could provide the basic legal framework to adopt a

national wetland and waterfowl management plan. The International Council for the Preservation of Birds (ICBP) and the International Wildfowl Research Bureau (IWRB) already coordinate cooperation in protection of birds, waterfowl and their habitats. The Ramsar Convention (Convention of Wetlands of International Importance Especially as Waterfowl Habitat) to which India is a signatory, and ratification of the India–USSR Migratory Bird Treaty can formally lead to interrelationship between the countries and a national waterfowl/wetland management plan can be prepared.

### **1.6 Ramsar sites in India**

During the second half of the twentieth century and especially in the last few decades, wetlands have received considerable attention all over the world from both researchers and conservationists. A landmark step in this direction has been the adoption of The Ramsar Convention. It was adopted on 2<sup>nd</sup> February 1971 in Ramsar, Iran. Its main objectives are to stem the progressive encroachment on and loss of wetlands now and in future, recognising their fundamental ecological function.

The convention emphasises the need for

- *maintaining the genetic and ecological diversity of region because of the quality and peculiarities of its flora and fauna;*
- *as the habitat of plants or animals at a critical stage of their biological cycle;*
- *as an area hosting one or more endemic plant or animal species or communities.*

#### **Specific criteria based on waterfowl**

A wetland should be considered Internationally important if :

- *it regularly supports 20,000 waterfowl; or*
- *it regularly supports substantial numbers of individuals from particular groups of waterfowl, indicative of wetland*

*values, productivity or diversity; or where data on population are available, it regularly supports 1% of the individuals in a population of one species or subspecies of waterfowl.*

India has the following six Ramsar Sites, namely Wular lake (Kashmir), Harike lake (Punjab), Keoladeo National Park, Bharatpur (Rajasthan), Sambhar lake (Rajasthan), Chilka lake (Orissa), and Loktak lake (Manipur).

Of these, Keoladeo National Park is also a World Heritage Site.

**Wular lake (Jammu and Kashmir):** 34°26'N, 74°42' E; Kashmir valley, Natural; 120 km<sup>2</sup>; 1530 m alt. It is a natural freshwater lake on the river Jhelum. It was designated a Ramsar Site in 1990, also a National Wetland under MOEF, Govt. of India. The lake is threatened due to many anthropogenic pressures, encroachments and pollution. It supports mirror carp commercial fishing. A very important staging wetland for migratory waterfowl like Tufted Duck. Some important waterbird species are: Little Grebe, Eastern Greylag Goose, Brahminy Duck, Pintail, Common Teal, Mallard, Gadwall, Wigeon, Shoveller, Redcrested Pochard, Common Pochard, Tufted Duck, Chinese Whitebreasted Waterhen, Indian Moorhen and Coot.

**Harike lake (Punjab):** 31°13' N, 75°12' E in Amritsar district; Man-made; 58 km<sup>2</sup>; 218.83 m alt. It is a shallow water reservoir created in 1953 by construction of a barrage at Harike at the confluence of the Sutlej and Beas rivers. It was declared a bird sanctuary in 1982 and designated a Ramsar Site in 1990, also a National wetland under MOEF, Govt. of India. The entire lake is auctioned annually for commercial fishing. The uncontrolled growth of water hyacinth (*Eichhornia crassipes*) and siltation are the major threats to the wetland. It is one of the most important staging and wintering lakes for migratory waterfowl. Some important waterbird species are: Great Crested Grebe, Little Grebe, Large Cormorant, Little Cormorant, Darter, Eastern Grey Heron, Purple Heron, Indian Pond Heron, Cattle Egret, Large

Black Ibis, Eastern Greylag Goose (common), Barheaded Goose (common), Brahminy Duck, Pintail, Common Teal, Spotbill Duck, Mallard, Gadwall, Falcated Teal, Wigeon, Shoveller, Redcrested Pochard, Common Pochard (very common), Tufted Duck (very common), Chinese Whitebreasted waterhen, Indian Moorhen, Coot and Pheasant-tailed Jacana.

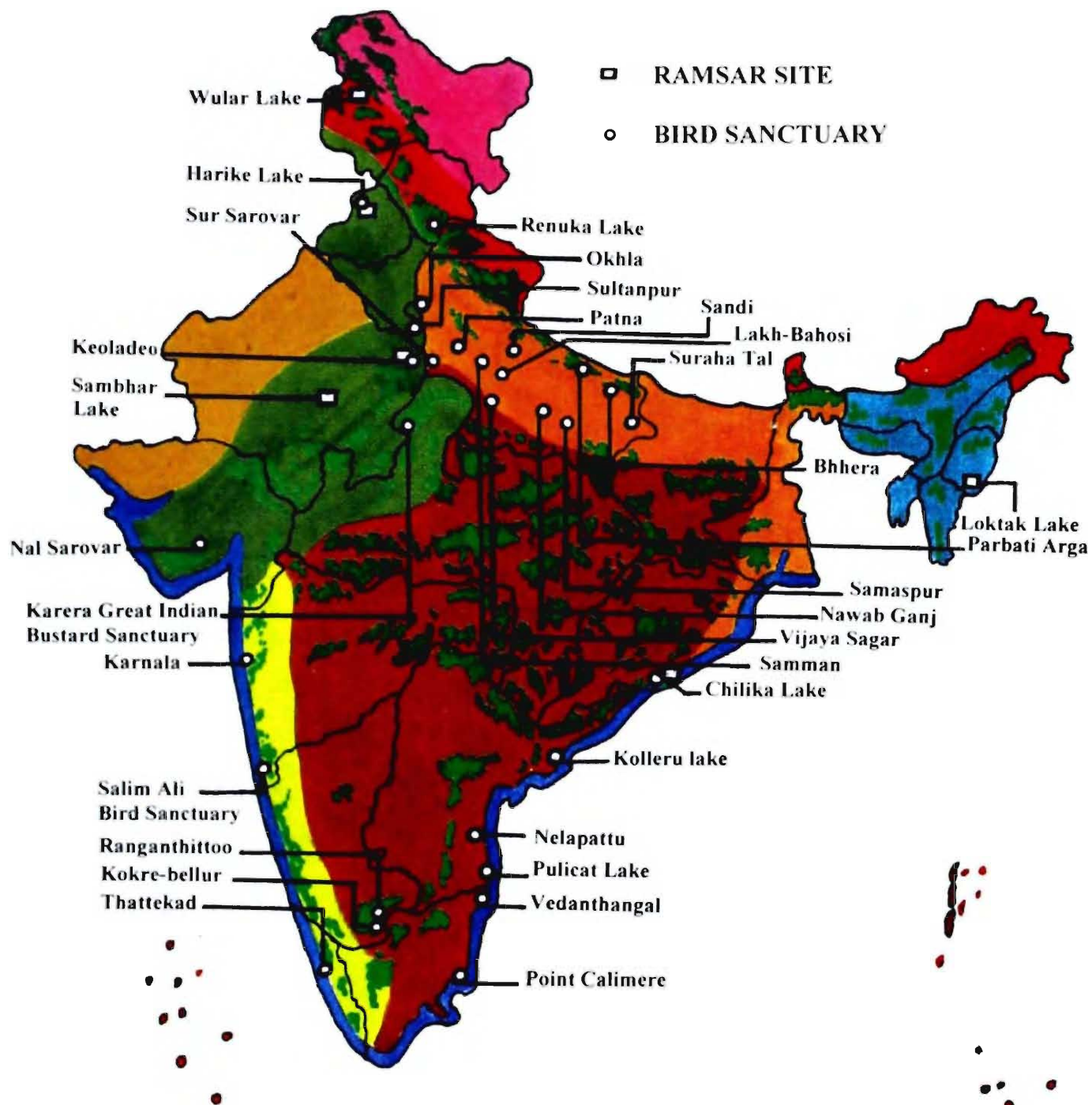
**Keoladeo National Park (Rajasthan):** 27°07' N, 77°29' E, Bharatpur; Man-made; 9 km<sup>2</sup>; 173 m alt. It is known as the most important and critical wetland in India. 354 bird species including 25 waterfowl species are known from the park. It was established as a Ramsar Site in 1981, a National Park in 1982, and a World Heritage Site in 1985. The foremost management problem is the maintenance of water supply. KNP is famous as the only habitat in India for Siberian or White Crane. Some important waterbird species are: *Great Crested Grebe, Little Grebe, Large Cormorant, Little Cormorant, Darter, Eastern Grey Heron, Purple Heron, Night Heron, Painted Stork, Openbill Stork, Whitenecked Stork, Indian Black Ibis, Eastern Greylag Goose, Barheaded Goose, Brahminy Duck, Pintail, Common Teal, Spotbill Duck, Mallard, Gadwall, Falcated Teal, Wigeon, Shoveller, Redcrested Pochard, Common Pochard, Tufted Duck, Cotton Teal, Coot and **Siberian Crane**, a Globally threatened species (only wetland in India visited by the species; two birds spent the winter of 1999-2000 at KNP).*

**Sambhar lake (Rajasthan):** 26°52' N, 74°54' E, near Jaipur; Natural, 190 km<sup>2</sup>, 360 m alt. Largest saline wetland in India. It was designated a Ramsar Site in 1990. Grazing is extensive in catchment areas, poaching of waterfowl also prevails. This is the most important wintering area for flamingos outside Rann of Kutch. Some important waterbird species are: *Little Grebe, Large Cormorant, Little Cormorant, Darter, Eastern Grey Heron, Purple Heron, Painted Stork, Eastern Greylag Goose, Barheaded Goose, Brahminy Duck, Common Teal, Spotbill Duck, Shoveller, Redcrested Pochard, Common Pochard, Tufted Duck and Coot.*

**Chilka lake (Orissa):** 19°28' N, 85°06' E, Natural, 1165 km<sup>2</sup>. 0-2 m alt on the coast of Orissa. It is a shallow, brackish-water lagoon separated from the Bay of Bengal by a sand ridge. It was designated a Ramsar Site in 1981, and was selected by Govt. of India as a wetland for special conservation. It is a major source of commercial fishery and around 10,000 boats operate in the lake. A part of the lagoon, Nalban and adjoining areas form a very important wintering ground for migratory waterfowl. It supports a population of more than a million waterfowl during winters. There is a total ban on bird hunting; still 15,000 to 20,000 birds are poached every year. Some important waterbird species are: *Great Crested Grebe, Little Grebe, Large Cormorant, Little Cormorant, Darter, Eastern Grey Heron, Purple Heron, Large Egret, Night Heron, Painted Stork, Openbill Stork, Whitenecked Stork, Eastern Greylag Goose, Barheaded Goose, Brahminy Duck, Pintail, Common Teal, Spotbill Duck, Gadwall, Wigeon, Shoveller, Redcrested Pochard, Common Pochard, Tufted Duck and Coot.*

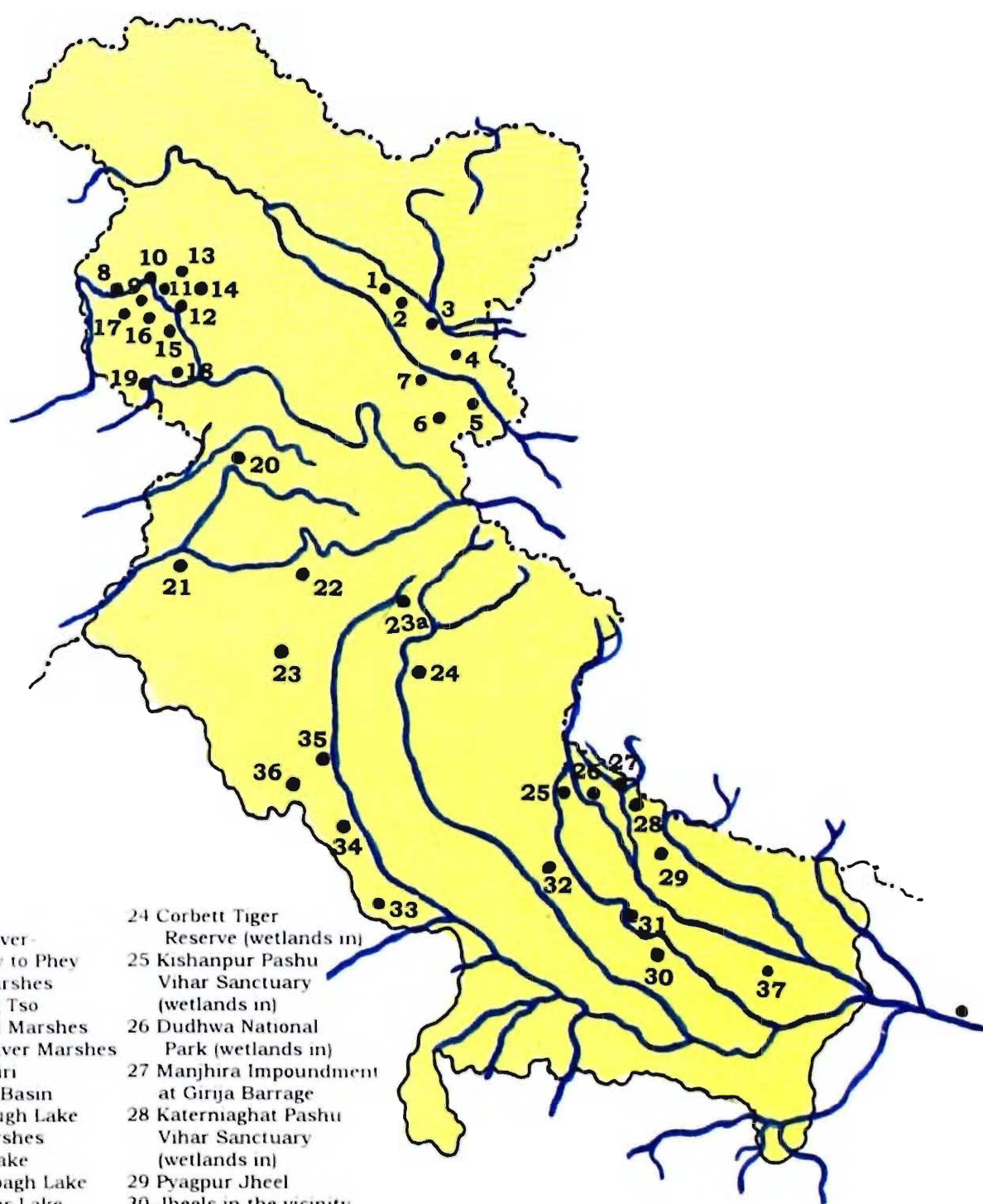
**Loktak lake (Manipur):** 24°25' N, 93°46' E; Natural; 55 km<sup>2</sup>, 768.5-m alt. One of the largest freshwater lakes in the country on Manipur river. It was designated a Ramsar Site in 1990. Also selected as a wetland for special conservation by MOEF, Govt. of India. Human encroachment at the periphery for agriculture is the greatest threat. It is a very important wintering site for migratory waterfowl. Some important waterbird species are: *Eastern Grey Heron, Night Heron, Eastern Greylag Goose, Barheaded Goose, Brahminy Duck, Pintail, Common Teal, Spotbill Duck, Gadwall, Wigeon, Shoveller, Redcrested Pochard, Common Pochard and Coot.*

# BIOGEOGRAPHIC REGIONS, RAMSAR SITES AND BIRD SANCTUARIES IN INDIA



|                  |                  |
|------------------|------------------|
| TRANSHIMALAYAN   | GANGETIC PLAINS  |
| HIMALAYAN        | NORTH-EAST INDIA |
| INDIAN DESERT    | ISLANDS          |
| SEMI-ARID        | COASTS           |
| WESTERN GHATS    | FOREST COVER     |
| DECCAN PENINSULA |                  |





#### Index

- |                                    |                                                           |
|------------------------------------|-----------------------------------------------------------|
| 1 Indus River-<br>Thicksey to Phey | 24 Corbett Tiger<br>Reserve (wetlands in)                 |
| 2 Shey Marshes                     | 25 Kishanpur Pashu<br>Vihar Sanctuary<br>(wetlands in)    |
| 3 Pangong Tso                      | 26 Dudhwa National<br>Park (wetlands in)                  |
| 4 Chushul Marshes                  | 27 Manjhira Impoundment<br>at Girja Barrage               |
| 5 Hanle River Marshes              | 28 Katerniaghat Pashu<br>Vihar Sanctuary<br>(wetlands in) |
| 6 Tso Moriri                       | 29 Pyagpur Jheel                                          |
| 7 Tso Kar Basin                    | 30 Jheels in the vicinity<br>of Haidergarh                |
| 8 Shallabugh Lake<br>and Marshes   | 31 Nawabganj<br>Priyadarshani<br>Bird Sanctuary           |
| 9 Wular Lake                       | 32 Dahar Jheel                                            |
| 10 Naranbagh Lake                  | 33 National Chambal<br>(gharial) Wildlife<br>Sanctuary    |
| 11 Ahansar Lake,<br>Waskursar Lake | 34 Chhata Lakes                                           |
| 12 Dal Lake                        | 35 Jamuna River<br>near Delhi                             |
| 13 Anchar Lake                     | 36 Sultanpur Jheels                                       |
| 14 Khushalsar Lake                 | 37 Eastern Uttar<br>Pradesh (wetlands of)                 |
| 15 Hokarsar Lake                   |                                                           |
| 16 Mirgund Lake                    |                                                           |
| 17 Haigam Rakh                     |                                                           |
| 18 Surinsar Lake                   |                                                           |
| 19 Mansar Lake                     |                                                           |
| 20 Pong Dam Lake                   |                                                           |
| 21 Harike Lake                     |                                                           |
| 22 Ropar Wetland                   |                                                           |
| 23 Lav Kush Tirath                 |                                                           |
| 23a Asan Reservoir                 |                                                           |

### Wetland Sites in Northern India

## **2. PHYSIOGRAPHY OF NORTHERN INDIA**

### **2.1 Climate**

The Northern Indian region is remarkable in having the highest and the most extensive mountain system in the world, namely, the Himalayas on its northern boundary. The Himalayas obstructs the moisture-laden winds from the south, causing them to shed their moisture as extensive rainfall along the submontane areas (north of Indo-Gangetic plains) and as snowfall on the northern mountains. The great Himalayan mountain barrier is also equally effective in protecting India from the direct invasion of severely cold winds from the north temperate regions of Eurasia. Therefore, the Himalayan uplift is literally the key to all biogeographic peculiarities of India, since it influences the climate, flora and fauna of the whole country.

The conventional climatic divisions on the basis of prevailing temperature conditions, namely alpine, temperate, subtropical and tropical are present in Northern India since a major geographical portion is covered by mountainous Himalayan ranges.

India is ecologically a land of tropical monsoon climate. The divisions of the year into seasons are dominated by the monsoon, e.g. i) the season of the north-east monsoon December to March, ii) the transitional hot weather during April-May, iii) The season of the south-west monsoon from June to September, and iv) the transitional period of retreating southwest monsoon during October-November (Mani, 1974). The cold weather lasts from October to February in Northern India. During January there is a pronounced temperature gradient from north to south. The

days are generally warm but the nights are very cold. During this weather, the outward winds are controlled directionally by the general topography of the land, so that they are westerly or north-westerly down the Ganga valley and northerly in the Ganga delta. Therefore, January and February generally remain cloudless over most parts of Northern India (Mani, 1974). The mean temperature starts rising by early March and reaches maximum by May. The monsoon commences in Northern India by the middle of June and is marked by distinct south-westerly winds and results in the existence of low-pressure area over north-west India, which is over-come by the arrival of rain-bearing Southeast trade winds. Due to withdrawal of SW monsoon, the rain becomes less during October, though the land is still waterlogged and therefore the atmosphere is humid. The mean temperature starts dropping in Northern India from November.

It may be summarised that the Himalayas exercises a dominating influence on the meteorological conditions of not only Northern India, but also the whole of the country. As it controls the air and water circulatory system, the Himalayan Mountains have a very noticeable moderating effect on the atmospheric temperature and humidity over Northern India.

## **2.2 Wetlands**

The term 'wetland' used here is as defined in the text of the *Convention on Wetlands of International Importance Especially as Waterfowl Habitat* (the Ramsar Convention), i.e., 'areas of marsh, swamp, pebbles or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water, the depth of which does not exceed six metres'.

When discussing wetlands-their importance, conservation and fauna, special emphasis is generally given to waterfowl for many reasons, namely, they are conspicuous elements of the wetland fauna and thus readily identified, studied

and censored, resulting in much more information and data available on waterfowl than on any other wetland species. Many species are international migrants and depend on wetlands in a number of countries on their route thus necessitating need for international cooperation in conservation strategies of wetlands. In addition, waterfowl are at the apex of the food chain and are useful indicators of the overall health of the wetland and are highly sensitive to pollution and disturbance.

Wetlands can be classified as habitats as follows (Hussain and De Roy, 1993):

- 01: Shallow sea bays and straits (under six metres at low tide)
- 02: estuaries, deltas
- 03: small, offshore islands, islets
- 04: rocky sea coasts, sea cliffs
- 05: sea beaches (sand, pebbles)
- 06: intertidal mudflats, sandflats
- 07: mangrove swamps, mangrove forest
- 08: coastal brackish and saline lagoons and marshes
- 09: salt-pans (artificial)
- 10: shrimp-ponds, fish-ponds
- 11: rivers, streams-slow-flowing (lower perennial)
- 12: rivers, streams-fast-flowing (upper perennial)
- 13: oxbow lakes, riverine marshes
- 14: freshwater lakes and associated marshes (lacustrine)
- 15: freshwater ponds (under 8 ha), marshes, swamps (palustrine)
- 16: salt lakes, saline marshes (inland drainage systems)
- 17: water-storage reservoirs, dams
- 18: seasonally flooded grassland, savanna, palm savanna
- 19: rice paddies

- 20: flooded arable land, irrigated land
- 21: swamp forest, temporarily flooded forest
- 22: peat bogs

However, the prevailing wetlands in India are:

1. Tanks, reservoirs, and other water bodies of the Deccan peninsula
2. Backwaters and estuaries of the west coast of the peninsula
3. The vast saline expanses of Rajasthan and Gujarat (mainly Rann of Kutch)
4. Freshwater lakes and reservoirs from Gujarat eastwards through Rajasthan and Madhya Pradesh
5. Deltaic wetlands (including mangroves), lagoons, and salt swamps of India's east coast
6. Marshes, jheels, terai swamps, and Chaur lands of the Indo-Gangetic plain
7. Floodplain of the Brahmaputra and the marshes and swamps in the hills of north-eastern India
8. Lakes and rivers of the montane (primarily Palaearctic) regions of Kashmir and Ladakh
9. Wetlands (primarily mangrove associations and coral reefs) of India's island arcs.

The northern portion of India contains a number of national and international wetlands. These wetlands support a large variety of waterbirds (180 forms), many of which are either rare or even extinct locally or very rare outside India, while a large number are winter migrants from Eurasia. These wetlands are a rich tribute to Hindu philosophical traditions and a good example of coexistence of wildlife with mankind even in high density habitations and intensive agricultural areas. Nevertheless due to non-stop anthropogenic pressure on wetlands like demand for fuel and fodder far exceed their regenerative ability. The ever-increasing use of fertilisers, herbicides, and pesticides

is polluting the wetlands beyond redemption and seriously effecting rich bird life which has shown a serious decline in the recent past.

Important and major wetlands in N India, apart from the rivers, are: Chandigarh: Sukhna Lake. Delhi: Horseshoe Lake, Yamuna River, Okhla Reservoir, Najafgarh Drain, Ramghat and Wazirabad Reservoir. Haryana: Sultanpur jheels. Jammu and Kashmir: Ahansar Lake, Anchar Lake, Chushul marshes, Dal Lake, Haigam Rakh, Henley River marshes, Hokarsar Lake, Indus River (Thicksey to Phey), Mansar Lake, Pangong Tso, Tso Kar Basin and Tso Moriri.

Himachal Pradesh: Pong Dam Lake. Punjab: Harike Lake, Kanjli and Ropar Lake. Uttaranchal: Asan Reservoir (Dehra Dun Valley), Corbett National Park (Kalagarh Reservoir). Uttar Pradesh: Katarniaghat Bird Sanctuary, National Chambal Wildlife Sanctuary, Nawabganj Bird Sanctuary, Payagpur jheels, Soj jheels, Wetlands of eastern Uttar Pradesh.





### 3. WATERBIRDS

#### 3.1 Systematic list

| Family            | Genus                | Species             | Subspecies          | Status     |
|-------------------|----------------------|---------------------|---------------------|------------|
| Gaviidae          | <i>Gavia</i>         | <i>arctica</i>      | <i>suschkini</i>    | WM/Va      |
| Podicipedidae     | <i>Podiceps</i>      | <i>cristatus</i>    | <i>cristatus</i>    | WM/UnCom   |
|                   |                      | <i>griseigena</i>   |                     | WM/UnCom   |
|                   |                      | <i>nigricollis</i>  | <i>nigricollis</i>  | WM/UnCom   |
|                   |                      | <i>ruficollis</i>   | <i>capensis</i>     | R/Com      |
|                   |                      | <i>auritus</i>      |                     | WM/Va      |
| Pelecanidae       | <i>Pelecanus</i>     | <i>onocrotalus</i>  |                     | WM/UnCom   |
|                   |                      | <i>philippensis</i> | <i>philippensis</i> | WM/UnCom   |
|                   |                      |                     | <i>crispus</i>      | WM/Ra      |
| Phalacrocoracidae | <i>Phalacrocorax</i> | <i>carbo</i>        | <i>sinensis</i>     | R/WM/Com   |
|                   |                      | <i>fuscicollis</i>  |                     | R/LM/Com   |
|                   |                      | <i>niger</i>        |                     | R/LM/Com   |
|                   | <i>Anhinga</i>       | <i>rufa</i>         | <i>melanogaster</i> | R/LM/UnCom |
| Ardeidae          | <i>Ardea</i>         | <i>insignis</i>     |                     | R/VRa      |
|                   |                      | <i>cinerea</i>      | <i>rectirostris</i> | R/UnCom    |
|                   |                      | <i>purpurea</i>     | <i>manilensis</i>   | R/LM/UnCom |
|                   | <i>Butorides</i>     | <i>striatus</i>     | <i>javanicus</i>    | R/Ra       |
|                   | <i>Ardeola</i>       | <i>grayii</i>       | <i>grayii</i>       | R/Com      |
|                   | <i>Bublulcus</i>     | <i>ibis</i>         | <i>coromandu</i>    | R/Com      |
|                   | <i>Ardea</i>         | <i>alba</i>         | <i>alba</i>         | WM/Va      |
|                   |                      |                     | <i>modesta</i>      | R/LM/UnCom |
|                   | <i>Egretta</i>       | <i>intermedia</i>   | <i>intermedia</i>   | R/LM/UnCom |
|                   |                      | <i>garzetta</i>     | <i>garzetta</i>     | R/LM/Com   |
|                   |                      | <i>gularis</i>      | <i>schistacea</i>   | R/LM/Ra    |

| <b>Family</b>     | <b>Genus</b>            | <b>Species</b>       | <b>Subspecies</b>    | <b>Status</b> |
|-------------------|-------------------------|----------------------|----------------------|---------------|
| Ciconiidae        | <i>Nycticorax</i>       | <i>nycticorax</i>    | <i>nycticorax</i>    | R/LM/UnCom    |
|                   | <i>Ixobrychus</i>       | <i>minutus</i>       | <i>minutus</i>       | R/LM/Ra       |
|                   |                         | <i>cinnamomeus</i>   |                      | R/LM/UnCom    |
|                   |                         | <i>sinensis</i>      |                      | R/LM/UnCom    |
|                   |                         | <i>flavicollis</i>   | <i>flavicollis</i>   | R/LM/UnCom    |
|                   | <i>Botaurus</i>         | <i>stellaris</i>     | <i>stellaris</i>     | WM/Ra         |
|                   | <i>Mycteria</i>         | <i>leucocephala</i>  |                      | R/LM/Com      |
|                   | <i>Anastomus</i>        | <i>oscitans</i>      |                      | R/LM/UnCom    |
|                   | <i>Ciconia</i>          | <i>episcopus</i>     | <i>episcopus</i>     | R/Ra          |
|                   |                         | <i>ciconia</i>       | <i>ciconia</i>       | WM/Ra         |
|                   |                         | <i>nigra</i>         |                      | WM/UnCom      |
|                   | <i>Ephippiorhynchus</i> | <i>asiaticus</i>     | <i>asiaticus</i>     | R/Ra          |
|                   | <i>Leptoptilos</i>      | <i>dubius</i>        |                      | R/LM/Ra       |
|                   |                         | <i>javanicus</i>     |                      | R/LM/Ra       |
| Threskiornithidae | <i>Threskiornis</i>     | <i>aethiopica</i>    | <i>melanocephala</i> | R/LM/UnCom    |
|                   | <i>Pseudibis</i>        | <i>papillosa</i>     | <i>papillosa</i>     | R/Un Com      |
|                   | <i>Plegadis</i>         | <i>falcinellus</i>   | <i>falcinellus</i>   | R/LM/UnCom    |
|                   | <i>Platalea</i>         | <i>leucorodia</i>    | <i>major</i>         | R/WM/UnCom    |
| Phoenicopteridae  | <i>Phoenicopiterus</i>  | <i>roseus</i>        |                      | R/LM/Ra       |
|                   |                         | <i>minor</i>         |                      | R/LM/Ra       |
| Anatidae          | <i>Anser</i>            | <i>albifrons</i>     | <i>albifrons</i>     | WM/Ra         |
|                   |                         | <i>erythropus</i>    |                      | WM/Ra         |
|                   |                         | <i>anser</i>         | <i>rubrirostris</i>  | WM/Com        |
|                   |                         | <i>indicus</i>       |                      | WM/R/Com      |
|                   |                         | <i>caerulenscens</i> | <i>caerulenscens</i> | WM/Va         |
|                   | <i>Cygnus</i>           | <i>columbianus</i>   | <i>bewickii</i>      | WM/Va         |
|                   |                         | <i>cygnus</i>        | <i>olor</i>          | WM/Va         |
|                   | <i>Dendrocygna</i>      | <i>javanica</i>      |                      | R/LM/UnCom    |
|                   |                         | <i>bicolor</i>       |                      | R/LM/Ra       |
|                   | <i>Tadorna</i>          | <i>ferruginea</i>    |                      | WM/R/VCom     |
|                   |                         | <i>tadorna</i>       |                      | WM/UnCom      |

| <b>Family</b> | <b>Genus</b>        | <b>Species</b>         | <b>Subspecies</b>      | <b>Status</b> |
|---------------|---------------------|------------------------|------------------------|---------------|
| Gruidae       | <i>Marmaronetta</i> | <i>angustirostris</i>  |                        | WM/Ra         |
|               | <i>Anas</i>         | <i>acuta</i>           |                        | WM/VCom       |
|               |                     | <i>crecca</i>          | <i>crecca</i>          | WM/VCom       |
|               |                     | <i>formosa</i>         |                        | WM/Va         |
|               |                     | <i>poecilorhyncha</i>  | <i>poecilorhyncha</i>  | R/LM/Com      |
|               |                     | <i>platyrhynchos</i>   |                        | WM/R/Com      |
|               |                     | <i>strepera</i>        | <i>strepera</i>        | WM/Com        |
|               |                     | <i>falcata</i>         |                        | WM/Ra         |
|               |                     | <i>penelope</i>        |                        | WM/Com        |
|               |                     | <i>querquedula</i>     |                        | WM/Com        |
|               |                     | <i>clypeata</i>        |                        | WM/Com        |
|               | <i>Rhodonessa</i>   | <i>caryophyllacea</i>  |                        | Cr/R          |
|               | <i>Netta</i>        | <i>rufina</i>          |                        | WM/Vcom       |
|               | <i>Aythya</i>       | <i>ferina</i>          |                        | WM/VCom       |
|               |                     | <i>nyroca</i>          |                        | WM/R/Com      |
|               |                     | <i>fuligula</i>        |                        | WM/Com        |
|               |                     | <i>marila</i>          | <i>marila</i>          | WM/Va         |
|               | <i>Nettapus</i>     | <i>coromandelianus</i> | <i>coromandelianus</i> | R/UnCom       |
|               | <i>Sarkidiornis</i> | <i>melanotos</i>       | <i>melanotos</i>       | R/LM/UnCom    |
|               | <i>Clangula</i>     | <i>hyemalis</i>        |                        | WM/Va         |
|               | <i>Bucephala</i>    | <i>clangula</i>        | <i>clangula</i>        | WM/UnCom      |
|               | <i>Mergus</i>       | <i>albellus</i>        |                        | WM/Ra         |
|               |                     | <i>merganser</i>       | <i>orientalis</i>      | WM/Ra         |
|               | <i>Oxyura</i>       | <i>leucocephala</i>    |                        | WM/Ra         |
|               | <i>Grus</i>         | <i>grus</i>            | <i>lilfordi</i>        | WM/Ra         |
|               |                     | <i>nigricollis</i>     |                        | R/Ra          |
|               |                     | <i>antigone</i>        | <i>antigone</i>        | R/LM/UnCom    |
|               |                     | <i>leucogeranus</i>    |                        | WM/VRa        |
| Rallidae      | <i>Anthropoides</i> | <i>virgo</i>           |                        | WM/Ra         |
|               | <i>Rallus</i>       | <i>aquaticus</i>       | <i>korejewi</i>        | R/WM/Com      |
|               |                     | <i>striatus</i>        | <i>albiwenter</i>      | R/Ra          |
|               | <i>Rallina</i>      | <i>eurizonoides</i>    | <i>amauroptera</i>     | R/LM/UnCom    |
|               | <i>Crex</i>         | <i>crex</i>            |                        | WM/Va         |

| <b>Family</b>  | <b>Genus</b>          | <b>Species</b>       | <b>Subspecies</b>    | <b>Status</b> |
|----------------|-----------------------|----------------------|----------------------|---------------|
| Jacanidae      | <i>Porzana</i>        | <i>parva</i>         |                      | WM/Ra         |
|                |                       | <i>pusilla</i>       | <i>pusilla</i>       | WM/R/Ra       |
|                |                       | <i>porzana</i>       |                      | WM/Ra         |
|                | <i>Amaurornis</i>     | <i>fuscus</i>        | <i>bakeri</i>        | R/LM/UnCom    |
|                |                       | <i>akool</i>         | <i>akool</i>         | R/LM/UnCom    |
|                |                       | <i>phoenicurus</i>   | <i>chinensis</i>     | R/Com         |
|                | <i>Gallinula</i>      | <i>cinerea</i>       | <i>cinerea</i>       | R/Ra          |
|                | <i>Gallinula</i>      | <i>chloropus</i>     | <i>indica</i>        | R/Com         |
|                | <i>Porphyrio</i>      | <i>porphyrio</i>     | <i>poliocephalus</i> | R/LM/UnCom    |
|                | <i>Fulica</i>         | <i>atra</i>          | <i>atra</i>          | WM/R/VCom     |
|                | <i>Hydrophasianus</i> | <i>chirurgus</i>     |                      | SR/LM/UnCom   |
|                | <i>Metopidius</i>     | <i>indicus</i>       |                      | R/UnCom       |
|                | <i>Metopidius</i>     | <i>indicus</i>       |                      | R/UnCom       |
| Haematopodidae | <i>Haematopus</i>     | <i>ostralegus</i>    | <i>ostralegus</i>    | WM/Ra         |
| Charadriidae   | <i>Vanellus</i>       | <i>leucurus</i>      |                      | WM/UnCom      |
|                |                       | <i>gregarius</i>     |                      | WM/Ra         |
|                |                       | <i>vanellus</i>      |                      | WM/UnCom      |
|                |                       | <i>cinereus</i>      |                      | WM/Ra         |
|                |                       | <i>indicus</i>       | <i>indicus</i>       | R/AM/Com      |
|                |                       | <i>spinosus</i>      | <i>duvaucelii</i>    | R/LM/UnCom    |
|                |                       | <i>malabaricus</i>   |                      | R/LM/Ra       |
|                | <i>Pluvialis</i>      | <i>squatarola</i>    |                      | WM/PM/Ra      |
|                |                       | <i>apricaria</i>     | <i>apricaria</i>     | WM/Va         |
|                |                       | <i>dominica</i>      | <i>fulva</i>         | WM/Va         |
|                | <i>Charadrius</i>     | <i>leschenaultii</i> |                      | WM/Ra         |
|                |                       | <i>hiaticula</i>     | <i>tundrae</i>       | WM/Ra         |
|                |                       | <i>dubius</i>        | <i>curonicus</i>     | WM/Ra         |
|                |                       |                      | <i>jerdoni</i>       | R/Com         |
|                |                       | <i>alexandrinus</i>  | <i>alexandrinus</i>  | R/WM/UnCom    |
|                |                       | <i>placidus</i>      |                      | WM/Ra         |
|                |                       | <i>mongolus</i>      | <i>atrifrons</i>     | R/WM/UnCom    |
|                | <i>Numenius</i>       | <i>phaeopus</i>      | <i>Phaeopus</i>      | WM/PM/UnCom   |

| <b>Family</b>    | <b>Genus</b>       | <b>Species</b>       | <b>Subspecies</b>   | <b>Status</b> |
|------------------|--------------------|----------------------|---------------------|---------------|
|                  |                    | <i>arquata</i>       | <i>arquata</i>      | WM/Ra         |
|                  |                    |                      | <i>orientalis</i>   | WM/UnCom      |
|                  | <i>Limosa</i>      | <i>limosa</i>        | <i>limosa</i>       | WM/UnCom      |
|                  |                    | <i>lapponica</i>     | <i>lapponica</i>    | WM/Ra         |
|                  | <i>Tringa</i>      | <i>erythropus</i>    |                     | WM/UnCom      |
|                  |                    | <i>totanus</i>       | <i>totanus</i>      | WM/Ra         |
|                  |                    |                      | <i>eurhinus</i>     | WM/R/UnCom    |
|                  |                    | <i>stagnatilis</i>   |                     | WM/UnCom      |
|                  |                    | <i>nebularia</i>     |                     | WM/UnCom      |
|                  |                    | <i>ochropus</i>      |                     | WM/Com        |
|                  |                    | <i>glareola</i>      |                     | WM/UnCom      |
|                  |                    | <i>terek</i>         |                     | WM/UnCom      |
|                  |                    | <i>hypoleucos</i>    |                     | R/WM/UnCom    |
|                  | <i>Arenaria</i>    | <i>interpres</i>     | <i>interpres</i>    | WM/Va         |
|                  | <i>Limnodromus</i> | <i>semipalmatus</i>  |                     | WM/Va         |
|                  | <i>Capella</i>     | <i>solitaria</i>     | <i>solitaria</i>    | WM/R/Ra       |
|                  |                    | <i>nemoricola</i>    |                     | R/WM/Ra       |
|                  |                    | <i>stenura</i>       |                     | WM/UnCom      |
|                  |                    | <i>gallinago</i>     | <i>gallinago</i>    | R/WM/UnCom    |
|                  |                    | <i>minima</i>        |                     | WM/UnCom      |
|                  | <i>Scolopax</i>    | <i>rusticola</i>     | <i>rusticola</i>    | R/WM/UnCom    |
|                  | <i>Calidris</i>    | <i>albus</i>         |                     | WM/Ra         |
|                  |                    | <i>minutus</i>       |                     | WM/UnCom      |
|                  |                    | <i>temminckii</i>    |                     | WM/UnCom      |
|                  |                    | <i>subminutus</i>    |                     | WM/Ra         |
|                  |                    | <i>alpinus</i>       | <i>alpinus</i>      | WM/UnCom      |
|                  |                    | <i>testaceus</i>     |                     | WM/Ra         |
|                  | <i>Limicola</i>    | <i>falcinellus</i>   | <i>falcinellus</i>  | WM/Ra         |
|                  | <i>Tryngites</i>   | <i>subruficollis</i> |                     | WM/Va         |
|                  | <i>Philomachus</i> | <i>pugnax</i>        |                     | WM/UnCom      |
|                  | <i>Phalaropus</i>  | <i>lobatus</i>       |                     | WM/Va         |
| Rostratulidae    | <i>Rostratula</i>  | <i>benghalensis</i>  | <i>benghalensis</i> | R/UnCom       |
| Recurvirostridae | <i>Himantopus</i>  | <i>himantopus</i>    | <i>himantopus</i>   | R/Com         |

| <b>Family</b>   | <b>Genus</b>         | <b>Species</b>        | <b>Subspecies</b>     | <b>Status</b> |
|-----------------|----------------------|-----------------------|-----------------------|---------------|
|                 | <i>Recurvirostra</i> | <i>avosetta</i>       |                       | WM/UnCom      |
| Ibidorhynchidae | <i>Ibidorhyncha</i>  | <i>struthersii</i>    |                       | R/AM/Ra       |
| Burhinidae      | <i>Burhinus</i>      | <i>oediconemus</i>    | <i>indicus</i>        | R/UnCom       |
|                 | <i>Esacus</i>        | <i>magnirostris</i>   | <i>recurvirostris</i> | R/LM/UnCom    |
| Glareolidae     | <i>Cursorius</i>     | <i>coromandelicus</i> |                       | R/LM/UnCom    |
|                 | <i>Glareola</i>      | <i>pratincta</i>      | <i>pratincta</i>      | WM/Ra         |
|                 |                      |                       | <i>maldivarum</i>     | R/LM/UnCom    |
|                 |                      | <i>lactea</i>         |                       | R/LM/UnCom    |
| Laridae         | <i>Larus</i>         | <i>argentatus</i>     | <i>heuglini</i>       | WM/Ra         |
|                 |                      | <i>ichthyaetus</i>    |                       | WM/Ra         |
|                 |                      | <i>brunnicephalus</i> |                       | WM/R/UnCom    |
|                 |                      | <i>ridibundus</i>     | <i>ridibundus</i>     | WM/Ra         |
|                 |                      | <i>genei</i>          |                       | WM/Ra         |
|                 |                      | <i>minutus</i>        |                       | WM/Va         |
|                 |                      | <i>canus</i>          |                       | WM/Va         |
|                 | <i>Chlidonias</i>    | <i>hybrida</i>        | <i>indica</i>         | WM/R/UnCom    |
|                 |                      | <i>leucoptera</i>     |                       | WM/Ra         |
|                 |                      | <i>niger</i>          | <i>niger</i>          | WM/Va         |
|                 | <i>Gelochelidon</i>  | <i>nilotica</i>       | <i>nilotica</i>       | WM/R/UnCom    |
|                 | <i>Hydroprogne</i>   | <i>caspia</i>         | <i>caspia</i>         | WM/UnCom      |
|                 | <i>Sterna</i>        | <i>aurantia</i>       |                       | R/UnCom       |
|                 |                      | <i>hirundo</i>        | <i>tibetana</i>       | WM/R/UnCom    |
|                 |                      | <i>macrura</i>        |                       | WM/Va         |
|                 |                      | <i>acuticauda</i>     |                       | R/Ra          |
|                 |                      | <i>albifrons</i>      | <i>albifrons</i>      | R/WM/UnCom    |
|                 |                      | <i>sandvicensis</i>   | <i>sandvicensis</i>   | WM/Ra         |
|                 | <i>Rynchops</i>      | <i>albicollis</i>     |                       | R/LM/Ra       |

## 3.2 Descriptions

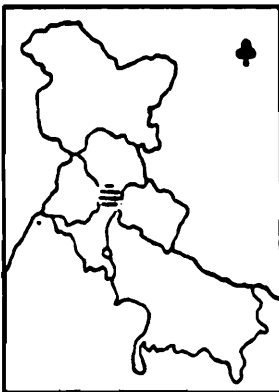
### Divers

(Family : GAVIIDAE)

World: 5 species; Asia: 4; India: 2; N India: 1. Streamline body. Legs short and set far back, toes fully webbed. Skilled divers and swimmers. Plumage dense, compact and rather harsh. Wings of 11 primaries, the outermost minute. Rectrices 18 or 20. Tarsi reticulate and laterally compressed. Sexes alike (winter), dimorphic (summer). Breeding extralimital.

**1(1). Blackthroated Diver.** *Gavia artica suschkini* (Zarudny); Domestic duck  $\pm$ ; 65 cm; **WM/Va C** (Fig. 1)

**Black-throated Loon:** *Gavia arctica* (L)



**Diagnostics:** Sexes alike. Practically a tail-less bird with pointed straight bill. In winter (non-breeding adult), without black throat and with dark grey upperparts and white underparts. Compared with Red-throated Diver, appears black-and-white rather than grey-and-white. Wings sparingly spotted with white. A brown line across the lower throat and a black line across the vent.

**Habits and Habitat:** Very rarely recorded from floodplains of N India in winters. **Food:** Carnivorous, mainly fish. **Status and Distribution:** Very rare vagrant in N India, essentially marine in winters and frequent coastlines. Breeds across northern Eurasia.

### Grebes

(Family : PODICIPEDIDAE)

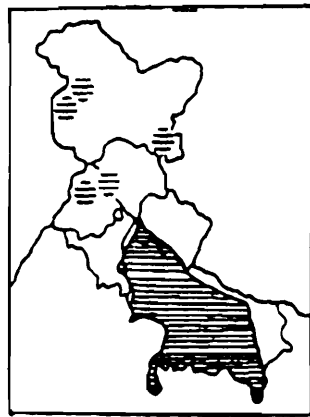
World: 21 species; Asia: 6; India: 5; N India: 5. Plumage dense and silky. Primaries 12, the first from outside rudimentary. Tail soft and rudimentary. Bill compressed and sharply pointed. Legs placed far back, specially adapted for



diving and swimming. Tarsi scutellated in front, laterally compressed. Front toes with broad lateral vane-like lobes. Hind toe small, raised, vertically lobed. Nails broad and flattened. Sexes seasonally dimorphic. Young nidifugous (able to swim at once)..

**2(3). Great Crested Grebe.** *Podiceps cristatus cristatus* (Linnaeus); *Shiva-hans*; Domestic Duck -; 46-51 cm; **WM/UnCom C/H** (Fig.2)

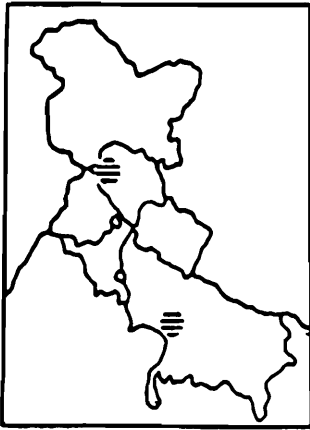
*Podiceps cristatus* (l)



**Diagnostics:** Sexes alike, but the diagnostics less developed in females. A tailless aquatic bird characterised by slender white neck and straight pointed bill; two upstanding, backwardly directed ear tufts above head and a frill of chestnut-and-black elongated feathers below the head. In winter (non-breeding), these 'ears' much reduced, in young birds absent. However, it has the black forehead, crown and crest; a blackish line from gape to eye; white lores and sides of the head, chin and throat; dark nape and back; mottled brown and rufous flanks and white underparts. **Habitat:** Prefers open water lakes, reservoirs, jheels and salt-pans. **Habits:** Swims with body low and erect neck, both male and female perform elaborate courtship display. Breeds from June to August in Ladakh between 4700 and 5200 m, also known to breed in Gujarat. **Food:** Fish, frogs, tadpoles, aquatic insects, occasionally macrophytes. **Status and Distribution:** Occurs in small numbers in N India from October to April, more common in coastal areas; Pakistan; Nepal; Bhutan; Bangladesh. Distributed across Europe to China and Japan.

**3(3a). Rednecked Grebe.** *Podiceps griseigena* (Boddaert); 40-50 cm; **WM/UnCom C** (Fig.3)

**Diagnostics:** Sexes alike. *Breeding:* Black crown with short crest, contrasting greyish-white cheeks and reddish foreneck. *Non-breeding:* Similar to Great Crested Grebe, but



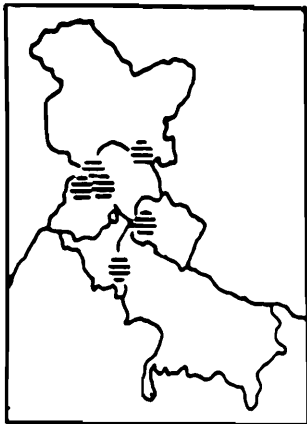
with less defined black crown reaching to eye; lores black; cheeks pale with dusky wash; neck and flanks dusky with prominent white flash at rear. In flight, white bars on forewings and secondaries. Yellow base of bill and dusky cheeks are prominent. **Habitat:** Prefers freshwater lakes and reservoirs. **Habits:** Like typical grebes; very similar to Great Crested Grebe. **Food:** Mainly fish, frogs, tadpoles, aquatic insects, shrimps, etc. **Status and**

**Distribution:** Uncommon winter migrant to N and NW India, Himachal Pradesh, Uttar Pradesh, Rajasthan, Gujarat; Pakistan. Breeds in north-east Europe, temperate Asia and western N America.

**4(4). Blacknecked Grebe.** *Podiceps nigricollis nigricollis* Brehm; Dabchick +; 28-34 cm; **WM/UnCom C** (Fig.4)

*Podiceps nigricollis* (I)

**Diagnostics:** Sexes alike. A small darkbrown grebe with a slender, pointed and slightly uptilted bill, white underparts and silvery white flanks. In winter distinguishable from very similar Little Grebe by blackish cap to below the eyes, mixed black and white chin and throat, and dark brown foreneck. In summer by black head and neck, and a golden tuft of feathers behind the eyes. **Habitat:** Prefers shallow lakes or reservoirs with patches of emergent vegetation. **Habits:** Prefers reed bordered jheels with floating vegetation and shallow water. Occurs in company with Dabchicks, sometimes in large flocks. **Food:** Fish, tadpoles, frogs, shrimps and its own feathers. **Status and Distribution:** Uncommon winter migrant to N India from plains to 1800m; breeds in small numbers in W Pakistan hills; Nepal. Mainly breeds in Palaearctic region from Europe to China and Japan.

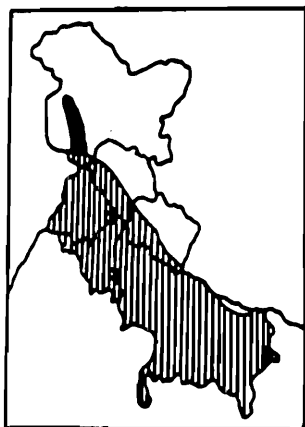


**5(5). Little Grebe or Dabchick.** *Podiceps ruficollis capensis* Salvadori; Pandubi, Pind; Tailless pigeon ±; 25-29

cm; **R/Com C** (Fig.5)

*Tachybaptus ruficollis* (L)

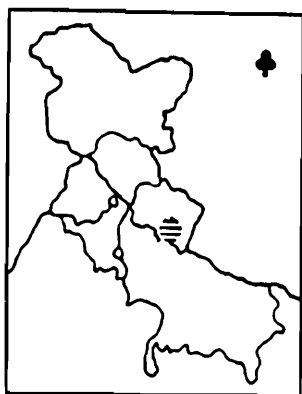
**Diagnostics:** *Adult:* Sexes alike. A small, squat and tailless bird with short pointed bill and backwardly placed legs. It rides the water with rear end raised and dives frequently. A white wing patch in flight. *Breeding* (summer): Forehead,



crown and nape blackish-brown; lores, face, and chin chestnut; upper plumage lighter than the crown; flanks dusky brown and underparts silky smoky-white. *Non-breeding* (winter): Light brown with whitish chin, pale rufous neck and whitish under parts. *Juvenile:* Paler, the chestnut on the sides of the head and lower neck is either absent or a trace of it, the lower plumage is white with very little brown. **Habitat:**

Stays in loose flocks in open waters during non-breeding season, but singly or in pairs in vegetation during breeding season. **Habits:** Keeps singly or in pairs among aquatic vegetation, dives for safety when disturbed. Breeds from April to October in N India. Nest (like a pad of weeds) either floating or bedded on waterweeds. **Food:** Molluscs, fish, tadpoles, crustaceans and aquatic insects. **Status and Distribution:** Locally common throughout India, except extreme NW, NE and Himalayas, from plains up to 1800 m (Kashmir); Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. N Africa; Middle East; SE Asia.

**6 Horned Grebe or Slavonian Grebe.** *Podiceps auritus* (Linnaeus); 31-38 cm; **WM/Va** (Fig.6)



**Diagnostics:** Sexes alike. Like Blacknecked Grebe, but with white tipped straight bill and a pale stripe from base of bill to eyes. *Adult: Non-breeding* (winter): black cap extends down up to eyes, foreneck white, and hind neck dark. *Breeding* (summer): Head black with yellow ear tufts sweeping back from eyes, neck and flanks rufous. *Juvenile:* similar to non-breeding birds but

with faint dark stripes on cheeks. **Habitat:** Found in shallow lakes and jheels with emergent vegetation. **Habits:** Keeps singly or in pairs amidst aquatic vegetation, occasionally found in open water in small loose flocks. Keeps neck erect while swimming. **Status and Distribution:** Winter migrant, vagrant, only one or two records available from Northern India. Breeds in central/northern Asia moves to S and SE Asia in non-breeding period.

## Pelicans

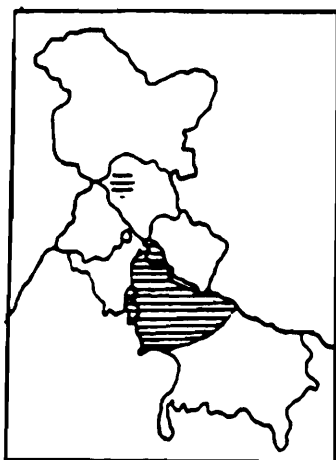
(Family : PELECANIDAE)

World: 8 species; Asia: 4; India: 3; N India: 3. Gregarious, fish-eating. Large birds with broad and powerful wings. Bill enormous. Upper mandible terminates in a strongly hooked nail; the lower consists of two flexible rami supporting a large gular pouch. Retracted neck bends back in a flat S. Legs short and strong with large webbed feet. Sexes alike. Young nidicolous (remaining long in the nest) because naked on hatching, becoming downy later. Flight either characteristic V-shaped or long straggly ribbons with a wide front.

**7(20). White or Rosy Pelican.** *Pelecanus onocrotalus* Linnaeus; *Hawasil*; Vulture ±; 140-183 cm; **WM/UnCom C** (Fig.7)

### Great White Pelican (I)

**Diagnostics:** *Adult:* Sexes alike, female smaller. Large white bird with yellowish pouch attached to the lower mandible. Bill lead-blue, mottled with white along the centre and with the nail and edges of both mandibles red; lower mandible is blue on the basal, yellow on the terminal half; forehead feathers terminate in a point over the bill; slight crest on the back of the head. Plumage mostly white tinged rose with yellowish feathers on the breast. Primaries

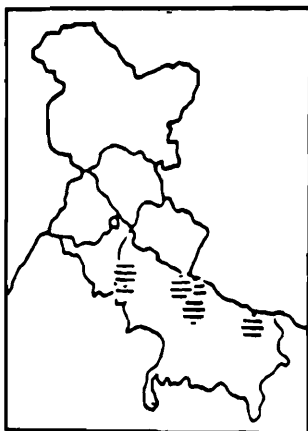


and underside of secondaries black. Feet fleshy-pink, with yellow webs. **Juvenile:** Largely white, head and neck overspread with dull iron-rust; remaining plumage dull pale brown; ashy tinged webs. **Habitat:** Found in congregations in large jheels, heronries, lagoons and tidal creeks. **Habits:** May be found in small flocks as in NZP, New Delhi or huge concentrations on large lakes as in the Great Rann of Kutch; breeds from February to April. **Food:** Chiefly fish. **Status and Distribution:** Breeds in Gujarat, winter migrant to NW, N and NE India. Common in Gujarat and Assam during winters; Pakistan; Nepal; Bangladesh; Maldives. Also breeds in SE Europe, Iraq and the Persian Gulf, winters in N Africa as well.

**8(21). Spottedbilled or Grey Pelican.** *Pelecanus philippensis philippensis* Gmelin; *Hawasil*; Vulture +; 140-152 cm; **GT/Vu WM/UnCom C**(Fig.8)

**Spot-billed Pelican.** *Pelecanus philippensis* (I)

**Diagnostics:** **Adult:** Sexes alike. Head, neck and upperparts grey; underparts greyish- white, under tail-coverts mottled with brown; bill and gular pouch flesh-coloured, blue spots on upper mandible and blackish marking on pouch; nuchal crest brown, composed of white-tipped elongated feathers; legs and feet dark brown. In summer, under wing-coverts and under tail-coverts slightly wine-coloured; in winter lower back, rump and flanks tinged with vinaceous. **Juvenile:** Pale brown above and white below. **Habitat:** Found in



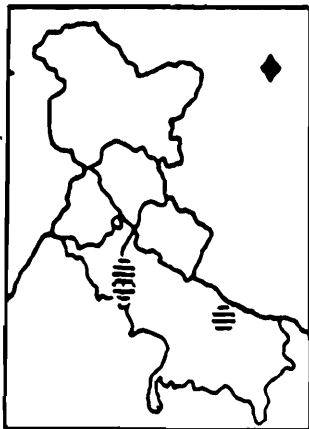
large lakes, reservoirs, lagoons and estuaries. **Habits:** Gregarious; often found in association with egrets and cormorants; breeds from September to April. **Food:** Mainly fishes in large quantity. **Status and Distribution:** Globally threatened/ Vulnerable. Overall population declining. A widespread resident species in India, locally common during breeding season in S and SE India, Assam; Nepal; Bangladesh; Sri Lanka; Maldives. **Remarks:** It was once a

widespread species in Asia but the population has declined drastically in the last two decades. Presently a total of 11,500 individuals are estimated in the world, of which about 6000 birds are known from the Indian subcontinent.

**9(22). Dalmatian Pelican.** *Pelecanus philippensis crispus* Bruch; *Hawasil*; Vulture +; 160-183 cm; **GT/Vu WM/Ra C** (Fig. 9)

*Pelecanus crispus* (I)

**Diagnostics:** Adult: Sexes alike. Plumage silvery-white, except black primaries and dusky secondaries; feathers on forehead end in a concave line instead of a point; a short



curly tuft of feathers on back of head; bill grey with yellow nail; gular pouch pinkish-grey; legs and feet dark grey. *Juvenile:* Upper plumage brownish-grey; under plumage pure white; gular pouch greyish.

**Habitat:** Flocks in large lakes, marshes, rivers and lagoons. **Habits:** Occurs singly or in pairs or in small flocks, population declining. **Food:** Almost exclusively fish.

**Status and Distribution:** Globally threatened/Vulnerable. A rare winter migrant to western India, common during winters in Gujarat and also Rajasthan; Pakistan; Nepal; Bangladesh; Maldives. Breeds in SE Europe across Asia to China, winter migrant to S Africa. **Remarks:** There has been a drastic decline in the number of birds since the 19<sup>th</sup> century due to large-scale persecution by fishermen and contamination of food due to poisonous pesticides. The BirdLife International Red Data Book estimates 3200-4300 pairs of the species in the world.

### **Cormorants, Shags and Darters** (Family PHALACROCORACIDAE)

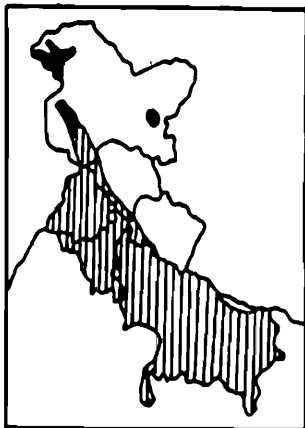
World: 36 species; Asia: 11, India: 5; N India : 4. Gregarious, fish eating, and colonial nesting birds. Plumage black in all Indian species. Body long, spindle-shaped. Bill serrated, laterally compressed and hooked at

tip in cormorants; stiletto-like in the Darter. Tail long and stiff. Legs short, feet large, pelecaniform with all four toes united in a web for swimming. Flight either V-shaped or in wavy diagonal lines. Sexes alike. Young nidicolous.

**10(26). Large Cormorant.** *Phalacrocorax carbo sinensis* (Shaw); *Jal-kowwa*, *Neiar*; large duck; 80-100 cm; **R/WM/Com C** (Fig. 10)

**Great Cormorant, *Phalacrocorax carbo* (L)**

**Diagnostics:** *Adult:* Sexes alike. Black waterbird with a slender bill, hooked at tip and stiff longish tail. *Breeding:* Glossy black plumage with metallic blue-green sheen; throat



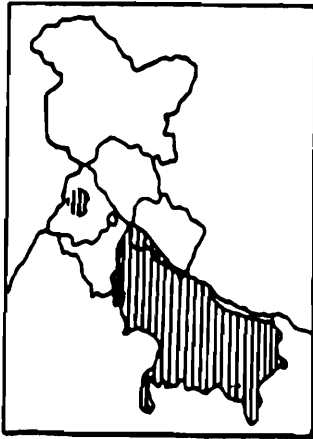
and front half of face white; gular pouch bright yellow; silky white plumage on head and neck; a broad white patch on posterior flanks. *Non-breeding* (winter): Yellow gular pouch less bright; silky white of head and neck along with the white patch of posterior flanks disappear. *Juvenile:* Brown above and white below. **Habitat:** Inland (reservoirs, lakes, and large rivers, high altitude lakes in Himalayas up to 3500 m)

and coastal wetlands. **Food:** Carnivorous, voracious fish feeders. **Habits:** Occurs in small groups generally in the deeper waters for fishing, forms large flocks during breeding season, breed in large heronries from September to February in N India. **Status and Distribution:** Resident as well as winter migrant in Northern India, locally common almost throughout India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. Widespread from south Europe to central Asia.

**11(27). Indian Shag.** *Phalacrocorax fuscicollis* Stephens; *Chhota Jal-kowwa*; Duck +; 63 cm; **R/LM/Com C** (Fig. 11)

**Indian Cormorant (L)**

**Diagnostics:** *Adult:* Sexes alike. Chiefly a black water bird with blue-green eyes; dark brown bill; yellow gular skin; white speckled throat; black legs and feet. Scaly effect on back and wings visible on a closer look. *Breeding* (July-



February): Upper plumage iridescent bronze-black; under plumage glossy black; a white tuft of feathers on each side of the neck behind eyes, a few specks on head; face black-purplish. *Non-breeding*: Plumage without gloss. *Juvenile*: Scaly bronze-brown above with black primaries and tail; white below; flanks mottled with brown and white. **Habitat**: Freshwater lakes, reservoirs, and rivers. **Habits**: Found in

large flocks, more gregarious than Large Cormorant; sometimes feeds with Little Cormorant. Breeds gregariously from August to October in N India. **Food**: Chiefly fish. **Status and Distribution**: A resident species occurring almost throughout India, except extreme NW, NE and Himalayas locally common, shows local movements depending on water conditions; Pakistan; Bhutan; Bangladesh; Sri Lanka; Myanmar.

**12(28). Little Cormorant.** *Phalacrocorax niger* (Vieillot); *Pan kowwa*; Jungle crow +; 51 cm; **R/LM/Com C** (Fig.12)

**Diagnostics**: *Adult*: Sexes alike. Smaller black body with stout and hooked bill, blackish at tip and bluish purple at base; domed forehead; stiff tail; and without yellow gular



skin. *Breeding*: Black with glistering blue-green; upper back and wing-coverts dark silvery grey; short occipital crest, a few white silky feathers on forecrown, sides of head and neck. *Non-breeding*: Crest and white feathers disappear, and feathers at base of lower bill appear white, sometimes extending to throat. *Juvenile*: Brown above and paler below with white throat and central abdomen. **Habitat**: Found in lakes,

rivers, irrigation reservoirs, canals, village tanks, estuaries, etc. **Habits**: Often found in large flocks in lakes and reservoirs, while also occurring in small numbers in rivers, etc. Hunts on fish in groups.

Breeds in mixed colonies from July to September in N



India. **Food:** Largely fish, also on tadpoles, frogs and crustaceans. **Status and Distribution:** A resident species widespread and common in plains of India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. SE Asia.

**13(29). Darter or Snakebird.** *Anhinga rufa melanogaster* Pennant; *Pan dubi*; Duck +; 85-97 cm; **NT R/LM/UnCom C** (Fig. 13)

***Anhinga melanogaster* (I)**

**Diagnostics:** *Adult:* Sexes alike. Like cormorant but with long slender snake-like neck; narrow head; pointed and small dagger-shaped bill and fan-shaped stiff tail. A white streak



from eye to sides of the neck; white chin and throat, remaining head and neck velvety chocolate-brown; black above; back and wings longitudinally streaked and speckled with silver-grey; entirely black below, including legs. *Juvenile:* Head and neck pale brown; lower back to upper tail-coverts dark brown; mantle narrowly streaked rufous and silver-grey; brown below; pale tail-tip. **Habitat:** Inland waters.

**Habits:** Occurs singly, in twos or small flocks, only rarely in large flocks, swims with submersed body with only snake-like head and neck protruding, which the bird turns from side to side. Breeds gregariously in heronries from July to December in N India. **Food:** Chiefly on fish, occasionally swallows too large ones. **Status and Distribution:** A resident species almost throughout India, locally common in Assam, uncommon elsewhere, population declining; Pakistan; Nepal; Bangladesh; Sri Lanka; Thailand, Indochina and Malaysia. **Remarks:** Status unknown. Feared to be decreasing all over the country.

**Heron, Egrets and Bitterns**  
(Family : ARDEIDAE)

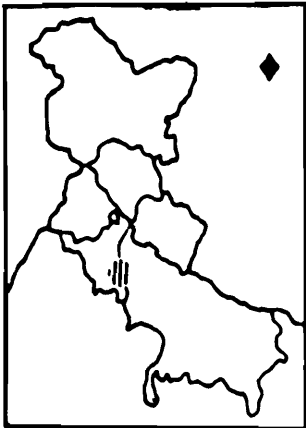
World: 60 species; Asia: 30; India: 20; N India: 17. Usually gregarious. Waders with long legs, neck and bill.

Legs projecting well beyond short tails during flight. Necks retracted into S-curve enable these birds to extend the neck with speed and great force to catch or pierce the prey. Bill straight, sharp-pointed and dagger-like. Nostrils oval, close to the base. Most species have specialised feathers, i.e. powdery downs, on each side of breast and rump; these are never shed, but continue to grow from the base and give off a powder substance for preening feathers. Many species acquire filamentous ornamental plumes ('aigrettes') during the breeding season. Middle and outer toes united by a small web at their base; middle toe pectinate or comb-like. Sexes alike or nearly so. Breeding colonial. Young nidicolous.

**14(33). Great Whitebellied Heron.** *Ardea insignis* Hume; Grey heron+; c127cm; **GT/En R/VRa C** (Fig.14)

**White-bellied Heron (I)**

**Diagnostics:** Sexes alike. *Adult:* Chiefly a dull grey heron with shiny white belly and whitish chin and throat. Bill, crown, tail, and primaries slaty-black, remaining upperparts greyish. The longest crest feathers tipped grey. Lower breast, abdomen, flanks, axillaries, under wing-coverts and tail-coverts pure white. Thigh-coverts white in front, grey behind. Legs and feet black with horny patches. *Juvenile:* Dark brown above with pale rufous-brown head and neck white-streaked. **Habitat:** Rivers, lakes and marshes in tropical forested areas. **Habits:** Diurnal, occurs singly or in pairs, very wary. **Food:** Carnivorous. **Status and Distribution:** Globally threatened/Endangered. Very rare resident in foothills of the eastern Himalayas. According to Grimmet *et al.* (1998) sighting records from Bihar, Delhi and Tamil Nadu require confirmation. **Remarks:** Only one or two records from N India. Not recorded at all from Nepal in 20<sup>th</sup> century.

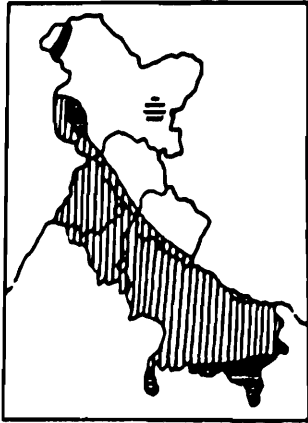


The species is highly endangered, though the number of world population is unknown, only a few hundreds are estimated. The species is severely threatened due to destruction and fragmentation of its habitat.

**15(36). Eastern Grey Heron.** *Ardea cinerea rectirostris* Linnaeus; *Anjan, Brag*; 90-98 cm; **R/UnCom C** (Fig.15)

**Grey Heron,** *Ardea cinerea* (I)

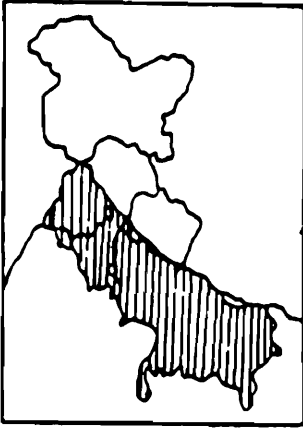
**Diagnostics:** *Adult:* Sexes alike but female smaller with less developed occipital crest and pectoral plumes. A long-legged and long-necked ashy-grey bird with yellow bill; long black occipital crest; white crown and neck; black dotted line down middle of foreneck; elongated black-streaked white feathers on breast; underparts greyish-white; ashy-grey above; darker central feathers with black tips; primaries, outer secondaries, primary coverts and bastard wing almost black; tail grey. *Juvenile:* Browner and darker grey with fore-neck more conspicuously black-streaked and without lengthened scapulars and breast plumes. **Habitat:** Almost all types of wetlands, from tiny streams to rivers, backwaters, marshes, swampy meadows and jheels. **Habits:** Diurnal, generally solitary, though roosts communally in winters, breeds in colonies from July to October in N India, nests among reeds, perches on trees. **Food:** Fish, frogs, and aquatic invertebrates such as insects, crustaceans and molluscs. Known to cause considerable damage to hill trout. **Status and Distribution:** Resident throughout India, but uncommon, breeds up to 1750 m in Kashmir from March to June, recorded up to 4500 in Ladakh. Pakistan; Nepal; Bangladesh; Bhutan; Sri Lanka; Maldives. SE Asia.



**16(37). Eastern Purple Heron.** *Ardea purpurea manilensis* Meyen; *Lal anjan*; Grey heron -; 78-90 cm; **R/LM/UnCom C** (Fig.16)

**Purple Heron,** *Ardea purpurea* (I)

**Diagnostics:** *Adult:* Sexes alike, female with less developed crest and pectoral plumes. A lanky marsh bird with long slender snake-like neck; slaty-purple above; chestnut and black below. Bill dark yellow; drooping crest black; crown, crest and a line down hind neck black; a second up-running



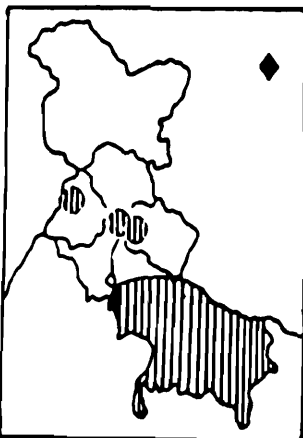
black line from gape to crest; a third black line down whole length of side of neck; rest of head and neck rufous with another black streak down fore-neck. Chin and throat white; long drooping plumes on upper breast buff white with black and chestnut streaks; rest of upperparts slaty black and rich chestnut; underparts chiefly chestnut and black; legs reddish-brown. *Juvenile*:

Cinnamon-brown. **Habitat**: Marshes with elephant grass, lakes, jheels, rivers, paddy fields, mudflats and mangroves. **Habits**: Generally solitary, shy, feeds in dense aquatic vegetation, active in morning and evening. Breeds from June to October in N India. **Food**: Chiefly fish, frogs but also water insects. **Status and Distribution**: A resident and locally common species throughout the plains of India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. SE Asia.

**17(38). Little Green Heron.** *Butorides striatus javanicus* (Horsfield); *Kancha bagla*; Pond heron =; 40-48 cm; **R/Ra C** (Fig. 17)

**Little Heron, *Butorides striatus* (l)**

**Diagnostics: Adult**: Sexes alike. Chiefly a black, grey and dark metallic green heron with black bill; glossy greenish-black forehead, crown and longish occipital crest; white chin, cheeks and central throat; grey head and neck. Upper parts slaty-grey glossed with bronze-green; lower parts ashy-grey and under tail-coverts white with blackish edges. Legs dull green or plumbeous green. *Juvenile*: Brownish above, white below; dark streaks at sides; wings with white spots.



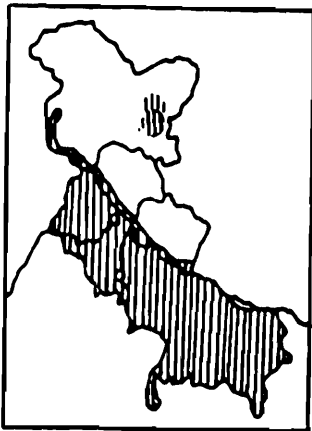
**Habitat**: Rivers, lakes, marshes with dense vegetation on the banks, rice fields. **Habits**: Solitary, frequents the same area, crepuscular, usually remains in thick vegetation, occasionally active during day, often perches on overhanging

branches. Breeds from March to September in N India. **Food:** Chiefly fish, frogs, crustaceans (crabs) and aquatic insects. **Status and Distribution:** Widespread resident species almost throughout Indian plains, except NW portions, where it is rare; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. SE Asia.

**18(42). Indian Pond Heron or Paddy Bird.** *Ardeola grayii* *grayii* (Sykes); *Andha bagla*, *Broku*; Hen +; 42-45 cm; **R/Com C** (Fig. 18)

*Ardeola grayii* (I)

**Diagnostics:** *Adult:* Sexes alike. A thick-set, earthy-brown at rest and largely snow-white in flight waterbird with yellow bill, black at tip and bluish at base; white chin, throat and foreneck; horny-green legs. *Breeding:* Long recumbent white or buff occipital crest of lanceolate plumes; ashy-brown upper breast; deep maroon and long decomposed feathers on back; white underparts. *Non-breeding:* Dark brown head and neck with buff streaks of sides of neck prominent; brown mantle; white streaks on scapulars; white underparts.

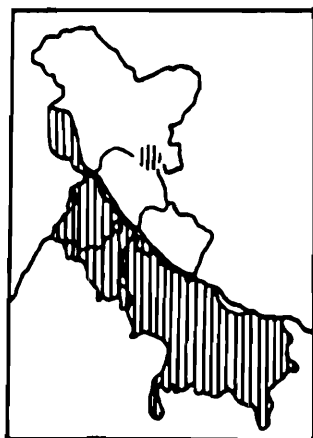


**Habitat:** Streams, jheels, marshes, ponds, rice fields, village tanks, ditches, wells and mudflats. **Habits:** Generally solitary or in small groups when hunting, gregarious when roosting, nests in colonies; collects in large numbers in drying ponds to feast on frogs and fishes. Breeds almost throughout the year. **Food:** Voracious feeder on frogs and fish, besides aquatic insects. **Status and Distribution:** A common and wide spread resident species throughout India up to 1500 m in Himalayas; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. From Persian Gulf to Malaysia.

**19(44). Cattle Egret.** *Bubulcus ibis coromandus* (Boddaert); *Gai bagla*; Hen =; 48-53 cm; **R/Com C**(Fig. 19)

*Bubulcus ibis* (I)

**Diagnostics:** *Adult:* Sexes alike. A lanky snow-white bird.



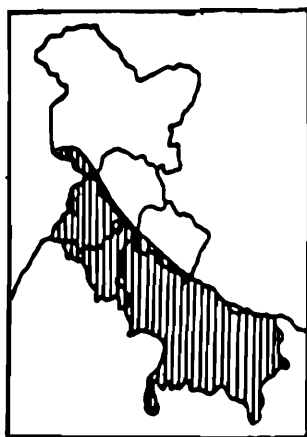
**Non-breeding:** Like Little Egret, but always identified by *yellow bill contra black*. **Breeding:** Golden-buff plumes on head, neck and back. **Habitat:** Damp grassy fields, fallow, paddy fields, and periphery of canals, lakes, and reservoirs. **Habits:** Gregarious when feeding and roosting, invariably accompanying grazing village livestock, feeds on insects disturbed by animals. Breeds almost all the year, though

mainly from June to August in N India. **Food:** Chiefly insects such as beetles and grasshoppers, besides earthworms. **Status and Distribution:** A common resident species throughout India up to 1500 m in Himalayas; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. SE Asia.

**20(45) Large Egret or Great White Heron.** *Ardea alba alba* Linnaeus; *Bada bagla*; Grey heron ±; c 96 cm; **WM/Va C** ; **21(46). Eastern Large Egret.** *Ardea alba modesta* J.E. Gray; *Bada bagla*; Grey heron -; c 91 cm; **R/LM/UnCom C** (Fig. 21)

**Great Egret, *Casmerodius albus* (L)**

**Diagnostics:** Both are identical and undistinguishable, except for size. Two sub species, viz., *A. a. alba* (96 cm)-rare winter straggler, and *A. a. modesta* (91 cm)-resident and nomadic (shifting locally with water conditions) occur. **Adult:** Sexes alike. A snow-white bird with yellow beak and black legs. Breeding birds with black beak; edge of gape, naked lores and orbital skin behind eyes bright green; three sets of long, transparent, white plumes growing from scapulars extending beyond tail.



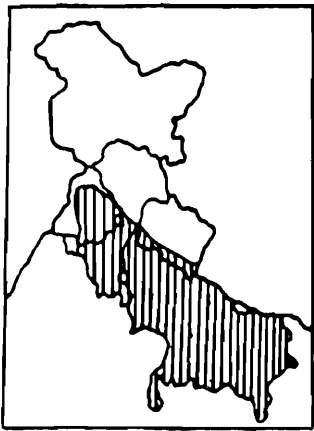
**Juvenile:** Pure white. **Habitat:** Jheels, marshes. **Habits:** Generally solitary, though roosts and feeds in communally. Breeds in mixed heronries from July to September in N India. **Food:** Fish, frogs, aquatic insects and crustaceans. **Status and Distribution:** Resident throughout

India, shifts locally depending on availability of water. Sri Lanka; Nepal; Maldives. Myanmar and Indo-Malaysian Archipelago.

**22(47,48). Smaller or Median Egret.** *Egretta intermedia intermedia* (Wagler); *Karchia bagla*; 65-72 cm; **R/LM/UnCom C** (Fig. 22)

**Intermediate Egret.** *Mesophoyx intermedia* (L)

**Diagnostics:** *Adult:* Sexes alike. A comparatively medium-size snow-white egret. *Non-breeding:* Often indistinguishable.

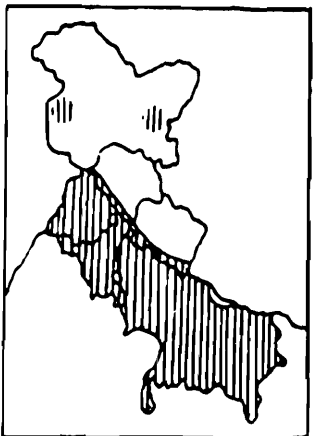


*Breeding:* Develops filamentous plumes on breast as well as back, and the yellow bill (non-breeding) turns black. **Habitat:** Lakes, reservoirs, marshes, pools with vegetation, jheels and inundations. **Habits:** Diurnal, occurs in small flocks, roosts and feeds communally. Often solitary when hunting. Breeds in colonies in mix heronries from July to September in N India. **Food:** Fish, frogs and aquatic insects. **Status and**

**Distribution:** Throughout India, Andaman and Nicobar Islands; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. SE Asia.

**23(49). Little Egret.** *Egretta garzetta garzetta* (Linnaeus); *Karchia bagla*; Domestic Hen  $\pm$ ; 55-63 cm; **R/LM/Com C**

**Diagnostics:** *Adult:* Sexes alike. A pure white bird like the other egrets but smaller; bill and legs black; feet yellow.



*Breeding* (July-September): A drooping nuchal crest of two long narrow plumes; filamentous ornamental feathers on breast and scapulars; a thick bunch of decomposed dorsal plumes extends beyond the tail. *Non-breeding:* The ornamental plumes are dropped though occasionally some of the scapular plumes are retained.

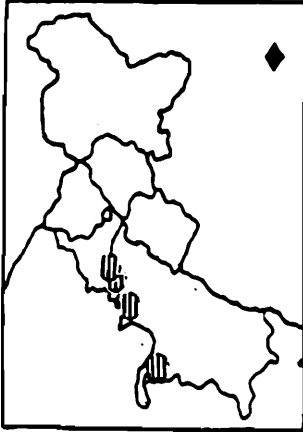
**Habitat:** Marshes, jheels, lakes, rivers, paddy fields, mudflats, etc. **Habits:** Generally found in flocks,

more gregarious than the two large species, roosts communally on trees. Breeds in colonies and mixed heronries from July to September in N India. **Food:** Fish, frogs, crustaceans and aquatic insects. **Status and Distribution:** Throughout India up to 900 m, except NW and NE; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. S and E Europe; N and E Africa; SE Asia.

**24(50). Indian Reef Heron.** *Egretta gularis schistacea* (Hemprich and Ehrenberg); *Kala bagla*; Little Egret =; 55-65 cm; **R/LM/Ra C** (Fig.24)

**Western Reef Egret,** *Egretta gularis* (l)

**Diagnostics:** *Adult:* like Little Egret but dimorphic, has two colour phases, viz., pure white and slaty-grey. The latter may vary up to slaty-blue-black. Throat and upper foreneck glistening white in slaty-grey phase. Sexes alike in both colour phases. Breeding birds develop two elongated narrow plumes on hindcrest (nuchal crest), and same sort of plumes on back and breast. *Juvenile:* Pale ashy-grey above and white below except grey upper foreneck.



**Habitat:** Affects freshwaters rarely, generally found at sandy and rocky seashores, estuaries, mangroves and lagoons. **Habits:** Solitary and crepuscular, sits by hunching, runs around for hunting and stalks its prey. Breeds colonies along the western coast. **Food:** Fish, crab and molluscs. **Status and Distribution:** Resident but undertakes local movements, mainly on W and SE coasts, rare inland.

**25(52). Night Heron.** *Nycticorax nycticorax nycticorax* (Linnaeus); *Tar bagla*, *Bor*, Pond Heron =; 58-65 cm; **R/LM/UnCom C** (Fig.25)

**Black-Crowned Night Heron,** *Nycticorax nycticorax* (l)

**Diagnostics:** *Adult:* Sexes alike. Strongly built grey, white and black heron with stout black bill. Crown, nape and occipital crest black with two or three very long, narrow





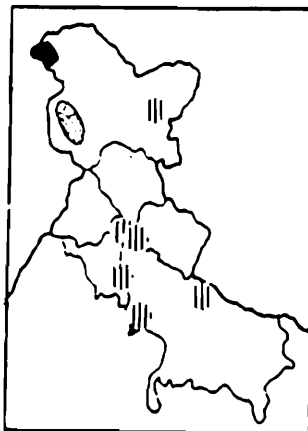
white plumes; forehead and a streak over eye white; sides of neck, wings, rump and tail greyish; eyes blood-red; underparts white; legs and feet pale-green, in breeding season turn pinkish and bill blacker. *Juvenile*: Pale- smoky brown with bright yellow eyes and resembles adult pond heron except for white wings. **Habitat**: Reservoirs, jheels, tanks, streams, ponds and rivers.

**Habits**: Generally gregarious, nocturnal or crepuscular except in breeding season, during daytime roosts on dense trees, often at dusk. Breeds in pure colonies from April to May in Kashmir and June-July to September in N India. **Food**: Chiefly fish, frogs, aquatic insects such as odonata larvae. **Status and Distribution**: Resident, nomadic, patchily distributed throughout India up to 1700 m, Andaman and Nicobar islands; Pakistan; Nepal; Bhutan; Bangladesh; Maldives. C and S Europe; south to Africa; SE Asia. Throughout the world except Australasia.

**26(55). Little Bittern.** *Ixobrychus minutus minutus* (Linnaeus); Go; Pond heron -; 33-36 cm; **R/LM/Ra C** (Fig. 26)

*Ixobrychus minutus* (I)

**Diagnostics**: *Adult*: Sexually dimorphic. *Male*: A 'hunchbacked' and buff bird with purplish-yellow bill and greenish-horny legs. Crown to tail black, buff wing patch visible in flight only; sides of head and neck greyish-pink or vinous; throat and neck whitish; upper breast and flanks ochre; lower breast blackish-maroon; central abdomen, vent and under tail- coverts almost white. *Female*: Chestnut-brown above, including shoulder patch; chestnut-rufous below and rufous streaked. *Juvenile*: Heavily streaked above and below. **Habitat**: Jheels, marshes, lakes and streams with tall reeds at edges. **Habits**: Solitary, rarely in pairs,

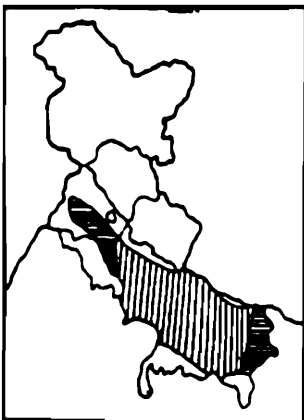


most active at dusk, remains hidden in thick vegetation at the edges of water bodies when disturbed feigns freezing. Breeds commonly and abundantly in Kashmir Valley from May to July. **Food:** Fish, frogs, aquatic insects, crustaceans and molluscs. **Status and Distribution:** Resident, nomadic, mainly distributed in plains; up to 1800 m in Kashmir where it commonly breeds, and also in Assam; Pakistan. Widespread in Eurasia; tropical Africa; Australia; New Zealand.

**27(56).Chestnut Bittern.** *Ixobrychus cinnamomeus* (Gmelin); *Lal bagla*; Pond heron-; 38-40 cm; **R/LM/UnCom C** (Fig.27)

**Cinnamon Bittern (I)**

**Diagnostics:** *Adult:* Sexually dimorphic. *Male:* Upper plumage chestnut-cinnamon, wing-coverts paler; chin, throat and upper foreneck white with a dark median stripe down the foreneck; a patch of black, buff- edged feathers on each side of upper breast largely concealed by elongated breast feathers; remaining underplumage and wings pale chestnut; bill yellow; legs and feet yellowish-green.

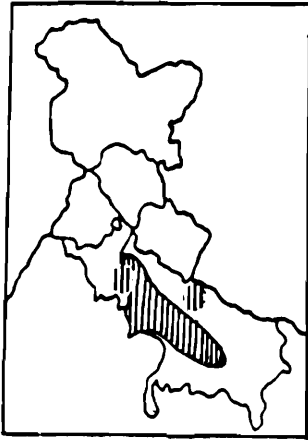


*Female:* Darker; chestnut-brown above with blackish crown; wings mottled buff and brown; buff- rufous below with dark brown striation from chin to vent and a streak down middle of foreneck and breast.

*Juvenile:* Like female, but mottled above and heavily streaked below. **Habitat:** Reedy beds of jheels and marshes, paddy fields, etc. **Habits:** Non- gregarious, crepuscular, generally occurs in company of Yellow Bittern, seen during day only upon emerging from long grasses. Breeds from May to September in N India. **Food:** Voracious feeder and consumes large quantity of fish, frogs, molluscs and aquatic insects. **Status and Distribution:** Resident, nomadic, scattered throughout India, Andaman and Nicobar Islands; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. SE Asia.

**28(57). Yellow Bittern.** *Ixobrychus sinensis* (Gmelin); *Jun bagla*; Pond heron -; 37-38 cm; **R/LM/UnCom C** (Fig.28)

**Diagnostics:** *Adult:* Sexually dimorphic. *Male:* Crown and crest black with dark flight feathers; remaining back chiefly yellowish-brown; rump dark ashy; tail slaty-black; bill yellowish-horny; chin, throat and foreneck pale yellowish; sides of upper breast with buff streaks; rest of underparts buffish; legs and feet yellowish. *Female:* Almost similar except for a buff mesial line down the throat. *Juvenile:* More rufous-brown above with broad buff fringes on all feathers; streaked below; the mesial line more pronounced. **Habitat:** Scrubby

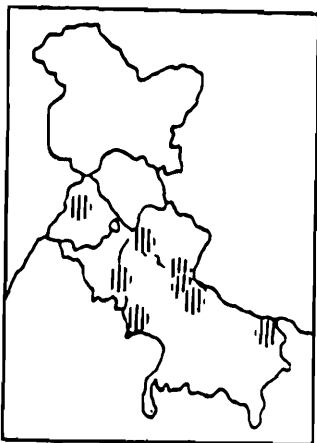


swamps with reeds, inundated paddy fields in company with Chestnut Bittern. **Habits:** Generally crepuscular and nocturnal, active on cloudy day; also feigns freezing. Breeds from June to September in N India. **Food:** Very voracious feeder on fish, frogs and aquatic insects. **Status and Distribution:** Resident, nomadic, widespread and uncommon

**29(58). Black Bittern.** *Ixobrychus flavicollis flavicollis* (Latham); *Kala bagla*; Pond heron +; c 58 cm; **R/LM/UnCom C** (Fig.29)

*Dupetor flavicollis* (I)

**Diagnostics:** *Adult:* Sexually dimorphic. *Male:* Upper plumage slaty-grey to black with bluish sheen. Bill reddish-horny with yellowish tip and terminal half of lower mandible; chin and throat white with rufous dotted line down the middle; yellowish patch on either side of neck; upper breast dark slate with buff-white margins on feathers; breast, abdomen and remaining underplumage slaty-grey to brownish-black; legs and feet dark brown. *Female:* Brown above and paler below with streaks on breast. *Juvenile:* Crown blackish; upperparts dark brown with rufous scalloping;

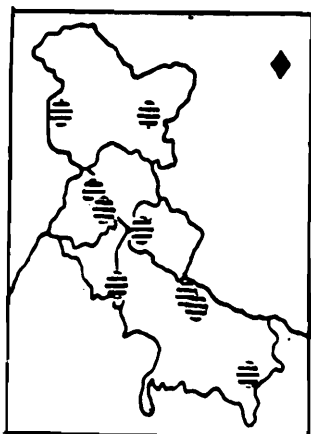


underparts mottled chestnut and buff. **Habitat:** Occur in reedy swamps and ditches in forest with overgrown seepage and submerged bushes. **Habits:** Generally crepuscular and nocturnal, non-gregarious, active in early morning and dusk, feigns freezing. Breeds from June to September in N India. **Food:** Devours large fishes, frogs, aquatic insects and molluscs. **Status and Distribution:** Resident, nomadic and widespread but uncommon throughout India, Assam, Manipur, Karnataka, Kerala; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. SE Asia.

**30(59). Bittern.** *Botaurus stellaris stellaris* (Linnaeus); *Nirgoug*; Pond heron +; 70-80 cm; **WM/Ra C** (Fig. 30)

**Great Bittern,** *Botaurus stellaris* (L)

**Diagnostics:** *Adult:* Sexes alike. Crown, nape and upper back black; sides of head yellowish-orange faintly dotted with black; remaining back, rump and tail yellowish-buff, profusely barred and mottled with black. Bill greenish-yellow; lores green to bluish; chin and throat white with a conspicuous buff and black median line that continues down the overhanging yellowish plumes; remaining underparts yellowish-buff with narrow brownish bars on sides of breast. Legs and feet greenish-yellow. *Juvenile:* Upper parts pale chestnut



to reddish-brown and underparts reddish-buff, except for whitish chin and throat. **Habitat:** Inland jheels, marshes and swamps with thick overgrown beds of *Phragmites* and *Typha*. **Habits:** Found singly, crepuscular, nocturnal and shy, remains hidden in reed beds, feeds alone, feigns freezing. **Food:** Chiefly fish, frogs, aquatic invertebrates, occasionally small birds and rodents. **Status and Distribution:** Winter migrant, rare but widespread mainly in plains, Andhra Pradesh, Gujarat, Madhya Pradesh, Orissa, Maharashtra, Tamil Nadu, Karnataka, Assam; Pakistan; Nepal. Breeds across northern Eurasia from Britain to Japan.

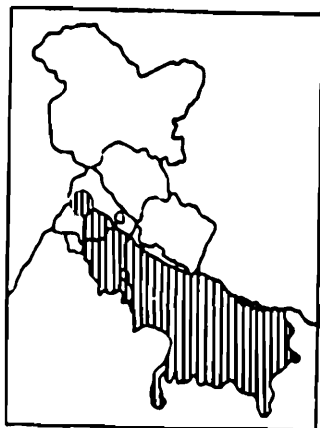
## Storks

(Family : CICONIIDAE)

World: 19 species; Asia: 11; India: 8; N India: 8. Large, long-legged and diurnal waders. Chiefly terrestrial and marsh hunting. Large or very large birds. Bill long, massive, pointed, straight or nearly so, ungrooved. Wings long and broad. Tail rather short. Legs very long, the tibia partly naked. The three anterior toes united by webs at their base. Lacking voice due to absence of tracheo-bronchial muscles in the larynx. In most species the noise produced is either by hissing or by snapping of mandibles. In characteristic flight, neck and legs fully outstretched, except in Adjutants. Sexes similar, but males usually larger. Young nidicolous.

**31(60). Painted Stork.** *Mycteria leucocephala* (Pennant); Janghil; Vulture  $\pm$ ; 93-100 cm; **NT R/LM/Com C** (Fig. 31)

**Diagnostics:** *Adult:* Sexes alike. Long-legged, long-necked large black and white bird with orange-yellow bill and face.



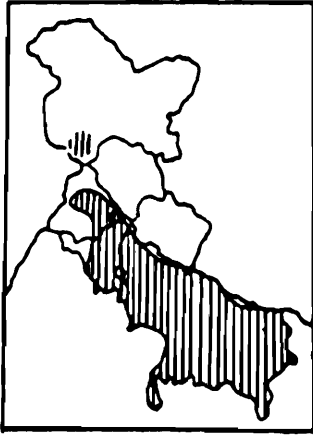
Plumage white; wings blackish-green and white, breast band and tail-quills black; wing-coverts with rich rosy-pink wash; legs and feet fleshy-brown. **Habitat:** Lakes, reservoirs, marshes, inundated fields, river-banks and grassy islands in impoundments. **Habits:** Generally found in small groups only during breeding season. Large flocks with chicks may be found roosting on trees in heronries, but also roost on sandbanks and mudflats. Breed in large mixed

heronries from August to October in N India. **Food:** Chiefly fish, frogs, occasionally aquatic insects and reptiles. **Status and Distribution:** Resident, nomadic, widespread and locally common in plains, Andhra Pradesh, Gujarat, Madhya Pradesh, Tamil Nadu, Karnataka, Kerala; Pakistan; Nepal; Bangladesh; Sri Lanka. SE Asia.

**32(61). Openbill Stork.** *Anastomus oscitans* (Boddaert); Ghonghila; Large duck =; 68-81 cm; **NT R/LM/UnCom C** (Fig. 32)

### Asian Openbill (I)

**Diagnostics:** *Adult:* Sexes alike. A small stork with white plumage; greenish-black scapulars, wings and tail; dull



greenish-horny bill with arching mandibles, showing a gap in-between at close range. In non-breeding season the white plumage of the upperparts is replaced with pale smoky-grey. *Juvenile:* Smoky brown-grey with blackish brown mantle; gap in bill develops slowly. **Habitat:** Jheels, marshes, shallow wetlands such as lakes and reservoirs, paddy fields, riverbeds, etc.

**Habits:** Found individually or in small flocks, congregates at the time of nesting. Breeds in large mixed heronries from July to September in N India. **Food:** Feeds in shallow water on molluscs, frogs, fishes and other small animals. **Status and Distribution:** Resident, nomadic, locally common throughout India; Andhra Pradesh, Tamil Nadu, Rajasthan; Pakistan; Nepal; Bangladesh; Sri Lanka. SE Asia.

**33(62). Whitenecked Stork.** *Ciconia episcopus episcopus* (Boddaert); *Laglag*; Goose  $\pm$ ; 75-92 cm; **R/Ra C** (Fig. 33)

### Woolly-necked Stork, *Ciconia episcopus* (I)

**Diagnostics:** *Adult:* Sexes alike. Large black and white stork with conspicuous white neck, black cap and red legs. Bill black, tinged crimson-red at tip and gape; crown black with green sheen; rest of plumage black, glossed purple or greenish-blue, except lower abdomen, under tail-coverts and tail which are white.



*Juvenile:* Neck feathers longer and stuffer; glossy black replaced by dark brown. **Habitat:** Flooded grasslands, fallow, irrigated ploughed fields, rain-filled ponds, marshes, stream banks, rivers, etc.

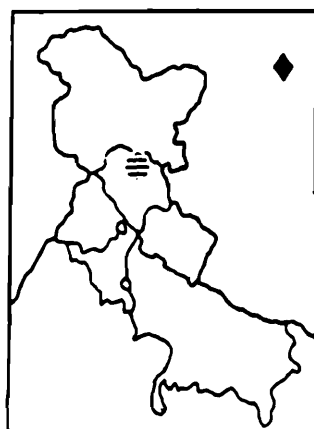
**Habits:** Generally solitary, in pairs or sometimes in small groups, seldom wades in water, roosts on tall trees at night. Breeds individually

from July to September in N India. **Food:** Chiefly frogs, reptiles and aquatic invertebrates, occasionally fish, also on swarming termites. **Status and Distribution:** Resident, sparsely distributed in the well-watered parts of India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. Myanmar.

**34(63). White Stork.** *Ciconia ciconia ciconia* (Linnaeus); Ujlí; Goose ±; 100-125 cm; **WM/Ra C** (Fig.34)

*Ciconia ciconia* (I)

**Diagnostics:** *Adult:* Sexes alike. Chiefly white storks with black primaries; red bill and legs; long and lanceolate feathers



on head, neck and breast. *Juvenile:* Like adult, but black parts replaced by brown.

**Habitat.** Jheels, marshes, wet grassland, damp ploughed or fallow fields.

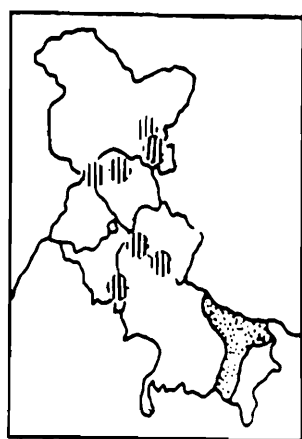
**Habits:** Hunts quietly in search of food in marshy grasslands, fresh fallow or ploughed fields, solitary or in small flocks. Arrives by September/October and departs by March/April.

**Food:** Generally frogs, reptiles and crustaceans, occasionally fish,

voraciously feeds on swarming population of locusts, which makes it a specially protected bird in many countries.

**Status and Distribution:** Winter and passage migrant in NW India; Pakistan; Nepal; Bangladesh; Sri Lanka. Breeds in Palaearctic north to 60° N latitude; N Africa; W Asia.

**35(65). Black Stork.** *Ciconia nigra* (Linnaeus); *Surmal*; White stork ±; 90-100 cm; **WM/UnCom C** (Fig.35)



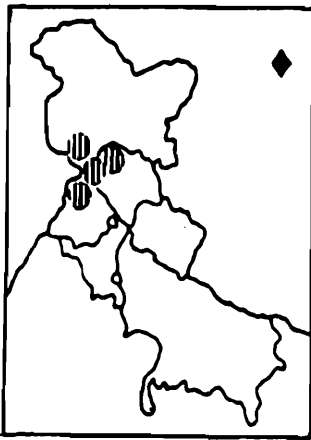
**Diagnostics:** *Adult:* Sexes alike. A black stork with contrasting white underparts; scarlet bill and legs. Plumage black with varying sheen; purple, green and bronze on upperparts; brilliant green on neck; mixed green and purple on breast except underparts. *Juvenile:* Head, neck and upper breast with pale-tipped dark own feathers; mantle brownish-black; underparts white.

**Habitat:** Marshes, river-banks, freshwater lakes, streams, paddy fields. **Habits:** Generally in pairs or in small flocks, shy and prefers riverine areas. **Food:** Chiefly frogs, fish, aquatic invertebrates. **Status and Distribution:** Widespread but uncommon, more frequent in Northern India, Assam, Rajasthan, Gujarat, Maharashtra, rare south to 18°N; Nepal; Bhutan; Bangladesh; Sri Lanka. Breeds in C Europe and Eurasia, winters in S Asia and Africa.

**36(66). Blacknecked Stork.** *Ephippiorhynchus asiaticus asiaticus* (Latham); *Loha sarang*; Painted stork +; 129-150 cm; **R/Ra C** (Fig. 36)

*Ephippiorhynchus asiaticus* (I)

**Diagnostics:** *Adult:* Sexes alike except for colour of eyes, brown in male and yellow in female. A black and white stork



with black neck and bill and coral red legs. Head and neck black with varying sheen; copper-bronze on occiput and nape, and purple-green-blue on rest; back, scapulars, innermost secondaries and median wing-coverts black with green sheen; remaining plumage white. *Juvenile:* A dull replica of adult. **Habitat:** Lowland freshwater marshes, jheels, large rivers, sometimes mangroves, and mudflats. **Habits:**

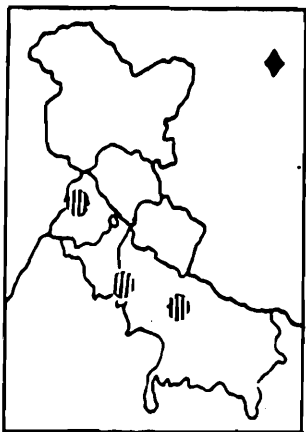
Invariably solitary or in well-separated pairs or with family after breeding season, very cautious. Breeds from September to December in N India. Nest very large platform of sticks about 1-2 m in diameter. **Food:** Mainly fish, occasionally frogs, reptiles and crabs. **Status and Distribution:** Resident, widespread in plains but uncommon; Pakistan; Nepal; Sri Lanka. SE Asia.

**37(67). Adjutant Stork.** *Leptoptilos dubius* (Gmelin); *Garur*, Vulture +; 120-150 cm; **GT/En R/LM/Ra O** (Fig. 37)

**Greater Adjutant** (I)

**Diagnostics:** *Adult:* Sexes alike. The largest Indian stork with a long (25-35 cm), naked pinkish gular pouch hanging

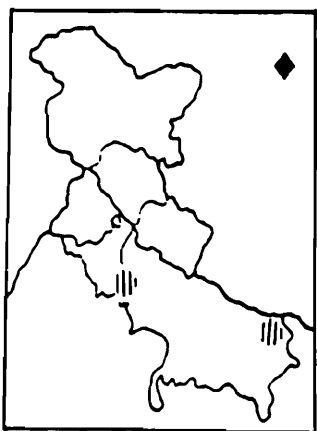




from base of neck, and naked reddish and yellow head, neck and bill. **Breeding:** A ruff of white feathers round base of neck; upper plumage, including wings and tail, blackish slaty-grey with slight green sheen; innermost secondaries and greater wing-coverts silvery-grey, forming a broad wing-band; under plumage white with soft under tail-coverts. **Non-breeding:** The silvery-grey wing-band absent. **Juvenile:** Naked parts

poorly covered with feathers; inner secondaries and coverts dark brown. **Habitat:** Jheels, marshes and agricultural fields, out-skirts of human habitations. **Habits:** Solitary or in small flocks near the habitat where the water is drying and fish have concentrated; when not feeding stands hunched up or squatting. **Food:** Chiefly fish, frogs, reptiles and crustaceans, generally omnivorous. **Status and Distribution:** Globally threatened/Endangered. Resident, nomadic, the population has recently declined drastically due to felling of nest trees, breeds only in Assam, rare elsewhere; though once not uncommon in Northern India; Pakistan; Nepal; Bangladesh; SE Asia. **Remarks:** World population (the majority of which occur in India) is estimated to be 500-700 individuals. A population survey during winter 1991-92 in the nesting colonies of Brahmaputra valley, Assam, recorded only 126 nests and 455 adult storks

**38(68). Lesser or Haircrested Adjutant.** *Leptoptilos javanicus* (Horsfield); *Chhota garur*, Vulture +; 110-120 cm; **GT/Vu R/LM/Ra C** (Fig.38)



**Diagnostics:** **Adult:** Sexes alike. Head and neck reddish- yellow, nearly naked, with sparse hair-like feathers; gular pouch absent; upper plumage, including wings and tail black with green sheen, closely barred and with a copper spot on the larger secondary coverts near their tip; under plumage white. In non-breeding plumage, the copper spots absent. **Juvenile:** Head and

neck better feathered; upper plumage less glossy. **Habitat:** Lakes, jheels, swamps, forest pools, flooded fields and dry riverbeds. **Habits:** Generally solitary, very shy, less scavenger than Adjutant Stork, feeds while walking slowly. **Food:** Chiefly fish, frogs, reptiles, aquatic invertebrates (crustaceans) and also locusts. **Status and Distribution:** Globally threatened/Vulnerable. Resident, nomadic, population has declined recently, breeds mainly in Assam, rare elsewhere: Bihar, Orissa, Kerala, Rajasthan; Nepal; Bangladesh; Sri Lanka. SE Asia.

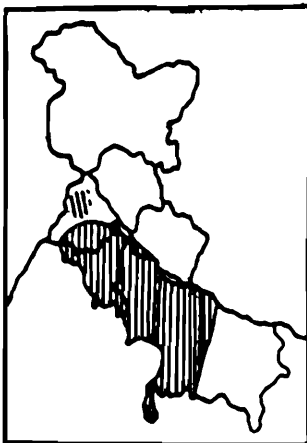
**Remarks:** The species has become exceedingly rare in the last century due to loss of wetlands as well as poaching. Small population of only around 10,000 birds is estimated worldwide. In India 135 nests were recorded from Assam in 1992.

### **Ibises and Spoonbill** (Family : THRESKIORNITHIDAE)

World: 31 species; Asia: 9; India: 4; N India: 4. Gregarious marsh birds. Bill long, laterally compressed and decurved (Ibises) or spatulate (Spoonbills). Nostrils placed at base of narrow groove on each side of culmen. Flight with extended neck. Sexes alike or nearly so.

**39(69). White Ibis.** *Threskiornis aethiopica melanocephala* (Latham); *Safed baza*; Hen  $\pm$ ; 75 cm; **NT R/LM/UnCom C** (Fig. 39)

**Black-headed Ibis, *Threskiornis melanocephalus* (L)**



**Diagnostics:** *Adult:* Sexes alike. An unmistakable white bird with long decurved black bill, naked bluish-black head and neck, and glossy black legs and feet. In flight, blood-red patches of bare skin on flanks and underwing conspicuous. *Breeding:* Long ornamental plumes round base of neck; elongated disintegrated inner secondaries; some slaty-grey in wings. *Non-*

**breeding:** Neck-plumes elongated inner secondaries and ordinary feathers replace slaty-grey ones in wings. **Juvenile:** Head and neck feathered except face and patch around eye; patch of bare skin under wing black, not blood-red as in adult. **Habitat:** Rivers, jheels, freshwater marshes, reservoirs, tanks, paddy fields, etc. **Habits:** Generally gregarious, occurs in moderate to large flocks in company with storks, egrets and spoonbills. Breeds in colonies from June/July to October in N India. **Food:** Carnivorous, chiefly fish, frogs, molluscs and aquatic insects. **Status and Distribution:** Resident, nomadic, uncommon, generally in plains of India, except NW and E India; Pakistan; Bangladesh; Sri Lanka. Myanmar; China; Japan.

**40(70). Indian Black Ibis.** *Pseudibis papillosa papillosa* (Temminck); *Kala baza*; Domestic hen  $\pm$ ; 68 cm; **NT R/UnCom C** (Fig.40)

**Black Ibis, *Pseudibis papillosa* (I)**

**Diagnostics:** **Adult:** Sexes alike. Blackish-brown bird with long decurved dull green bill, a small white shoulder patch



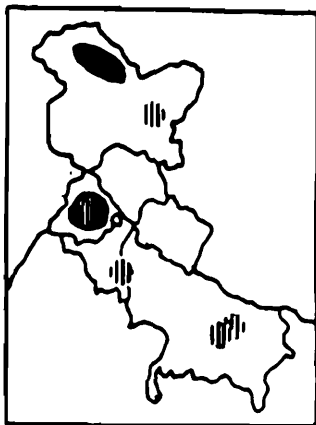
and brick-red legs. Head black, with a triangular patch of brilliant red warts; upper plumage brown with bronze-green sheen on scapulars and back; remaining plumage black with purple-blue sheen; tail black, glossed with blue-green. **Juvenile:**

Dull brown. **Habitat:** Dry plains, cultivated agricultural fields, lakes, marshes and riverbeds, sometimes around rubbish dumps. **Habits:** Generally forages on margins of lakes and reservoirs in small flocks of 4-10, gregarious, nests on trees. Breeds individually or in small groups of 3-5 pairs from March to October in N India. **Food:** Generally frogs, fish and aquatic insects in addition occasionally lizards, scorpions. **Status and Distribution:** Resident, widespread, throughout Gujarat, Rajasthan, Karnataka, West Bengal, Assam and Gangetic plains; Pakistan; Nepal; Bangladesh. SE Asia.

**41(71). Glossy Ibis.** *Plegadis falcinellus falcinellus* (Linnaeus); *Chhota buza*; Domestic hen  $\pm$ ; 52-65 cm; **R/LM/UnCom C** (Fig.41)

*Plegadis falcinellus*(I)

**Diagnostics:** *Adult:* Sexes alike. A dark Ibis with long, de-curved plumbeous-brown bill, feathered head, bronze-



brown feet. *Breeding:* Upperparts maroon-brown with green and purple dark sheen on head, neck, chin, throat, lower back, and rump; tail black glossed with green and purple; underparts chestnut, axillaries and under tail-coverts deep purple.

*Non-breeding:* Head and neck brown, white-streaked; scapulars and innermost wing-coverts glossy green-blue. *Juvenile:*

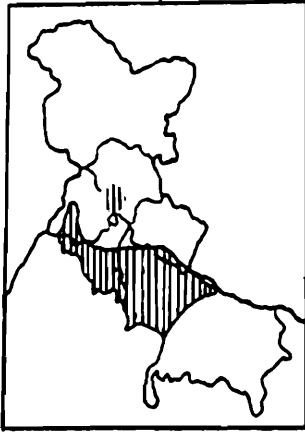
Like adult in winter, but, unglossed ashy-brown above and all brown below. No white streaks on neck.

**Habitat:** Large lakes, marshes, flooded grasslands and paddy fields. **Habits:** Gregarious and shy, small to large flocks of 40 to 50 birds, feeds in shallow waters. Breeds in colonies and mixed heronries from May to July in N India. **Food:** Chiefly molluscs, crustaceans and aquatic insects. **Status and Distribution:** Resident, nomadic, also winter migrant mainly to S India; Assam, Gangetic plains, Gujarat, Orissa, Madhya Pradesh, Rajasthan, West Bengal, Manipur; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Temperate to tropical Eurasia; SE Asia; Africa.

**42(72). Spoonbill.** *Platalea leucorodia major* Linnaeus; *Chamacha*; 60 cm; Duck +; **R/WM/UnCom C** (Fig.42)

**Eurasian Spoonbill, *Platalea leucorodia* (I)**

**Diagnostics:** *Adult:* Sexes alike, female slightly smaller. A snow-white bird with characteristic long, flat, spatula-shaped black bill, the terminal half of the spoon yellow; tawny patch on lower foreneck; black legs and feet. *Breeding:* A pure white nuchal crest of pointed plumes. *Non-breeding:* The crest has moulted. *Juvenile:* Primaries black-tipped and



black-shafted, the first three largely mottled with black. **Habitat:** Marshy jheels, reservoirs, large lakes, rivers and swamps. **Habits:** Gregarious, occur in small to medium flocks of up to 50 or more birds, forages in early morning or evening or at night, spends most of the day resting or sleeping with the bill tucked under the wings. Breeds in colonies in large mixed heronries generally from July to October in N India. **Food:** Chiefly small fishes, frogs and aquatic invertebrates, occasionally phytoplankton. **Status and Distribution:** Almost all through the plains except C and E India, mainly winter migrant; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. C and SE Asia.

### Flamingos

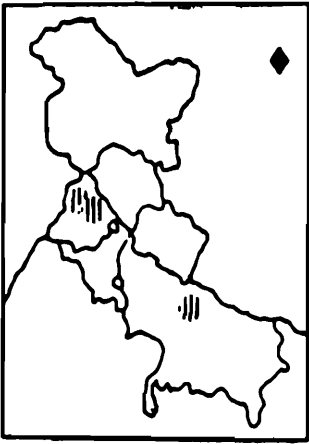
(Family PHOENICOPTERIDAE)

World: 5 species; Asia: 2; India: 2; N India: 2. Gregarious. Elegant marsh birds with excessively long legs, long sinuous necks and unique thick lamellate bills sharply decurved or 'broken' in middle. Plumage largely pinkish-white and crimson, with black wing-quills. Tibias bare; toes short and webbed. Sexes alike, but female smaller and paler. Flights: diagonal wavy ribbons, single file or in V formation with long neck and legs extended. Young nidifugous (leaving nest soon after hatching).

**43(73). Flamingo.** *Phoenicopterus roseus* Pallas; *Raj hans*; Vulture +; 125-145 cm; **R/LM/Ra C/H** (Fig.43)

**Greater Flamingo,** *Phoenicopterus ruber* (L)

**Diagnostics:** *Adult:* Sexes alike, female smaller and generally with less pronounced rose colour. A tall, white, stout-legged and long-necked bird with a large sharply decurved massive pink bill, edge of upper mandible and terminal third black; legs and feet pinkish-red. Plumage rose and white, wings black and scarlet. In flight, the long neck



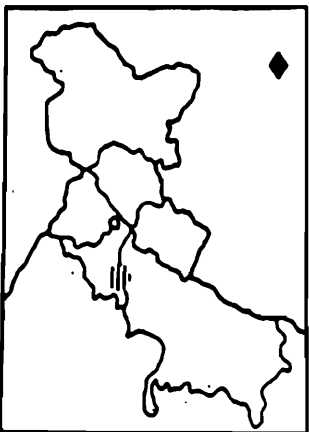
and legs stretched to full length with contrasting black and scarlet underwing. **Juvenile:** Greyish-brown with brownish bill and dark plumbeous legs. **Habitat:** Large shallow brackish water lakes, salt-pans, estuaries, also freshwater jheels. **Habits:** Highly gregarious, occurs in small groups to huge flocks, feeds in shallows by emerging its head with inverted bill. **Food:** Mainly comprising chironomid larvae, small

molluscs, crustaceans and seeds of aquatic plants, seldom fish.

**Status and Distribution:** Rare outside Great Rann of Kutch (where it breeds from September to April), though about two thousand birds visit Pulicat lake (Andhra Pradesh) and Chilka Lake (Orissa). A few birds occasionally recorded from Keoladeo National Park; the species has also been visiting Sambhar Lake (Rajasthan) regularly. All the aforesaid areas are Ramsar sites except Pulicat. Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. S Europe; NE Africa.

**44(74). Lesser Flamingo.** *Phoeniconaias minor* (Geoffroy); *Chhota Rajhans*; Large duck =; 90-105 cm; **NT R/LM/Ra H/C** (Fig.44)

**Diagnostics:** **Adult:** Sexes more or less alike, female smaller and paler, without crimson on scapulars, back or breast.



Comparatively smaller flamingos with much deeper rose-pink plumage, dark bill with crimson-red centre and crimson feathers around base, and red legs and feet. In flight, the contrasting crimson and black underwing is prominent. **Juvenile:** Greyish-brown with darker bill. **Habitat:** Prefers more saline waters than Greater Flamingo; brackish water lakes and lagoons, salt-pans. **Habits:** Gregarious,

often found in company with Greater Flamingo, however,

differs in feeding habits from former, as it sieves the diatoms from water surface when walking or swimming. Breeds in Little and Great Rann of Kutch during June-July. **Food:** Chiefly algae and plankton, occasionally insect larvae. **Status and Distribution:** Resident and locally common in Little and Great Rann of Kutch (Gujarat), Sambhar lake (Rajasthan), rare in western Gangetic plains, Chilka lake (Orissa), Andhra Pradesh; Pakistan.

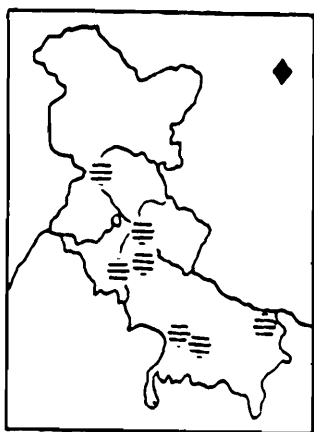
### **Ducks, Geese and Swans** (Family : ANATIDAE)

World: 149 species; Asia: 62, except sea ducks; India: 41, N India: 36. Plump waterbirds with considerable diversity in size and coloration. Swans are generally larger and heavier than Geese, while Geese are larger and heavier than Ducks. Bill typically broad, flat, rounded at tip, and with a comb-like fringe or lamellae. Wings mostly narrow and pointed. Tail and legs short; feet webbed. Young nidifugous. Most species migratory.

**45(79). Whitefronted Goose.** *Anser albifrons albifrons* (Scopoli); Greylag goose -; 66-86 cm; **WM/Ra H** (Fig.45)

**Greater Whitefronted Goose, *Anser albifrons* (L)**

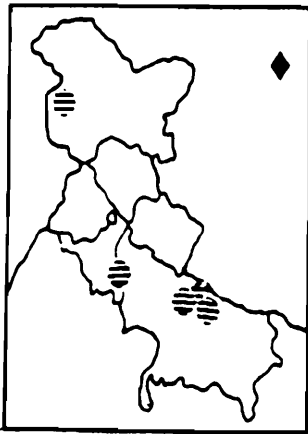
**Diagnostics:** *Adult:* Sexes alike. A brown goose with a characteristic white patch on forehead, from gape to gape, sometimes extending to chin also; white-tipped pinkish bill; heavy black blotches on breast and abdomen; white vent and under tail-coverts; orange-yellow legs and feet. **Habitat:** Large lakes and rivers. **Habits:** Gregarious, arrives in large flocks on lakes during winter especially in NW Himalayas and Kashmir in October-November, spends daytime floating with head tucked in feathers, rises almost vertically from ground on being disturbed. **Food:** Chiefly vegetarian, comprising grasses, arable crops, grains and



algae. **Status and Distribution:** Rare, winter migrant to NW India, Rajasthan, Orissa, Assam, Manipur; Pakistan; Bangladesh. Breeds in Arctic coasts of Europe and Asia, winters in SW Europe, S and SE Asia.

**46(80). Lesser Whitefronted or Dwarf Goose.** *Anser erythropus* (Linnaeus); Duck  $\pm$ ; 53-66 cm; **GT/Vu WM/Ra H** (Fig.46)

**Diagnostics:** *Adult:* Sexes alike. Comparatively smaller (53 cm) and dark brown goose with a diagnostic more extensive white patch on forehead, reaching to top of head between eyes; pinkish bill; blotchy black bars on lower breast and belly; orange-yellow legs. **Habitat:** Found in marshes, grasslands and lakes. **Habits:** In India recorded only in ones and twos or in small groups in company with Greylag Goose, though congregates in large flocks in other countries. **Food:** Chiefly land plants, grasses, arable crops and seeds. **Status and Distribution:** Globally threatened/Vulnerable. Rare winter visitor mainly to north and east, Assam, Bihar, Maharashtra, West Bengal; Pakistan. Breeds in N Europe and Siberia, winters in SE Europe, Middle East and SE Asia. **Remarks:** A drastic decline has taken place in their population due to loss of feeding habitat and hunting in winter homes.



**47(81). Eastern Greylag Goose.** *Anser anser rubrirostris* Swinhoe; *Raj hans*; Domestic goose  $\pm$ ; 75-90cm; **WM/Com H** (Fig.47)

**Greylag Goose, *Anser anser* (I)**



**Diagnostics:** *Adult:* Sexes alike. A large, grey-brown goose with pink bill and legs; a very narrow white rim of feathers at base of bill; ash-brown head and neck; pale or grey back and rump; white upper tail-coverts and vent. **Habitat:** Lakes, reservoirs, large rivers, tanks, grassy banks, crops. **Habits:** Shy and reserved, assembles in large numbers where food is



in abundance, generally on large jheels. Feeds by grazing on wet grasslands or crops mainly during the night, daytime is spent swimming or resting. Arrives through NW India and Kashmir in October and November. **Food:** Major source is land plants, grasses and arable winter crops such as wheat and gram.

**Status and Distribution:** Mostly passage winter migrant, common to NW India, rare in Assam, Manipur, Orissa, Gujarat, Rajasthan, Madhya Pradesh, Karnataka; Pakistan; Bhutan; Bangladesh; Sri Lanka. Breeds eastwards from 40° E and south of 60° N, winters in SE Asia.

**48(82). Barheaded Goose.** *Anser indicus* (Latham); *Hans*; Greylag goose -; 71-76 cm; **WM/R/Com H** (Fig.48)

**Diagnostics:** *Adult:* Sexes alike. An ashy-grey, white and brown goose. Head white with two black bars, one across the sinciput from eye to eye and the other shorter below on nape; neck brown with a white stripe on each side; face, throat, chin, vent and under tail-coverts white; reast ashy; bill yellow with black tip; upper plumage pale ashy, each feather with whitish edge; scapulars darker; flanks brown; lower back, primaries and rump grey; tail grey with white tip; legs yellow.



*Juvenile:* Like adult but paler and without black bars on head and white stripes on neck. **Habitat:** Generally occurs on large jheels and rivers, breeds in swampy high-altitude lakes in Ladakh, winter migrants elsewhere such as on rivers and jheels in plains of N India. **Habits:** Generally gregarious, nocturnal feeder in grasslands on river banks, often raiding arable crops, especially gram, mustard and wheat, which at times leads to their shooting by farmers. Birds rest on sandbanks in daytime, wary and shy in winter because of hunting. **Food:** Exclusively vegetarian, comprising arable winter crops, grasses, tubers and paddy stubble. **Status and Distribution:** Common throughout Northern India to Rajasthan, Gangetic plains,

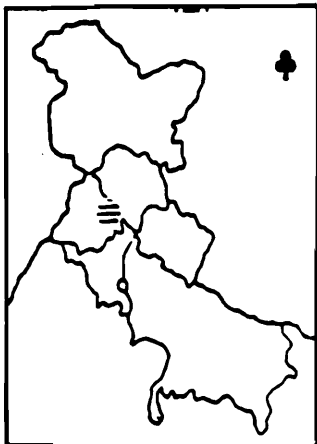
Assam, Orissa, Gujarat, Karnataka; arrives in Northern India by October/ November and present up to April; Pakistan; Nepal; Bhutan; Bangladesh.

Breeds in high-altitude lakes in C Asia including Tibet, in Ladakh around 4300 m, viz, Pangong Tso, Tso Moriri and Tsokr lakes from May to June. **Remarks:** The species is referred to as 'Hamsa' or 'Rajhans' in ancient Indian epics, and its Trans-Himalayan migration is equated to a religious pilgrimage. Like cranes, geese also have strong pair bonds. Estimated wild population in the world around 20,000. Main threat to the species is due to hunting, egg collecting, perdition, and habitat loss.

**49(83). Lesser Snow Goose or Blue Goose.** *Anser caerulenscens caerulenscens* (Linnaeus); 65-84 cm; **WM/Va** (Fig.49)

**Snow Goose, *Anser caerulenscens* (I)**

**Diagnostics:** Sexes alike but dimorphic, with two colour phases viz., 'white or snow' and 'blue'. Only the former has been recorded from India. **Adult:** With white plumage, contrasting black primaries, and pink bill and legs. **Juvenile:** Like juvenile Barheaded Goose but with pinkish-grey bill and legs, pale brownish-grey crown and hind neck, and white tail, neck and underparts. **Habitat:** Grassy edges of reservoir. **Habits:** Observed grazing with Bar-headed Geese (Mundkur *et al.*, 1992). **Status and Distribution:** Winter migrant, vagrant in India. **Remarks:** The first



reference of Snow Goose from India was based on a single bird shot from a flock of nine Greylag Geese from Haigam lake, Kashmir in 1950. It was later found to be a partial albino of Greylag Goose (*Anser anser*). Thereafter, it was eliminated from the list of Indian avifauna. Subsequently, in 1989 (Mundkar *et al.* 1992) the Snow Goose was recorded from Sundernagar district in Gujarat along with a flock of Barheaded Goose (*Anser indicus*). Thus, it was again added

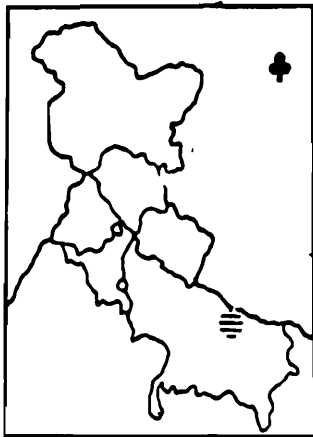
to the list of Indian avifauna. Recently, in March 2000, a pair of Snow Goose was sighted and photographed by Dr. H.S. Mehta of the Zoological Survey of India, Solan,

at Sukhna Lake, Chandigarh (Singh, Chandigarh Tribune 14.5.2000). Hence the species is included with the waterbirds of Northern India.

**50(84). Bewick's or Western Whistling Swan.** *Cygnus columbianus bewickii* Yarrell; Vulture +; 120-140 cm; **WM/Va H** (Fig.50)

**Tundra Swan,** *Cygnus columbianus* (L)

**Diagnostics:** Adult: Sexes alike, female slightly smaller. The smallest of the white swans; plumage pure white; bill

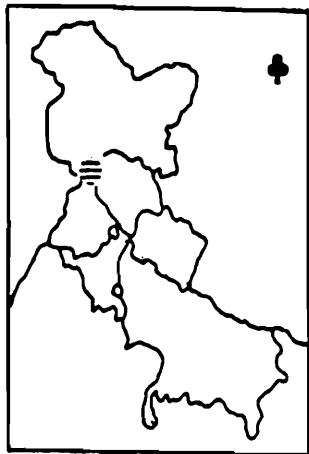


black with a yellow patch on its base, the extent of the yellow varies according to individuals; culmen depressed in the middle; legs, toes and webs black. **Habitat:** Lakes, marshes, rivers and estuaries. **Habits:** In the Indian subcontinent this swan is a rare vagrant, shy and wary, generally found singly, mostly spends time swimming, sometimes grazing on land. **Food:** Chiefly aquatic plants, algae, land plants, grasses.

**Status and Distribution:** Very rare winter vagrant, once recorded from Delhi; Pakistan; Nepal. Breeds in north Russia, winters in N Europe, C Asia and southern Britain.

**51(86). Whooper Swan.** *Cygnus cygnus* (Linnaeus); Vulture +; 150-156 cm **WM/Va H** (Fig.51)

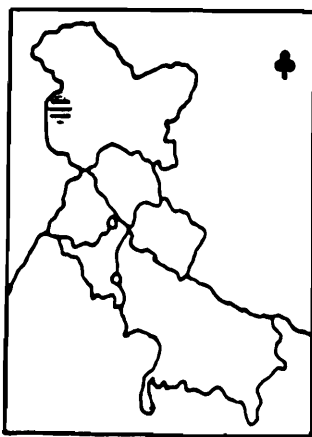
**Diagnostics:** Adult: Sexes alike, female slightly smaller.



A large swan with entirely white plumage; black-tipped bill with yellow base and lores, the yellow extending forward laterally to the nostrils; black legs, toes and webs. **Habitat:** Large rivers, open lakes and jheels, marshes and estuaries. **Habits:** Very rare winter straggler in severe winters, generally to NW part of the subcontinent; shy and wary, found singly, spends most of its time in swimming. **Food:** Chiefly

vegetarian, comprising aquatic plants, algae, grasses, etc. **Status and Distribution:** Very rare winter vagrant, Kashmir, Punjab; Pakistan; Nepal. Breeds across N Eurasia, winters in Europe from Britain to Greece, North Sea and Baltic.

**52(87). Mute Swan.** *Cygnus olor* (Gmelin); Vulture +; 125-155 cm; **WM/Va** (Fig.52)

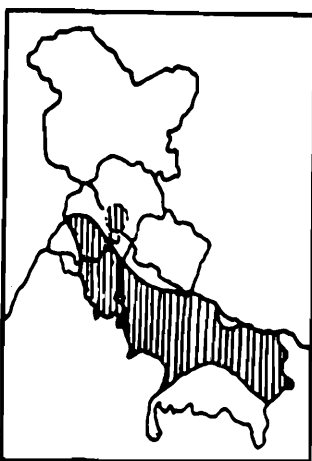


**Diagnostics:** Sexes alike, female slightly smaller. Also a large swan with pure white plumage, prominent black knob on forehead at base of long and pointed pinkish- orange bill, and slender neck carried in an S-shaped curve. *Juvenile:* chiefly grey with either slightly developed or without knob and feathers of forehead extended to a point. **Habitat:** Lakes, large rivers and reservoirs, etc. **Habits:** Recorded in India only as vagrant individually at large rivers or open

waters, spends much time swimming, feeds by submerging its head or neck or by upending, occasionally grazes. **Status and Distribution:** winter migrant, vagrant in India, mostly recorded from Pakistan.

**53(88). Lesser Whistling Teal or Tree Duck.** *Dendrocygna javanica* (Horsfield); *Seelhi*; Domestic duck -; 40-45 cm; **R/LM/UnCom H/C** (Fig.53)

#### **Lesser Whistling-Duck (I)**

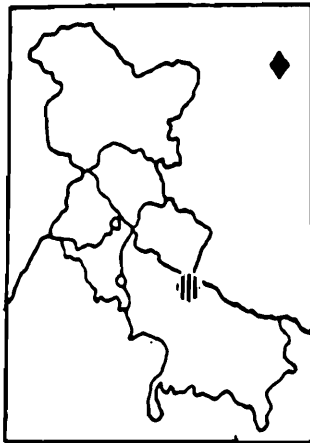


**Diagnostics:** *Adult:* Sexes alike. Small brown and chestnut ducks with slaty-grey bill and plumbeous-blue legs. Forehead and crown brown; remaining head and neck fulvous-grey; hindneck reddish-brown changing into brown on the scapulars and back; flanks chestnut; rump black; upper tail-coverts uniformly chestnut; tail brown; underparts chestnut. *Juvenile:* Duller in colour. **Habitat:** Generally found in reedy freshwater marshes, shallow pools, lakes

with emergent vegetation and submerged trees in plains. **Habits:** Gregarious, sociable, keeps in groups of 10 to 15, sometimes in large flocks as well, in and around weedy tanks, roosts on trees during daytime near water. Breeds from June to October in N India. **Food:** Mainly vegetarian comprising aquatic plants, arable crops and also frogs, fish, molluscs and insects. **Status and Distribution:** Resident, nomadic, all India, including Andaman and Nicobar Islands; Nepal; Pakistan; Sri Lanka; Bangladesh. SE Asia.

**54(89). Large Whistling Teal.** *Dendrocygna bicolor* (Vieillot); Domestic duck -; 51 cm; **R/LM/Ra H** (Fig.54)

**Fulvous Whistling-Duck (I)**

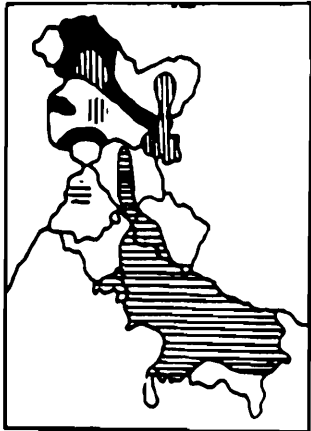


**Diagnostics:** *Adult:* Sexes alike. Similar to the Lesser Whistling Teal, but larger with creamy white upper tail-coverts; blackish-brown stripe on nape; pale rufescent-white centre of neck with black streaks; dusky-black bill; dusky plumbeous to bluish-slate legs. *Juvenile:* Duller; the chestnut portions more brown. **Habitat:** Reedy and vegetation covered jheels, flooded paddy fields, ponds and shallow lakes in plains. **Habits:** Found in small flocks on secluded weed-covered tanks, shy and wary, generally feeds at night, during day roosts near water body. Breeds from June to October. **Food:** Chiefly vegetarian, comprising aquatic plants. **Status and Distribution:** Resident, nomadic, earlier scattered widely, now mainly (scarcely) in Assam, Manipur, West Bengal; Pakistan; Sri Lanka; Nepal; Bangladesh. Far-flung and in fragments up to S China and SE Asia.

**55(90). Ruddy Shelduck or Brahminy Duck.** *Tadorna ferruginea* (Pallas); *Surkhab*; Large domestic duck =; 61-67 cm; **WM/R/VCom O** (Fig.55)

**Diagnostics:** *Adult:* A large bright orange-brown duck with pale buff head and neck; black beak, feet and tail; white wing-coverts and a prominent metallic green speculum.

**Male:** In breeding season develops a narrow black collar on lower neck. **Female:** With whiter head and without black



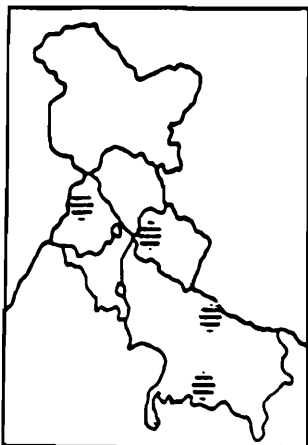
collar. **Juvenile:** Like female but duller with a grey wash on scapulars and tertiaries.

**Habitat:** Common winter migrant to large open lakes and rivers with extensive shingle banks and mudflats. **Habits:** Generally found in pairs or small flocks, but large congregations can be seen on northern lakes and reservoirs, feeds by grazing on banks; breeds around high-altitude lakes and swamps. Arrives in N India by October/

November and most depart by April, though stray birds may be found up to even June. **Food:** Almost omnivorous, comprising grains, aquatic plants, algae and aquatic invertebrates. **Status and Distribution:** Mainly winter migrant all over India, Pakistan; Nepal; Bhutan, Bangladesh; Sri Lanka. Breeds over huge area from Morocco to C Siberia and N China, also around high-altitude lakes and swamps above 4000 m in Ladakh, viz., Pangong, Tsokr and Tso Moriri Lakes, Sikkim and Nepal. Winters in southern half of its breeding range. **Remarks:** The bird is also popularly known as "Surkhaab" or "Chakwa-Chakwi" in folklore.

**56(91). Common Shelduck.** *Tadorna tadorna* (Linnaeus); *Safed surkhab*; Domestic duck  $\pm$ ; 58-67 cm; **WM/UnCom C/H** (Fig.56)

**Diagnostics:** **Adult:** A distinctive white and black duck



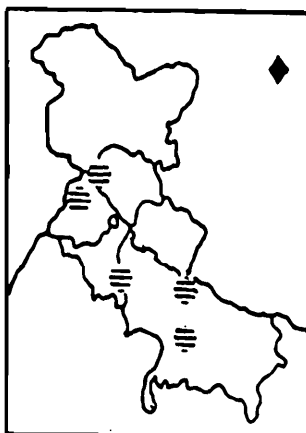
with a broad chestnut breast-band, glistening greenish-black head and neck, glossy green speculum bordered above with chestnut, black tail-tip, bright red bill and pink legs. **Male:** With a conspicuous red knob above base of bill and a broad black band from breast to vent. **Female:** Considerably smaller, dull coloured and without red knob. **Male (in eclipse):** Head dull blackish with little sheen; feathers of

lower black band with white tips. *Juvenile*: Chestnut breast-band absent, sometimes sides slightly suffused with chestnut. **Habitat**: Open lakes, large rivers and mudflats. **Habits**: Generally more gregarious than Brahminy, occurs in small flocks, feeds by walking on mudflats, which it frequents often. **Food**: Chiefly carnivorous, comprising molluscs, aquatic arthropods, also algae, seeds. **Status and Distribution**: Uncommon and irregular winter migrant to India up to 15° N, mostly in NE; Pakistan; Sri Lanka; Nepal; Bhutan; Bangladesh. Breeds on coasts of NW Europe, C Asia to eastern Siberia, winters in N Africa, Middle East, India, S China and Japan.

**57(92). Marbled Teal.** *Marmaronetta angustirostris* (Menetries); Domestic duck -; 39-48 cm; **GT/Vu WM/Ra H/C** (Fig.57)

**Marbled Duck (I)**

**Diagnostics:** *Adult*: Sexes alike, female slightly smaller.



Small greyish-brown duck with a distinct dark brown patch from eye to nape; a slight nuchal crest; bluish-grey bill, and horny-brown legs. Above, spotted or marbled with pale greyish buff and blackish. Below, more or less transversely barred brown-barred.

**Habitat**: Occurs in shallow freshwater lakes, matted jheels with extensive emergent vegetation, avoids open waters.

**Habits**: Generally occurs in pairs or small flocks, occasionally large flocks in winter,

drops for cover after a short flight, shy and secretive, spends day hiding in vegetation. **Food**: Mainly comprise aquatic plants, and partly aquatic invertebrates. **Status and Distribution**: Globally threatened/Vulnerable. Rare winter migrant to N India, Madhya Pradesh, Rajasthan, Gujarat, West Bengal, Assam, Maharashtra; Pakistan; Bangladesh. Breeds in Mediterranean region, Middle East and NW Pakistan and India in June-July. **Remarks**: Estimated global population 33,000 birds, but the Indian population is only about 2,000 birds.

Most serious threat is due to loss of southern Iraq marshes, where it breeds most extensively.

**58(93). Pintail.** *Anas acuta* Linnaeus; *Seenkh par*; Domestic duck-; 56-75cm; **WM/VCom H/C** (Fig.58)

**Northern Pintail (I)**

**Diagnostics:** *Male:* Head, face and neck chocolate-brown; nape black; bill plumbeous; either side of neck with white-



stripe joining down to white neck and breast; neck finely pencilled silver-grey; speculum metallic bronze-green; upper tail-coverts grey edged with black; undertail-coverts black with broad buff patch in front. Tail long, pointed pin-like. *Female:* Mottled brown and buff with pointed but pinless tail and without prominent speculum. *Male (in eclipse):* Resembles female, but lacks

distinctive pale edges to feathers on its back; dark ashy-grey or greyish-white coarsely vermiculated mantle. **Habitat:** Lakes, marshes, reedy and vegetation-covered jheels, wet paddy fields, and rivers. **Habits:** One of our commonest migratory species, highly gregarious, keeps in flocks of up to hundreds; largely crepuscular, feeds at night and roosts during day; shy and very wary. Arrives in Northern India by September-October and mostly departs by end of March. **Food:** Chiefly vegetarian, plant seeds, arable winter crops such as wheat and gram, aquatic plants, and also molluscs as well as other invertebrates. **Status and Distribution:** Common and widely distributed winter migrant to India; Pakistan; Sri Lanka; Nepal. Arrives by early October and departs by March. Breeds in northern parts of Europe, Asia and N America, winters south to N Africa, Middle East and S and SE Asia.

**59(94). Common Teal.** *Anas crecca crecca* Linnaeus; *Chhoti murghabi*; Half-grown domestic duck  $\pm$ ; 34-38cm; **WM/VCom H** (Fig.59)



*Anas crecca* (L)

**Diagnostics:** *Adult:* A small duck with a distinctive tricoloured (black, metallic green, and buff) speculum—



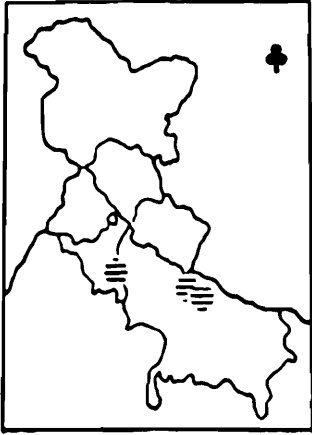
particularly conspicuous in flight; black bill; olive-grey to deep slaty-blue legs. *Male:* Pencilled greyish. Head dark chestnut with a broad metallic green band surrounding the eye and running back to the nape. A narrow whitish line from the bill running back towards the eye and then dividing to surround the green band; breast and flanks vermiculated dark brown and white; abdomen white or pale buff; tail brown,

feathers pale edged; under tail-coverts buff laterally, black in centre. *Female:* Mottled brown and buff; pale belly; black and green speculum. *Male (in eclipse):* Crown and nape blackish-brown. *Juvenile:* Belly spotted; secondaries shorter.

**Habitat:** Freshwater shallow inland wetlands like tanks, jheels, marshes, pools, reservoirs and rivers. **Habits:** One of the commonest and most abundant species in India, found in flocks of up to 200 or more ducks, feeds in the fields at night with other dabbling ducks. One of the earliest species to arrive by middle or end of August and continues until November (many birds moult in India), mostly departs by end of March, though may stay as late as May. **Food:** Chiefly vegetarian, comprising aquatic plants, their seeds and arable winter crops. **Status and Distribution:** One of the commonest winter migrant all over India, including A and N Islands; Pakistan; Sri Lanka; Nepal. Breeds in Europe and N and NE Asia, winters in N Africa, Middle East, India and SE Asia.

**60(95). Baikal, Clucking or 'Formosa' Teal. *Anas formosa*** Georgi; Common teal +; 39-43cm; **GT/Vu WM/Va H** (Fig.60)

**Diagnostics:** *Male:* A remarkably beautiful teal with rather round head and body. The breeding male exhibits a distinctive showy pattern of head; crown, hind neck, chin,



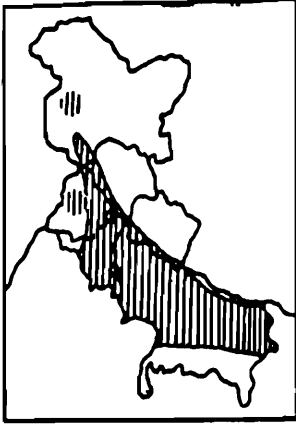
unroast and vertical line across the face from eye to throat black; rest of face buff; white lines bordering the crown and hind neck; crescent band of metallic green on sides of head and neck. Bill bluish-grey. Mantle slaty-grey, pencilled with brown and black; inner scapulars and tertiaries very long and pointed, black, white and cinnamon; wings brown, with black and green mirror or speculum edged with white; back, rump

and tail greyish-brown; sides slaty-grey; breast vinaceous spotted with black; remaining underparts white; under tail-coverts black bordered with chestnut. A crescent white line on sides of breast, another at base of tail. Legs grey. *Female*: Brown, much like a female Common Teal but larger in size and distinctive head pattern; crown dark; face light speckled brown with dark lines above eyes and from eye to nape; round white patch at base of bill. *Male (in eclipse)*: Brown like female, but more uniform and without conspicuous head markings. **Habitat**: Large rivers, lakes and marshes. **Habits**: Recorded singly or in pairs, once in party of 8 to 10, habits otherwise not recorded from India, feeds by dabbling. **Food**: Chiefly herbivorous. **Status and Distribution**: Globally Threatened/Vulnerable. A very rare and sporadic winter migrant to N India, recorded at long intervals; Pakistan; Nepal; Bangladesh. Breeds in Siberia, east of the Yenisey River to the Kolyma delta, south to Lake Baikal, winters in China and Japan. **Remarks**: A dramatic decline in its population has occurred due to hunting on migratory passage by shooting or poisoning.

**61(97). Spotbill Duck.** *Anas poecilorhyncha poecilorhyncha* J.R.Forster; *Gugral*; Domestic duck =; 58-63 cm; **R/LM/Com H/C**(Fig.61)

**Spot-billed Duck**, *Anas poecilorhyncha* (I)

**Diagnostics**: *Male*: A large, blackish-brown duck with scaly-patterned plumage. Bill black and yellow (terminal third or less), tip black; two swollen orange-red spots at the

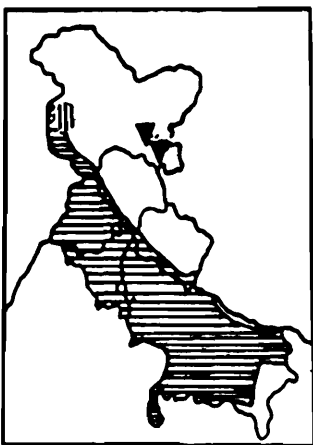


base of bill on either side of forehead. Crown from forehead to nape dark brown; remaining head and neck buff-white; eye-stripe dark and broad. Feathers with pale edges; speculum glossy green with narrow black-and-white margins; tail darker. Legs and feet coral-red. *Female*: With less conspicuous loreal spots, slightly smaller and duller than male. *Juvenile*: Like adult but paler, without red spots at base of bill and

less spotted below. **Habitat**: Freshwater vegetation covered wheels, lakes, reservoirs, marshes and tanks with extensive emergent vegetation, rarely on rivers. **Habits**: Sociable, usually occurs in pairs though during breeding season females with chicks is not a rare sight, in non-breeding period flocks up to 50 are found; feeds by dabbling or by walking in marshy vegetation. Breeds chiefly from July to September/October in N India. **Food**: Mainly vegetarian, comprising aquatic plants, their seeds and arable crops such as rice, occasionally aquatic insects. **Status and Distribution**: Throughout India up to 1800 m in Kashmir; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka.

**62(100). Mallard. *Anas platyrhynchos* Linnaeus; Nilgir; Domestic duck =; 50-65 cm; WM/R/Com H/C (Fig.62)**

**Diagnostics**: *Male*: Head and upper neck glistening metallic dark green separated from chestnut breast by narrow white collar; bill dull olive-yellow; above and below largely grey; rump, tail-coverts and two upcurled central tail-feathers black; speculum glossy bluish-purple. *Female*: Brown and buff, streaked and spotted with black; chin, throat and foreneck plain buff; irregular dark line through eye; orange legs. Distinguished from the very similar female Shoveller by bill shape and purple-blue speculum (vs. green). *Male (in eclipse)*: Like female; however, head darker;



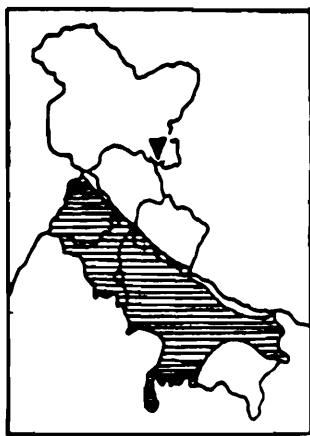
upper plumage back to tail much like the breeding plumage; moulted curly tail feathers.

**Habitat:** Occurs in shallow freshwater jheels, marshes, reservoirs, lakes, rarely rivers and ponds **Habits:** A gregarious dabbling duck, keeps in small flocks, sometimes up to 50, mostly feeds at night, usually wary. Breeds in very small numbers in Kashmir. **Food:** chiefly vegetarian, comprising arable winter crops such as wheat and gram, aquatic plants, sometimes molluscs, fish fry and tadpoles. **Status and Distribution:** Winter migrant, almost throughout India though uncommon, becoming rare in peninsula; Pakistan; Nepal; Bhutan; Bangladesh. Throughout the Holarctic region, breeds from Arctic Circle south to the Mediterranean region, winters in southern half of breeding range, i.e., N Africa, Middle East, S and SE Asia.

**63(101). Gadwall.** *Anas strepera strepera* Linnaeus; *Bhuar*, Domestic duck-; 45-51cm; **WM/Com H/C** (Fig.63)

*Anas strepera* (I)

**Diagnostics:** *Male:* Body generally dark brown and grey; belly whitish; tail velvety-black; breast with crescent markings; chest nut patch with the black-and-white speculum etc. diagnostic. *Female:* Like female Mallard, but duller and smaller with chestnut on wing and orange-yellow legs. *Male (in eclipse):* Like female, but greyer and less heavily marked above. **Habitat:** Freshwater reedy marshes and jheels with extensive aquatic and emergent vegetation, open water spread of dams and reservoirs. **Habits:** Gregarious,



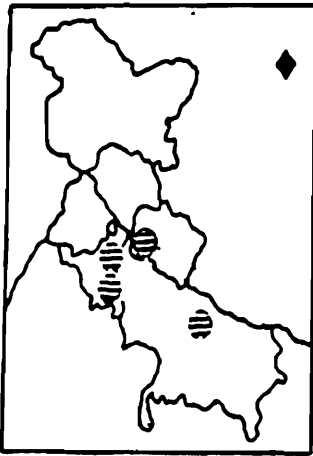
usually found in small flocks of 10-30 birds. Surface feeding duck, predominantly vegetarian; shy and wary, keeps near emergent vegetation. **Food:** Primarily vegetarian, comprising aquatic plants and grains of arable crops, occasionally molluscs and aquatic insects. **Status and Distribution:** Commonly and widely distributed winter migrant all over India, though more frequent in peninsula; Pakistan; Nepal;

Bhutan; Bangladesh; Sri Lanka. Breeds in Eurasia and N America, winters south to N Africa, S Asia and S China.

**64(102). Falcated or Bronzecapped Teal.** *Anas falcata* Georgi; *Kala sinkhur*, Domestic duck-; 48-54cm; **WM/Ra H** (Fig.64)

**Falcated Duck (I)**

**Diagnostics:** *Male:* Head bronze-green with chestnut crown, lores and cheeks; throat white contrasting with finely



pencilled body; bill black; inner secondaries very long and falcated (sickle-shaped); stern buff-edged black; upper tail-coverts black, overtopping tail; legs grey. *Female:* Resembles female Gadwall; however, mottled dark and light brown with white-edged greenish-black speculum; 14 rectrices instead of 16 (cf. female Gadwall); grey (not orange-yellow) legs. *Male (in eclipse):* Like female but less coarsely

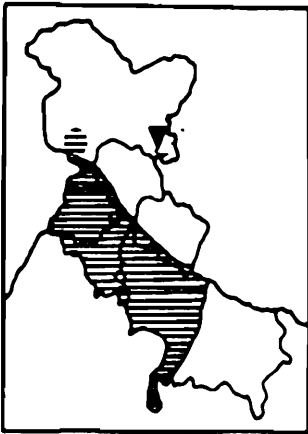
mottled, has some green gloss on head and darker cheeks.

**Habitat:** Lakes, marshes and rivers. **Habits:** A dabbling duck, shy and wary, occurs singly or in pairs but flocks up to 80 recorded, keeps close to emergent vegetation. **Food:** Chiefly vegetarian. **Status and Distribution:** Rare winter migrant to Northern India, Assam, Manipur, Bihar, Gujarat; Pakistan; Nepal; Bangladesh. Breeds in N Asia, south of Arctic Circle from the upper Yenisey south to Lake Baikal, winters in SE Asia.

**65(103). Wigeon.** *Anas penelope* Linnaeus; *Chhota lalsir*, Domestic duck/Gadwall-; 45-51 cm; **WM/Com H/C** (Fig.65)

**Eurasian Wigeon (I)**

**Diagnostics:** *Male:* Distinctive creamy patch on forehead contrasting with rusty-red head and neck; finely pencilled grey body; blue-grey bill with black tip; vinous-red breast; metallic green speculum bordered with black; white under plumage; black tail-coverts. *Female:* Mottled brown. Similar to male in eclipse -but much duller, less reddish-brown, the



dark vermiculation less coarse, the lesser wing-coverts grey. The more rufous plumage and metallic green speculum differentiate it from rather similar female Gadwall (speculum—contrasting white and black). Male (in eclipse): Reddish-brown with black vermiculations above and chiefly white below. **Habitat:** Freshwater shallow reedy jheels, marshes, open lakes, reservoirs, rivers and also pools, avoids

deep waters overgrown with vegetation. **Habits:** Highly gregarious, large flocks are common, feeds chiefly by grazing on edges, sometimes dabbles at water surface. **Food:** Chiefly vegetarian, comprising aquatic plants, algae, grasses, seeds, arable crops, occasionally aquatic animals. **Status and Distribution:** All India, common winter migrant in north, Assam, Manipur, Orissa; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. Breeds in Eurasia in temperate regions north of Arctic Circle and beyond, winters in Britain, Middle East, S Asia, S China and Japan.

**66(104). Garganey or Bluewinged Teal.** *Anas querquedula* Linnaeus; *Patari*; Domestic duck -; 37-41 cm; **WM/Com H/C** (Fig.66)

**Diagnostics:** *Male:* A small brown teal with conspicuous white eyebrows. Bluish-grey forewings, prominent in flight.



Head and neck pinky-brown. Bill brownish-black with black nail. Upper plumage blackish-brown with pale edges; scapulars long, drooping and glossy black with white median ribs; speculum green between two white bands. Breast light brown, speckled black, underparts white, finely waved on sides and black spotted near vent. *Female:* Mottled brown above and white below with whitish eyebrows.

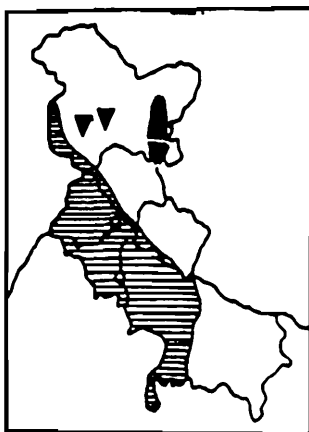
*Male (in eclipse):* Like female, but with adult male wing coloration. **Habitat:** Frequents almost all types of wetlands

including jheels, marshes, lakes, reservoirs, rivers and village ponds with plenty of vegetation. **Habits:** Gregarious, flocks in thousands at certain wetlands, non-diving duck, nocturnal feeder, shy and wary, generally keeps in emergent vegetation. **Food:** Primarily vegetarian, comprising seeds, arable crops, occasionally aquatic insect larvae, worms and molluscs. **Status and Distribution:** All India, one of the commonest winter migrants, occurring up to 4000 m; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds across Palaearctic from Britain to Pacific, winters south of N Africa, S Asia, S China and Japan.

**67(105). Shoveller.** *Anas clypeata* Linnaeus; *Tokarwala*; Domestic duck -; 44-52cm; **WM/Com C/H** (Fig.67)

#### **Northern Shoveler (I)**

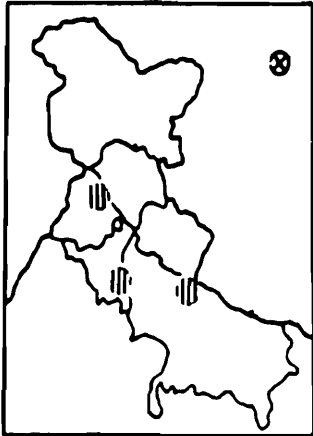
**Diagnostics:** *Male:* Head and neck glossy green; bill large, flat, greyish-black; eyes yellow; breast white; abdomen and flanks chestnut with white-edged black stern; speculum metallic green. *Female:* Mottled dark brown and buff, with greyish-blue shoulder patch; faint green speculum bordered above and below with white; bill broad, flat, greenish-brown tinged with orange. *Male (in eclipse):* Like female but largely with adult male wing coloration. **Habitat:** Occurs in almost all types of shallow freshwaters like jheels, lakes,



rivers, reservoirs, irrigation and village tanks. **Habits:** Gregarious, usually keeps in small flocks, feeds by sweeping sideways, also upends, and sometimes on surface. Arrives by late October and one of the last to depart, stray birds may stay back up to May/June. **Food:** Chiefly aquatic animals such as molluscs, crustaceans, insect larvae, worms, occasionally aquatic plants. **Status and Distribution:** All India, a rather common winter migrant, widespread up to 1300 m; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Circumpolar scarcely distributed; breeds in Europe, N Asia and N America but not north of Arctic Circle, winters south of N Africa, S and SE Asia and S America.

**68(106). Pinkheaded Duck.** *Rhodonessa caryophyllacea* (Latham); *Gulab sir*, Domestic duck =; 60 cm; **GT/Cr R O** (Fig.68)

**Diagnostics:** *Adult:* A brownish-black duck with narrow bill, long and thin neck, thick body, short tail and reddish-black legs. *Male:* Head partly tufted on the occiput; bill, head and hind neck rose-pink; a blackish line on the forehead and a black band from chin, broadening gradually down to the breast; speculum pinkish-buff; rest of upper and under plumage brownish-black. *Female:* Similar to male but blackish-brown; head and neck much less bright and not sharply demarcated as in male; speculum pale



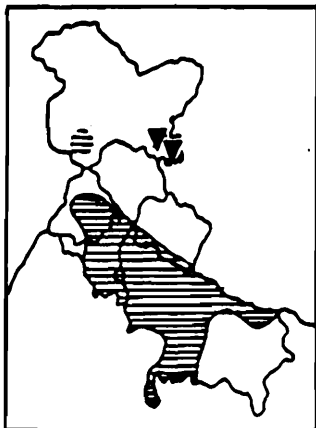
brownish-buff. **Habitat:** Earlier found in jheels, secluded ponds and marshes in the Himalayan terai. **Habits:** Very shy and secretive; records indicate that this duck was seldom seen unless flushed and flocks up to 30-40 birds were recorded, a surface feeding duck. **Food:** Comprises both aquatic plants and animals. **Status and Distribution:** Globally threatened/Critical. In India last sighted in 1935 from Bihar, earlier common in NE, Manipur, West Bengal, Bihar, Orissa (stragglers were recorded in winter from Lucknow, Uttar Pradesh, Ropar, Punjab and Delhi in Northern India); Nepal; Bangladesh. Myanmar. **Remarks:** Ali and Ripley (1978) record that the species was presumably always very rare and local (in all, 80 skins of this species are available in museums around the world), now believed to be extinct in the wild in India. Conversion of its habitat to agricultural land and hunting are likely causes of the critical status of the species. Extinction of the species needs confirmation as recently there are reports of its sighting in N Myanmar.

**69(107). Redcrested Pochard.** *Netta rufina* (Pallas); *Lal sir*, *Lal chonch*; Domestic duck-; 53-57cm; **WM/VCom H/C** (Fig.69)



*Rhodonessa rufina* (L)

**Diagnostics:** *Male:* Head golden-orange with silky chestnut crest; bill bright crimson; neck, rump and upper tail-coverts blackish-brown; wing bases next to scapulars with white band; tail silvery-grey-brown; legs and feet dull fleshy-red. *Female:* Above pale greyish-brown; crown dark; bill dusky black with red tip, wings like male but paler and duller, white replaced by grey. *Male (in eclipse):*

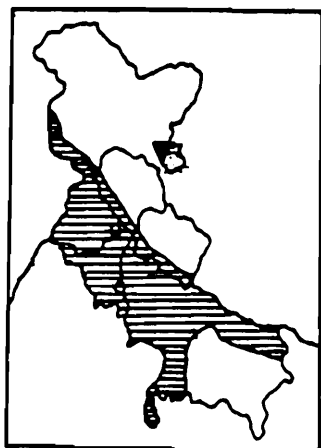


Like female but browner on underparts; crest bushy; the brightness of eyes, bill and feet retained. **Habitat:** Inhabits large jheels, reservoirs, marshes and wetlands with

plenty of submerged and fringe vegetation, occasionally on rivers. **Habits:** A diving duck which prefers deep open waters, generally shy and wary, feeds in small groups though large flocks also common, feeds by diving. Arrives by October and generally departs by mid-March. **Food:** Chiefly vegetarian, comprising aquatic plants, algae, seeds, also aquatic animals. **Status and Distribution:** Winter migrant, occurs throughout the country from October to March, very common in NW India, in lesser numbers in peninsula; Pakistan; Nepal; Bhutan; Bangladesh. Breeds predominantly in S Europe and C Asia, winters in Middle East and S Asia.

**70(108). Common Pochard.** *Aythya ferina* (Linnaeus); *Lal sir*; Domestic duck-; 42-49cm; **WM/VCom H/C** (Fig.70)

**Diagnostics:** *Male:* Head and neck deep chestnut; bill black with pale grey band near tip; upper back grey; breast black; remaining underparts light grey; sides largely greyish-white; rump, upper and under tail-coverts dull black; legs slaty-blue. *Female:* Head, neck, upper back and breast rufous brown; rump, upper and under tail-coverts dark grey-brown. *Male (in eclipse):* Dull and more brownish than in breeding plumage.



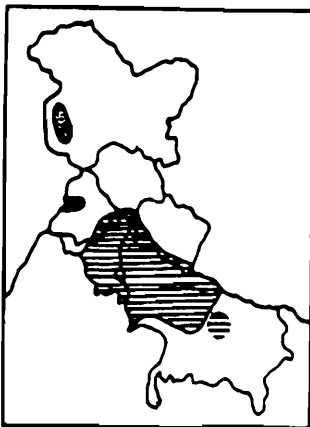
**Habitat:** Frequents open parts of jheels,

lakes and irrigation reservoirs with deep waters and submersed aquatic vegetation. **Habits:** One of our commonest diving ducks forming very large flocks from a few hundred to thousands of birds; feeds under water, mainly nocturnal feeder. Arrives in N India fairly late by mid-October and departs by end of March. **Food:** Chiefly vegetarian, comprising aquatic plants, algae, seeds, also occasionally molluscs, insect larvae, fish and tadpoles. **Status and Distribution:** Very common winter migrant in NW India up to 5000 m; Assam, Manipur, Karnataka, Kerala, Tamil Nadu; Pakistan; Nepal; Bhutan; Bangladesh. Breeds from W Europe to E Siberia, winters Middle East, S Asia and S China.

**71(109). White-eyed Pochard or Ferruginous Duck.** *Aythya nyroca* (Guldenstadt); *Kurchiya*; Domestic duck -; 38-42 cm; **GT/Vu WM/R/Com O** (Fig.71)

**Ferruginous Pochard (I)**

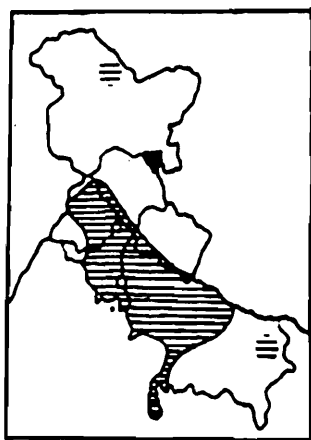
**Diagnostics:** *Male:* Head, neck and breast deep chestnut; nape darker; bill bluish-black; iris white; upper plumage blackish-brown; speculum white; belly with a large white oval patch; under tail-coverts white; legs dark slaty. *Female:* Duller with brownish iris and less contrasting off-white belly. *Male (in eclipse):* With brown mantle and dull reddish head, neck and breast. The deep chestnut colour, white oval belly-patch, white under tail-coverts and broad white crescent band on flight feathers are diagnostics of both sexes



in flight. **Habitat:** Occurs in weedy and vegetation covered jheels, open irrigation tanks, reservoirs with thick marginal vegetation. **Habits:** A shy and secretive duck which occurs in pairs or in small groups, feeds mainly by diving at night, hides in reeds on being disturbed. Occasionally breeds from May to June/July in Kashmir and Ladakh (around 1500 m). **Food:** Both aquatic vegetation (seeds, plants, algae) and animals (molluscs, larvae, fish). **Status and Distribution:** Globally threatened/Vulnerable. All over India, common in

north; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds in S Europe to W Siberia, south to N Africa, Middle East, and S China, also in Kahmir and Ladakh in our limits. Winters in Mediterranean, Middle East, India, Myanmar. **Remarks:** Estimated world population 60,000, the number declining rapidly all over the world due to wetland drainage and hunting. Still common in the Tibetan plateau, however.

**72(111). Tufted Duck.** *Aythya fuligula* (Linnaeus); *Dubaru*; Domestic duck -; 40-47cm; **WM/Com C/H** (Fig.72)

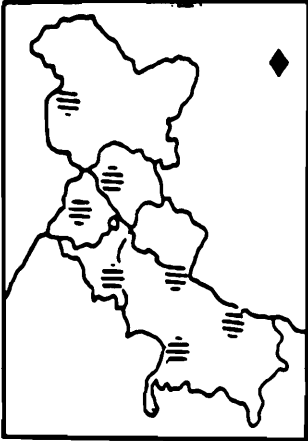


**Diagnostics:** *Male:* The only Pochard with a long occipital crest. Plumage boldly contrasting black and white. Head, neck, breast, back, tail and vent jet-black; sides of body and flanks pure white; belly greyish; iris golden-yellow; bill, legs and feet greyish-blue. *Female:* Dark brown with rudimentary occipital crest; belly white; often a white ring of feathers at base of bill. *Male (in eclipse):* Darker than female; flanks with white moulting; underparts uniformly brown; touch of white at base of bill. **Habitat:** Prefers open and deep tanks, irrigation reservoirs, lakes and marshes. **Habits:** Generally gregarious, occurs in large flocks of hundreds. Diving duck which feeds mainly by diving in daytime. Arrives by mid-October and departs by end of March. **Food:** Predominantly aquatic animals such as molluscs, also plant seeds. **Status and Distribution:** Common all over India during winters, occurring up to 5000 m (Sikkim), but rare in Kashmir; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds across Palaearctic, south to C Europe, winters in south half of breeding range, Middle East, S Asia and S China.

**73(112). Scaup Duck.** *Aythya marila marila* (Linnaeus); *Dubaru*; Domestic duck-; 40-51cm; **WM/Ra C/H** (Fig.73)

**Greater Scaup, *Aythya marila* (L)**

**Diagnostics:** *Male:* Head, neck, breast, upper back, rump and upper tail-coverts black, the first two with green sheen. Back pale grey, tail blackish-brown. Flanks and abdomen white, posterior abdomen mixed with brown, vent and under tail-coverts dark brown or black. Iris golden-yellow. Bill with black tip. Legs and feet greyish-blue. *Female:* Resembles the female Tufted Pochard, dark brown with a broad white ring around base of bill, speculum white. *Male (in eclipse):* Like adult female, but with no white band round bill;

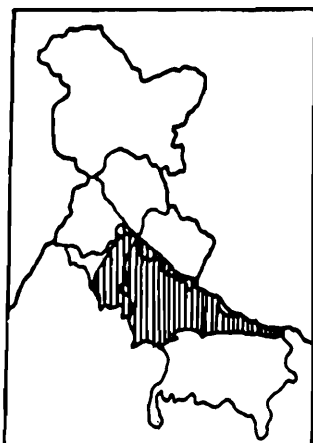


upperparts more vermiculated with white and white speculum more pronounced than in female. **Habitat:** Occurs in large freshwater lakes and rivers during winter. **Habits:** Gregarious in winter habitats. Feeds by diving, move around freely in open water. **Food:** Aquatic molluscs and invertebrates constitute major food, also plant seeds. **Status and Distribution:** Rare winter migrant generally from Kashmir to NW and E India, not south of 19°N, Bihar, West Bengal, Assam, Manipur, Maharashtra; Pakistan; Bangladesh. Breeds in Circumpolar region in far north of Palaearctic, winters in W coasts of Europe, eastern Mediterranean, Black Sea, Middle East and South Asia.

**74(114). Cotton Teal or Quacky-duck. *Nettapus coromandelianus coromandelianus* (Gmelin); Girja; Partridge =; 30-37cm; R/UnCom H/C (Fig.74)**

**Cotton Pygmy-Goose, *Nettapus coromandelianus* (L)**

**Diagnostics:** The smallest Indian duck. *Male:* Chiefly black and white with a prominent black collar round the lower neck. Head and neck white with blackish, green-glossed crown; bill black; iris crimson-red; back blackish-brown, completely overlaid with dark green gloss slightly mixed with purple, distinct white wing-bar prominent in flight; underparts white; tail brown; legs black. *Female:* Dull brown, a dark line through eyes, indistinct white wing-bar.



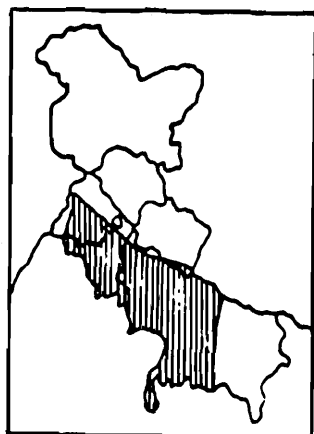
**Male (in eclipse):** Like female but darker above, distinct white wing-bar. **Habitat:** Village tanks, ponds, vegetation covered pools and channels. **Habits:** Usually in pairs during breeding season, otherwise small flocks up to 50 to 500 birds, sometimes perch on overhanging branches. Breeds during July-August in N India. **Food:** Chiefly vegetarian, comprising aquatic plants, arable crops, but also

crustaceans and insect larvae. **Status and Distribution:** Almost throughout India up to 300 m, though only locally common in peninsula; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. SE Asia.

**75(115). Nakta or Comb Duck.** *Sarkidiornis melanotos melanotos* (Pennant); *Nakta*; Domestic duck +; 56-76 cm; **R/LM/UnCom H/C** (Fig.75)

**Comb Duck.** *Sarkidiornis melanotos* (I)

**Diagnostics:** A large glossy blue-black and white duck. **Male:** Head and neck white, speckled with black, coalescing on crown, nape and hindneck; bill and comb (swollen fleshy knob) black; a black demicollar on each side of upper breast; another broad black band in front of under tail-coverts; remaining underparts white, upper back black glossed with green and blue, except scapulars, which are glossed with purple. Speculum bronze; lower back grey; tail dark brown; legs and feet plumbeous. Eclipse plumage absent.



**Female:** Smaller, duller and without comb on bill, demicollar on upper breast and black band near tail. **Juvenile:** Black upperparts less glossy than in female; lower back and rump dull greyish-white; upper tail-coverts and tail dull brown.

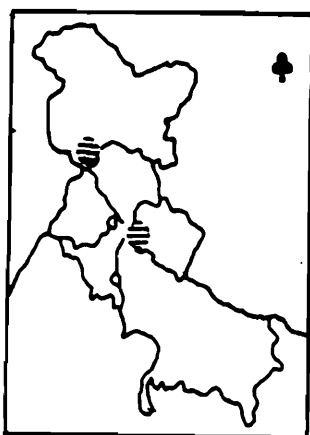
**Habitat:** Reedy tanks, jheels, irrigation tanks with plenty of aquatic vegetation, lowland pools in wooded areas. **Habits:** Usually occurs in small flocks of 5 to 30 birds, rarely up to

a hundred; feeds by grazing in marshes and wet grasslands, readily perches on trees. Breeds during SW monsoon in N India. **Food:** Chiefly vegetarian, aquatic plants, shoots, seeds, arable crops, also aquatic insects. **Status and Distribution:** Resident, nomadic but uncommon almost all over India; Pakistan; Nepal; Bangladesh; Sri Lanka. S Africa; Myanmar; SE China.

**76(117).Longtail Duck, or Old Squaw.** *Clangula hyemalis* (Linnaeus); Domestic duck-;36-47cm;**WM/Va C** (Fig.76)

#### **Long-tailed Duck (I)**

**Diagnostics:** *Male:* Chiefly a dark chocolate-brown and white duck with small head, short bill, and long pointed



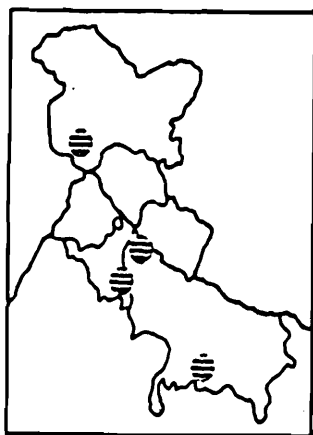
tail. Head, neck, upper breast, scapulars, flanks, and vent pure white; a patch on either side of neck behind ear-coverts, a broad band along spine on back, pointed central tail, and a collar descending from upper back widening below in to a broad pectoral band covering upper abdomen dark brown. In summer, head, neck and upper breast blackish-brown and back scalloped chestnut-buff. *Female:* In winter,

dark brown entirely on back, scalloped fulvous; white head with dusky crown, and dusky patches on either side of upper neck; brownish lower foreneck and upper breast, forming a diffuse pectoral band; remaining underparts white. In summer, upperparts duller than in winter, the scalloping less conspicuous. **Habitat:** Chiefly maritime, a very rare winter straggler on freshwater lakes, wheels and large rivers. **Habits:** Feeds by diving, remains under water for many seconds, while flying swings from side to side. **Food:** Carnivorous on molluscs and crustaceans. **Status and Distribution:** Very rare winter vagrant to India, Pakistan; Nepal. Circumpolar; breeds on Arctic coast of Europe in Iceland and Scandinavia, Arctic Asia, N America, winters S Britain along North Sea. **Remarks:** Only three records from Kashmir, Assam and Dehra Dun within Indian limits.

**77(118). Goldeneye Duck.** *Bucephala clangula clangula* (Linnaeus); Domestic duck -; 42-50 cm; **WM/UnCom C** (Fig.77)

**Common Goldeneye, *Bucephala clangula* (I)**

**Diagnostics:** *Male:* Breeding bird with a distinctive oval white cheek-patch at base of upper mandible. Head, nape, chin and throat black with metallic green gloss on the first two; upperparts black with elongated white markings on scapulars; neck and underparts white, except grey vent and thighs spotted with white. Iris golden-yellow; bill black; legs and feet yellow with black webs. *Female:* Head chocolate; neck with white collar round the base; back and tail grey. *Male (in eclipse):* Like female, but larger and brighter.

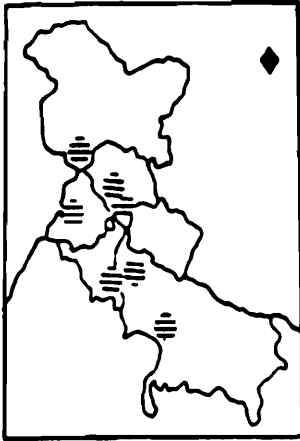


**Habitat:** Swift flowing rivers, freshwater lakes, avoids shallow water with extensive vegetation. **Habits:** A diving duck, feeds diurnally, occasionally dabbles. Occurs in small parties of 5-6 birds in winter. **Food:** Chiefly carnivorous on aquatic insects, molluscs and crustaceans. **Status and Distribution:** An uncommon winter migrant to Northern India from Kashmir to Assam, Bihar, Manipur; Pakistan; Nepal; Bangladesh. Circumpolar in northern Boreal forests; breeds from Scandinavia east across Europe and Asia, winters from Britain, Mediterranean, to S China and Japan.

**78(119). Smew.** *Mergus albellus* Linnaeus; *Nikenne*; Domestic duck -; 38-44 cm; **WM/Ra C** (Fig.78)

*Margellus albellus* (I)

**Diagnostics:** *Male:* Predominantly a white duck with black eye-patch having green reflections; a broad black band from behind eye to nape; short drooping nuchal crest; black back with two black streaks diverging from its anterior end down each side of white breast. Grey body sides and tail; white flanks, finely barred with black; pale grey on underside of tail; dark slaty bill; slaty-black legs, feet and webs. *Female:* Forehead, crown, nape and short nuchal crest chestnut-



red. Throat and sides of head white; back greyish-brown; breast and flanks grey, remaining underparts white. *Male* (in eclipse): Differs from female in larger white wing-bar; darker lesser wing-coverts; and two black crescent bands on sides of breast.

**Habitat:** Open jheels, freshwater lakes, and rivers as they descend from hills to plains.

**Habits:** Sociable, occurs in small flocks, only occasionally large groups, fast swimmer, and diurnal feeder by diving, swift flier. **Food:** Chiefly carnivorous, fish, molluscs, crustaceans, aquatic insects. **Status and Distribution:** Rare and sparse winter migrant to N and NW India, Assam, Bihar, West Bengal, Orissa, Gujarat; Pakistan; Nepal; Bangladesh. Breeds from N Scandinavia across N Palaearctic in boreal zone, winters on coasts and lakes of Britain, Mediterranean, Middle East to China and Japan.

**79(121). Eastern Merganser. *Mergus merganser orientalis*** Gould; Domestic duck =; 58-72 cm; **WM/Ra C** (Fig.79)

**Common Merganser, *Mergus merganser* (I)**

**Diagnostics:** Generally a black and white (male) or grey and white (female) duck with slender neck, narrow pointed



red bill and red legs. *Male*: Head, upper neck and long crest of narrow feathers black glossed with metallic green; upper back glossy black; lower back, rump and upper tail-coverts grey, vermiculated with white; extreme upper back, lower neck and underparts white with pronounced salmon-pink tinge on underparts; tail silvery-brown. *Female*: Chin and throat white; head, crest and neck chestnut and

cinnamon-brown; upperparts grey-brown, with blue blotches; speculum white; underparts white, flanks with grey stripes; legs and feet orange-red. *Male (in eclipse)*: Like female, but retains white wing-coverts. **Habitat:** Large rivers,

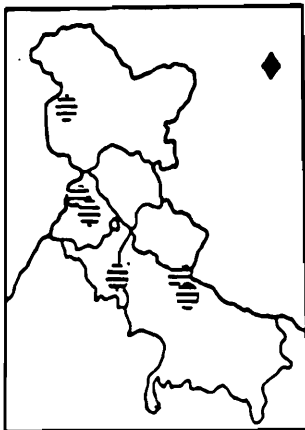


lakes, fast-flowing hill streams as they descend from hills into plains. **Habits:** Gregarious, usually occurs in small flocks, feeds by diving, diurnal, an expert swimmer and diver. Breeds in Ladakh, ducklings reported in June. **Food:** Carnivorous, almost exclusively on fish. **Status and Distribution:** Rare winter migrant to Northern India, common in eastern Himalayas, breeds at 3000-4000 m in NW Himalayas, Indus and Tankse rivers; Nepal. Principally breeds in C Asia, winters in Northern India, Myanmar and SE China. **Remarks:** Estimated population around 2000. Hunting and habitat loss are the primary threats.

**80(123). Whiteheaded Stifftailed Duck. *Oxyura leucocephala* (Scopoli); Domestic duck -; 43-48 cm; **GT WM/Ra H/C** (Fig. 80)**

**White-headed Duck (I)**

**Diagnostics:** A tubby duck with unique large bill and big stiff tail. Bill very high and much swollen at base, sinking abruptly and broadening towards tip. Tail composed of stiff, narrow and pointed feathers, appearing like a bunch of wires artificially stuck in, often carried upright when swimming. *Male:* Head of breeding male chiefly white except for a black patch on crown. A blackish ring round the neck just below the nape and upper throat. Back, scapulars, rump and sides of body chestnut-rufous, finely vermiculated and speckled black. Upper tail-coverts dark chestnut, finely pencilled with black. Tail blackish; wing grey; upper breast rusty-grey; underparts silvery-white mottled grey. Legs plumbeous-black. *Female:* Brown with pale cheeks divided by a conspicuous whitish line below eye from bill to nape; throat and sides of upper neck whitish; remaining plumage as in breeding male, somewhat greyer and paler, with fine barring. *Male (in eclipse):* Like female, but more richly tinted above. **Habitat:** Large freshwater lakes, brackish lagoons with extensive submerged aquatic vegetation. **Habits:** Keeps singly or in small flocks of 6-30



chestnut, finely pencilled with black. Tail blackish; wing grey; upper breast rusty-grey; underparts silvery-white mottled grey. Legs plumbeous-black. *Female:* Brown with pale cheeks divided by a conspicuous whitish line below eye from bill to nape; throat and sides of upper neck whitish; remaining plumage as in breeding male, somewhat greyer and paler, with fine barring. *Male (in eclipse):* Like female, but more richly tinted above. **Habitat:** Large freshwater lakes, brackish lagoons with extensive submerged aquatic vegetation. **Habits:** Keeps singly or in small flocks of 6-30

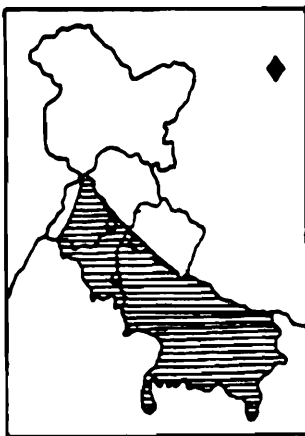
birds, a very reluctant flier, prefers to dive, feeds by diving. **Food:** Chiefly vegetarian, comprising aquatic plants, seeds, also molluscs, crustaceans, insect larvae. **Status and Distribution:** Globally threatened/Vulnerable. Rare winter migrant to NW India, Rajasthan, Gujarat, West Bengal; Pakistan. Breeds in Mediterranean, Black and Caspian Sea areas, C Asia, winters south of Egypt to S Asia. **Remarks:** Vagrant in most of its range, having become extinct as breeding species in many European countries, current Global population expected to be around 18,000 birds. Major threat has been attributed to extensive drainage and pollution.

### **Cranes** (Family GRUIDAE)

World: 15 species; Asia: 9; India: 6; N India: 5. Large elegant birds with long necks and long legs superficially resembling storks but with bill either equal or little longer than head. Nostril covered by a membrane on the posterior side and placed above halfway of the mandible. Wings broad, with eleven primaries. Inner secondaries much lengthened, drooping over tail. Tail short with twelve feathers. Tibiae partly bare; toes short, strong and unwebbed; hind toe raised (*contra* Storks). Flight powerful, in V-formation or in line with outstretched head, neck and legs. Calls powerful, trumpet-like. Young nidifugous.

**81(320). Eastern Common Crane.** *Grus grus lilfordi* Sharpe; Kurch; Goose  $\pm$ ; 110-120 cm; **WM/Ra H/C** (Fig. 81)

**Common Crane,** *Grus grus* (l)

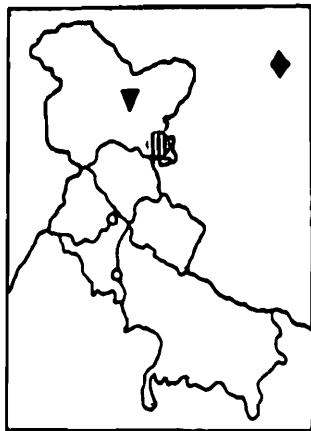


**Diagnostics:** *Adult:* Sexes alike. A tall grey bird with black flight-feathers, long neck, dull green bill, and black legs. Head and upper neck blackish with dull red naked patch across nape; a prominent broad white band runs from behind eye down on sides of upper neck; tail darker grey, concealed by a mass of long grey drooping tertiaries.

**Juvenile:** Grey with buff-edged feathers, crown and neck covered by rusty feathers, tertiaries shorter. **Habitat:** Sandy riverbeds, reservoirs and jheels, affects fields of winter crops. **Habits:** Highly gregarious, sometimes keeps in large flocks of hundreds massed together on open sandbanks of rivers during winters, often in company of Demoiselle Crane. Fly in wide V-formation. Start arriving in NW India by August/September and return by end of March. **Food:** Mainly vegetarian, arable crops, shoots, tubers, seeds, also insects and reptiles. **Status and Distribution:** Rare winter migrant, earlier abundant in NW India, now generally occurs in Gujarat, Madhya Pradesh; Pakistan; Nepal; Bhutan; Bangladesh. Breeds in N and C Asia, winters in China and N India.

**82(321). Blacknecked Crane.** *Grus nigricollis* Przevalski; Kutung; Sarus crane  $\pm$ ; 129 cm; **GT R/Ra H** (Fig. 82)

**Diagnostics:** Sexes alike, female slightly smaller. Like Common Crane, a tall grey bird with black wing tips, horny-green bill and black legs and feet. Head and neck black; entire crown and lores naked and dull red; a small white patch below and behind the eyes; tail black, concealed by drooping plumes. **Habitat:** Spends summer in high-altitude lakes in Trans-Himalayas, winter in wet fallows and marshes in Bhutan. **Habits:** Gregarious in winter, very sedentary in Apa Tari valley, where every winter a small flock of 20-40



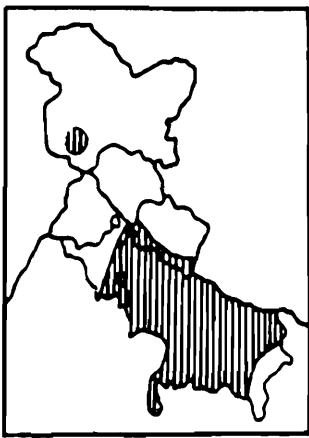
birds arrives by mid-November and departs by end of February; tame in habits since not disturbed by local Buddhist populace. **Food:** Seeds and grains. **Status and Distribution:** Globally threatened/Vulnerable. Breeds in Ladakh between 4000-5000 m from May to July in Tso Kar and Tso Moriri lakes, winter migrant to Bhutan and Arunachal Pradesh, recently attempted to breed in Sikkim. Mainly breeds in the high altitude lakes of C Asia, winters up to N Vietnam. **Remarks:** Of the 15 species of Cranes

world over, Blacknecked Crane is the most endangered. It is restricted only to high-altitude Trans-Himalayan lakes in India, and very few birds are known to survive. Hussain and De Roy (1993) record a few hundred birds from India, though in 1991-92 a global population of about 5500 birds was estimated. Gaur (1994) estimates a population of only about 500 birds worldwide, and only 10 breeding pairs are known from Ladakh. The Arunachal population seems to have been lost altogether. Scientists of the Zoological Survey of India, Solan (Himachal Pradesh) counted only about 14 birds from Hanle River marshes, Chushul marshes and Tso Moriri Lake in Ladakh from 1996 to '98. Serious threats to the species are due to habitat loss on account of agriculture.

**83(323). Indian Sarus Crane.** *Grus antigone antigone* (Linnaeus); Sarus; Vulture +; 156 cm; **NT R/LM/UnCom H/C** (Fig. 83)

**Crane.** *Grus antigone* (L)

**Diagnostics:** *Adult:* Sexes alike, female slightly smaller. The largest Indian Crane with naked red head and upper

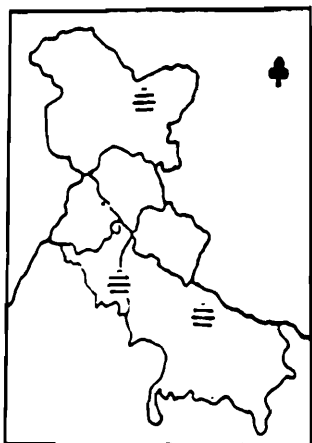


neck, grey plumage, greenish-horny bill, and red legs. *Juvenile:* Brownish-grey with rusty-brown on head and neck. **Habitat:** Affects open cultivated well-watered plains, marshland and jheels. **Habits:** Generally keeps in pairs or small flocks, though up to 70 recorded in a flock; very tame in central and western India where generally not disturbed. Sarus pair for life and the faithfulness and devotion of the couple is

legendary in India, resulting in the universal protection of the species in our country. Courtship display during breeding season is very elaborate; breeds from July to October in N India. **Food:** Mainly fish, crustaceans, insects, frogs, lizards, marsh vegetation. **Status and Distribution:** Resident, nomadic and uncommon in C and NW India (population distinctly declining), Gujarat, Rajasthan, Assam, north Andhra Pradesh; Pakistan; Nepal; Bangladesh.

**84(325). Siberian or Great White Crane.** *Grus leucogeranus* Pallas; *Chini kulang*; Common crane  $\pm$ ; 120-140 cm; **GT WM/VRa H** (Fig. 84)

**Diagnostics:** *Adult:* Sexes alike. A striking snow-white Crane with naked red face and forecrown; dark brown bill; reddish-pink legs and feet. *Juvenile:* Buff-brown-cinna mon, head covered with white feathers.



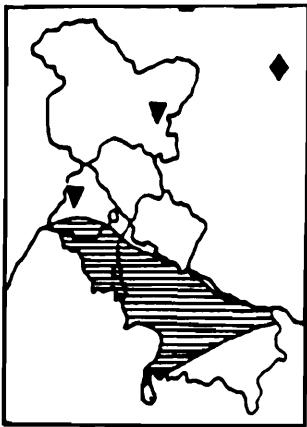
**Habitat:** Freshwater marshes with aquatic vegetable food in waters of wading depth. **Habits:** A winter migrant to Keoladeo Ghana National Park in very small numbers of 3 to 4 birds, though earlier larger flocks of up to 72 birds recorded from the same habitat. Feeds in family groups of parents and one or two young ones by

probing for aquatic plants while wading. **Food:** Chiefly vegetarian, comprising aquatic plant shoots, corns, seeds. At Bharatpur they are known to feed chiefly on the tuber of sedge (*Cyperus rotundus*). **Status and Distribution:** Globally threatened/Endangered. Very rare and restricted winter migrant presently recorded only from Keoladeo Ghana National Park (Bharatpur, Rajasthan). Formerly it was reported as uncommon and sparse but regular winter migrant to Northern India, straggling to Delhi, Prayagpur jheel (Uttar Pradesh) Bihar, and Maharashtra. Overflies Russia, Afghanistan and Pakistan en route to India. Breeds locally at Kunowat, Siberia, winters in China (eastern population of 2500-3000 birds), Iran (part of western population, 12 birds) and also in India. **Remarks:** The species has almost reached the brink of extinction in India in the last few decades. Approximately 200 birds were visiting Keoladeo in 1960s; however, their number has come down to as low as **two** in 1999. Since 1990 less than a dozen birds have been wintering at Keoladeo Ghana National Park (KGNP). This number has declined further, with only five cranes wintering in 1992-93, and only two in 1999-2000 and 2000-2001 (20<sup>th</sup> October 2000). Efforts have been made to reintroduce the species by establishing captive breeding

flocks at KGNP. The western population is on the verge of extinction. About 2000 birds exist in the eastern population, which winters in China. Loss of habitat and excessive poaching and hunting especially in Afghanistan during their 6000 km migratory journey, which takes about 45 days (twice a year), are major causes of the most alarming decline in its population.

**85(326) Demoiselle Crane.** *Anthropoides virgo* (Linnaeus); *Karkara*; Sarus crane-; 90-100 cm; **WM/Ra H** (Fig. 85)

**Diagnostics:** *Adult:* Sexes alike. A delicate grey crane of medium size with black head and neck, except for grey



forecrown and nape; prominent white ear-tufts behind eyes; black feathers of lower neck long, pointed and falling over breast; brownish-grey sickle-shaped secondaries drooping over tail; red-tipped greenish bill; black legs and feet. *Juvenile:* Like adult, but with grey head and much shorter drooping secondaries. **Habitat:** Large rivers with sandy beds, reservoirs, winter crop fields, flat open margins of jheels and tanks.

**Habits:** Very highly gregarious species; flocks of thousands visit the subcontinent. Feeds in early morning and late afternoon in winter arable crop fields, retires on sandbanks or edges of jheels at night. **Food:** Exclusively herbivorous; seeds of wheat, gram and paddy are favoured. **Status and Distribution:** Passage winter migrant to Gujarat, Rajasthan, northern Karnataka, eastern Uttar Pradesh, Orissa and Andhra Pradesh; Pakistan; Nepal; Bhutan; Bangladesh. Breeds across C Palearctic from Black Sea to N China, winters in NE Africa, Middle East and S Asia, though bulk of population is found in NC India (Rajasthan and Gujarat).

### **Rails and Coots** (Family RALLIDAE)

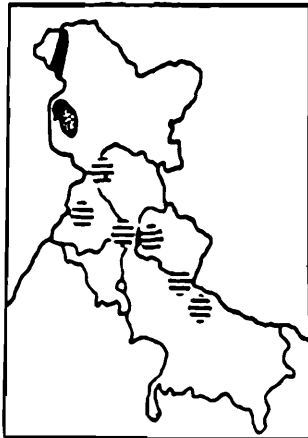
World: 124 species; Asia: 34; India: 16; N India: 14. Small

to medium-size crepuscular or diurnal birds with plump, laterally compressed body; short rounded wings; and short pointed tails. Plumage black or in soft shades of grey, brown, blue or green. Bill long and curved in Rails and short and stout in Moorhens and Coots. Tibiae partly bare. Legs long, toes very long in Rails and lobed in Coots. Walk, run and swim well but fly very poorly with legs dangling, although some species are long- distance migrants. Sexes similar in most species. Young nidifugous.

**86(327). Turkestan Water Rail.** *Rallus aquaticus korejewi* Zarudny; Grey partridge -; 23-28 cm; **R/WM/Com C/H**(Fig. 86)

**Water Rail, *Rallus aquaticus* (l)**

**Diagnostics:** *Adult:* Sexes alike. Medium- size bird with slender body, comparatively longer, fleshy-brown legs and long orange- red bill. Above, greyish olive-brown streaked with black. Below, chin and throat white; sides of head, neck and breast pale slaty- grey; flanks with black and white bars. *Juvenile:* With definite white bars on wing-coverts and reddish-edged feathers below. **Habitat:** Occurs in reedy marshes, jheels, inundated sugar fields. **Habits:** Normally occurs singly or in pairs in swampy reed beds, ventures out to feed

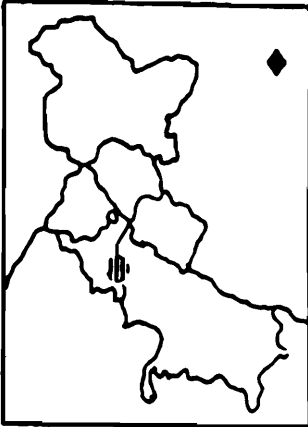


during early morning or dusk in cloudy and drizzly weather. Breeds from late May to early August in Kashmir valley. **Food:** Chiefly carnivorous, comprising snails, slugs, insects, but also marsh plants. **Status and Distribution:** Common in north-western and west-central India; straggles south up to Madhya Pradesh, breeds in Kashmir and Ladakh up to 1500 m; Pakistan; Nepal; Bangladesh; Sri Lanka. Breeds in W and C Asia, winters in NW India and E China.

**87(329). Indian Bluebreasted Banded Rail.** *Rallus striatus albiiventer* Swainson; Grey partridge-; 27cm; **R/UnCom O** (Fig. 87)

**Slaty-breasted Rail, *Gallirallus striatus* (I)**

**Diagnostics:** *Male:* Crown to hind neck chestnut; upper parts dark brown with narrow white bars broken into spots



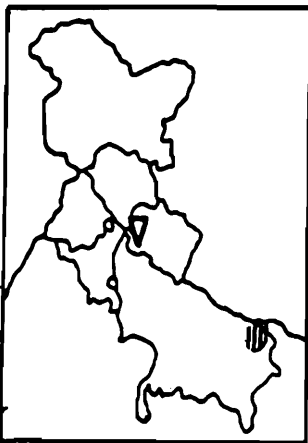
on lower back and primaries; chin and throat white; sides of head, foreneck and breast ashy-blue; abdomen, flanks and under tail-coverts dark brown with conspicuous white bars. Bill and eyes red; legs olive-grey. *Female:* Duller above and whitish on belly. *Juvenile:* Crown and neck rufous-brown streaked with dark brown; feathers of back streaked with dark brown, the white bars and spots absent. **Habitat:**

Reedy swamps and mangroves, margin of village tanks, inundated paddy fields. **Habits:** Usually solitary or in pairs, more common and frequent than known, skulkers. Breeds from mid- June to September all over its range. **Food:** omnivorous, marsh plant shoots, seeds, molluscs and crustaceans. **Status and Distribution:** Resident, uncommon but widespread from plains up to 1300 m in India; Nepal; Bangladesh; Sri Lanka.

**88(332). Indian or Slatylegged Banded Crake. *Rallina eurizonoides amauroptera* (Jerdon); Quail/Partridge; 25 cm; R/LM/UnCom O (Fig. 88)**

**Slaty-legged Crake, *Rallina eurizonoides* (I)**

**Diagnostics:** *Adult:* Sexes alike. Head, neck and breast chestnut; remaining upper parts rufous brown; bill green,



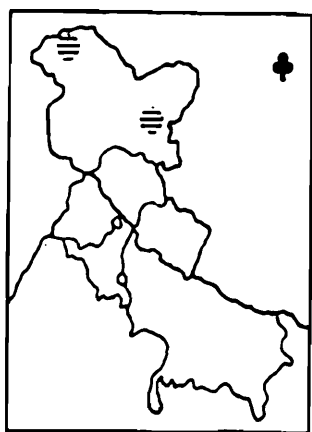
terminal half of upper mandible and tip of lower dark brown; chin and throat white; underparts with striking black and white bands; legs slaty. *Juvenile:* Uniformly olive-brown above; more ashy-brown on sides of head and neck; a few white and black bars on scapulars and wing-coverts. **Habitat:** Occurs in a variety of forest habitats from plains up to 1600 m, marshes. **Habits:** Shy and wary, hides in thick cover, partly



nocturnal, when flushed flies into trees. Breeds from June to September. **Food:** Omnivorous, marsh plant shoots, seeds, molluscs, worms. **Status and Distribution:** Resident, local migrant, uncommon but widespread in well-wooded and well-watered tracts throughout India up to 1600 m in Himalayas; Nepal; Sri Lanka; Myanmar; SE Asia.

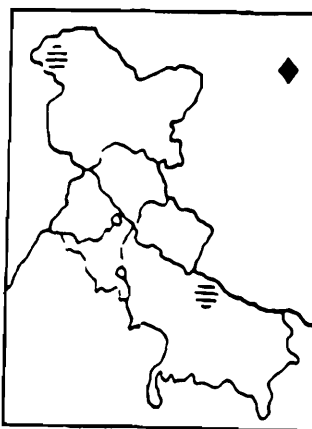
**89(334). Corncrake or Landrail.** *Crex crex* (Linnaeus); Grey Partridge -; 25-30 cm; **GT WM/Va** (Fig. 89)

**Diagnostics:** Sexes alike. A quail-like Crake with grey-blue supercilium, yellowish-buff or yellowish-ashy upperparts, feathers boldly streaked dark brown; whitish chin and throat; pale ashy-grey breast; broadly barred reddish-brown flanks and under tail-coverts. **Habitat:** like other rails, but chiefly grasslands and standing crops. **Habits:** Crepuscular. **Food:** Mainly carnivorous (insects, snails and worms), also seeds and other vegetable matter. **Status and Distribution:** Globally threatened/ Vulnerable. Winter migrant, vagrant in India, Pakistan and Sri Lanka.



Breeds in N Eurasia up to Arctic Circle, winters chiefly in N and E Africa. There has been a steep decline in its population Globally, and about 50% population has been lost in the last twenty years or so owing to habitat loss, in addition to mass trapping of the species in Egypt {4600 birds were caught during autumn of 1991 (Collar *et al.*, 1994)}.

**90(335, 336). Little Crake.** *Porzana parva* (Scopoli); Grey Quail ±; 20-23 cm; **WM/Ra C** (Fig. 90)



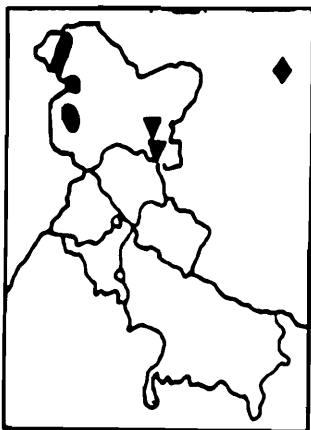
**Diagnostics:** Sexually dimorphic. **Male:** sides of head, neck and supercilium dark ashy-grey; crown and nape dark brown; remaining upperparts olive-brown; upper back, scapulars and innermost secondaries broadly streaked with black; chin, throat and rest of underparts dark ashy-grey barred with white posteriorly. **Female:** head pale grey and underparts browner than

male. **Habitat:** Reed covers in and around marshes. **Habits:** mainly crepuscular. **Food:** Carnivorous, mainly water insects. **Status and Distribution:** Winter migrant, rare in India and Pakistan, and vagrant in Bangladesh. Breeds in E and S Europe, SW Asia and NW Africa, winters in Mediterranean and Middle East countries.

**91(337). Eastern Baillon's Crake. *Porzana pusilla pusilla*** (Pallas); Grey quail  $\pm$ ; 17-19 cm; **WM/R/Ra H/C** (Fig. 90)

**Baillon's Crake. *Porzana pusilla* (l)**

**Diagnostics:** *Adult:* Sexes alike. Bill horny-green; a brownish streak through eye over ear-coverts to sides of neck; supercilium, sides of head and neck, breast and anterior abdomen grey; remaining upper plumage rufous-brown broadly streaked dark brown; scapulars, back, rump and upper tail-coverts with narrow white paint-like smears. Posterior abdomen vent and under tail-coverts barred brown and white. Legs and feet yellowish-green. *Juvenile:* Like adult but paler above; brown eye-streak broader; almost white below; sides of neck, breast and flanks suffused ruddy brown. **Habitat:** Occurs in reedy marshes, jheels, edges of lakes, pools with emergent vegetation, irrigated crops, paddy fields. **Habits:** Generally keeps singly or in pairs, great skulker, hides in reeds, chiefly crepuscular. Breeds from May to August in Northern India. A passage migrant recorded in N India in September-October and March-April.

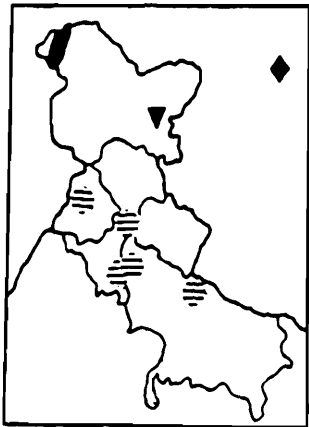


**Food:** Chiefly vegetarian, seeds of aquatic plants, occasionally molluscs, insects. **Status and Distribution:** Common in Kashmir during summers, where breeds up to 1800 m; Pakistan; Nepal; Bangladesh; Sri Lanka. Breeds in C and E Asia from the river Ob to Japan, winters in India and SE Asia.

**92(338). Spotted Crake. *Porzana porzana* (Linnaeus);**

Grey quail +; 22-24 cm; **WM/Ra C** (Fig. 92)

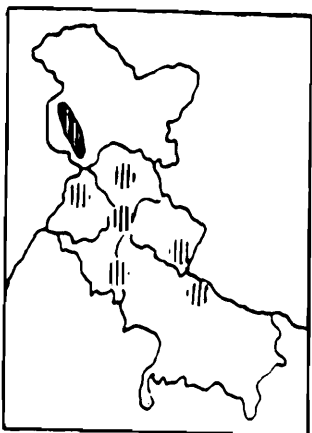
**Diagnostics:** *Adult:* Sexes alike. Bill yellow with orange base, dark green tip and culmen; supercilium, sides of head and neck grey, spotted white; remaining upper parts rufescent olive-brown broadly black streaked; black hind neck and upper back white-spotted; scapulars, lower back, rump, upper tail-coverts and inner secondaries narrowly white-streaked. Chin and throat white; breast grey, white-speckled; vent and under tail-coverts buff; flanks grey-brown with white bars. Legs and feet bright olive-green. *Juvenile:* More



brown below and with more extensive white on chin and throat. **Habitat:** Occurs in reedy jheels, marshes around reservoirs and canals, swamps. **Habits:** Typical Crake-like, crepuscular, occurs singly or in pairs, skulker, prefers reed beds. Arrives in N India by September-October and departs by March and April. **Food:** Primarily aquatic insects, molluscs. **Status and Distribution:** Rare winter migrant, mainly to NW India; Pakistan; Nepal. Breeds in Britain, Europe and W Asia and probably also in NW Kashmir, winters in N India; S and E Africa.

**93(339). Northern Ruddy Crake.** *Amaurornis fuscus bakeri* (Hartert); Grey quail +; 22 cm; **R/LM/UnCom C/H** (Fig. 93)

**Ruddy-breasted Crake, *Porzana fusca* (L)**



**Diagnostics:** *Adult:* Sexes alike. Upperparts dark olive-brown; chin and throat white; forehead, crown, sides of face, neck and breast chestnut; under tail-coverts blackish with white fringes. Legs and feet brick red. *Juvenile:* Darker above; sides of head, neck and lower plumage barred brown and white. **Habitat:** Occurs in swamps, edges of flooded fields, reedy canal banks, marshes. **Habits:** Shy, wary

and extreme skulker; on being disturbed immediately slips into herbage. Breeds abundantly during June, July and August in Kashmir. **Food:** Chiefly insectivorous (aquatic insect larvae, molluscs), also shoots and seeds of marsh plants. **Status and Distribution:** Resident in Kashmir, local migrant to NW India, found up to 1800 m in Himalayas; Pakistan; Nepal; Bhutan; Bangladesh, Sri Lanka. Myanmar; Thailand.

**94(342). Brown Crane.** *Amaurornis akool akool* (Sykes); Grey partridge -; 28 cm; **R/LM/UnCom C/H** (Fig.94)

*Amaurornis akool* (I)

**Diagnostics:** *Adult:* Sexes alike, female slightly smaller. upperparts dark olive- brown; indistinct supercilia; sides of head and neck ashy-grey. Chin and throat white; breast and upper abdomen ashy-grey; remaining underparts and flanks brown. Legs and feet fleshy brown. **Habitat:** Affects swampy reedy beds, water bodies with emergent vegetation, irrigation channels. **Habits:** Shy and secretive, crepuscular, emerges cautiously to feed at edges in early morning and evening. Breeds from May to August in N India.



**Food:** Chiefly insectivorous (aquatic insects, larvae, molluscs, worms), also marsh plants. **Status and Distribution:** resident species though it undertakes local movements; uncommon in north, west and central India up to 800 m; Pakistan; Nepal.

**95(343). Chinese Whitebreasted Waterhen.** *Amaurornis phoenicurus chinensis* (Boddaert); *Dawak*; Grey partridge ±; 32 cm; **R/Com O** (Fig. 95)

**White-breasted Waterhen,** *Amaurornis phoenicurus* (I)

**Diagnostics:** *Adult:* Sexes alike. A familiar dark slaty-grey and silky-white rail. Bill greenish-yellow, base of upper mandible red. Forehead, supercilia and sides of head pure white; upperparts dark slaty-grey; under parts silky-white,



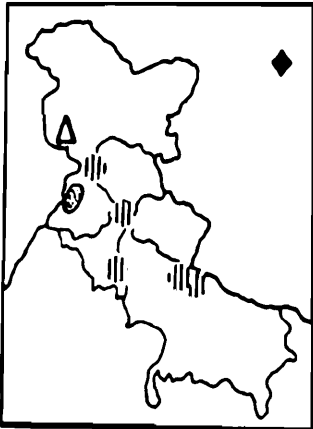
except rufous vent and under tail-coverts; suede of breast and flanks slaty-grey. Legs and feet yellowish-green. *Juvenile*: More olive-brown above with white facial mask obscured by slaty-tipped feathers. **Habitat**: Occurs in reedy marshes, edges of submersed fields, monsoon ponds, roadside ditches, village tanks, reservoirs. **Habits**: Most common rail, less shy and secretive, often seen in villages and parks within the

city limits. Breeds from June-July to October in N India. **Food**: Almost omnivorous, including insects, molluscs, worms and plant shoots and seeds. **Status and Distribution**: Commonly found up to 1500 m in N India, widely distributed all over India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. SE Asia.

**96(346). Kora or Watercock. *Gallinago cinerea cinerea*** (Gmelin); *Kora*; Grey partridge +; 43 cm; **R/Ra H/C** (Fig. 96)

*Gallinago cinerea* (L)

**Diagnostics**: *Adult*: Sexes alike in non-breeding plumage, female considerably smaller. Dark brown above and pale buffy brown with fine wavy darker bars below; bill horny-yellow; legs and feet dull greenish-brown. The breeding male black with grey scaly markings above; red fleshy frontal shield projecting above crown; bright red eyes and legs; buff-white under tail-coverts. *Juvenile*: Like female but less barred below. **Habitat**: Affects reedy swamps, low-lying waterlogged paddy and other fields, ditches, ponds, channels with



emergent vegetation. **Habits**: Crepuscular, feeds early morning or late evening, but also in overcast weather. Male belligerent during breeding season, which extends from June to September in N India. **Food**: Chiefly vegetarian, comprising arable crops, wild rice, but also aquatic insects, molluscs. **Status and Distribution**: Resident and widespread species

in well-watered areas, generally common in NE India; disperses widely in SW monsoon; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. SE Asia.

**97(347). Indian Moorhen.** *Gallinula chloropus indica* Blyth; *Jal murghi*, Tech; Grey partridge  $\pm$ ; 32-35 cm; **R/Com** O (Fig. 97)

**Common Moorhen.** *Gallinula chloropus* (L)

**Diagnostics:** *Adult:* Sexes alike. Head and neck dark grey; remaining upperparts dark brown, closed wings with white edges; underparts slaty-grey; under tail-coverts conspicuously white with a black central patch; iris, frontal shield and base of bill red; terminal third of bill greenish-yellow; legs and feet green with an orange ring around base of tibia.



*Juvenile:* More brown, less grey above; much mixed with white below; bill and frontal shield greenish-brown. **Habitat:**

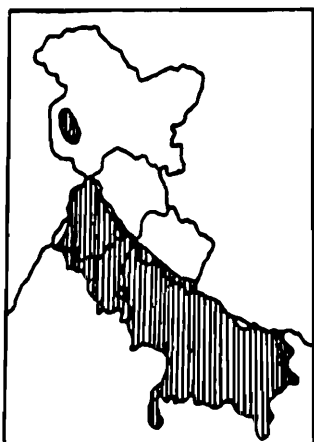
Occurs in jheels and swamps, marshes, lakes, ponds, village tanks and ditches with emergent vegetation. Shifts locally with water conditions. **Habits:** Singly, in pairs or in small flocks up to 50 or more in winter; spends most of its time foraging in open water with floating vegetation; also feeds onshore. Breeds up to 2400 m in N India from May to August.

**Food:** Omnivorous, aquatic plants, molluscs, insects, small fish and frogs. **Status and Distribution:** Resident and common in Northern India, migrant in some areas, widely distributed all over India; Pakistan; Nepal; Bangladesh; Sri Lanka. SE Asia.

**98(349). Indian Purple Moorhen.** *Porphyrio porphyrio poliocephalus* (Latham); *Khima*, Wan tech; Hen  $\pm$ ; 45-50 cm; **R/LM/UnCom** H/C (Fig. 98)

**Purple Swamphen.** *Porphyrio porphyrio* (L)

**Diagnostics:** *Adult:* Sexes alike, but the baldred forehead (Casque) smaller than in female. A purplish-blue rail with

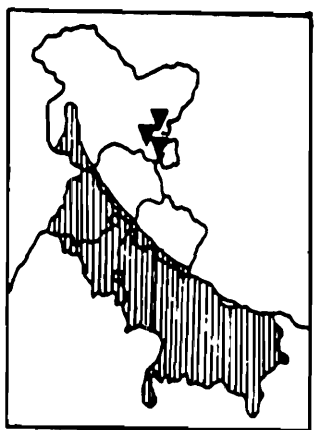


red bill, fore head and legs. Upperparts generally purple-blue; tail black with green reflections; scapulars and wings greenish-blue; chin, throat and foreneck cobalt-blue; breast greenish- blue; abdomen and flanks purple; vent blackish-brown; under tail-coverts white. *Juvenile*: Paler, with black bill and Basque; orange-brown legs and feet. **Habitat**: Occurs in large marshes and reed beds around jheels, rivers and swamps. **Habits**: Diurnal species, occurs in flocks of 5-10, though bigger groups up to 50 may be found. Climbs among reeds for feeding. Breeds during SW monsoon, from June to September in N India. **Food**: Chiefly vegetarian (seeds and grains), also molluscs and insects. **Status and Distribution**: Resident throughout India up to 1500 m, except in NW and NE Himalayas, rare in Kashmir, uncommon elsewhere; Nepal; Pakistan; Bangladesh; Sri Lanka.

**99(350). Coot.** *Fulica atra atra*. Linnaeus *Dasari, Kolur, Duck* -; 36-38 cm; **WM/R/VCom H/C** (Fig. 99)

**Common Coot, *Fulica atra* (I)**

**Diagnostics: Adult**: Sexes alike. A slaty-black waterbird with stout pointed ivory-white bill, white frontal shield and green legs. Head, neck and throat black; upper plumage slaty-black with steel-blue sheen; under plumage slaty-grey with dark vent and undertail-coverts. *Juvenile*: Greenish-brown above and mottled white underneath. **Habitat**: Large jheels, lakes, reservoirs and irrigation tanks with deep water and marginal emergent vegetation. **Habits**: Gregarious, gathers in very large flocks during winter, diurnal, forages on aquatic vegetation in open waters, spends major part of day



amidst floating vegetation. Breeds from May to September in N India. **Food:** Chiefly vegetarian (shoots, seeds of aquatic plants), but also molluscs, worms and insects. **Status and Distribution :** Widely distributed all over India, resident in Himalayas up to 2500 m, winter migrant elsewhere; Pakistan; Nepal; Bangladesh; Sri Lanka. Breeds across the Palaearctic, southwards into Oriental and Australian regions, winters south to Middle East, India and SE Asia.

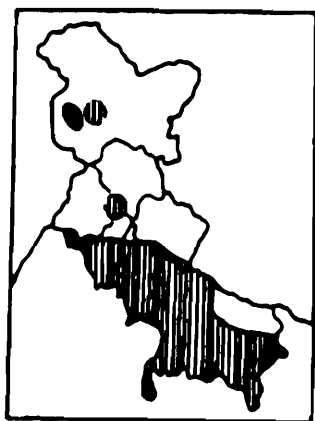
### **Jacanas**

(Family : JACANIDAE)

World: 8 species; Asia: 3; India: 2; N India: 2. Wading birds with enormously elongated toes and claws; wing spur short and wings rounded; tail short, except in *Hydrophasianus*. Associated with floating vegetation. Flight feeble and short, with large feet dangling behind. Sexes alike, but female larger and polyandrous. Young nidifugous and downy.

**100(358). Pheasant-tailed Jacana. *Hydrophasianus chirurgus* (Scpoli); *Piho*, *Gund kav*; Grey partridge =; 39-58 cm; **SR/LM/UnCom H/C** (Fig. 100)**

**Diagnostics:** *Adult:* Sexes alike, female slightly larger. *Breeding:* Head, face, throat and foreneck white; hind neck pale silky golden-yellow, edged with black line; upper and lower plumage chocolate-brown; rump, upper tail-coverts and tail black; wing-coverts white; tail long, pointed and sickle-shaped (Pheasant-like); legs and feet pale bluish with long spidery toes. *Non-breeding:* Chiefly dull brown and white with a black "necklace" on upper breast, and without the long tail. *Juvenile:* Yellow on neck absent; black necklace broken up with

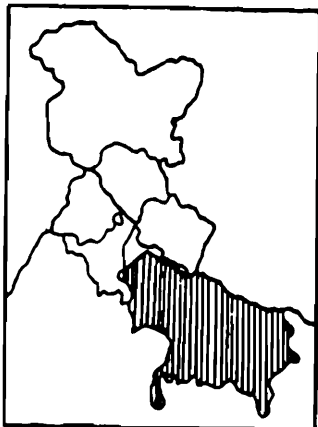




white; and crown dull rufous-brown. **Habitat:** Occurs in lotus and water hyacinth covered jheels, reservoirs, lakes, pools and village tanks. **Habits:** Gregarious in winters, when flocks of 50 to 100 birds occur, feeds in open amidst the floating vegetation on which the bird trips about easily. Breeds from May to July in Kashmir and up to September in N India. **Food:** Chiefly vegetarian (aquatic plants, shoots, seeds), also molluscs, aquatic insects. **Status and Distribution:** Widely distributed all over India, mainly summer visitor up to 1500 m in Himalayas for breeding, winter migrant to plains of Indian peninsula; Pakistan; Nepal; Bangladesh; Sri Lanka. SE Asia.

**101(359). Bronzewinged Jacana. *Metopidius indicus*** (Latham); Grey partridge  $\pm$ ; 28-31 cm; **R/UnCom H/C** (Fig. 101)

**Diagnostics:** *Adult:* Sexes alike, female slightly larger. Bill greenish-yellow, tinged with red at base; frontal shield bluish-red; a broad superciliary streak from eye to nape pure white; rest of head, neck and lower parts black with deep green sheen; back and wings metallic greenish-bronze; tail and under tail-coverts chestnut; vent and thigh-coverts dull brownish-black; legs and feet dull green. *Juvenile:* With short dull white supercilium, rufous-brown crown, terminal black band on rufous tail, and whitish underbody.



**Habitat:** Occurs in vegetation covered jheels, lakes, reservoirs, pools and village tanks. **Habits:** Similar to Pheasant-tailed Jacana and generally found together; when disturbed partially submerge, on being constantly disturbed takes refuges in standing vegetation on dry land. Resident breeds from June to September in N India. **Food:** Mainly vegetarian (seeds, shoots) also aquatic insects, molluscs. **Status and Distribution:** Widely and commonly distributed in western and southern India, mainly from Uttar Pradesh and Gujarat; Pakistan; Nepal; Bangladesh. SE Asia.

## Oystercatchers

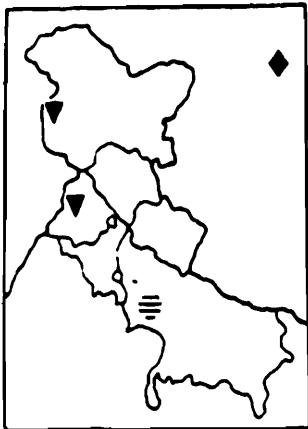
### (Family HAEMATOPODIDAE)

World: 11 species; Asia: 2; India: 1, N India: 1: Sexes alike, but female with longer and thinner bill. Frequents seashores. Feeds chiefly bivalve molluscs. Bill long and compressed, slightly tuncated at tip. Wings long and pointed, first primary longest. Tarsus short, stout and reticulated throughout. Hindtoe absent; anterior toes short, stout and edged laterally with a narrow membrane and slightly webbed, especially between 3<sup>rd</sup> and 4<sup>th</sup> toes.

**102(360) Oystercatcher or Sea-Pie.** *Haematopus ostralegus ostralegus* Linnaeus; *Darya gajpaon*; Grey Partridge +; 42-46 cm; **WM/Ra.C** (Fig. 102)

**Eurasian Oystercatcher, *Haematopus ostralegus* (l)**

**Diagnostics:** Sexes alike. A striking black and white bird with stout red legs; long straight orange-red snipe-like bill, blunt at tip. *Non-breeding* (first winter): white collar present foreneck. In flight can be distinguished by broad white band across the black wings. **Habitat:** Chiefly a coastal bird, affects sandy and rocky seashores, rare inland on shingle beds of large rivers. **Habits:** Occurs in small flocks, a passage migrant inland. **Food:** Carnivorous, mainly marine molluscs, annelids and crustaceans. **Status and Distribution:** Winter migrant chiefly to seacoasts and offshore islands, rare vagrant inland. Breeds on European coasts, winters mainly in Africa.



## Lapwings, Plovers, Sandpipers, Stints and Snipes

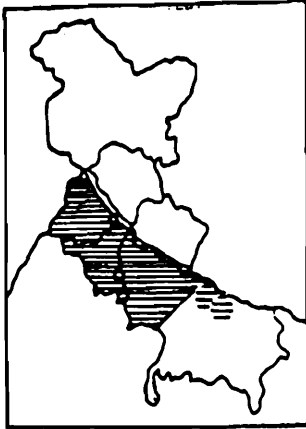
### (Family : CHARADRIIDAE)

World: 152 species; Asia: 82; India: 55; N India: 49: Small to medium-size waders. Bill short, pigeon-like to long, slender and straight or downcurved. Wings long and pointed. Legs short to long, with tibiae partly bare in many species. Flight

strong, swift and well sustained. Sexes may be nearly alike, or female may be much smaller and/or duller.

**103(362). Whitetailed Lapwing.** *Vanellus leucurus* (Liechtenstein); Grey partridge  $\pm$ ; 26-29 cm; **WM/UnCom C** (Fig. 103)

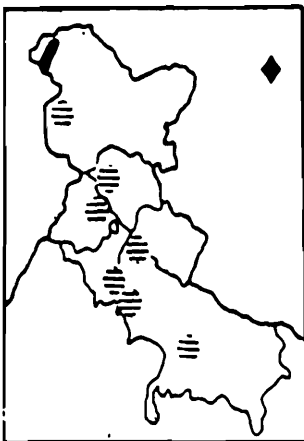
**Diagnostics:** *Adult:* Sexes alike. A light brown and white plover with black bill and long prominent yellow legs.



Forehead and indistinct supercilia greyish-white; upper plumage light brown, except white rump and tail. Chin, throat and foreneck ashy-grey; breast dark grey; abdomen and under tail-coverts rosy-white. The white rump and tail, and contrasting black primaries and white patch on secondaries are diagnostics in flight. *Juvenile:* Darker above and sullied white below. **Habitat:** Freshwater marshes

and marshy grassy edges of large jheels. **Habits:** Gregarious, occurs in large flocks when migrating, otherwise in smaller groups of up to 25 birds, feeds in shallow water also on land. Visits N India from September to March. **Food:** Carnivorous comprising aquatic insects, crustaceans, molluscs. **Status and Distribution:** Locally common winter migrant to N, NW and C India; Pakistan; Nepal; Bangladesh. Breeds in Iraq.

**104(363). Sociable Lapwing.** *Vanellus gregarius* (Pallas); Grey partridge  $\pm$ ; 27-30 cm; **GT WM/Ra H** (Fig. 104)



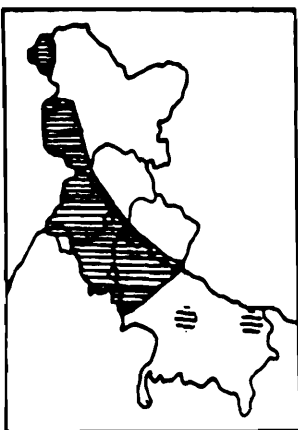
**Diagnostics:** *Adult:* Sexes alike. *Non-Breeding* (winter): Crown and eye-stripe brown, forehead buffy-white, supercilia white; remaining upperparts ashy-grey; wings black with large white patch (secondaries); lower back white; tail white with a black subterminal band. Chin and throat white; breast mottled brown and grey; remaining underparts smoky-white.

Bill, legs and feet black. **Breeding** (summer): Crown and eye-stripe black; forehead and supercilia pure white; throat and upper breast ashy-grey; lower breast black and chestnut; abdomen and vent white. The black subterminal tail band and large white patch in black flight feathers are diagnostic clues in flight. **Habitat**: Occurs in fallow, wastelands, stubble, occasionally grassy margins of lakes and rivers. **Habits**: Generally keeps in small flocks of 5 or 6, before spring migration the size of flocks increases to 20-100; feeds generally during night, early morning or evening. Arrives by September-October and departs by March-April in N India. **Food**: Insectivorous (grasshoppers, crickets). **Status and Distribution**: Globally threatened/Vulnerable. Rare winter migrant to N and NW India, though common earlier; Pakistan; Bangladesh; Sri Lanka; Maldives. Breeds in C and N Asia, winters in NE Africa to Sudan and N India. A global population of only about 10,000 birds survives and there has been a rapid decline in its range due to agriculture.

**105(364). Peewit, Lapwing or Green Plover.** *Vanellus vanellus* (Linnaeus); Grey partridge =; 28-31 cm; **WM/UnCom C** (Fig. 105)

**Northern Lapwing (I)**

**Diagnostics:** *Adult*: Sexes alike, female's crest smaller.

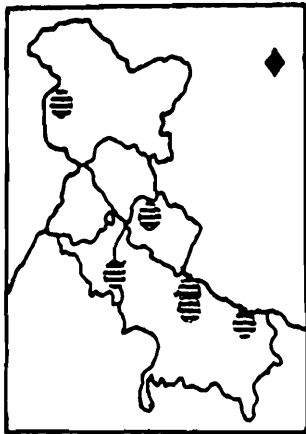


*Non-Breeding* (winter): Crown brown; face, chin, throat and foreneck white, speckled with brown or black; scapulars, innermost secondaries and black breast-feathers fulvous scalloped; remaining underparts as in breeding bird. *Breeding* (summer): Long upstanding pointed crest, crown and chin to breast black; remaining underparts white; sides of head and neck white with black markings; back, rump, scapulars and

innermost secondaries glossy bronze-green; scapulars marked with violet-purple; upper and under tail-coverts cinnamon, former with a broad black subapical band.

**Juvenile:** Brown above, each feather fulvous edged; back slightly glossed with purple-bronze and wings with green; under- parts like non-breeding adult. **Habitat:** Affects fallows, reaped and irrigated fields, riverbanks with pebbles, lake margins and marshlands. **Habits:** Generally found in pairs or small groups, though congregates in large flocks before migration, forage on wet meadows. Occurs from September-October to March-April in N India. **Food:** Carnivorous (molluscs, insects and worms). **Status and Distribution:** Uncommon winter migrant to N and NW, rare in NE India; Assam, Manipur, Arunachal Pradesh; Pakistan; Nepal; Bhutan; Bangladesh. S China and Japan. Breeds in Europe and N Asia east to Siberia, winters in S Europe, N Africa, SW Asia and N India.

**106(365). Greyheaded Lapwing. *Vanellus cinereus*** (Blyth); Grey partridge +; 34-37 cm; **NT WM/Ra C Fig.106)**



**Diagnostics:** *Adult:* Sexes alike.

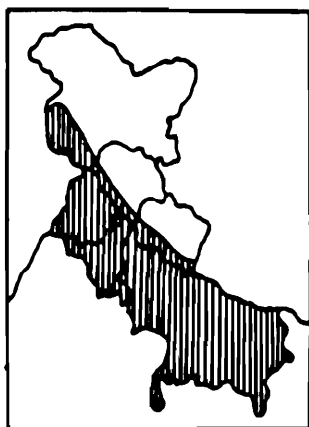
Comparatively a larger Plover with red iris; yellow eyelids and lappets; yellow bill, the terminal third black; and yellow legs. Head and neck grey; back light brown; rump, upper tail-coverts and tail white, the last with a broad black subterminal band; primaries black; secondaries white; neck and breast ashy- grey bordered by a chocolate-and-black pectoral band;

remaining underparts white. *Juvenile:* Light brown and without dark pectoral band. **Habitat:** Occurs in marshes, wheels edges, riverbanks, grazing fields, ploughs and stubble. **Habits:** Gregarious, flocks up to 50 birds, commonly associated with Redwattled Lapwing. Arrives in Northern India by September-October and departs by March end or April. **Food:** Carnivorous (insects, worms, molluscs). **Status and Distribution:** A common winter migrant to NE India, rare elsewhere; Nepal; Bangladesh. Breeds in C Asia, China, Korea and Japan, winters in S and SE Asia.

**107(366). Redwattled Lapwing.** *Vanellus indicus indicus* (Boddaert); *Titeeri*; Grey partridge +; 32-35 cm; **R/AM/Com C** (Fig. 107)

*Vanellus indicus* (I)

**Diagnostics:** *Adult:* Sexes alike. A familiar plover with black tipped red bill, crimson-red wattle and eyelids, and bright yellow legs. Head, neck and breast jet-black; upper- parts bronze-brown; under parts white continuing to broad bands up the neck-sides towards eyes; rump, upper tail-coverts and tail white, the last with a broad sub-terminal black band; primaries and outer secondaries black, the latter with broad white bases. *Juvenile:* Black feathers of head broadly fringed with brown; chin, throat and fore-

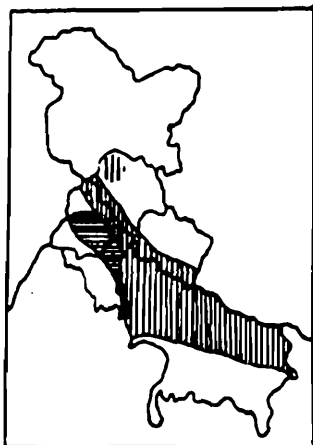


neck white; sides of neck sullied white. **Habitat:** Found at jheels, tanks, ditches, puddles, open cultivation, countryside and open grounds near water. **Habits:** Generally crepuscular and nocturnal, feeds actively in morning, evening or moonlit nights, keeps in pair or threes or small flocks up to a dozen birds. Breeds from March to August-September in N India, nests on ground in natural depressions, sometimes also at unusual places like rooftops. **Food:** Carnivorous (molluscs, insects), rarely vegetable matter. **Status and Distribution:** A common and widespread resident species all over India; undertakes altitudinal migration in spring and autumn up to 1800 m; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. N Africa and Middle East.

**108(369). Spurwinged Lapwing.** *Vanellus spinosus duvaucelii* (Lesson); Grey partridge =; 29-32 cm; **R/LM/UnCom C** (Fig. 108)

**River Lapwing.** *Vanellus duvaucelii* (I)

**Diagnostics:** *Adult:* Sexes alike. Bill, head and occipital crest drooping over back black; upperparts sandy grey-brown; upper tail-coverts and tail white, the latter with its terminal half black; central secondaries white; chin, cheek,

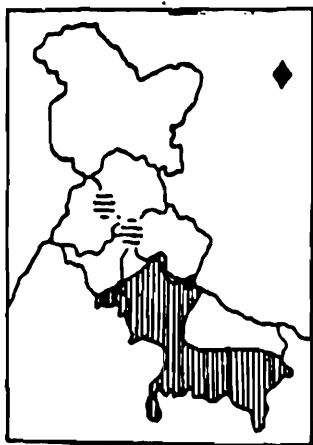


throat and a patch on abdomen black bordered with white; upper breast vinous-grey; remaining under- parts white. Legs and feet reddish-black. *Juvenile*: Undescribed. **Habitat**: At sandbanks, pebble beds and islands of rivers, jheels, tanks, reservoirs, ditches and puddles. **Habits**: Generally solitary or in pairs, rarely in flocks not larger than 3 to 6 birds, in general similar in behaviour to Redwattled

Lapwing. Breeds from March to June in N India. **Food**: carnivorous (molluscs, crustaceans, insects). **Status and Distribution**: A locally common resident species in N India and foothills of the NE, show seasonal nomadic movements; Nepal; Bhutan; Bangladesh. SE Asia.

**109(370). Yellow-wattled Lapwing.** *Vanellus malabaricus* (Boddaert); *Zirdi*; Grey partridge -; 26-28 cm; **R/LM/Ra C** (Fig. 109)

**Diagnostics**: *Adult*: Sexes alike. Bill black with yellow base and gape; wattle right yellow. Crown (skullcap) silky black, surrounded by a thin white line; upperparts sandy brown. Tail white with a broad black sub terminal band; chin and throat black; breast sandy brown; remaining underparts white separated from breast by a thin black line; primaries black; outer secondaries white with a black tip; legs and feet bright yellow. *Juvenile*: Pale sandy brown above and whitish below with traces of brown on throat and upper

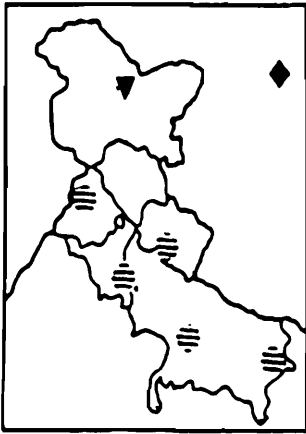


breast. **Habitat**: Fallows, dry fields, much less dependent on water, near jheels, keeps away from muddy shores. **Habits**: Very similar to Redwattled Lapwing except that it keeps away from water, occurs in pairs. Breeds from March-April to July, nests on fallow lands circled by pebbles. **Food**: Chiefly insectivorous. **Status and Distribution**: A rare, resident species with local seasonal movements during SW

monsoon, endemic to subcontinent, widely distributed in India; Pakistan; Nepal; Bangladesh; Sri Lanka.

**110(371). Blackbellied or Grey Plover.** *Pluvialis squatarola* (Linnaeus); *Bada batan*; Grey partridge =; 27-30 cm; **WM/PM/Ra C** (Fig. 110)

**Diagnostics:** Sexes alike. *Non-breeding*(winter): Forehead and lores white speckled with black; sides of head and neck



white streaked with brown, rump, uppertail-coverts and tail white narrowly barred with brown; remaining upper parts dark brown, conspicuously scalloped with pale brownish-grey. Foreneck, breast and flanks streaked and spotted with brown; remaining underparts white. *Breeding* (summer): Upperparts mottled black and silver-grey; chin to middle of abdomen

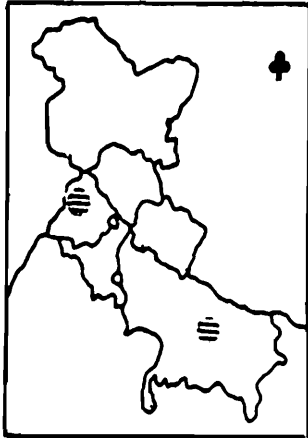
black; lower abdomen and under tail-coverts white. In flight a large black oval patch (axillaries) conspicuous in both summer and winter. **Habitat:** Mainly seaboard, less common (only as vagrant) in inland waters, lakes and pools. **Habits:** Gregarious, generally in flocks of 15-20, but sometimes very large flocks seen, swift flier, very wary and thus difficult to approach, occurs in company of other wader species. Arrives in NW India by early August and departs by April, though rare vagrants may be seen round the year. **Food:** Carnivorous (molluscs, crustaceans, insects), rarely marsh plants, seeds. **Status and Distribution:** A wide spread winter migrant to coastal India, rarely inland as passage migrant, common in peninsula; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Circumpolar, breeds in Arctic tundra of Europe and Asia, winters in Africa, S and SE Asia.

**111(372). Golden Plover.** *Pluvialis apricaria apricaria* (Linnaeus); *Chhota batan*; Grey partridge -; 23-27 cm; **WM/Va C/H** (Fig. 111)



**European Golden Plover, *Pluvialis apricaria* (L)**

**Diagnostics:** *Adult:* Sexes alike. Similar to Grey Plover. *Non-breeding* (winter): Upper parts black and gold-spangled; chin and throat white, breast mottled gold and brown; abdomen, vent and under tail-coverts white, the latter tipped and barred on lateral feathers with gold and brown. *Breeding* (summer): Upperparts bright gold-spangled; underparts black. In flight, the pure white underwing and axillaries distinguish it from Grey Plover, which has black axillaries.

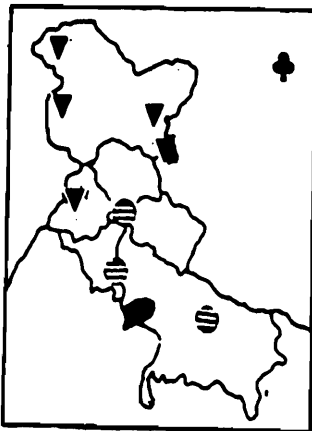


**Habitat:** Affects muddy shore of jheels, wet pastures and grass fields. **Habits:** Gregarious, generally in small flocks in association with other waders, very wary and difficult to approach. **Food:** Chiefly carnivorous (insects, small molluscs crustaceans, .), occasionally aquatic plants. **Status and Distribution:** A winter vagrant to N India; Pakistan. Breeds in Arctic Europe and Asia, winters in Mediterranean countries.

**112(373). Eastern Golden Plover. *Pluvialis dominica fulva* (Gmelin); Chhota batar; Grey partridge -; c 24 cm; WM/Va C/H (Fig. 112)**

**Pacific Golden Plover, *Pluvialis fulva* (L)**

**Diagnostics:** Sexes alike. Similar to Golden Plover, but with less gold spangling, especially on wings. *Non-breeding* (winter): Upperparts mottled brown, white, and golden yellow. Underparts whitish, breast mottled with brown, grey, and yellow. Differs from the preceding two plovers by a little duller upperparts and grey axillaries (under wings near body), which are pure white in Golden Plover and black in Grey Plover. *Breeding* (summer): Forehead white running back in a broad band over the eyes and down sides of neck

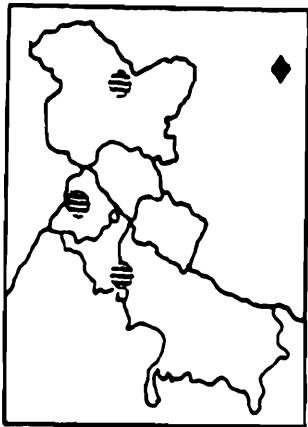


and breast, lores black, remaining upperparts blackish brown spangled with white and golden- yellow. Underparts from throat to vent black. **Habitat:** Grasslands, fallows and partially submerged agricultural fields. **Habits:** Gregarious, in flocks of 20-50 birds in company of other waders, very wary, when disturbed, the flock flies away suddenly. **Food:** Chiefly carnivorous (insects, small molluscs and crustaceans), occasionally seeds of marshy plants. **Status and Distribution:** Widespread winter migrant to NE and SE India, vagrant elsewhere; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in N Asia up to Yenisey River, winters chiefly in India, S China and SE Asia.

**113(374). Large Sand Plover.** *Charadrius leschenaultii* Lesson; Grey Partridge -; 22-25 cm; **WM/Ra C** (Fig. 113)

**Greater Sand Plover (I)**

**Diagnostics:** Sexes alike. *Non-breeding* (winter): Forehead and supercilium prominent pale; crown, ear-coverts, upperparts and patches on sides of breast grey-brown. *Breeding* (summer): male has black mask with white patches on sides of forehead, rufous-orange breast-band and sides of neck while female is similar to non-breeding adult but with an orange breast-band. **Habitat:** Mainly on sandy shores; vagrant to inland rivers. **Habits:** A sea-board species, gregarious in company with other waders in the coastal areas. **Food:**

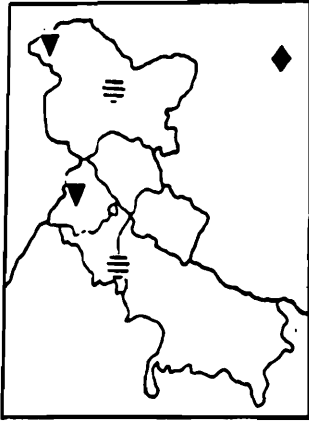


Carnivorous, comprising crabs, marine worms and insects. **Status and Distribution:** Winter migrant to seaboards. Arrives by late August and departs around May. Rare inland vagrant in N India.

**114(378). Eastern Ringed Plover.** *Charadrius hiaticula tundrae* (Lowe); Grey quail ±; 18-20 cm; **WM/Ra C** (Fig. 114)

**Common Ringed Plover, *Charadrius hiaticula* (I)**

**Diagnostics:** *Adult:* Sexes alike. Bill, legs and feet orange-yellow, the former with black tip. *Non-breeding* (winter): Breast-band and ear-coverts brownish-black; forehead and supercillium whitish; legs and base of bill orangish. *Breeding*



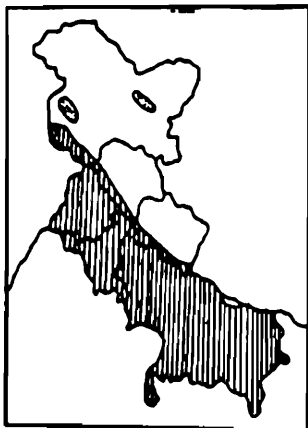
(summer): Upper forehead, lores to upper ear-coverts black; a broad line from eye to eye covering lower forehead white; remaining head and upperparts, except a buffish hind-collar, dark brown. Tail brown with a broad subterminal white band and pure white tip; chin, throat and sides of neck white, meeting the buffish hind-collar; a broad black band across the foreneck and

upper breast; remaining underparts white. **Habitat:** Freshwater lakes and intertidal mudflats. **Habits:** Occurs in pairs or in small flocks mixed with other waders; when foraging scatters over wide area, typical plover feeding behaviour. **Food:** Carnivorous. **Status and Distribution:** A very rare winter migrant in India; Pakistan; Bangladesh; Sri Lanka; Maldives. Circumpolar, breeds in Arctic tundra of N Siberia, winters chiefly along the coasts of NE Mediterranean and of E Africa.

**115(379). European Little Ringed Plover.** *Charadrius dubius curonicus* Gmelin, **WM/Ra C**; and **116(380) Indian Little Ringed Plover.** *Charadrius dubius jerdoni* (Legge); *Zirrea*, *Kola katij*; Lesser sand plover ±; 14-17 cm; **R/Com C** (Fig. 116)

#### **Little Ringed Plover, *Charadrius dubius* (I)**

**Diagnostics:** *Adult:* Sexes alike. A typical little plover with sandy brown upperparts and white forehead. Black fore-crown, separated from sandy brown crown by a thin white line running back over eyes and ear-coverts; black bands on head and breast, the latter continues into a pectoral band; white neck-ring, chin, throat and under parts; yellow eye-ring and legs. A double collar on hind neck (the upper white, the lower black) separating crown from the sandy brown upperparts. *Juvenile:* Brownish head and



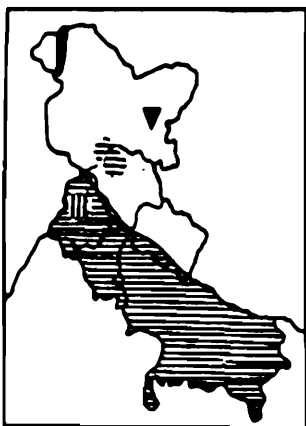
breast; whitish fringes on black pectoral band when first assumed. **Habitat:** Sandy, pebbled margins of lakes, rivers,

pools, grasslands, etc. **Habits:** In pairs or small flocks, which scatter over wide area for feeding, generally mixed with other waders. *C. d. curonicus* breed in Kashmir during April-May, while *C. d. jerdoni* breeds in N India from June to August. **Food:** Carnivorous. **Status and Distribution:** *C. d. curonicus*: Partly resident form, breeds in Kashmir up to 1500 m, winter migrant to the rest of the country; Pakistan; Nepal; Sri Lanka. Chiefly breeds in Europe and N Asia from 62° to 67°N; winters in Africa, Middle East, India and SE Asia. *C. d. jerdoni*: resident throughout India. SE Asia.

**117(381). Kentish Plover.** *Charadrius alexandrinus alexandrinus* Linnaeus; Grey quail -; 15-17 cm; **R/WM/UnCom C** (Fig. 117)

*Charadrius alexandrinus* (I)

**Diagnostics:** *Adult:* Sexes alike, but female duller. Similar to immature Little Ringed Plover. *Non-breeding* (winter):



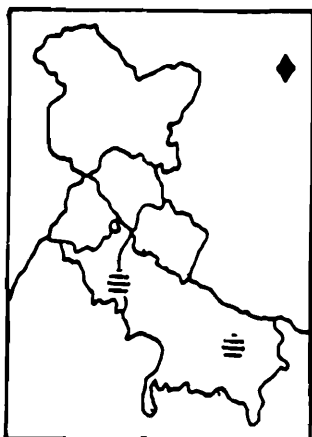
Distinguished by blackish legs, white forehead continued unbroken as supercilium, sandy grey crown, narrow and brownish eye stripe, and a small dark patch on either side of breast. *Breeding* (summer): Male with black and rufous crown, and black eye streak. Female more or less as in non-breeding plumage. *Juvenile:* Like female but with the upperparts narrowly scalloped with sandy buff. **Habitat:**

Riverbeds with shingle, sandy margins of lakes ponds, and salt-pans. **Habits:** Flocks mixed with other waders, keeps in pairs or small groups which scatter over large areas for feeding. Breeds in N India during May and June. **Food:** Carnivorous (crabs and insects). **Status and Distribution:** Widespread and locally common species, breeds in N and S India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds across Palaearctic from Europe to Japan, winters in Mediterranean, S Africa, S and SE Asia.

**118(383). Long-billed Ringed Plover.** *Charadrius placidus* J. E. Gray; Grey Quail +; 19-23 cm; **NT WM/Ra** (Fig. 118)

### Long-billed Plover (I)

**Diagnostics:** Similar to Large Ringed and Little Ringed Plovers except with nearly black frontal bar and comparatively thin black breast-band. In



flight, white wing-bar inconspicuous. Non-breeding birds and juveniles duller overall.

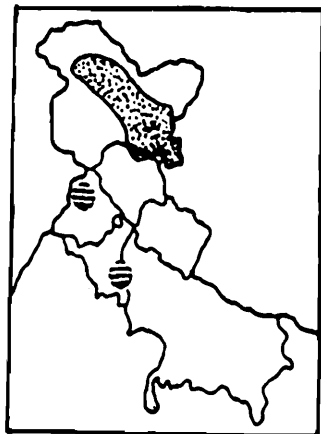
**Habitat:** Occasionally on coarse sandy bank of rivers. **Habits:** Generally solitary, rarely in small flocks, found mixed with other waders. When disturbed, flies off rapidly though at low altitue over the ground. **Status and Distribution:** Winter migrant to N and NE India, rare but regular;

Nepal; Bhutan; Bangladesh and Sri Lanka. Breeds in N Asia, winters S to China, N India and Myanmar.

**119(384). Pamirs Lesser Sand Plover.** *Charadrius mongolus atrifrons* Wagler; Grey quail =; 19-21 cm; **R/WM/UnCom C** (Fig. 119)

### Lesser Sand Plover, *Charadrius mongolus* (I)

**Diagnostics:** *Adult:* Sexes alike. A typical little plover with short pigeon-like black bill and greenish-grey legs. *Non-*



*breeding* (winter): Distinguished from similar Kentish Plover by broad white face divided by dark brownish patch behind eyes. Upperparts sandy greyish-brown and underparts white. *Breeding* (summer): Forehead and sides of head black; crown and hind neck rusty; remaining upperparts sandy brown; upperparts and flanks chestnut, separated from glistening white throat by a blackish half- collar. *Juvenile:*

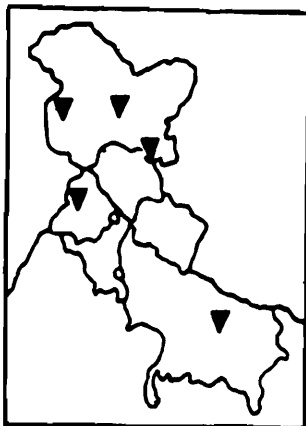
Feathers of upperparts with pale fringes. **Habitat:** Occurs in sandy plains in the vicinity of high-altitude lakes, streams and marshes in summer. **Habits:** Gregarious, keeps in scattered flocks, which are sometimes very large, with other waders. When resting the bird stands inert on one leg. Breeds from early June to mid-July in Ladakh. **Food:** Carnivorous,

comprising crabs, insects and worms. **Status and Distribution:** Resident between 3900-5500 m in Ladakh, Lahaul-Spiti and Sikkim, common winter migrant to coastal areas, rare inland; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. C Asia.

**120(385). Whimbrel.** *Numenius phaeopus phaeopus* (Linnaeus); *Chhota gulinda*; Hen =; 40-46 cm; **WM/PM/UnCom C** (Fig. 120)

*Numenius phaeopus* (I)

**Diagnostics:** *Adult:* Sexes alike. Bill long, downcurved, horny brown. Crown black with one white median stripe and two white superciliary stripes; a dark brown band from lores through eye to ear-coverts. Upperparts sandy brown with whitish spots, lower back and rump white, tail ashy-brown with blackish bars. Chin, throat and abdomen white, remaining underparts sullied, white-black streaks on foreneck and breast, and bars on flanks. Legs and feet greenish-grey. *Juvenile:* Mantle buff-scalloped; lower back, rump



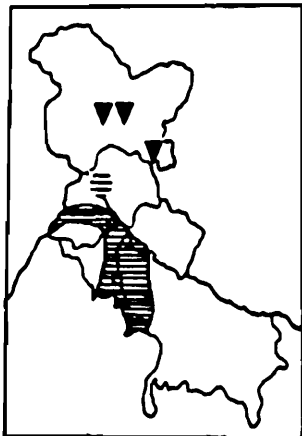
and upper tail-coverts white, finely brown scalloped. **Habitat:** Rare passage migrant on jheels, otherwise on seacoasts, tidal mangroves, creeks and mudflats. **Habits:** Gregarious, often found in flocks of 5-15 in winter, walks about on mud and feeds by picking up from surface or by probing. Arrives by early October in N India and departs from second week of April to May. **Food:** Carnivorous (crabs, molluscs, crustaceans). **Status and Distribution:** A winter migrant to the western coast of India, occasionally inland as vagrant, some birds oversummer; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Circumpolar from Iceland to Siberia, winters throughout Africa, Middle East, S and SE Asia.

**121(387). Curlew.** *Numenius arquata arquata* (Linnaeus); Large hen =; 50-60 cm; **WM/Ra C**; and **122(388). Eastern Curlew.** *Numenius arquata orientalis* C.L. Brehm; *Bada*

*gulinda*; Large hen =; 58 cm; **WM/UnCom C** (Fig. 122)

**Eurasian Curlew, *Numenius arquata* (L)**

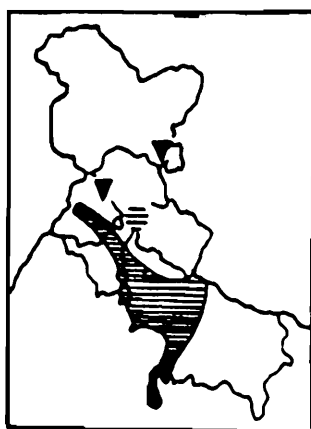
**Diagnostics:** *Adult:* Sexes alike. A hen-sized unmistakable wader with long, slender and strongly downcurved dark



brown bill and bluish-grey legs and feet. Plumage streaked buff and brown, abdomen whitish streaked with black. White lower back and rump conspicuous in flight. *Juvenile:* With more pronounced buff streaks on upperparts; white back; buff tinge on rump; narrow black streaks on breast and abdomen. **Habitat:** Occasionally on large lakes, mudflats, commonly around tidal estuaries and

creeks. **Habits:** Keeps singly or in small flocks of about 6 birds, runs around and feeds between tide marks, wary and difficult to approach. Starts arriving in N India by October and departs by April end or early May. **Food:** Carnivorous, comprising fiddler and sand crabs, crustaceans and insects. **Status and Distribution:** *N. a. arquata:* A rare winter migrant mainly to NW India. *N. a. orientalis:* Uncommon winter migrant to the whole of the subcontinent, migrant mainly to the coastal areas; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in Palaearctic up to W Siberia, winters in E Africa, S and SE Asia.

**123(389). Blacktailed Godwit. *Limosa limosa limosa* (Linnaeus); *Khag*; Hen =; 36-44 cm; **WM/UnCom C/H** (Fig. 123)**



*Limosa limosa* (L)

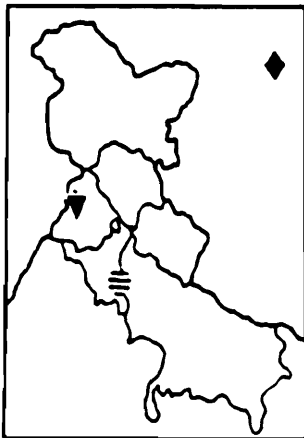
**Diagnostics:** *Adult:* Sexes alike but female slightly larger. Bill long, slender and straight with red base and dusky tip. Upperparts grey-brown with white upper tail-coverts. Underparts white. Legs and feet greyish-green (summer): Assumes chestnut head and breast, bars on

flanks; white chin, throat, abdomen and lower back. In flight, broad white wing-bars, white rump and black tail-tip distinctive. **Habitat:** Found at inland jheels, brackish lakes (though a predominant freshwater species), shallows and mud banks of rivers, lakes and reservoirs. **Habits:** Gregarious, often occurs in large flocks, common at stagnant waters at the margins of drying jheels; flocks often wade into shallow water up to the belly feeding with head and neck submerged. Starts arriving in N India by end of September-early October and departs by May. **Food:** Chiefly carnivorous (molluscs, crustaceans), also aquatic plants. **Status and Distribution:** Winter migrant to N India extending eastward up to W. Bengal; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds locally in N and C Europe and W Asia, winters chiefly in Mediterranean, S Africa and S and SE Asia.

**124(391). Bartailed Godwit.** *Limosa lapponica lapponica* (Linnaeus); *Khag*; Hen =; 37-41 cm; **WM/Ra C** (Fig. 124)

*Limosa lapponica* (I)

**Diagnostics:** Sexes alike, except in summer. A dark-patterned sandy brown bird with parti-coloured black-and-white tail, flesh-coloured bill with terminal half-black, and greenish-grey legs and feet. *Non-breeding* (winter): Plumage like Blacktailed Godwit, but distinguished by slender straight bill slightly upcurved and shorter legs when the bird is at rest. *Breeding* (summer): Head, neck and underparts of the male are rich rufous. Female duller and browner. In flight, absence of white wing-bar and barred tail are pointers. *Juvenile:* Like adult in winter but the breast buff, mottled and streaked blackish. **Habitat:** Generally estuaries, lagoons and salt pans, rarely and waters, lakes etc. **Habits:** Gregarious, mostly coastal in mixed flocks with Blacktailed Godwit and other waders, one of the earliest migrants from western coasts of the subcontinent. **Food:**





Carnivorous (molluscs, marine worms and insects). **Status and Distribution:** Chiefly a winter migrant to the westcoasts of Sindh and Gujarat, rare inland in N India. Breeds in N Eurasia, winters in tropical Africa; Middle East and NW Pakistan and India.

**125(392). Spotted or Dusky Redshank.** *Tringa erythropus* (Pallas); *Surma*; Grey partridge  $\pm$ ; 29-32 cm; **WM/Ra C** (Fig. 125)

**Diagnostics:** Sexes alike. *Non-breeding* (winter): Brownish- grey with faint white spots; red and black bill and red legs. Head, hind neck and back ashy-brown; supercilia white. Upper back with tiny white fringes on each feather; scapulars and inner secondaries notched with black and white; wing-coverts with broad white fringes; lower back, rump and tail-coverts white, the last barred with black; tail ashy-brown, barred with white on edges. Underparts white with brown on neck and upper breast; dusky tinge on



flanks. *Breeding* (summer): Overall sooty black spotted and scalloped with white. **Habitat:** Occurs at inland jheels and tanks, muddy banks and shallow waters of lakes and rivers. **Habits:** Generally solitary or in small flocks in company of other waders, forages either in water or by picking from surface in open deep waters. Starts arriving in N India by mid- September and departs by April end. **Food:** Carnivorous (molluscs, crustaceans and insects). **Status and Distribution:** A winter migrant in much of India including Kashmir, except Far east and the Himalayas, where scarce; Pakistan; Nepal; Bangladesh; Sri Lanka. Breeds north of Arctic Circle in Scandinavia and N Asia, winters in Mediterranean, Africa, S and SE Asia.

**126(393). Common Redshank.** *Tringa totanus totanus* (Linnaeus); **WM/Ra C** ;and **127(394) Eastern Redshank.** 122. *Tringa totanus eurhinus* (Oberholser); *Chhota batar*; Grey partridge  $\pm$ ; 27-29 cm; **WM/R/UnCom C** (Fig.127)

*Tringa totanus* (I)

**Diagnostics:** *Adult:* Sexes alike. *Non-breeding* (winter): Mottled grey-brown above and white below with orange-red

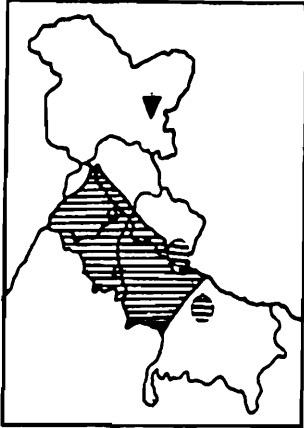


legs and basal third of bill. Lower back, rump and tail white, the last barred with brown. Breast finely streaked with brown. *Breeding* (summer): Upperparts streaked and spotted with black and fulvous; upper breast heavilystreaked with brown and lower breast with dark crescent spots. The white edges to the dark greyish wings and the white lower back and rump are diagnostic in flight. *Juvenile:* More rufous

above; scapulars with fulvous spots; flanks with more black bands. **Habitat:** Found at marshes, muddy edges of rivers, lakes, salt-pans and muddy pools. **Habits:** Occurs solitary or in small groups with other waders; wary and noisy, feeds by picking from surface while walking, shallow water wader. **Food:** Carnivorous, comprising molluscs, insects, worms. **Status and Distribution:** *T. t. totanus:* uncommon winter migrant to NW India. Breeds across whole of Palaearctic extending up to S China, winters coasts of Asia and Africa. *T. t. eurhinus:* winter migrant to much of the subcontinent except C and E India and part of Himalayas; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in C and E Asia, in Ladakh and Kashmir between 4000-5000 m (Tsokkr, Tso Moriri and Pangong lakes, Rupshu, Chushul, etc.) from May to July, winters in S and SE Asia.

**128(395). Marsh Sandpiper or Little Greenshank.** *Tringa stagnatilis* (Bechstein); Grey partridge-; 22-25 cm; **WM/UnCom C** (Fig. 128)

**Diagnostics:** Sexes alike. *Non-breeding* (winter): Greyish-brown above and white below with white forehead, supercilium, sides of head, lower back and rump; black bill; greenish legs. *Breeding* (summer): Sandy grey above and white below with dark angular spots on back; brown spots on foreneck and upper breast; irregular bars on flanks; narrow bars on tail. **Habitat:** Occurs at swampy edges of freshwater ponds and jheels, paddy fields and marshes.



**Habits:** Uncommon, generally solitary, sometimes in flocks with other waders, forages actively at the edges of water bodies or on mud. Arrives in N India by mid-August and departs by April end/early May.

**Food:** Carnivorous, comprising molluscs, crustaceans, insects.

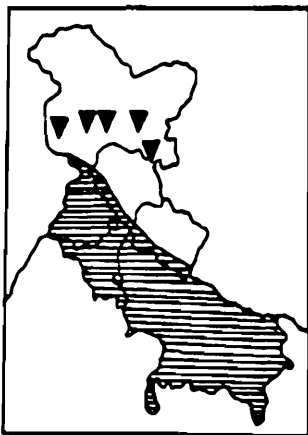
**Status and Distribution:** A widespread winter migrant to India, though more common in NW and E India; Pakistan; Nepal; Bangladesh; Sri

Lanka; Maldives. Breeds south of 56° latitude in SE Europe and C and S Russia, winters in Africa, Middle East, S and SE Asia.

**129(396). Greenshank.** *Tringa nebularia* (Gunnerus); *Timtima*; Grey partridge +; 30-34 cm; **WM/UnCom C** (Fig. 129)

#### **Common Greenshank (I)**

**Diagnostics:** Sexes alike. *Non-breeding* (winter): Dark greyish-brown above and white below. White forehead; lower



back, rump and tail, the last with faint, almost invisible barring. Greyish on foreneck and sides of head. Bill greenish-brown, blacker at tip and slightly upcurved. Legs and feet olive-green.

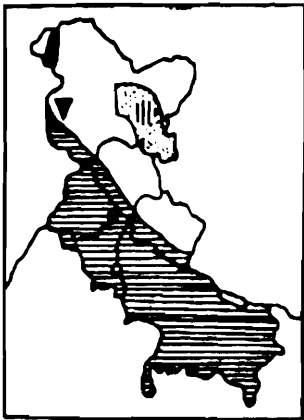
*Breeding* (summer): Darker above, with broad black centres on back and scapulars. Distinguished from Marsh Sandpiper by larger size and from Redshank by absence of white wing-bar (in flight), olive-green legs and slightly upcurved bill. **Habitat:** Found

at riverbanks, marshes, puddles, tanks, jheels and paddy fields. **Habits:** Forages in scattered parties with other sandpipers, occurs in flocks of 15-20 birds when migrating, runs around on mud often probing for food, wades in shallow water. Arrives by second half of August in N India and departs by April end or early May. **Food:** Carnivorous (tadpoles, molluscs, crustaceans). **Status and Distribution:** A winter migrant all over India, widespread over different kinds of wetlands including coastal areas, Pakistan; Nepal; Bhutan;

Bangladesh; Sri Lanka; Maldives. Breeds in N Europe and across N Asia south to 55° N, winters in the Mediterranean, S Africa, Middle East, S and SE Asia up to Australia and New Zealand.

**130(397). Green Sandpiper.** *Tringa ochropus* Linnaeus; Grey quail +; 21-24 cm; **WM/Com C** (Fig. 130)

**Diagnostics:** *Adult:* Sexes alike. *Non-breeding* (winter): Head and neck ashy brown; remaining upperparts dark brown with green-bronze sheen; tail white with faint blackish terminal bars; underparts white with fine brown streaks on throat, breast and flanks. *Breeding* (summer): Darker, spotted lightly with white. *Juvenile:* With bronze narrow scalloping on upperparts and narrow bars with a broad terminal band on tail. Distinguished from similar Wood Sandpiper by more white on rump and tail, and darker



surface of upper- and underwings. **Habitat:** Generally favours small wetlands though affects lakes, village tanks, puddles, streams, marshes and paddy fields. **Habits:** Generally solitary, gathers into small flocks of 15 to 20 at migration, runs about and feeds at water edge, also wades in shallow water and probes by bill. A common passage migrant, arrives in N India from August to November and departs in April-May. **Food:** Carnivorous (molluscs, crustaceans, aquatic insects). **Status and Distribution:** A common winter migrant to almost all over India, widespread up to 2000 m; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. Breeds in N Europe and Asia, north to Arctic Circle up to 68° N, winters in Britain, Mediterranean, S Africa, S and SE Asia.

**131(398). Wood or Spotted Sandpiper.** *Tringa glareola* Linnaeus; *Chupka*; Grey quail ±; 18-21 cm; **WM/UnCom C** (Fig. 131) **Diagnostics:** Sexes alike. *Non-breeding* (winter): Grey- brown above spotted white. White below with dusky breast. Bill blackish; supercilium whitish; lower back, rump

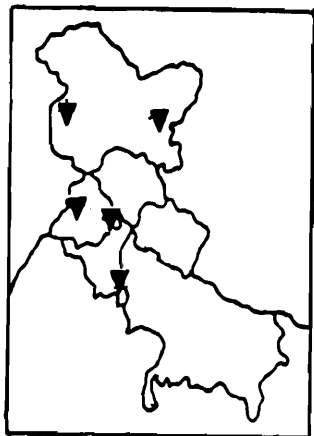


and tail white, the last blackish barred. Legs and feet olive-green. **Breeding** (summer): Darker with conspicuous white spots. In flight, grey-brown upperparts, white rump, barred brown-and-white tail, and absence of wing-bar are diagnostic. **Habitat:** Affects jheels with emergent vegetation, marshes, village tanks, paddy fields and irrigation tanks in lowlands, occasionally up to 2000 m.

**Habits:** Gregarious, often in flocks of 20-30, still larger flocks at the time of migration, when also shows territorial behaviour, wades for feeding in shallow waters. Starts arriving in N India by August end and departs by March/May. **Food:** Carnivorous, comprising tiny fishes, molluscs, crustaceans. **Status and Distribution:** winter migrant to all over India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds Europe and N Asia, winters in S Africa, S and SE Asia up to Australia.

**132(400). Terek Sandpiper or Avocet-Sandpiper.** *Tringa terek* (Latham); Grey quail +; 22-25 cm; **WM/UnCom C** (Fig. 132)

*Xenus cineris* (I)



**Diagnostics:** Sexes alike. Unmistakable bird. Bill long, slender and upcurved with yellow base and black or dark brown tip. Legs short and orange-yellow. **Non-breeding** (winter): Forehead and supercilia white; upperparts greyish-brown with blackish streaks; underparts pure white. **Breeding** (summer): Sides of head and neck, and breast streaked with brown; upperparts boldly streaked with black. **Habitat:** Rarely on freshwater lakes, mudflats, occasionally ascends large

ivers. **Habits:** Gregarious, keeps in small flocks of 10-15 birds, feeds in shallow waters. Starts arriving by early August and departs by April/May. **Food:** Carnivorous (small molluscs, crustaceans and aquatic insects). **Status and**

**Distribution:** A common winter migrant to the coastal areas, uncommon passage migrant to inland areas of N India, regularly to Punjab; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in N Russia to Siberia up to 70° N, winters in E Africa, S and SE Asia up to Australia.

**133(401). Common Sandpiper.** *Tringa hypoleucos* Linnaeus; Grey quail =; 19-21 cm; **R/WM/UnCom C** (Fig. 133)

*Actitis hypoleucos* (I)

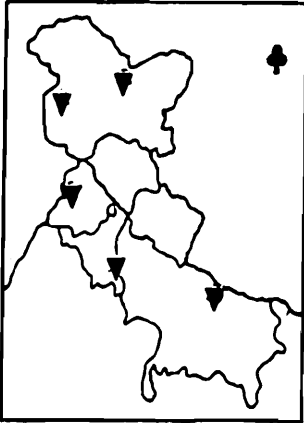


**Diagnostics:** Sexes alike. *Non-breeding* (winter): Olive-brown above and white below with more ash-brown on head and sides of neck; supercilia pale and indistinct; rump and tail brown with only the outer tail-feathers white; breast lightly brown-streaked. A prominent small white patch dividing band of wing from side of breast. *Breeding* (summer): Darker above and speckled. Foreneck and breast boldly brown-streaked. In flight distinguished by white wing-bar and brown rump. **Habitat:** Affects freshwater bodies, village tanks, stream banks, ditches, rivers, canals, lakes. **Habits:** Generally solitary or in two or threes in non-breeding season, runs along water edge and picks up titbits from ground or vegetation. Breeds during May and June in N India (Himalayas). **Food:** Carnivorous (small molluscs, crustaceans, aquatic insects). **Status and Distribution:** Resident in higher elevations of Kashmir, Ladakh and Garhwal where commonly breeds between 1800-3200 m; winter migrant to all over India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds throughout Europe and Asia south of tundra, winters in Africa, SE Asia, Malaya Archipelago to Australia.

**134(402). Turnstone.** *Arenaria interpres interpres* (Linnaeus); Grey quail ±; 23 cm; **WM/Va C** (Fig. 134) **Ruddy Turnstone,**

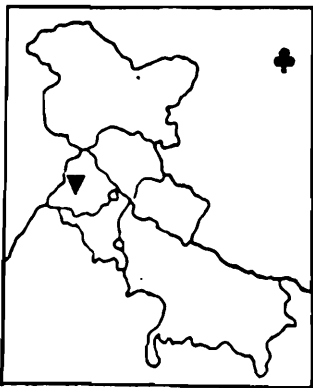
*Arenaria interpres* (L)

**Diagnostics:** Sexes alike. Dark brown and white wader with glistening white chin and throat, straight conical black bill and orange-red legs. *Non-breeding* (winter): Upperparts dark brown and white; lower back, rump and tail-coverts white, the last with a dark brown cross-bar; tail dark with white tip; foreneck and sides of breast brown; remaining underparts including chin and throat pure white. *Breeding* (summer):



Head white streaked with black on crown; a black band from forehead to eye; a black patch below eye; upperparts chiefly black and deep rufous; foreneck and sides of breast black; remaining underparts white. **Habitat:** Rarely on inland waters, mudflats. **Habits:** Largely a coastal migrant, occasionally only moves inland. Occurs in small flocks, runs actively on sandy banks turning over algae or poking under stones with bill for food. Arrives toward the end of August and departs by May. **Food:** Carnivorous, comprising small crabs, molluscs, crustaceans. **Status and Distribution:** Mainly a winter migrant along the western coast of India, rare inland vagrant; Pakistan; Nepal; Sri Lanka; Maldives. Circumpolar along Arctic coastline. Breeds on Arctic coasts and tundra around 76° N, winters on coasts of Europe, S and SE Asia, scattered almost all over the global coastline.

**135(403). Snipebilled Godwit or Asian Dowitcher.** *Limnodromus semipalmatus* (Blyth); Grey Partridge +; 34-36 cm; **NT WM/Va C** (Fig. 135)



**Diagnostics:** Sexes alike. Similar to Godwit but with conspicuously broad-based and all-black long bill, swollen at tip. *Non-breeding* (winter): supercilium broad and white, upperparts blackish-grey with white scalloping, underparts whitish with dark grey streaks except throat and belly. *Breeding* (summer): head, neck, breast,

belly and upperparts rufous, mantle feathers with black centres, under tail-coverts white barred brown. **Habitat:** Mainly intertidal mudflats and mudbanks of large tidal rivers. **Habits:** Generally occurs in small parties with Godwit and other waders. Feeds by probing deep into mud. **Food:** Carnivorous, usually molluscs, crustaceans and worms. **Status and Distribution:** Winter migrant to Indian coasts, vagrant inland; Bangladesh and Sri Lanka. Breeds in C Asia, winters in E and S Asia.

**136(404). Eastern Solitary Snipe.** *Capella solitaria solitaria* (Hodgson); *Ban chaha*; Grey quail +; 29-31 cm; **WM/R/Ra C** (Fig. 136)

**Solitary Snipe,** *Gallinago solitaria* (l)



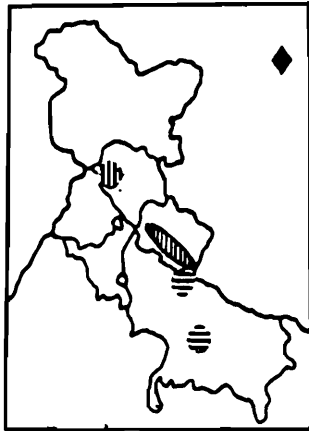
**Diagnostics:** Sexes alike. A typical and cryptic coloured marsh bird with plump body and long, greenish-plumbeous bill. Plumage variegated brown, black, rufous, fulvous and white. Crown black with a narrow white median band; supercilium broken, indistinctly mixed with white and brown, and narrowing behind the eye; scapulars with broad white outer edges; abdomen white, faintly barred at the sides. Legs and feet plumbeous. **Habitat:** Affects large high-

altitude boggy mountain streams and paddy fields bordered with stubble. **Habits:** Solitary, swamp-dwelling species at high altitudes in Himalayas, flies slow and in short hops. **Food:** Carnivorous, comprising small molluscs, worms. **Status and Distribution:** A resident species in Himalayas, found between 2440-4600 m in summer and from 1200-3000 m in winter, an altitudinal migrant, rare winter migrant to plains; Pakistan; Nepal; Bhutan; Bangladesh. Breeds at high altitudes in C Asia, probably also breeds in Ladakh, Kashmir, Himachal Pradesh and Garhwal and Kumaon hills.

**137(405). Wood Snipe.** *Capella nemoricola* (Hodgson); *Chaha*; Grey quail +; 28-32 cm; **GT R/WM/Ra C** (Fig.137)



*Gallinago nemoricola* (I)



**Diagnostics:** Sexes alike. Bill horny brown, pointing downwards; upperparts dark brown, variegated with black, rufous and buff streaks; breast fulvous barred with brown; remaining underparts white closely barred with brown; legs dark plumbeous-green. Usually distinguished from Eastern Solitary, Pintail and Fantail Snipes by larger size, much darker coloration, comparatively slow flight with downwardly pointing bill. **Habitat:** Breeds in alpine meadows with streams, affects swamps, pools and puddles. In winter, occurs in swampy areas at the edge of the forest. **Habits:** Solitary in montane areas, slow and wavering flights. **Food:** Carnivorous (aquatic insects, worms). **Status and Distribution:** Globally threatened/Vulnerable. A resident species throughout Himalayas, breeds from Arunachal to east of NW Himachal Pradesh between 3000-5000 m. Comes down to foothills during winter, rare vagrant to peninsula; Nepal; Bhutan; Bangladesh; Sri Lanka. SE Asia. Recent studies indicate that the species is very sparsely distributed in its entire range. Major cause of threat is habitat loss in its wintering areas.

**138(406). Pintail Snipe.** *Capella stenura* (Bonaparte); Chaha; Grey quail +; 25-27 cm; **WM/UnCom C** (Fig.13)

*Gallinago stenura* (I)

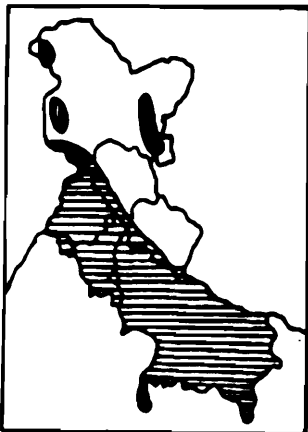


**Diagnostics:** Sexes alike, female slightly larger. Dark brown above heavily streaked with buff, rufous and black; dull white below. Bill long, with terminal third or half blackish-brown and basal half dull olive-green. Tail normally with 26 or 28 feathers, outer 8 or 9 on each side being stiff and narrow (pin-like, hence the name). Legs and feet plumbeous-green. **Habitat:** Occurs at edges of marshy jheels, paddy stubble, and seepage from reservoirs in foothills,

occasionally on dry ground. **Habits:** Generally solitary, forages in morning and evening by probing its slender bill into soft mud, very active on cool windy days. Starts arriving by early September and departs by April. **Food:** Carnivorous, chiefly small molluscs, aquatic larvae and worms. **Status and Distribution:** A locally common winter migrant to almost whole of India, except western and eastern parts and Himalayas; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in E Siberia east to Yenisey up to 67°N, winters in S and SE Asia.

**139(409). Common or Fantail Snipe.** *Capella gallinago gallinago* (Linnaeus); *Chaha*; Grey quail +; 25-27 cm; **R/WM/UnCom C** (Fig. 139)

*Gallinago gallinago* (I)



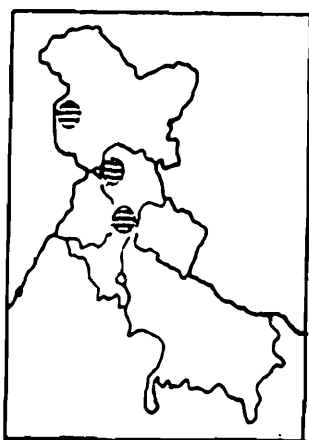
**Diagnostics:** *Adult:* Sexes alike. Dark brown above heavily streaked with black, rufous and buff; whitish below. Head with a buff median stripe and supercilium. Bill olive-yellow on basal half and dark horny-brown to blackish on terminal half. Tail-feathers 14 or 16. Legs and feet dull olive-green. In flight, the long straight bill held downwards. Distinguished from Pintail Snipe only when the bird is in hand.

*Juvenile:* Like adults, but with whitish fringes on mantle feathers and wing-coverts. **Habitat:** Occurs at swampy edges of jheels, marshes around reservoirs, paddy stubble, muddy edges of rivers and pools. **Habits:** Solitary, occasionally in flocks, crepuscular and nocturnal, though feeds in daytime. Breeds from late April to mid-June. Starts arriving in plains by end of August/ September and departs by April. **Food:** Carnivorous, comprising small molluscs, worms. **Status and Distribution:** Resident in Himalayas, breeds between 1600-4500 m in Kashmir and Garhwal, common and widespread migrant to rest of India; Pakistan; Nepal; Bhutan, Bangladesh; Sri Lanka; Maldives. Circumpolar, breeds in Europe and N Asia, north to 66°-70°

N; Britain and C Asia, winters in N Africa, Middle East, S and SE Asia.

**140(410). Jack Snipe.** *Capella minima* (Brunnich); *Chhota chaha*; Grey quail ±; 17-19 cm; **WM/UnCom C/H** (Fig.140)

*Lymnocyptes minimus* (I)



**Diagnostics:** Sexes alike. The smallest snipe. Bill relatively

shorter and stouter. Bold buff streaks on shining metallic green and purple back.

Tail wedge-shaped. Legs and feet pale olive-green. **Habitat:** Found in swamps, around jheels, marshes, water logged paddy fields.

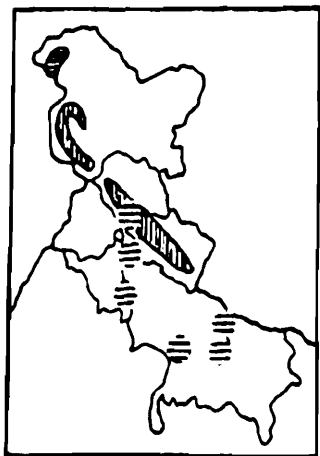
**Habits:** Invariably solitary, generally crepuscular and nocturnal. Arrives by end of October and departs by April. **Food:**

Chiefly carnivorous on small molluscs, aquatic larvae, occasionally on aquatic

plants. **Status and Distribution:** An uncommon winter migrant to almost throughout India generally below 1500m, except parts of NW, NE and Himalayas; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds across northern Palaearctic up to 70° N, winters in W Europe, Mediterranean, N Africa. Middle East, S and SE Asia.

**141(411). Woodcock.** *Scolopax rusticola rusticola* Linnaeus; *Simteetar*, *Sim kukra*; Partridge -; 33- 35 cm; **R/WM/UnCom C/H** (Fig.141)

**Eurasian Woodcock**, *Scolopax rusticola* (I)



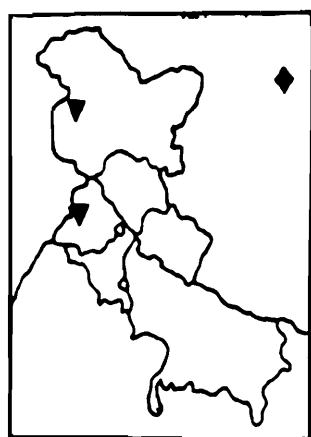
**Diagnostics:** Sexes alike. An outsized snipe. Cryptically coloured in brown, black and white. Bill long, dusky with swollen tip. Head and nape with three broad transverse bands of velvet-black, divided by yellowish lines. A blackish line running from base of bill to eye; another similar line below eye and posterior ear-coverts; remaining face grey with brown spots. Hind crown, nape and rump cross-barred black

and rufous; remaining upperparts brownish-grey blotched

and barred with black, rufous and buff. Chin white; remaining underparts dull greyish- white, cross-barred throughout with dark brown, more numerous on upper breast. Legs short, green-grey. **Habitat:** Occurs at swampy glades in Fir and Rhododendron forests of Himalayas. **Habits:** Solitary, crepuscular and nocturnal, lies in shady cover during day time, feeds by probing in soft earth. Breeds in Himalayas from April to July, arrives in plains of N India by October and departs by end of March. **Food:** Mainly carnivorous (ground worms), also plants and seeds. **Status and Distribution:** A resident species which breeds throughout Himalayas between 2000-3800 m, an altitudinal winter migrant to plains of India; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. Also breeds across the Palaearctic from Spain to Japan; C Asia, winters in S Eurasia, S and SE Asia.

**142(414). Sanderling.** *Calidris albus* (Pallas); Grey Quail; 19-20 cm; **WM/Ra C** (Fig. 142)

*Calidris alba* (I)



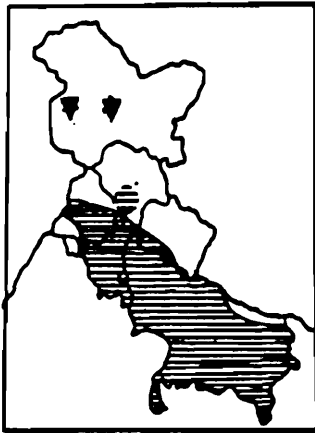
**Diagnostics:** Sexes alike. *Non-breeding* (winter): Face whitish; upperparts pale grey with blackish shoulder patch; under parts white; bill and legs black. *Breeding* (summer): Sides of head, breast and upperparts rufous mottled with black; underparts pure white. *Juvenile:* Chequered black-and-white above and whitish below. In flight, the broad white wing-bar is a pointer. **Habitat:** Sandy beaches, rarely inland. **Habits:** Forages in small mixed flocks, runs swiftly after each

receding wave to pick up the titbits the wave may cast ashore. **Food:** Carnivorous (tiny crustaceans, molluscs and other small animals). **Status and Distribution:** Winter migrant to coasts, rare inland; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds on arctic tundra, winters in British Isles, N Sea, Madagascar, Africa, S and SE Asia and Australia.

**143(416). Little Stint.** *Calidris minutus* (Leisler); *Chhota panlowwa*; Grey quail -; 13-15 cm; **WM/UnCom C/H**

*panlowwa*; Grey quail -; 13-15 cm; **WM/UnCom C/H** (Fig.143)

*Calidris minuta* (L)



**Diagnostics:** *Adult:* Sexes alike. *Non-breeding* (winter): Bill black; forehead and supercilia white; upperparts 'scaly' grey-brown with smoky brown outer tail feathers; underparts white with faint streaks on breast; legs and feet blackish. *Breeding* (summer): Forehead and small supercilia often obsolete, pale fawn; feathers on back black with broad rufous edges; foreneck and upper breast indistinctly spotted dark brown. *Juvenile:* Like adult in summer, but hind neck greyer

and mantle less rufous, white below. **Habitat:** Found at marshes, jheels, lakes and paddy fields in winters. **Habits:** Gregarious, often found in large flocks of hundreds mixed with other waders in coastal areas, constantly runs around on mud picking up food, when disturbed whole flock flies simultaneously and swiftly like a cloud. Starts arriving in N India in small numbers by September/October and departs by April/May. **Food:** Chiefly carnivorous, comprising small molluscs, crustaceans, insects, also aquatic plants and seeds. **Status and Distribution:** A winter migrant to both the coasts of India extending inland on passage, except higher Himalayas and extreme NW and NE regions of the country; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds among high Arctic tundra from 30° E, winters in S Africa, Middle East and S Asia.

**144(417). Temminck's Stint.** *Calidris temminckii* (Leisler); *Chhota panlowwa*; House sparrow +; 13-15 cm; **WM/UnCom C/H** (Fig. 144)

**Diagnostics:** Sexes alike. Very similar to Little Stint but distinguished by more uniform grey-brown upperparts, brownish fore head, white outer tail-feathers and greenish legs. **Habitat:** Prefers fresh water habitats with vegetation, marshes, pools, lakes and riverbanks.



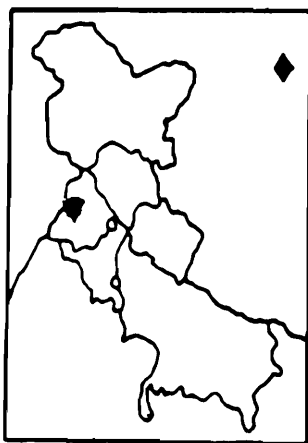
**Habits:** Often solitary, though sometimes occurs in small flocks of about 20 birds, forages at the margins and feeds slowly, picking prey from vegetation or mud. Starts arriving in N India by September/October and returns by April. **Food:** Chiefly carnivorous (small molluscs, crustaceans, insects), occasionally aquatic plants. **Status and Distribution:** An uncommon though widespread winter migrant to all

over the country, except part of Himalayas, NW and NE; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds from N Europe to NW Asia up to 76° N, winters in Mediterranean, N Africa, Middle East, S and SE Asia.

**145(418). Longtoed Stint.** *Calidris subminutus* (Middendorff); House Sparrow +; 13-15 cm; **WM/Ra C** (Fig. 145)

*Calidris subminuta* (I)

**Diagnostics:** Sexes alike. Similar to Little Stint but with comparatively longer, yellowish legs; upright and longish neck; slightly downcurved bill and greyish-brown outer tail-feather. *Non-breeding* (winter): upperparts with prominent dark centres in feathers and prominent supercilium. *Breeding* (summer): Crown rufous, supercilium white and foreneck and breast streaked with brown. *Juvenile:* With white V on back formed due to white edging to mantle. **Habitat:** Marshes, lakes, riverbanks and intertidal mudflats. **Habits:**

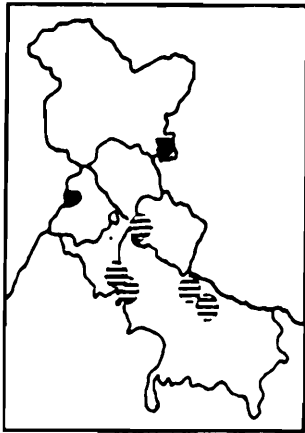


Forages with other Stints; runs about energetically. **Food:** Carnivorous, tiny invertebrates. **Status and Distribution:** Rare winter migrant to N India; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in E Siberia south to Kamchatka, winters in S and SE Asia.

**146(420,421). Dunlin.** *Calidris alpinus alpinus* (Linnaeus); Grey quail -; 16-22 cm; **WM/UnCom C** (Fig. 146)

*Calidris alpina* (I)

**Diagnostics:** Sexes alike. *Non-breeding* (winter): Upperparts grey-brown; throat, belly and under tail-coverts white; breast streaked grey; bill black, long and slightly downcurved near tip. *Breeding* (summer): Head and upperparts chestnut, boldly mottled with black; underparts white, except centre of breast and abdomen black. In flight, the white wing-bar, as in Curlew Sandpiper, conspicuous, but differs from it by black upper tail-coverts instead of white. **Habitat:** Affects riverbeds, flooded fields and sandbars. **Habits:** Gregarious,

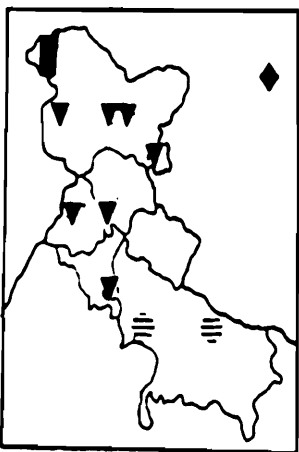


keeps in flocks mixed with other waders, scatters to feed on wet mud as well by wading near water edges, flies swiftly in close pack. Starts arriving in N India by August and departs by mid-May. **Food:** Carnivorous, comprising molluscs, crustaceans, aquatic insects. **Status and Distribution:** A winter migrant in abundance, chiefly to the western coast of India where locally common, occasional inland throughout N India including Kashmir; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in N Europe and N Asia up to 70° N, winters in Mediterranean, NE Africa and SW Asia.

**147(422). Curlew-Sandpiper.** *Calidris testaceus* (Pallas); Dunlin ±; 18-23 cm; **WM/Ra C** (Fig. 147)

*Calidris ferruginea* (I)

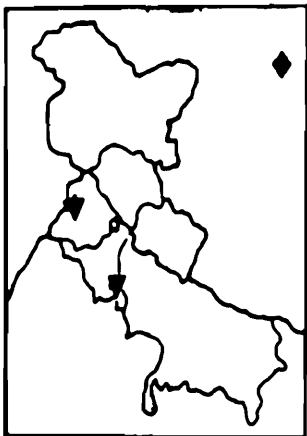
**Diagnostics:** Sexes alike. Often confused with Dunlin but differs by its slightly larger size, longer legs and similarly downcurved but more slender bill. In flight, it is distinguished by its white tail-coverts. *Non-breeding* (winter): Upperparts mottled grey-brown. Underparts white, with brownish wash and streaks on breast. *Breeding* (summer): Upper- and underparts mainly chestnut and rich rufous, crown and mantle grey-brown, fairly distinct supercilium from the



forehead to nape. Underparts white. **Habitat:** Chiefly coasts, seashore, mudflats and salt-pans, rarely on inland lakes and rivers. **Habits:** Gregarious, often in flocks with other waders, while foraging runs over wet mud near the edges, feeds by pecking or probing. **Food:** Carnivorous, comprising molluscs, crustaceans, worms. **Status and Distribution:** Winter migrant chiefly to the coasts, rarely inland in small numbers as passage migrant; Pakistan; Nepal; Sri Lanka; Maldives. Breeds in N Asia at mouth of Yenisey River, winters in Africa, Madagascar, S and SE Asia.

**148(424). Broadbilled Sandpiper.** *Limicola falcinellus falcinellus* (Pontoppidan); quail  $\pm$ ; 16-18 cm; **WM/Ra C** (Fig. 148)

*Limicola falcinellus* (l)



**Diagnostics:** Sexes alike. *Non-breeding* (winter): Bill horny black with broad base and slightly downcurved; supercilium short and white; upperparts mottled dark grey-brown, with a blackish patch on wing-shoulder; rump, upper tail-coverts and middle rectrices brown; underparts white with streaks on breast; legs and feet yellowish grey. *Breeding* (summer): Upperparts black with rufous and white markings; buff stripes on back; a double eye-stripe.

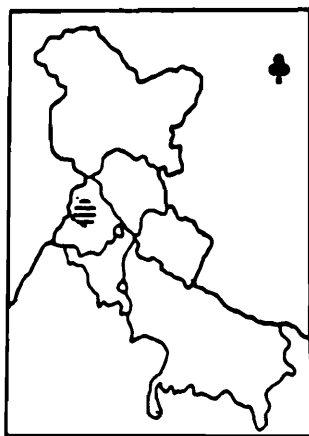
**Habitat:** Affects sandbanks in large rivers and mudflats.

**Habits:** Generally solitary in winters or small flocks when on passage, feeds by pecking and probing. Starts arriving by July end and August and emigrates by May end. **Food:** Carnivorous (molluscs, aquatic insects, worms). **Status and Distribution:** A winter migrant commonly to the western coast, rare vagrant inland; Pakistan; Bangladesh; Sri Lanka. A passage migrant. Breeds in Arctic of N Europe, N Russia and Siberia east to Yenisey river, winters in south Mediterranean, Black, Caspian and Red Seas, Middle East and NW India.



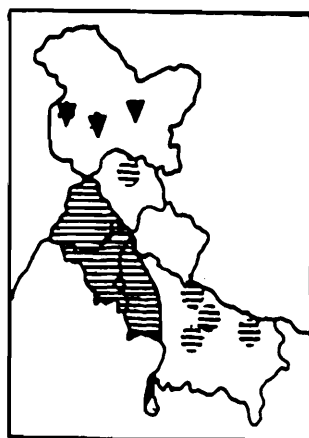
**149(425a). Buffbreasted Sandpiper.** *Tryngites subruficollis* (Vieillot); Common Sandpiper ±; 18-20 cm; **WM/Va** (Fig.149)

**Diagnostics:** Sexes alike. Bill short and straight, eyes large, upperparts blackish with buff scalloping, face and underparts buff, legs bright yellow. In flight, lacks obvious wing-bar and has more uniform upper tail-coverts. **Habitat:** Dry short-grass, dry mud and seashore. **Habits** : Feeds actively by picking prey from the ground and vegetation, does not wade, walks quickly, flight rapid and erratic. **Status and Distribution:** A vagrant winter migrant to India and Sri Lanka. Breeds on the arctic coasts of N America. Vagrant to the Palaearctic Region.



**150(426). Ruff.** *Philomachus pugnax* (Linnaeus); *Gehwala*; Grey quail +; 26-32 cm; **WM/UnCom C/H** (Fig.150)

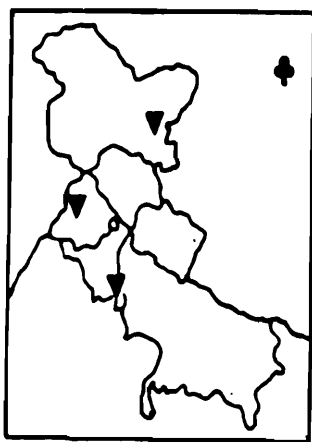
**Diagnostics:** *Non-breeding* (winter): A greyish-brown wader with bold scaly-patterned upperparts; relatively short, dark brown bill with yellowish base; varying orange-yellow legs. *Breeding* (summer): Upperparts of both sexes blackish, feathers edged with buff or rufous; breast flanks etc. suffused with brown. *Male* (Ruff): Face covered with yellow caruncles and grows an enormous ruff, extending from nape to cover the entire breast. The ruff may be of any colour-chestnut, buff, white, black or grey. *Female* (Reeve): Upperparts blackish, sometimes with black linear spots or broken bars on pale fulvous breast. **Habitat:** Affects flooded paddy fields, freshwater lakes, pools, marshes and mudflats. **Habits:** Gregarious, generally in small flocks of about 25 birds in company of other waders, though may congregate in large numbers at arrival and departure time in NW India and on chosen feeding grounds. Starts arriving by August/



September and departs by February/March from N India. **Food:** Mainly carnivorous, comprising molluscs, crustaceans, aquatic insects, occasionally exclusively on aquatic plants. **Status and Distribution:** A passage migrant to almost all over India during winters, common in NW and SW India; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds across Palaearctic from N Europe, N Asia to Tundra in East, winters in S Africa, S Asia and E China.

**151(428). Rednecked Phalarope.** *Phalaropus lobatus* (Linnaeus); quail ±; 18-19 cm; **WM/Va C** (Fig. 151)

**Diagnostics:** Female brighter and larger. A sandpiper-like bird with blackish bill. *Non-breeding* (winter): Crown,



nape, a broad line through eyes and legs blackish; remaining upperparts grey streaked with white; forehead, underparts and wing-bar white. *Breeding* (summer): Upperparts blackish-grey; sides of neck and foreneck rich rufous forming a broad band. Male duller, the rufous band divided by dark grey on the foreneck. **Habitat:** Affects freshwater lakes and shallow pools as passage migrant during winter. **Habits:**

Primarily a pelagic species; in freshwater swims buoyantly like a cork and spins round, also wades when foraging, extremely tame in freshwaters. **Food:** Chiefly insectivorous, and also on macroplanktons. **Status and Distribution:** In India, an uncommon winter migrant along the western coast, very rare passage vagrant in N India, arrives by September; Pakistan; Nepal; Sri Lanka. Breeds circumpolar in Arctic zone.

### **Painted Snipe**

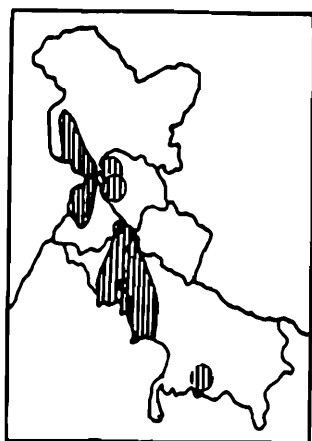
(Family : ROSTRATULIDAE)

World: 2 species; Asia: 1; India: 1; N India: 1: Sexually dimorphic. Polyandrous; male attends to nest and rears young.

**152(429). Painted Snipe.** *Rostratula benghalensis* *benghalensis* (Linnaeus); *Rajchaha*; Gey quail +; 25 cm **R/UnCom O** (Fig. 152)

**Greater Painted-Snipe,** *Rostratula benghalensis* (L)

**Diagnostics:** *Adult:* Polyandrous. Female larger than male. Sexes more or less alike and difficult to distinguish



in non-breeding season. A colourfully mottled snipe with long, flesh-pink bill, slightly downcurved at tip. *Breeding* (female): Head and neck chestnut with a broad, median and buff stripe on head down to bill; a pure white circle around and a short band behind the eye; remaining upperparts metallic bronze-green spotted and streaked with black and buff; broad white bands over shoulder to sides of

breast; chin, throat and breast chestnut; lower breast blackish. Remaining underparts white. *Breeding* (male): Duller and lacking the chestnut and black on neck and breast. *Juvenile:* Similar to adult male but with white throat; lower throat and foreneck washed with brown, with some dusky streaks. **Habitat:** Found in freshwater marshes with deep pools, ditches with thick vegetation and mud patches. **Habits:** A crepuscular species, active in early morning, evening and night, solitary or in small flocks, forages by probing into mud, wags hindparts while feeding. Breeds almost throughout the year, but chiefly July to September; nests on grass padding hidden in thick vegetation. **Food:** Omnivorous, comprising molluscs, crustacean, aquatic insects and arable crops. **Status and Distribution:** A resident but uncommon species almost throughout India, up to 1800 m in Himalayas; Pakistan; Nepal; Bangladesh; Sri Lanka. Africa south of Sahara; Middle East; S and SE Asia. Breeds throughout its range.

## Stilts and Avocets

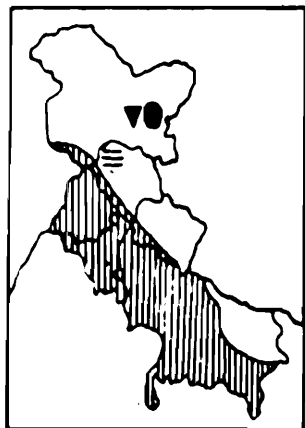
### (Family RECURVIROSTRIDAE)

World: 12 species; Asia: 3; India: 2; N India: 2: White, black or brownish-grey waders. Bill straight in Stilts or upcurved in Avocets. Wings long and pointed. Tail short and square. Legs extremely long; feet webbed; hallux or hind-toe vestigial or absent. Sexes alike. Young nidifugous and downy.

**153(430). Indian Blackwinged Stilt.** *Himantopus himantopus himantopus* (Linnaeus); Tinghur, Grey partridge  $\pm$ ; 35-40 cm; **R/Com C/H** (Fig. 153)

**Blackwinged Stilt.** *Himantopus himantopus* (L)

**Diagnostics:** *Adult:* A lanky black and white wader with painted wings, black bill and crimson-red legs. *Male:* Head



white with a few black spots; wings glossy black above and black below; tail pale grey-brown; remaining body glossy white. *Female:* Head and hind neck white sullied with brownish grey, wings brown above and black below. Duller in winter. *Juvenile:* Young males with black anterior crown, upper ear-coverts and a line down the back of the neck. **Habitat:** Affects freshwater and brackish water marshes, pools, village

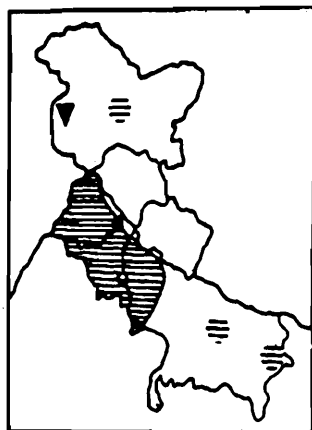
tanks, reservoirs, shallow margins of lakes and jheels.

**Habits:** Gregarious, occurs in small flocks round the year, though larger groups of 100 or more birds found occasionally, breeds in colonies, walks slowly, forages by wading or on dry mud, also floats sometimes for feeding. Breeds between April and August in N India. **Food:** Chiefly carnivorous (molluscs, aquatic insects), marshy vegetation, seeds. **Status and Distribution:** A resident species throughout India, up to 1500 m in Himalayas; widespread and common, subject to local movements in winter; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Mediterranean, S Africa, Middle East, S Russia, east to China.

**154(432). Avocet.** *Recurvirostra avosetta* Linnaeus; *Kusya chaha*; Grey partridge +; 42-45 cm; **WM/UnCom C** (Fig. 154)

**Pied Avocet (I)**

**Diagnostics:** *Adult:* Sexes alike. An unmistakable marsh bird with conspicuously upcurved long black bill; glistening



white body, black head, hind neck and two wing-bands, and bluish-grey legs. In winter, the tail is greyish, the long secondaries more grey and less black.

**Habitat:** Generally found at shallow brackish pools, jheels and swamps and mudflats.

**Habits:** Generally occurs in pairs or small parties though flocks of about 100 birds may be found, nests in colonies, runs about on mudflats and feeds by sweeping bill from

side to side from water surface or mud, swims like dabbling duck. **Food:** Carnivorous, comprising small molluscs, crustaceans and insects. **Status and Distribution:** A widespread and common winter and passage migrant to NW India, breeds in Gujarat within our limits, where present round the year; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. Breeds in Europe, S and E Africa, winters in S Africa and S Asia. The species was adopted as the symbol of bird conservation in Britain and Ireland in the 1940s.

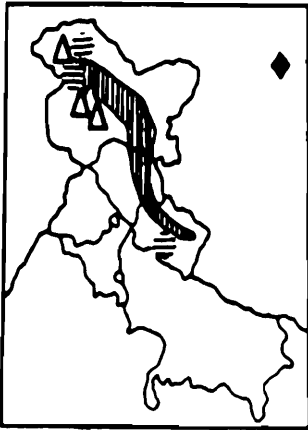
**Ibisbill**

(Family : IBIDORHYNCHIDAE)

World: 1 species; Asia: 1; India: 1; N India: 1: Bill red, long and down-curved. Hind toe absent. Sexes alike.

**155(433). Ibisbill.** *Ibidorhyncha struthersii* Vigors; Grey partridge +; 38-41 cm; **R/AM/Ra C** (Fig. 155)

**Diagnostics:** *Adult:* Sexes alike. An ashy grey-brown bird with black facial mask and broad breast-band. Long downcurved crimson-red bill. Bluish-grey neck, sides of head and upper breast; white border along facial mask; a narrow white band separating the broad breast-band from upper



breast; ashy grey tail with narrow wavy blackish cross-bars; white lower plumage. Pinkish-grey (non-breeding and young) to blood-red (breeding) legs and feet. *Juvenile*: Without black and white on head and black breast-band. **Habitat**: Found in Himalayas between 1700-4000 m at torrential hill streams with pebbly bed and islands. **Habits**: Generally occurs in pairs or in small flocks of 6 to 8 birds, forages quietly

on shingle bed in mountain rivers and streams, wary; feeds by walking slowly through the water by probing under stones or in short grass by rivers. Breeds from end of March to mid- May. **Food**: Carnivorous, comprising chiefly crabs. **Status and Distribution**: A rare breeding resident in NW Himalayas between 1700-4500 m in Ladakh, Kashmir, Garhwal and Kumaon; altitudinal migrant, moves to foothills during winter; Pakistan; Nepal; Bhutan. High plateau of C Asia.

### **Stone Curlews and Thick-knees** (Family BURHINIDAE)

World: 9 species; Asia: 3; India: 2; N India: 2: Plover-like birds with large yellow eyes, stout heavy bill; large broad head; long pointed wings; long legs, thickened tibiotarsal joint (knee), partly webbed feet with three toes. Sexes similar. Largely crepuscular and nocturnal.

**156(436). Indian Stone Curlew.** *Burhinus oediconemus indicus* (Salvadori); *Barsiri*; Grey partridge +; 40-44 cm; **R/UnCom C** (Fig. 156)

**Eurasian Thick-knee,** *Burhinus oediconemus* (I)

**Diagnostics:** *Adult*: Sexes alike. A streaked sandy brown bird with yellow 'goggle-like' eyes and yellowish 'thick-kneed' legs. Forehead, lores, a ring around eye and supercilium prominent white; upperparts ashy-brown. A broad buffy bar on closed wings, at rest. Chin and throat white; foreneck



and upper breast pale buff, streaked blackish-brown; remaining lower parts white, except pale buff under tail-coverts. In flight, two narrow white bars and a conspicuous white patch in the dark wings suggestive. *Juvenile*: Paler, more marked with buff, and streaks on upperparts narrower; white wing-bar indistinct.

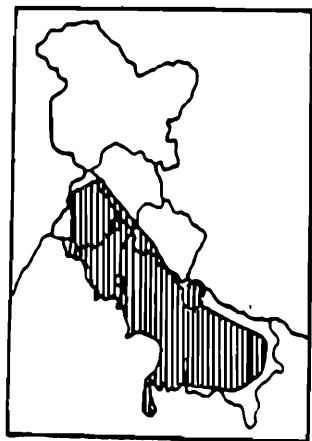
**Habitat**: Found in dry deciduous habitats such as stony, thorny hillsides, scant, open

dry forests and dry riverbeds. **Habits**: Generally crepuscular and nocturnal, occurs in pairs or small flocks of 5 to 6 birds, though during winter flocks up to 50 birds may be found; sedentary, spends daytime under shrubs. Breeds from February to August. **Food**: Carnivorous (mostly insects, molluscs, worms, small reptiles). **Status and Distribution**: An uncommon resident species, occurs all over India from plains to 1000 m in Himalayas; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. SE Asia.

**157(437). Great Stone Plover.** *Esacus magnirostris recurvirostris* (Cuvier); *Bada karwanak*; Domestic hen =; 49-54 cm; **R/LM/UnCom C** (Fig. 157)

**Great Thick-knee.** *Esacus recurvirostris* (L)

**Diagnostics**: *Adult*: Sexes alike. A massive-billed sandy brown plover with greenish-yellow legs. Bill stout and black with yellow base, distinctly upturned; lores, feathers round the eye and supercilium white; eyes large and yellow with two blackish bands resembling 'goggles'; primaries, innermost secondaries and scapulars black; tail ashy-brown with pale tip and two irregular dark bars. A short grey-brown moustachial streak, remaining lower plumage white. *Juvenile*: Paler.



**Habitat**: Generally in deciduous habitats such as stony beds of large rivers and lakes with pebbled shores. **Habits**: Crepuscular and nocturnal but prefers

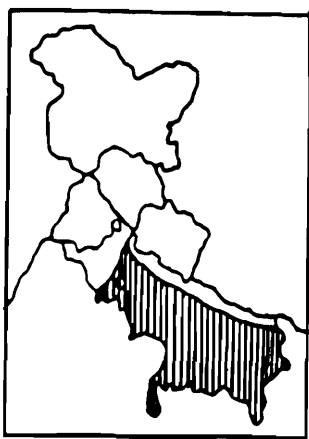
sunlight during day, inhabits water edges, if disturbed camouflage or runs off. Breeds from February to June. **Food:** Carnivorous, chiefly crabs, also frogs and molluscs. **Status and Distribution:** A common widespread resident species all over India, especially plains; Pakistan; Nepal; Bangladesh; Sri Lanka. SE Asia.

### **Coursers (Courier Plovers) and Pratincoles** (Family : GLAREOLIDAE)

World: 18; Asia: 6; India: 6; N India: 4: Plover-like birds with strong flight. Coursers: wings short and broad; bill longish and tapering; tail short; legs long and bare; three anterior toes short. Pratincole: Wings long, narrow and pointed; bill and legs short; tail forked; hind-toe (hallux) present; middle toe elongate with pectinate claw. Sexes alike, or nearly so.

**158(440). Indian Courser.** *Cursorius coromandelicus* (Gmelin); *Nukri*; Grey partridge -; c 26 cm; **R/LM/UnCom C** (Fig. 158)

**Diagnostics:** Sexes alike. A sandy brown lapwing-like cursorial bird with slightly arching black bill and ivory-white legs. *Adult:* Crown rich rufous. A conspicuous double black and white stripe through and above eye to nape. Upper plumage sandy with a light brown wash, hind neck rufous, primaries black, and upper tail-coverts white. Chin and throat white, remaining underparts chiefly chestnut and black, except white vent and under tail-coverts. *Juvenile:* Upperparts dull buff, irregularly barred blackish-brown, supercilium small and pale. Chin and abdomen white; breast dull rufous, more or less barred blackish. **Habitat:** Dry riverbeds, fallow fields and village grazing grounds. **Habits:** Cursorial, keeps in pairs or in small flocks in open country, shy and rapidly flies away when disturbed.



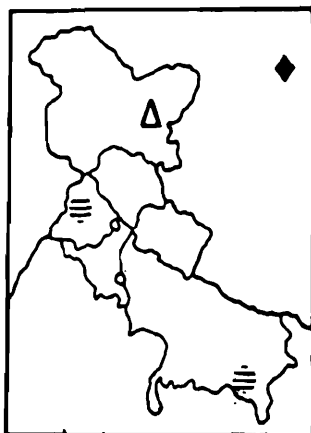


Breeds in N India between March and August. **Food:** Carnivorous, comprising chiefly insects (beetles, grasshoppers and crickets). **Status and Distribution:** Resident, undertaking local movements according to rainfall. Widely but patchily distributed; locally common.

**159(442). Collared Pratincole or Swallow-Plover.**  
*Glareola pratincola pratincola* (Linnaeus); Myna  $\pm$ ; 16-19 cm;  
**WM/Ra C** (Fig. 159)

*Glareola pratincola* (I)

**Diagnostics:** *Adult:* Sexes alike. A short-legged bird with long, narrow and pointed 'tern-like' wings; black bill; ashy-



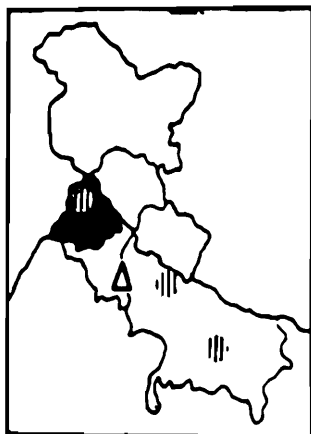
black legs and feet. Upperparts olive-brown; Upper tail-coverts white; tail black with white base. Chin and throat creamy with narrow black border; Upper breast brown; abdomen and under tail-coverts white. *Juvenile:* Like adult but upper feathers pale tipped and with black subedges; breast mottled brown and rufous white; no black neckline. **Habitat:** Occurs at barren river, flood- plains and grazing

land around jheels. **Habits:** Generally crepuscular, gregarious, active on cloudy days, generally sluggish and squats on open sandbank in a river or grazing land. **Food:** Insectivorous, feeds on flying insects, beetles, termites. **Status and Distribution:** A rare winter migrant to NW India; Pakistan; Sri Lanka. Breeds in Mediterranean, Black Sea, Middle East up to W Pakistan, winters in Africa and SW Asia.

**160(443). Large Indian Pratincole or Swallow-Plover.**  
*Glareola pratincola maldivarum* J.R.Forster; Myna  $\pm$ ; 23-24 cm; **R/LM/UnCom C** (Fig. 160)

**Oriental Pratincole, *Glareola maldivarum* (I)**

**Diagnostics:** Same as no. 159 but with less deeply forked tail. **Habitat:** Bare flats of larger rivers and marshes, low-lying pastures and fields, often near water. **Habits:**



Gregarious, crepuscular, keeps in flocks of 30 or 40, sometimes even larger flocks, hawks insects in the air like Swallows, occasionally feeds on ground. Breeds in colonies from March to July. **Food:** Chiefly insectivorous, comprising moths, bugs, beetles. **Status and Distribution:** Widespread and resident throughout India, known to breed in Punjab and Haryana in N India besides Madhya Pradesh, West

Bengal, Assam; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds throughout Asia. On migration or in winter through Malay Archipelago to Australia.

**161(444). Small Indian Pratincole or Swallow-Plover.** *Glareola lactea* Temminck; Sparrow +; 16-19 cm; **R/LM/UnCom C** (Fig. 161)

**Small Pratincole (I)**

**Diagnostics:** *Adult:* Sexes alike. Forehead brown; remaining upperparts pale sandy grey; black band from eye to beak; wings long, narrow and pointed; tail white with a broad subterminal black band; under parts smoky brown tinged with rufous, except whitish lower breast and abdomen; legs and feet short and dark brown. *Juvenile:* Upper plumage scaly; throat and foreneck spotted with black.



**Habitat:** Occurs around large rivers with shingle or sand banks, placid streams and lakes in Himalayas up to 1800 m. **Habits:**

Gregarious, found in large flocks around rivers and lakes, crepuscular, feeds generally at dusk; breeds from February to April. **Food:** Insectivorous (beetles, bugs, termites). **Status and Distribution:** A resident species almost in whole of India, in non-breeding season moves to coastal areas; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka. East to Myanmar and Thailand.

## Gulls and Terns

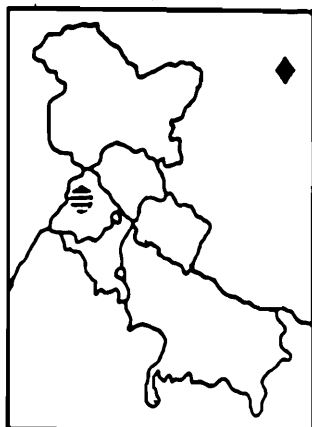
### (Family : LARIDAE)

World: 81 species; Asia: 45; India: 30; N India: 19. **Gulls:** Heavy-bodied gregarious birds with grey, white and black plumage; long pointed wings; sharply pointed or blunt and slightly hooked bill; square or forked tail. Legs short; feet webbed; hind-toe small or vestigial. Sexes alike. Roost and nest in colonies. **Terns:** Generally smaller and slimmer than gulls with soft grey plumage, except the Skimmer which has black and long pointed wings; finer bill; shorter legs, webbed feet. Sexes similar. Like gulls, colonial breeders. In winter, generally the head of white-headed species of Gulls streaked darker, while that of black-headed changes into white, sometimes mottled with grey. On the other hand, the black caps of Terns become white or streaked.

**162(450). Yellowlegged Herring Gull.** *Larus argentatus heuglini* Bree; *Dhomra*; Duck ±; 58-65 cm; **WM/Ra C** (Flg. 162)

**Yellow-legged Gull, *Larus cachinnans* (L)**

**Diagnostics:** Sexes alike. A large, heavy gull with bright yellow bill and legs. A bright red patch near tip of lower mandible. *Non-breeding* (winter): Head and hindneck with brown streaks. *Breeding* (summer): Head, neck, underparts and tail snow-white; mantle pearl-grey; wing-quills black with white near tip. **Habitat:** Generally along seacoast, harbours, also affects inland lakes and rivers during winter. **Habits:** Gregarious and mostly found at sea, flies gracefully, scavenger, forages on aquatic invertebrates in mudflats or by wading. Regularly flies between their roosting and feeding places at dusk and dawn. **Food:** Carnivorous (fish waste, molluscs, crabs, also steals eggs and chicks of terns). **Status and Distribution:** A winter migrant mainly along the western coast of India; rare passage migrant inland; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds

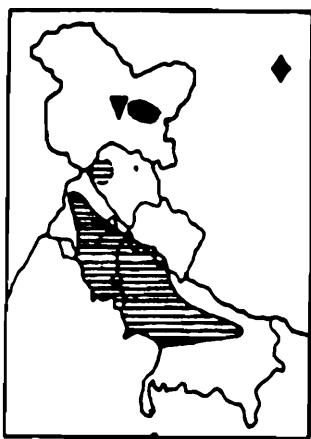


in N Siberia, winters in Red Sea, N African coasts, Persian Gulf and coasts of India.

**163(453). Great Blackheaded Gull.** *Larus ichthyaetus* Pallas; *Dhomra*; Duck +; 66-72 cm; **WM/Ra C** (Fig. 159)

**Pallas's Gull (I)**

**Diagnostics:** Sexes alike. *Breeding* (summer): Head and upper neck black with two crescent white patches (one above and one below eye). Mantle pearl-grey with slaty tinge, remaining plumage pure white; primaries mainly white, the outer ones with subterminal black bands and white tips, the inner ones and secondaries grey with broad white tips. Bill stout, yellow with an orange tip banded with black. Legs and feet yellowish-green. *Non-breeding* (winter): Head white with brown and black streaks.



**Habitat:** Occasionally found at large inland

lakes, reservoirs and rivers as winter or passage migrant.

**Habits:** Solitary, only rarely small loose flocks, swims by sitting on water. **Food:** Carnivorous (chiefly fish and crustaceans), also steals. **Status and Distribution:** A widespread and locally common winter migrant to Indian coasts, rare inland passage migrant on large rivers and lakes in winter; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds in S Russia to NW Mongolia, winters in SE Mediterranean, Red Sea, Persian Gulf and the coasts of India.

**164(454). Brownheaded Gull.** *Larus brunnicephalus* Jerdon; *Dhomra*; Jungle crow ±; 42-46 cm; **WM/R/UnCom C** (Fig. 164)

**Diagnostics:** Sexes alike. Medium-size gulls with a white patch (mirror) near the tips of black primaries; deep red bill, legs and feet. *Non-breeding* (winter): Head white with a vertical black crescent mark on ear-coverts. *Breeding* (summer): Head dark brown; remaining upperparts grey except white tail; underparts white. **Habitat:** Found inland at most large rivers and lakes as passage migrant during

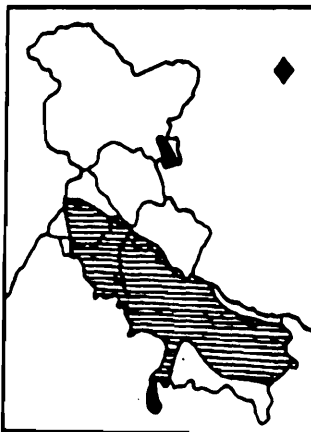


winters. **Habits:** Gregarious, scavenger on sea, generally feeds and roosts with Pariah and Brahminy kites and Blackheaded Gull. **Food:** Carnivorous, on Carcass and fish waste, prawns on seaboard, inland on insects, worms, grubs, slugs and also shoots of various crops. **Status and Distribution:** A winter migrant mainly along the Indian coasts, uncommon inland, mostly as passage migrant along large rivers and lakes; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds in high plateaus of C Asia up to S Mongolia (also breeds in Ladakh between 3000-4500 m (Tsokar and Tso Moriri)), winters on coasts of Middle East, S and SE Asia.

**165(455). Blackheaded Gull.** *Larus ridibundus ridibundus* Linnaeus; *Dhomra*; House crow  $\pm$ ; 38-43 cm; **WM/Ra C** (Fig. 165)

*Larus ridibundus* (I)

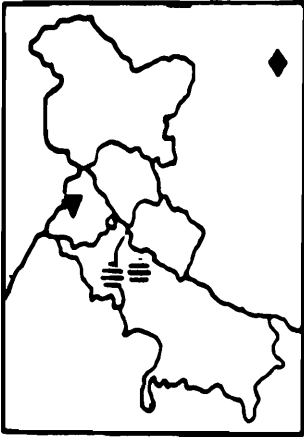
**Diagnostics:** Sexes alike. Very similar to Brownheaded Gull but distinguishable in all seasons by white leading edges to wings instead of white 'mirror'. **Habitat:** Found as passage migrant in varying numbers on inland rivers, jheels and lakes during winter. **Habits:** Gregarious, often in company of Brownheaded Gull, feeds terrestrially also when inland or by capturing winged insects, scavenges on sea. **Food:** Carnivorous (fish, crabs and carcass on seaboard, insects etc. inland like Brownheaded Gull). **Status and**



**Distribution:** A regular winter migrant along the coasts of India, though more common on western coast, a rare passage migrant along inland rivers and lakes; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds across temperate Palaearctic up to 68° N, winters in Mediterranean, Middle East and S and SE Asia.

**166(456). Slenderbilled Gull.** *Larus genei* Breme; *Dhomra*; House crow  $\pm$ ; 43 cm; **WM/Ra C** (Fig.166)

**Diagnostics:** Sexes alike. Very similar to Blackheaded Gull, but distinguished from it by absence of the brown spot on ear-coverts, smaller head, long neck, longer and brighter red bill and legs.

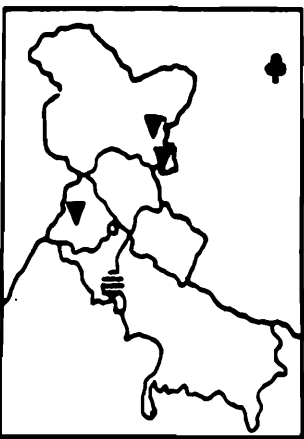


**Habitat:** Estuaries, lagoons, tidal creeks, salt-pans, coastal waters, offshore and occasionally also on inland lakes. **Habits:** Feeds on shoals of small fish, also scavenges from fishing boats. **Food:** Carnivorous, mostly fish. **Status and Distribution:** A regular winter migrant to western coast of India, rare and irregular inland; Pakistan; Nepal; Sri Lanka. Mediterranean, Africa.

Breeds on Black and Caspian Seas, Middle East and Pakistan, winters SW Asia.

**167(457). Little Gull.** *Larus minutus* Pallas; *Dhomra*; Pigeon -; 25-30 cm; **WM/Va C** (Fig.167)

**Diagnostics:** Sexes alike. *Non-breeding* (winter): Forehead, lores and a line over eyes white; crown and nape soft bluish-grey; remaining upperparts blue-grey, except white upper tail-coverts and tail; underparts white.

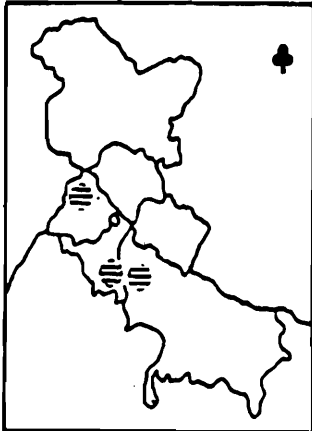


*Breeding* (summer): Head and upper neck pure black. **Habitat:** Rare vagrant to inland waters. **Habits:** A delicate species, which swims lightly by sitting on water, feeds on insects from water surface or by hawking. **Food:** Carnivorous (fish, prawns, carcass on seaboard, insects, etc., inland). **Status and Distribution:** A

vagrant species, rare sightings recorded from Ladakh, Punjab and Uttar Pradesh; Pakistan; Nepal; Sri Lanka. Breeds in N Europe and Siberia, winters on coasts of W Europe, Mediterranean, Black Sea and Sea of Japan.

**168. Mew Gull.** *Larus canus*; *Dhomra*; 43 cm; **WM/Va C** (Fig.168)

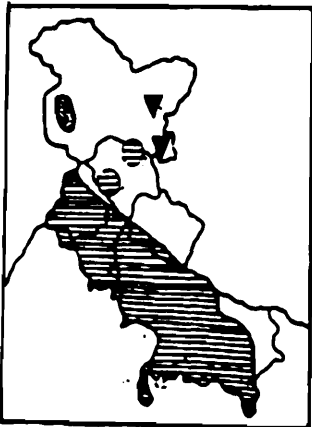
**Diagnostics:** Smaller than Yellowlegged Gull with slim body, rounded head and shorter bill. *Adult:* with white head, greenish-yellow bill and legs, and develops a narrow blackish subterminal band in non-breeding season. *Juvenile:* Grey-brown mantle and wing-coverts with pale fringes, dark-streaked crown and ear-coverts, and mottled grey-brown breast-band. **Habitat:** Lakes, large rivers and coasts. **Habits:** Scavenges on fish waste and refuse in harbours and around fishing boats and ships, seeks invertebrates on mudflats, steals eggs and chicks at seabird colonies. **Food:** Carnivorous (fish and invertebrates). **Status and Distribution:** Vagrant to India; Pakistan; Nepal; Bhutan.



**169(458). Indian Whiskered Tern.** *Chlidonias hybrida indica* (Stephens); *Ganga cheel*; Pigeon-; 23 cm; **WM/R/UnCom C** (Fig. 169)

**Whiskered Tern, *Chlidonias hybridus* (L)**

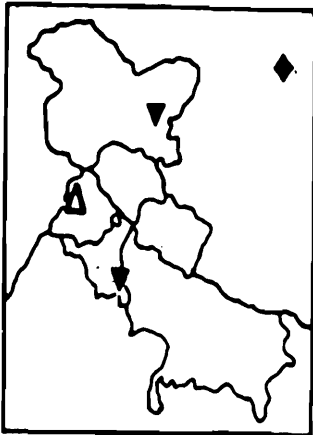
**Diagnostics:** *Adult:* Sexes alike. A silvery-grey and white bird with long narrow pointed wings (tips projecting beyond tail) and short red legs. *Non-breeding* (winter): Forehead white with black streaks; head and nape black; plumage pale ashy; bill and legs blackish. *Breeding* (summer): Crown down to eyes and nape black with contrasting snow-white cheeks ('whiskers'); belly black; bill and legs dark red. *Juvenile:* Streaked brown and white. **Habitat:** Affects inland jheels, lakes, reservoirs, marshes, rivers and flooded paddy fields. **Habits:** Gregarious, often feeds in flocks, mostly forages on insects by capturing them from surface, sometimes plunges for fish. Breeds in Kashmir from June to August. **Food:** Carnivorous, comprising fish, tadpoles, crabs and Odonata larvae. **Status and Distribution:** An uncommon winter migrant to India except Kashmir (and N India), and Assam where it breeds; Pakistan; Nepal; Bangladesh; Sri Lanka. Middle East.



**170(459). Whitewinged Black Tern.** *Chlidonias leucoptera* (Temminck); *Ganga cheel*; Pigeon -; 20-23 cm; **WM/Ra C** (Fig.170)

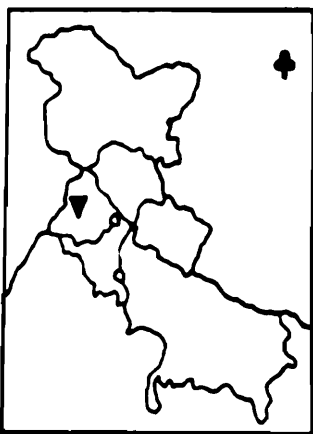
**Whitewinged Tern, *Chlidonias leucopterus* (I)**

**Diagnostics:** *Adult:* Sexes alike. In winter, similar to Whiskered Tern except slightly smaller size and dull grey (not silvery-grey) mantle. *Non-breeding* (winter): Black patch from pale crown to ear-coverts extends below eyes; often there is a white gap between this patch and eye. Tail white. *Breeding* (summer): Head to belly black with contrasting white wings, bill black, legs dark red. In flight, striking contrast on underwing between whitish flight feathers and black wing-coverts. **Habitat:** Affects lakes, marshes, flooded paddy fields and pools. **Habits:** Gregarious, in winter generally feeds with Whiskered Tern in small flocks flying back and forth at the height of 3 to 6 metres and thus catching insects in air or by swooping and picking from water surface. **Food:** Carnivorous, comprising tadpoles, fish, crabs, aquatic larvae. **Status and Distribution:** Rare winter migrant to India, sight records from Jammu and Kashmir, Punjab and Haryana; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in SE Europe across Siberia to Sea of Japan, winters in Mediterranean, S Africa, Middle East, S and SE Asia up to Australia.



**171(459a). Black Tern.** *Chlidonias niger niger* (Linnaeus); *Ganga cheel*; Pigeon -; 22-24 cm; **WM/Va C** (Fig.171)

*Chlidonias niger* (I)



**Diagnostics:** *Non-breeding* (winter): Differs from Whiskered Tern by dull grey instead of silvery-grey mantle; from Whitewinged Black Tern by a black patch on each side of breast, near bend of wings. *Breeding* (summer): Dark slate-grey above, black below without the white wing-shoulder or white tail of Whitewinged Black Tern. **Habitat:** Found at lakes, marshes, paddy fields and pools. **Habits:** Gregarious,

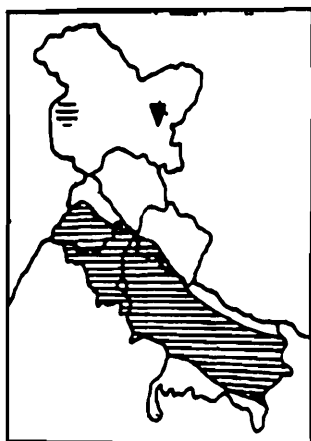


generally feeds in small flocks catching insects in flight or by swooping on water. **Food:** Carnivorous (fish, frogs, crustacean). **Status and Distribution:** A vagrant winter passage migrant to India, sight record near Delhi in 1949 (Ali and Ripley, 1969), might have been overlooked with other marsh tern species. Breeds throughout in Europe up to C Siberia and also in temperate N America; winters along the coasts of Africa and parts of S Asia.

**172(460). Gullbilled Tern.** *Gelochelidon nilotica nilotica* (Gmelin); *Ganga cheel*; House crow -; 35-38 cm; **WM/R/UnCom C** (Fig. 172)

*Gelochelidon nilotica* (I)

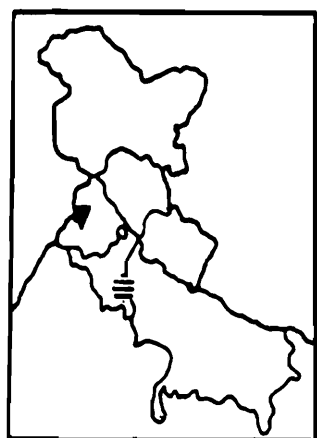
**Diagnostics:** *Adult:* Sexes alike. Pale grey and white tern with stout black 'gull-like' bill, slightly forked white tail and black legs. *Non-breeding* (winter): Head white streaked with black in front and behind the eyes. Distinguished from Whiskered Tern by larger size, stouter bill and slower wingbeats. *Breeding* (summer): Head turns jet-black covering forehead, crown down to eyes and nape. *Juvenile:* Crown grey or greyish-white; upperparts pale brown with buffish edges and grey-brown primaries. **Habitat:** Found at large



inland rivers, jheels, marshes and cultivations. **Habits:** Gregarious, but generally seen in singles or twos in association with other terns near wetlands, flying low over sand-mudflats, swooping down frequently for foraging. Breeds on sandbanks in rivers of Punjab from end April to June end. **Food:** Carnivorous, chiefly crabs, prawns, crustaceans, fish and small frogs. **Status and Distribution:** A widespread and locally common winter migrant in most parts of India; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds in Europe, W Asia and NW Africa to Middle East, winters in NE Africa, Middle East and S Asia.

**173(462). Caspian Tern.** *Hydroprogne caspia caspia* (Pallas); *Ganga cheel*; Jungle crow +; 47-54 cm; **WM/UnCom C** (Fig. 173)

*Sterna caspia* (I)

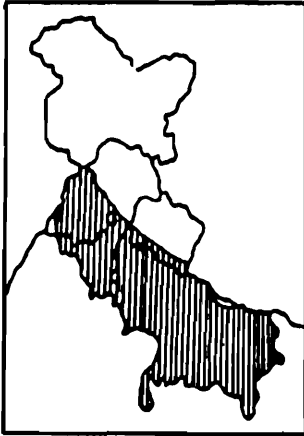


**Diagnostics:** *Adult:* Sexes alike. A large tern with stout coral-red bill, slightly forked tail, black legs and feet. *Non-breeding* (winter): Head and neck white, crown streaked with black; upperparts pearl-grey; coral-red bill with dusky tip; underparts pure white. *Breeding* (summer): Forehead and crown to below eyes glossy jet-black. *Juvenile:* Like adult in winter but upperparts barred with buff grey and brown. **Habitat:** Affects large inland lakes and rivers. **Habits:** Gregarious during breeding season, otherwise found singly or in twos, feeds by hovering over water with bill pointed downward, plunges often, submerging completely. **Food:** Carni-vorous, comprising mainly fish, crabs, prawns. **Status and Distribution:** A winter migrant to Indian coastal areas though breeds in Gujarat within Indian limits, widespread along coasts; Pakistan; Nepal; Bangladesh; Sri Lanka; Maldives. Breeds very locally in Europe, Africa and Asia between very wide range of latitudes, i.e., 10° to 60° N, winters in S Africa and S Asia.

**174(463). Indian River Tern.** *Sterna aurantia* J.E.Gray; *Ganga cheel*; House crow ±; 38-46 cm; **R/UnCom C** (Fig. 174)

*River Tern* (I)

**Diagnostics:** *Adult:* Sexes alike. A fluviatile pale grey and white bird with pointed bright yellow bill; deeply forked 'swallow' tail; and short red legs. *Non-breeding* (winter): Head dull grey with streaks; bill duller with black tip. *Breeding* (summer): Forehead, crown and nape down to below eyes glossy jet-black; a horizontal crescent white patch below eyes; upperparts blue-grey; underparts white. *Juvenile:* With white forehead and broad supercilium; buffy white edged and



blackish subedged upperparts. **Habitat:** Affects large rivers, lakes, canals and tanks. **Habits:** Generally solitary, also found in twos and threes, flies in flocks up and down over rivers and lakes for foraging, feeds by plunging from a height with wings pulled in, roosts at night on sandbanks. Breeds from March to May. **Food:** Carnivorous (fish, crustaceans and aquatic insects). **Status and Distribution:** A widespread

locally common resident species in the plains of N India including Kashmir valley; Pakistan; Bangladesh; Sri Lanka; Maldives. SE Asia.

**175(465). Tibetan Common Tern.** *Sterna hirundo tibetana* Saunders; *Ganga cheel*; House crow -; 31-36 cm; **WM/R/UnCom C** (Fig. 175)

#### Common Tern (I)

**Diagnostics:** *Adult:* Sexes alike. A pale grey bird with black-tipped reddish bill; forked tail; red legs. *Non-breeding*



(winter): Fore head white, head streaked, and nape dark. *Breeding* (summer): Forehead, crown below to eyes and nape black. *Juvenile:* Forehead buff, head streaked black, nape black; upperparts buff barred dark brown; underparts white.

**Habitat:** Affects large rivers, jheels and lakes. **Habits:** Generally solitary, sometimes in colonies, hunts fishes by plunging from height. Breeds during June-

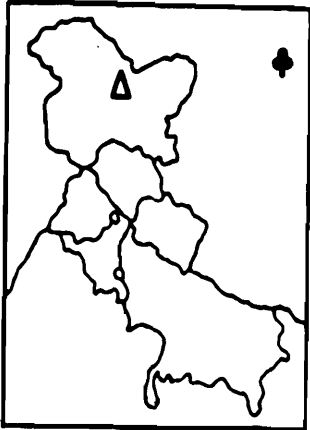
July in Ladakh. **Food:** Carnivorous, comprising chiefly fish, molluscs, crustaceans and aquatic insects. **Status and Distribution:** A breeding resident in high-altitude lakes of Ladakh (ca 3500 m, Pangong, Tsokar and Tso Moriri), locally common at breeding grounds, recorded up to 4700 m, uncommon but widespread winter migrant in the Gangetic Plains and coastal areas; Pakistan; Nepal; Bhutan; Bangladesh; Sri Lanka; Maldives. Breeds in Middle East and

C Asian plateau, winters in S and SE Asia.

**176(466a). Arctic Tern.** *Sterna macrura* Naumann; House crow -; 33-36 cm; **WM/Va C** (Fig. 176)

*Sterna paradisaea* (I)

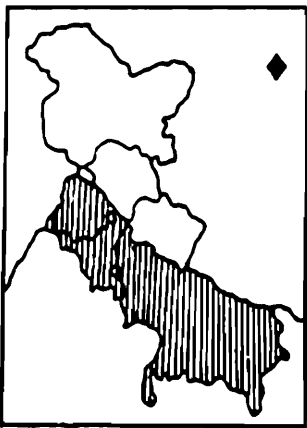
**Diagnostics:** Sexes alike. Similar to Common Tern, but bill, neck and legs shorter, tail longer. *Non-breeding* (winter): Bill and legs black, forehead white, hindcrown down to eyes and nape dark. *Breeding* (summer): Bill and legs red; primaries translucent; underparts grayer. *Juvenile*: Differs from the juvenile of Common Tern by white secondaries and inner primaries; and without brown on upperparts. **Habitat:** Inland only along Tundra rivers and marshes, mostly maritime. **Habits:** Similar to other common



terns. **Food:** Carnivorous, mainly comprising fish, molluscs and aquatic insects. **Status and Distribution:** Circumpolar, breeds in Holarctic between 60° to 75° N, winters in Antarctic south to 75° S; thus the species covers over 35,000 km on migration. In India, recorded only once from Suru Valley (4000m), Kashmir.

**177(470). Blackbellied Tern.** *Sterna acuticauda* J.E.Gray; *Ganga cheel*; House crow -; 33 cm; **GT R/Ra C** (Fig. 177)

**Diagnostics:** *Adult:* Sexes alike. *Non-breeding* (winter): Head white streaked with black; a black patch behind eye; bill dull yellow with dusky tip; upper plumage greyish; under plumage white with grey tinge on foreneck and breast; tail deeply forked; legs orange-red. *Breeding* (summer): Forehead, crown down below to eyes and nape glossy black; lores, cheeks, chin and throat pure white; upper plumage ashy-grey; remaining under plumage black. *Juvenile:* Upperparts buff-grey, feathers with pale buff-white edges and blackish

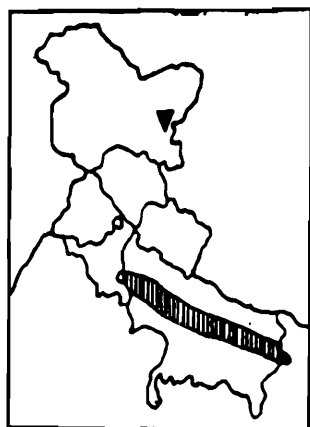


subedges. **Habitat:** Predominantly inland freshwater tern, found at large rivers, jheels and lakes, etc. in winter. **Habits:** Gregarious, occurs in flocks flying up and down on tranquil stretches of rivers, or resting on shoals and sandbanks; feeds by swiftly plunging vertically from air and submerging in water or by scooping the prey from water or land. Breeds primarily during March and April in N India. **Food:** Carnivorous (fish, crustaceans and aquatic insects). **Status and Distribution:** Globally threatened/Vulnerable. Resident in almost whole of India, except NW, NE and Himalayas; Pakistan; Nepal; Bangladesh. SE Asia. Global population is believed to be below 10,000 birds and declining rapidly. Major threats are the loss of habitat, collection of eggs for food and flooding of nests.

**178(475). Little Tern or Ternlet.** *Sterna albifrons albifrons* Pallas; Myna  $\pm$ ; 22-24 cm; **R/WM/UnCom C** (Fig.178)

*Sterna albifrons* (I)

**Diagnostics:** *Adult:* Sexes alike. A small grey and white tern. *Non-breeding* (winter): Forehead, crown and nape black mixed with white; bill blackish; legs and feet dusky red.

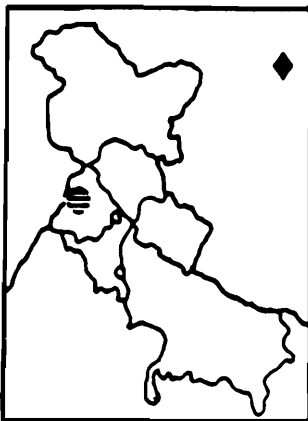


*Breeding* (summer): Forehead white, crown and nape velvety black; bill and legs orange-yellow. *Juvenile:* Dark wavy bars on upperparts; white forehead and crown speckled brownish-black; blackish nape finely dotted with white. **Habitat:** Generally at inland rivers, jheels, lakes and reservoirs. **Habits:** Feeds solitary or in small flocks, flying back and forth over water surface scanning for food, plunges steeply over prey; also feeds by dipping. Breeds locally, in small colonies on sandbanks in rivers of NW India during May and June. **Food:** Carnivorous, comprising chiefly small fish, crustaceans and aquatic insects. **Status and Distribution:** Resident in NW India, during non-breeding season disperses all over India and in coastal areas; Pakistan;

Nepal; Sri Lanka; Maldives. Mostly breeds in Europe, Mediterranean, Black and Caspian seas, winters coasts of S Africa and S Asia.

**179(480). Sandwich Tern.** *Sterna sandvicensis sandvicensis* Latham; House crow  $\pm$ ; 36-44 cm; **WM/Ra C** (Fig. 179)

**Diagnostics:** Sexes alike. *Non-breeding* (winter): forehead and crown white, black crest forming U-shaped patch, pale grey upper wings and darker outer primaries form distinct wedge. *Breeding* (summer): cap black with crest. *Juvenile*: like non-breeding adult with dark band on the lesser wing-coverts, brown crescent bars on tertiaries and tail-feathers, primaries dark grey. **Habitat:**

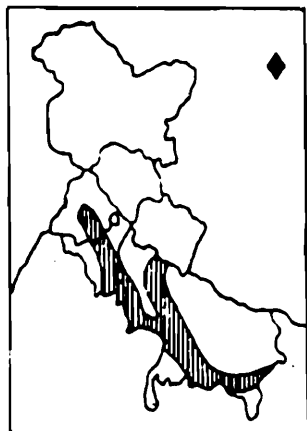


**Habits:** Frequents seacoasts and open sea. **Habits:** Flies closer to the water surface, often forages in flocks with Lesser Crested Tern, plunge-dives for fish. **Food:** Carnivorous (fish and marine worms). **Status and**

**Distribution:** Regular winter migrant to W coasts, rare inland; Pakistan; Sri Lanka. Breeds European coasts, winters on coasts of N and W Africa to Cape of Good Hope, Red Sea, Persian Gulf and elsewhere.

**180(484). Indian Skimmer or Scissorbill.** *Rynchops albicollis* Swainson; *Panchira*; House crow  $\pm$ ; 40 cm; **GT R/LM/Ra C** (Fig. 180)

**Diagnostics:** *Adult:* Sexes alike, but female slightly smaller. A large tern-like bird with contrasting pied plumage. Bill orange-red, yellow at tip and orange at base, with much longer lower mandible; forehead, neck-collar and wing-bar white; upperparts blackish-brown; underparts glistening white; legs and feet red. At rest, wings project much beyond the slightly forked tail. *Juvenile:* Forehead streaked with brown; upperparts lighter brown, scalloped with fulvous white; tail-feather brown-tipped. **Habitat:** Occurs in undisturbed reaches of rivers with sandbanks, reservoirs,



rarely on lakes also. **Habits:** Generally solitary, feeds in small flocks, roosts communally, hunts actively during moonlit nights, gracefully skims over undisturbed waters ploughing with lower mandible held at oblique angle. Breeds from February to April. **Food:** Carnivorous, comprising small fish. **Status and Distribution:** Globally threatened/ Vulnerable. Resident, nomadic, occurs mainly on large rivers in

Punjab and C India; Pakistan; Nepal; Bangladesh. SE Asia. **Remarks:** Population has become very scarce recently, thus rarely seen in most parts of India, except Gujarat. Global population is estimated to be around 10,000 individuals. Over 600 birds recorded in Bangladesh in 1991 during Asian Waterfowl Census. Major threats are loss of breeding habitats, use of pesticides and collection of eggs.

### 3.3 Population Status

The waterbirds of Northern India, comprising 180 forms, constitute nearly 74% of the inland waterbirds of India (245), almost 55% of Asia (328) and about 23% of the world (767).

Since, a large number of waterbirds are known to undertake well-defined seasonal movements and arrive in millions in India during winter every year, the waterbirds of Northern India have been broadly classified into the following two categories according to their residential status, namely, **migrant** and **resident**.

109 forms (60%) of the Northern Indian waterbirds are winter migrants. Among these, 94 forms are true winter migrants (WM). However, 13 forms also breed in the northern extremities of their winter range (WM/R). The Greylag Goose and the Whimbrel are passage migrants during winter (WM/PM) (Plates 43,44).

Of the 71 residents (R), 35 forms undertake local movements depending on drought/water conditions (R/LM),

while two undertake altitudinal movement between the plains of Northern India and the Himalayas (R/AM). Certain birds (10 forms) such as, Barheaded Goose, Ruddy Shelduck, Mallard, etc. are resident in some numbers in high altitudes of Himalayas (where they breed as well); however, they behave like true winter migrants in plains of the Northern India (R/WM). On the other hand, the Pheasant-tailed Jacana, is a resident in the plains of Northern India, undertakes summer migration to the foothills (SR). 22 forms are of true resident category (R). The Pinkheaded Duck has possibly become extinct (**Cr**) not only from Northern India, but throughout the country.

Based on the mid-winter waterfowl counts by Wetland International, it is estimated that approximately three million waterbirds migrate to India every winter. It is noteworthy that the Terai belt and Indo-Gangetic plains provide a large number of wetlands, which attract a sizeable population of these migratory birds.

It is not necessary that all waterbirds, whether resident or migratory, be found in equal numbers and frequency.

Therefore, according to their occurrence, frequency and population, they have been assigned the following various categories. Vagrant (**Va**) (20 forms) – a species which has been recorded in ones or twos only on a very few occasions in the last hundred years or so. Very rare (**VRa**) (2) – a species which has been recorded in ones or twos but at regular intervals. Rare (**Ra**) (59) – birds which are found in small numbers regularly. Species earlier found regularly in large numbers but whose number has dwindled recently have been classed as Uncommon (**UnCom**) (68). Birds which are still frequent and found in large flocks have been grouped as common (**Com**) (25). Certain species such as Pintail, Ruddy Shelduck, Pochards, Mallard, Gadwall etc., which, though winter migrants, occur on wetlands in the hundreds or even thousands are termed Very Common (**VCom**) (6).



### **3.4 Threatened species**

The Earth Summit at Rio de Janeiro in 1992 may be noted as a most historical moment because it focused biological diversity and its conservation as never before in the social, economic and political thinking of the late twentieth century. Ratification of the convention in 1993 was perhaps the final acceptance that the conservation of nature has obtained a rightful place on the global agenda of the community of nations. All conservationists have a reason to rejoice but a great challenge lies ahead. One of the major gaps is in describing biodiversity and formulating appropriate strategies for its conservation. Thus, the natural emphasis would be on conserving those elements of biodiversity, which our planet is likely to lose. This can be achieved by identifying and documenting the species, which are potential losers and the ecosystems on earth where they can be saved in the most cost-effective manner

As far as the bird fauna is concerned many organisations like BirdLife International, Wetlands International and Royal Society for the Protection of Birds have pioneered these activities.

The BirdLife International made a major thrust in this direction by documenting the Globally threatened bird species in the form of Red Data Books since 1964 under the series '*Birds to Watch*'. These adopt the IUCN criteria for assigning threat status and category based on rates of decline, population levels and range sizes (Collar *et al.*, 1994). Birds are perhaps the only class of animals in which new IUCN criteria have been used completely.

As per recent estimates 11% of World Avifauna (1111 bird forms) are Threatened, with a further 11 forms (0.1%) being categorised under Conservation dependent, 66 (1%) to Data Deficient and 875(9%) to nearThreatenedcategory. Of the 1111 threatened species, four are identified as Extinct in the wild, 168 as Critical, 235 as Endangered and 704 as Vulnerable (Collar *et al.*, 1994).

**It is amazing that 39 forms of Globally Threatened, waterbirds, including three of wetland dependent birds, are reported from Northern India (17 belong to GT category, 12 NT, 12 VU, 08 EN, 05 R, 02 I, and 01CR). Many of these are also listed in Red Data Book, IUCN (1990) and ZSI (1994), Directory of Indian Wetlands (1993), Schedule I of the Indian Wildlife (Protection) Act (1972) and Annexures I and II of CITES (1995) (Plates 43,44).**

**The threatened species of waterbirds along with their conservation status are summarised in the Table below. This is followed by a list of Thresholds for the waterbird population in Northern India.**

### 3.4 Threatened Species

(GT= Globally Threatened; EX = Extinct; CR = Critically Endangered; EN = Endangered; T= Threatened; NT = Near-Threatened; I= Indeterminate; R= Rare; VU= Vulnerable; UnKn = UnKnown)

| Sl. No.   | Species                                                                  | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|-----------|--------------------------------------------------------------------------|-------------------------|---------------------------------|---------------|-------------------------------------------|-------------------------------|-----------------------------|
| <b>A.</b> | <b><u>Waterbirds:</u></b>                                                |                         |                                 |               |                                           |                               |                             |
| 01.       | <b>Spottedbilled or Grey Pelican</b><br><i>Pelecanus p. philippensis</i> | GT/VU                   | I                               | -             | EN                                        | -                             | -                           |
| 02.       | <b>Dalmatian Pelican</b><br><i>Pelecanus p. crispus</i>                  | GT/VU                   | EN                              | VU            | EN                                        | -                             | -                           |
| 03.       | <b>Darter or Snake-bird</b><br><i>Anhinga rufa melanogaster</i>          | NT                      | -                               | -             | UnKn                                      | IV                            | -                           |

| Sl. No. | Species                                                                         | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | Book<br>ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|---------|---------------------------------------------------------------------------------|-------------------------|---------------------------------|-----------------------|-------------------------------------------|-------------------------------|-----------------------------|
| 04.     | <b>Great Whitebellied Heron</b><br><i>Ardea insignis</i>                        | GT/EN                   | EN                              | -                     | En                                        | I                             | -                           |
| 05.     | <b>Painted Stork</b><br><i>Mycteria leucocephala</i>                            | NT                      | -                               | -                     | -                                         | -                             | -                           |
| 06.     | <b>Opnbill Stork</b><br><i>Anastomus oscitans</i>                               | NT                      | -                               | -                     | -                                         | -                             | -                           |
| 07.     | <b>Black Stork</b><br><i>Ciconia nigra</i>                                      | -                       | -                               | -                     | -                                         | -                             | II                          |
| 08.     | <b>Adjutant Stork</b><br><i>Leptoptilos dubius</i>                              | GT/EN                   | EN                              | EN                    | EN                                        | I                             | -                           |
| 09.     | <b>Lesser or Haircrested<br/>Adjutant Stork</b><br><i>Leptoptilos javanicus</i> | GT/VU                   | VU                              | EN                    | T                                         | I                             | -                           |

| Sl. No. | Species                                                               | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | Book<br>ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|---------|-----------------------------------------------------------------------|-------------------------|---------------------------------|-----------------------|-------------------------------------------|-------------------------------|-----------------------------|
| 10.     | <b>White Ibis</b><br><i>Threskiornis aethiopica<br/>melanocephala</i> | NT                      | -                               | -                     | -                                         | -                             | -                           |
| 11.     | <b>Indian Black Ibis</b><br><i>Pseudibis papillosa papillosa</i>      | NT                      | -                               | -                     | -                                         | -                             | -                           |
| 12.     | <b>Spoonbill</b><br><i>Platalea leucorodia major</i>                  | -                       | -                               | EN                    | -                                         | I                             | II                          |
| 13.     | <b>Flamingo</b><br><i>Phoenicopterus roseus</i>                       | -                       | -                               | -                     | -                                         | -                             | II                          |
| 14.     | <b>Lesser Flamingo</b><br><i>Phoeniconaias minor</i>                  | NT                      | -                               | -                     | -                                         | -                             | II                          |

| Sl. No. | Species                                                              | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | Red Data Book<br>ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|---------|----------------------------------------------------------------------|-------------------------|---------------------------------|--------------------------------|-------------------------------------------|-------------------------------|-----------------------------|
| 15.     | <b>Lesser Whitefronted or Dwarf Goose</b><br><i>Anser erythropus</i> | GT/VU                   | R                               | -                              | -                                         | -                             | -                           |
| 16.     | <b>Barheaded Goose</b><br><i>Anser indicus</i>                       | -                       | -                               | -                              | T                                         | -                             | -                           |
| 17.     | <b>Large Whistling Teal</b><br><i>Dendrocygna bicolor</i>            | -                       | -                               | VU                             | -                                         | I                             | -                           |
| 18.     | <b>Marbled Teal</b><br><i>Marmaronetta angustirostris</i>            | GT/VU                   | VU                              | -                              | T                                         | -                             | -                           |
| 19.     | <b>Baikal, Clucking or Formosa Teal</b><br><i>Anas formosa</i>       | -                       | -                               | -                              | -                                         | -                             | II                          |
| 20.     | <b>Pinkheaded Duck</b><br><i>Rhodonessa caryophyllacea</i>           | GT/CR                   | EX                              | EX                             | T                                         | I                             | I                           |

| Sl. No. | Species                                                              | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | Book<br>ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|---------|----------------------------------------------------------------------|-------------------------|---------------------------------|-----------------------|-------------------------------------------|-------------------------------|-----------------------------|
| 21.     | <b>White-eyed Pochard</b><br><i>Aythya nyroca</i>                    | GT/VU                   | -                               | -                     | T                                         | -                             | -                           |
| 22.     | <b>Nakta or Comb Duck</b><br><i>Sarkidiornis melanotos melanotos</i> | -                       | -                               | -                     | -                                         | -                             | II                          |
| 23.     | <b>Eastern Merganser</b><br><i>Mergus merganser orientalis</i>       | -                       | -                               | -                     | T                                         | -                             | -                           |
| 24.     | <b>Whiteheaded Stiff-tailed Duck</b><br><i>Oxyura leucocephala</i>   | GT                      | VU                              | -                     | -                                         | -                             | II                          |
| 25.     | <b>Eastern Common Crane</b><br><i>Grus grus lilfordi</i>             | -                       | -                               | -                     | -                                         | -                             | II                          |

| Sl. No. | Species                                                              | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | Book<br>ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|---------|----------------------------------------------------------------------|-------------------------|---------------------------------|-----------------------|-------------------------------------------|-------------------------------|-----------------------------|
| 26.     | <b>Blacknecked Crane</b><br><i>Grus nigricollis</i>                  | GT/VU                   | R                               | CR                    | T                                         | I                             | I                           |
| 27.     | <b>Indian Sarus Crane</b><br><i>Grus antigone antigone</i>           | NT                      | -                               | -                     | -                                         | -                             | II                          |
| 28.     | <b>Siberian or<br/>Great White Crane</b><br><i>Grus leucogeranus</i> | GT/EN                   | R                               | EN                    | T                                         | I                             | I                           |
| 29.     | <b>Demosiella Crane</b><br><i>Anthropoides virgo</i>                 | -                       | -                               | -                     | -                                         | -                             | II                          |
| 30.     | <b>Sociable Lapwing</b><br><i>Vanellus gregarius</i>                 | GT/VU                   | R                               | -                     | -                                         | -                             | -                           |
| 31.     | <b>Greyheaded Lapwing</b><br><i>Vanellus cinereus</i>                | NT                      | -                               | -                     | -                                         | -                             | -                           |



| Sl. No. | Species                                                                             | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | Book<br>ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|---------|-------------------------------------------------------------------------------------|-------------------------|---------------------------------|-----------------------|-------------------------------------------|-------------------------------|-----------------------------|
| 32.     | <b>Long-billed Ringed Plover</b><br><i>Charadrius placidus</i>                      | NT                      | -                               | -                     | -                                         | -                             | -                           |
| 33.     | <b>Snipebilled Godwit or<br/>Asian Dowitcher</b><br><i>Limnodromus semipalmatus</i> | NT                      | -                               | -                     | -                                         | -                             | -                           |
| 34.     | <b>Wood Snipe</b><br><i>Capella nemoricola</i>                                      | GT/VU                   | I                               | -                     | -                                         | -                             | -                           |
| 35.     | <b>Blackbellied Tern</b><br><i>Sterna acuticauda</i>                                | GT                      | -                               | -                     | -                                         | -                             | -                           |
| 36.     | <b>Indian Skimmer or<br/>Scissorbill</b><br><i>Rynchops albicollis</i>              | GT                      | -                               | EN                    | T                                         | I                             | -                           |

| Sl. No.   | Species                                                                          | Collar et al.<br>(1994) | Red Data Book<br>IUCN<br>(1990) | ZSI<br>(1994) | Directory of<br>Indian Wetlands<br>(1993) | IWL(P)A<br>Schedule<br>(1972) | CITES<br>Appendix<br>(1995) |
|-----------|----------------------------------------------------------------------------------|-------------------------|---------------------------------|---------------|-------------------------------------------|-------------------------------|-----------------------------|
| <b>B.</b> | <b>Wetland dependent birds:</b>                                                  |                         |                                 |               |                                           |                               |                             |
| 37.       | <b>Whitetailed Sea Eagle</b><br><i>Haliaeetus albicilla</i>                      | NT                      | -                               | -             | -                                         | -                             | -                           |
| 38.       | <b>Ringtailed or<br/>Pallas's Fishing Eagle</b><br><i>Haliaeetus leucoryphus</i> | GT/VU                   | R                               | -             | -                                         | -                             | -                           |
| 39.       | <b>Himalayan Greyheaded<br/>Fishing Eagle</b><br><i>Ichthyophaga nanaplumbea</i> | NT                      | -                               | -             | -                                         | -                             | -                           |

### **3.5 Thresholds for Waterbird Population (N India), i.e., 1% of the biogeographic population of Waterbirds**

| <b>Species</b>           | <b>Threshold Number of individual birds</b> |
|--------------------------|---------------------------------------------|
| Little Grebe             | 5500                                        |
| Great Crested Grebe      | 400                                         |
| Great White Pelican      | 225                                         |
| Dalmatian Pelican        | 115                                         |
| Spottedbilled Pelican    | 115                                         |
| Little Cormorant         | 1500                                        |
| Indian Shag              | 300                                         |
| Large Cormorant          | 800                                         |
| Darter                   | 100                                         |
| Little Egret             | 7000                                        |
| Eastern Grey Heron       | 1200                                        |
| Great Whitebellied Heron | 1                                           |
| Eastern Purple Heron     | 500                                         |
| Large Egret              | 500                                         |
| Smaller or Median Egret  | 1000                                        |
| Cattle Egret             | 15,000                                      |
| Pond Heron               | 5000                                        |
| Night Heron              | 1000                                        |
| Little Bittern           | 150                                         |
| Yellow Bittern           | 5000                                        |
| Chestnut Bittern         | 6000                                        |
| Black Bittern            | 750                                         |

| <b>Species</b>        | <b>Threshold Number of<br/>individual birds</b> |
|-----------------------|-------------------------------------------------|
| Painted Stork         | 200                                             |
| Openbill Stork        | 1250                                            |
| Black Stork           | 55                                              |
| Whitenecked Stork     | 150                                             |
| White Stork           | 30                                              |
| Blacknecked Stork     | 4                                               |
| Adjutant Stork        | 7                                               |
| Lesser Adjutant Stork | 50                                              |
| Nakta or Comb Duck    | 60                                              |
| Cotton Teal           | 1500                                            |
| Gadwall               | 2000                                            |
| Falcated Teal         | 5000                                            |
| Wigeon                | 7500                                            |
| Mallard               | 11,000                                          |
| Spotbill Duck         | 6000                                            |
| Shoveller             | 6000                                            |
| Pintail               | 15,000                                          |
| Garganey              | 7500                                            |
| Baikal Teal           | 1000                                            |
| Common Teal           | 9000                                            |
| Marbled Teal          | 50                                              |
| Pinkheaded Duck       | 1                                               |
| Redcrested Pochard    | 750                                             |
| Common Pochard        | 10,000                                          |

| <b>Species</b>                 | <b>Threshold Number of<br/>individual birds</b> |
|--------------------------------|-------------------------------------------------|
| White-eyed Pochard             | 100                                             |
| Tufted Duck                    | 10,000                                          |
| Scaup Duck                     | 5000                                            |
| Goldeneye Duck                 | 250                                             |
| Smew                           | 250                                             |
| Siberian Crane                 | 30                                              |
| Indian Sarus Crane             | 100                                             |
| Demoiselle Crane               | 850                                             |
| Eastern Common Crane           | 60                                              |
| Blacknecked Crane              | 55                                              |
| Chinese Whitebreasted Waterhen | 10,000                                          |
| Kora or Watercock              | 500                                             |
| Indian Purple Moorhen          | 1000                                            |
| Indian Moorhen                 | 10,000                                          |
| Coot                           | 25,000                                          |
| Glossy Ibis                    | 500                                             |
| White Ibis                     | 300                                             |
| Indian Black Ibis              | 100                                             |
| Spoonbill                      | 150                                             |
| Flamingo                       | 2500                                            |
| Lesser Flamingo                | 1500                                            |
| Lesser Whistling Teal          | 10,000                                          |
| Large Whistling Teal           | 200                                             |
| Greylag Goose                  | 650                                             |

| <b>Species</b>         | <b>Threshold Number of individual birds</b> |
|------------------------|---------------------------------------------|
| Barheaded Goose        | 200                                         |
| Ruddy Shelduck         | 1000                                        |
| Lapwing                | 650                                         |
| Spurwinged Lapwing     | 100                                         |
| Yellow-wattled Lapwing | 500                                         |
| Greyheaded Lapwing     | 250                                         |
| Redwattled Lapwing     | 1500                                        |
| Sociable Lapwing       | 10                                          |
| Wood Snipe             | 50                                          |
| Pintail Snipe          | 2000                                        |
| Common Snipe           | 15,000                                      |
| Jack Snipe             | 660                                         |
| Black-tailed Godwit    | 2600                                        |
| Bar-tailed Godwit      | 3300                                        |
| Whimbrel               | 900                                         |

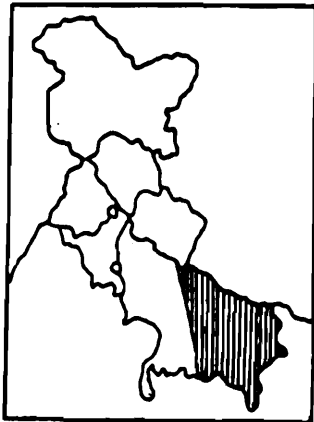
The Bombay Natural History Society (BNHS), the Royal Society for the Protection of Birds (RSPB) UK, and the BirdLife International have jointly established the Indian Bird Conservation Network (IBCN), which include the NGOs and individuals who want to endow in bird conservation in India. One of the major aims of the network is to identify and protect Important Bird Areas (IBA) throughout the country. The programme has been officially launched in India in March, 1999. There are many criteria for nominating an IBA, namely, Globally threatened species, Restricted Range Species, Biome Restricted Assemblage and Congregations (for details contact BNHS).



## 4. WETLAND DEPENDENT BIRDS

**181(135). Brahminy Kite, *Haliastur indus indus*** (Boddaert); Brahmini Cheel; Pariah Kite -; 48 cm; **R/Com C** (Fig. 181)

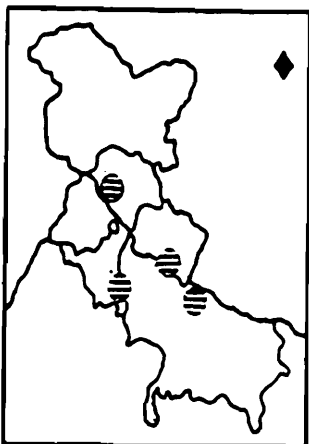
*Haliastur indus* (I)



**Diagnostics:** *Sexes alike.* Bright rusty-red above, white elsewhere; immature chocolate brown. Tail rounded. **Habits:** Often solitary or in pairs, but roost communally and gregarious where common. Feeds on fish, frogs, crab and young ducks. **Habitat:** Near around freshwater bodies. **Status and Distribution:** Resident; undertakes local movements. Widespread and locally common up to 1800 m in Himalayas.

**182(172a) Whitetailed Sea Eagle. *Haliaeetus albicilla*** (Linnaeus); Kite +; 69-86 cm; **NT WM/Ra C** (Fig. 182)

**Whitetailed Eagle** (I)



**Diagnostics:** Huge dark brown eagle with paler head, neck and upper breast; easily recognised by wholly white tail contrasting with brown wings and body. **Habits:** Lethargic, generally sits for hours perched on objects on ground at edge of water. Scoops on fish while flying low on water surface. **Habitat:** Rare winter migrant to large rivers and jheels. **Status and Distribution:** Winter migrant, widespread but rare.



**183(174) Ringtailed or Pallas's Fishing Eagle.** *Haliaeetus leucoryphus* (Pallas); *Machharang*; Kite +; 76-84 cm; **GT/Vu R/Ra C** (Fig. 183)

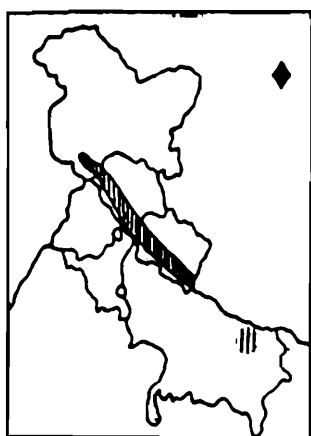
**Pallas's Fish Eagle (I)**



**Diagnostics:** *Sexes alike.* Dark brown with pale golden brown head, broad white band across tail conspicuous in flight. **Habits:** Rather sluggish, perching for long periods on a tree or sup port near water, feeds mainly on fish and ducks; breeds near lakes. **Habitat:** Mainly large rivers lakes and reservoirs. **Status and Distribution:** Globally threatened/ Vulneable. Resident, rare; from Kashmir east to NE India. **Remarks:** There is little recent information on its status in much of its range. Wetlands destruction, human disturbance and pollution are believed to be the main reasons for its decline in India.

**184(177) Himalayan Greyheaded Fishing Eagle.** *Ichthyophaga nana plumbea* (Jerdon); Kite ±; c.64 cm; **NT R/Ra C** (Fig. 184)

**Lesser Fish Eagle, *Ichthyophaga humilis* (I)**

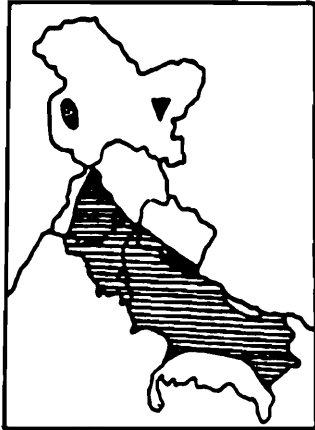


**Diagnostics:** *Sexes alike.* Head pure grey, less brown on crown, belly white, thigh and under tail-coverts clearly demarcated from breast, basal two-third of tail mottled brown, terminal third blackish. **Habits:** Solitary, usually perches on trees or rocks over looking water from where it takes flight for hunting fish, glides and soars on level wings. **Habitat:** Forest streams and lakes in foothills and sub-Himalayan terai. **Status and Distribution:** Resident, chiefly in Himalayas from Kashmir east to Arunachal Pradesh.

**185(203). Osprey.** *Pandion haliaetus haliaetus* (Linnaeus); *Machhlimar*; Kite-; 55-58 cm; **WM/R/UnCom C** (Fig. 185)

*Pandion haliaetus* (I)

**Diagnostics:** Sexes alike. Brown with white head and diagnostic brown breast band on white underparts.



**Habits:** Usually solitary, frequently perches on dead trees in vicinity of wetlands. Feeds on fish.

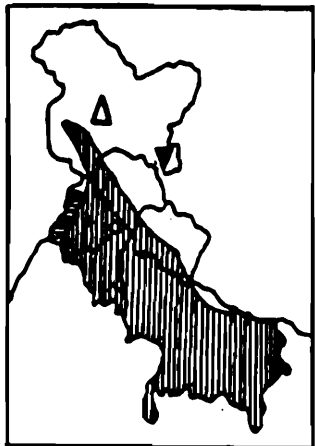
**Habitat:** Major rivers, reservoirs, lakes and jheels.

**Status and Distribution:** Mainly winter visitor, from September to March, throughout the subcontinent. Breeds in Himalayas in Ladakh, Kashmir and northern Uttar Pradesh between 2000 - 3300 m altitude

**186(210) Redcapped or Barbary Falcon.** *Falco peregrinus babylonicus* P.L.Sclater; Shaheen; Kite -; 38-48 cm; **R/WM/UnCom C** (Fig. 186)

**Peregrine Falcon, *Falco peregrinus* (I)**

**Diagnostics:** Prominent slaty-black head, black cheek stripes contrasting with white chin and throat.



**Habits:** Seen singly or in pairs; feeds on waterfowl, pigeons, partridges and other birds; preys actively at dawn and dusk.

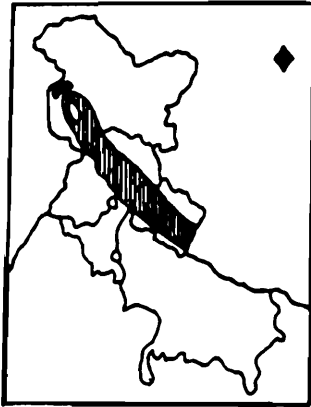
**Habitat:** Winters near large lakes, rivers and marshes.

**Status and Distribution:** Resident in NW Himalaya, undertakes altitudinal movements, winters in N Indian plains; widespread but uncommon up to 2745 m in Himalayas.

**187(717) West Himalayan Pied Kingfisher.** *Ceryle lugubris continentalis* Hartert; Machhi baag; House Crow ±; c. 41 cm; **R/Ra C** (Fig. 187)

**Crested Kingfisher, *Megaceryle lugubris* (I)**

**Diagnostics:** A very large crested black and white kingfisher; white-streaked black crown and breast and barred upperparts are characteristics of this bird.



Generally restricts to selected river stretch and perches most of the day on overhanging branches, from where it dives directly to catch fish. **Habitat:** Torrential hill streams and large rivers in Himalayan foothills. Rarely at lakes and reservoirs. **Status and Distribution:** Resident, locally common in Himalayas up to 2000 m.

**188(719) Indian Pied Kingfisher.** *Ceryle rudis leucomelanura* Reichenbach; Kilkila; Myna +; c. 31 cm; **R/Com C** (Fig. 188)

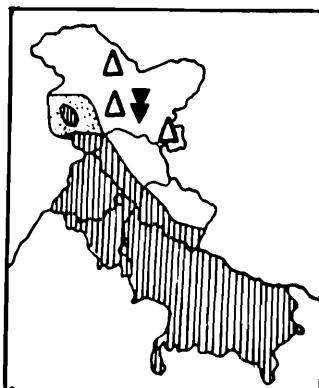
**Pied Kingfisher,** *Ceryle rudis* (I)

**Diagnostics:** Large crested, black and white Kingfisher; upperparts blotched with black rather than barred; black band through eye with broad white supercilium, crest small. **Habits:** Has a very characteristic habit of hunting by hovering over water with bill pointing down and fast beating wings; plunges vertically downwards to catch the fish. **Habitat:** Ponds, lakes, canals, irrigation tanks, flooded ditches, jheels, slow-running streams and rivers. **Status and Distribution:** Resident throughout India, common below 1800 m.



**189(722) Central Asian Small Blue Kingfisher.** *Alcedo atthis pallasii* Reichenbach; Sparrow+; c. 18 cm; **R/WM C** (Fig 189)

**190(723) Indian Small Blue Kingfisher.** *Alcedo atthis bengalensis* Gmelin, Sparrow+; c. 18 cm; **R/Com C**



**Common Kingfisher,** *Alcedo atthis* (I)

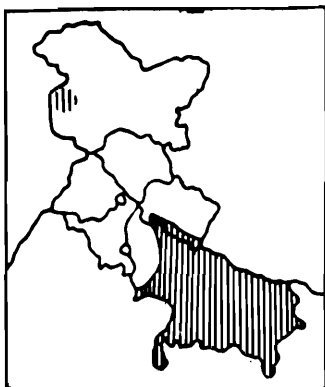
**Diagnostics:** Sexes alike. Brilliant turquoise-blue and orange kingfisher; blue green above, deep rust below; white neck patch; short stumpy tail and long, straight pointed bill. **Habits:** Perches around 1-2 m at a vantage point on a perch, plunges

headlong into the water to catch prey. **Habitat:** Streams, canals, ditches, ponds, rivers and lakes in open country. **Status and Distribution:** Resident almost throughout India up to 2000 m; common.

**191(730) Brownheaded Storkbilled Kingfisher.** *Pelargopsis capensis capensis* (Linnaeus); *Bada kilkila*; Pigeon ±; c. 38 cm; **R/UnCom C** (Fig. 191)

**Stork-billed Kingfisher, *Halcyon capensis* (L)**

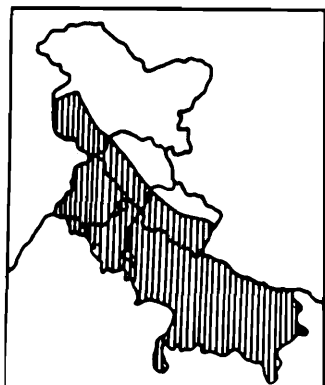
**Diagnostics:** Sexes alike. Large-size enormous compressed blood red bill, brownish cap, pale orange-buff collar and underparts, blue-green upperparts. **Habitat:** Lowland rivers, streams, irrigation channels and lakes. **Habits:** Occurs singly or in separated pairs, sluggish, generally remains hidden amidst overhanging vegetation at wetlands. **Status and Distribution:** Resident, locally common in plains and foothills of Uttar Pradesh and eastern and southern parts of the country.



**192(735) Whitebreasted Kingfisher.** *Halcyon smyrnensis smyrnensis* (Linnaeus); *Kilkila*; Myna +; c. 28 cm; **R/Com C** (Fig. 192) , **193(736) Indian Whitebreasted Kingfisher.** *Halcyon smyrnensis fusca* (Boddaert); *Kilkila*; Myna +; c. 28 cm; **R/Com C**

**White-throated Kingfisher, *Halcyon smyrnensis* (L)**

**Diagnostics:** A large Kingfisher with large red bill, chocolate-brown head and under parts except white throat and centre of breast; brilliant turquoise-blue upperparts, rump and tail; bold white wing-patch during flight is diagnostic. **Habitat:** Varied, often ranging away from water; streams, rivers, canals and village tanks. **Habits:** Characteristically perches on telegraph/phone wires, poles and



branches. **Status and Distribution:** Resident, common and widely distributed up to 2250 m.

**194(739) Blackcapped Kingfisher.** *Halcyon pileata* (Boddaert); *Kourilla*; Myna +; c. 30 cm; **R/LM/UnCom C** (Fig.194)

**Black-capped Kingfisher, *Halcyon pileata* (I).**

**Diagnostics:** Sexes alike. Mainly a coastal kingfisher with coral-red bill, purple-blue upperparts and tail, and pale rusty under parts. A large whitewing-patch conspicuous in flight. **Habitat:** Coastal areas including mangrove swamps, estuaries, tidal creeks and rivers. **Habits:** Perches on open edges of mangroves, forests and telegraph/phone wire. Dives down obliquely, rarely plunges into water.

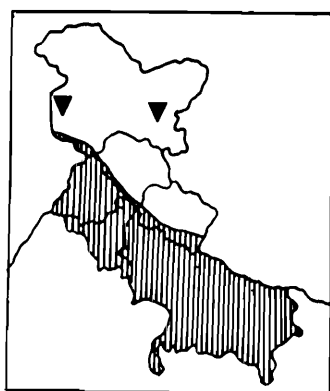


**Status and Distribution:** Resident, shows local movements and locally common.

**195(912) Indian Greythroated Sand Martin.** *Riparia paludicola chinensis* (J.E.Gray); *Ababil*; Sparrow -; c. 12 cm; **R/Com C** (Fig. 195)

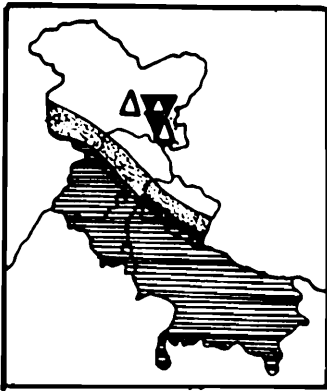
**Plain Martin, *Riparia paludicola* (I)**

**Diagnostics:** Sexes alike. Pale brownish-grey throat and breast, merges with drab white of under parts. **Habitat:** Near large rivers, streams and lakes with vertical banks. **Habits:** Generally feeds over water, crepuscular; perches in rows on telegraph/phone wires, roosts communally in reedbeds. **Status and Distribution:** Resident, common in N and C India from plains to 1500 m.



**196(916) Western Swallow.** *Hirundo rustica rustica* Linnaeus; *Ababil*; Sparrow ±; c. 18 cm; **R/AM/Com C** (Fig. 196)

**Barn Swallow, *Hirundo rustica* (I)**

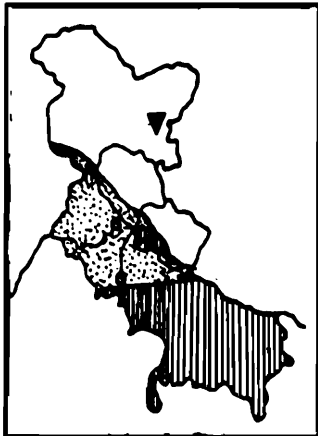


**Diagnostics:** Sexes alike. Rust-colored forehead and throat, long tail-streamers, blue-black breast band. **Habitat:** Open country lakes and rivers, generally near water in winter. **Habits:** Swift and agile flier, forages by skimming low over water, highly sociable, flocks in large numbers on telegraph/phone wires. **Status and Distribution:** Resident, breeds from foothills up to 3000 m.

**197(921) Indian Wiretailed Swallow. *Hirundo smithii filifera* Stephens; *Leishra*; Sparrow ±; c. 14 cm; R/SM/Com C (Fig. 197)**

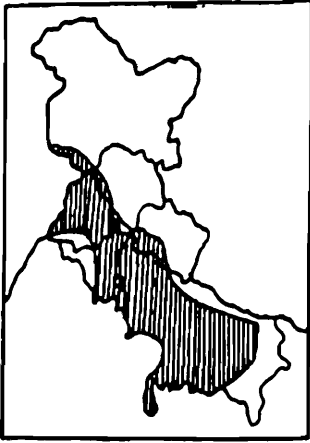
**Wire-tailed Swallow, *Hirundo smithii* (I)**

**Diagnostics:** Sexes alike, but female with shorter tail-wires. Glossy steel-blue above with bright chestnut cap; easily distinguished by bright pure white underparts and two long tail-wires. partly submerged rocks, often dashes under the spray of falling water. **Status and Distribution:** Resident but undertakes altitudinal movements; throughout Himalayas; winters between 1000-2000 m. **Habitat:** Open country, cultivations in the neighbourhood of rivers, jheels, reservoirs, etc. **Habits:** Generally found in vicinity of water, sails in flocks over the water surface, roosts in reed beds. **Status and Distribution** Resident in peninsula, undertakes summer migration to N India, up to 1500 m in the Himalayas.



**198(922) Indian Cliff Swallow. *Hirundo fluvicola* Blyth; *Nahar ababil*; Sparrow -; c. 12 cm; R/SM/Com C (Fig. 198)**

**Streak-throated Swallow (I)**

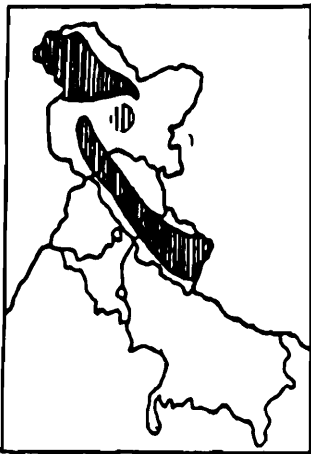


**Diagnostics:** Sexes alike. Very slightly forked tail; glossy steel-blue above with chestnut forehead and crown; rump pale brown; fulvous white below. **Habitat:** Found in open country and cultivation in the vicinity of rivers, canals and reservoirs. **Habits:** Highly gregarious, forages in close proximity of water with other swallows. **Status and Distribution:** Resident, but summer migrant to N India. Breeds upto

700 m in Himalayas.

**199(1684) Little Forktail.** *Enicurus scouleri scouleri* Vigors; Sparrow -; c. 12 cm; **R/AM/Com C** (Fig. 199)

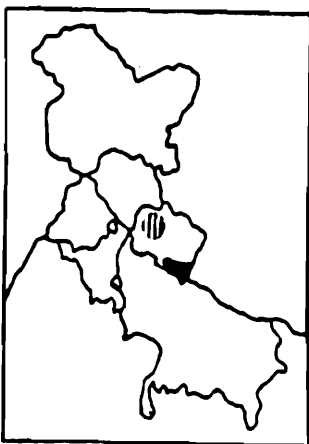
*Enicurus scouleri* (I)



**Diagnostics:** Distinguished from other Forktails due to small size, rounded body, short black tail with prominent white sides; black band across the white rump; forehead prominent white. **Habitat:** Rocky mountain streams, chiefly near waterfalls. **Habits:** Always occurs near water, feeds by standing on or running over partly submerged rocks, often dashes under the spray of falling water. **Status and Distribution :** Resident but undertakes altitudinal movements;

throughout Himalays; winters between 1000-2000 m.

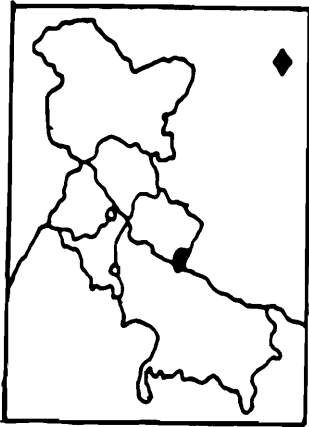
**200(1685) Blackbacked Forktail.** *Enicurus immaculatus* (Hodgson); Bulbul, with long tail; c. 25 cm; **R/Com C** (Fig. 200)



**Diagnostics:** Long, forked black-and-white tail, with white band across wing; crown and mantle black; bill small, more white on fore head. **Habitat:** Fast-flowing forested streams. **Habits:** Solitary, occurs on stones and boulders in and along streams. **Status and Distribution:**

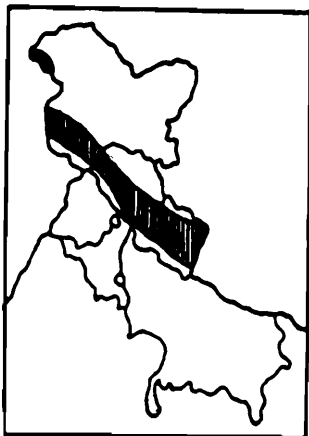
Resident, restricted to Himalayan foothills east of northern Uttar Pradesh.

**201(1686) Slatybacked Forktail.** *Enicurus schistaceus*(Hodgson); Bulbul, with long tail; c. 25 cm; **R/AM/Ra C** (Fig. 201)



**Diagnostics:** Long, forked black-and-white tail; slaty-grey crown and mantle contrasting with black throat and wing-coverts. **Habitat:** Large rocky forested torrential streams, also lake margins. **Habits:** Keeps solitary or in pairs, flits from stone to stone or trips over boulders for foraging. **Status and Distribution:** Resident but rare, undertakes altitudinal movements; restricted in Himalayas from northern Uttar Pradesh to Arunachal Pradesh.

**202(1688) Western Spotted Forktail.** *Enicurus maculatus maculatus* Vigors; Bulbul, with long tail; c. 25 cm; **R/AM/Com C** (Fig. 202)



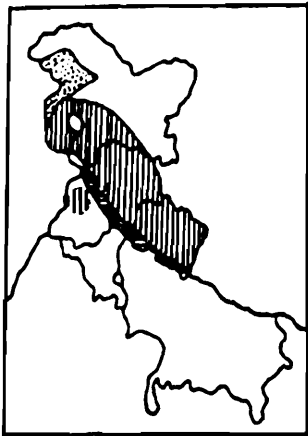
**Diagnostics:** Large sized Forktail with very long tail, white spots on black mantle, white forehead prominent, black of throat extends up to breast. **Habitat:** Rocky forested streams and ravines. **Habits:** Singly or in sparated pairs, flits over moss-covered stones at the water's edge or from stone to stone in mid-current. **Status and Distribution:** Resident, undertakes altitudinal movements; restricted to Himalayas from N Pakistan to Arunachal Pradesh.

**203(1679) Plumbeous Redstart.** *Rhyacornis fuliginosus fuliginosus* (Vigors); Sparrow -; c. 12 cm; **R/AM/Com C** (Fig. 203)

**Plumbeous Water Redstart,** *Rhyacornis fuliginosus* (l)

**Diagnostics:** Male: Bluish slaty with chestnut tail and





rufous lower belly. Female: Dark grey-brown above with two rows of white spots on wing, mottled slate and white below. **Habitat:** Fast-flowing streams and rivers. **Habits:** Solitary or in pairs, confines to hill streams where it hops from boulder to boulder, crepuscular, and hunts till late dusk. **Status and Distribution:** Resident, but undertakes altitudinal movements;

breeds in Himalayas from 1200-4300 m.

**204(1716) Whitecapped Redstart or River Chat.** *Chaimarrornis leucocephalus* (Vigors); *Gir-chaondia*; Bulbul; c. 19 cm; **R/AM/Com C/H** (Fig. 204) **White-capped Water Redstart (I)**



**Diagnostics:** Sexes alike. White cap contrasting with blue-black head, mantle and breast; rufous belly and rump; tail with broad black terminal band. **Habitat:** Mountain streams and rivers, along canals at low altitude during winter. **Habits:** Occurs singly or in pairs, perches on stones in torrents or rocky banks. **Status and Distribution:** Resident, undertakes altitudinal movements; breeds in

Himalayas between 1830-4880 m, restricts up to 1500 m during winter.

**205(1773) Whitebreasted Dipper.** *Cinclus cinclus cashmeriensis* Gould; *Dungal*; Myna ±; c. 20 cm; **R/Com C** (Fig. 205)

**White-throated Dipper, *Cinclus cinclus* (I)**

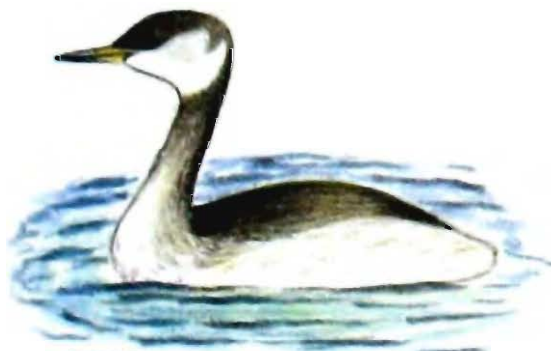
**Diagnostics:** Sexes alike. White throat and breast contrasting with brown belly; brown head and nape merging into greyish tinge of mantle, wings and tail. **Habitat:** Fast-



1 Blackthroated Diver



2 Great Crested Grebe



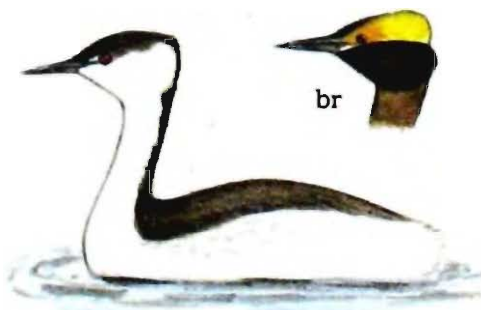
3 Rednecked Grebe



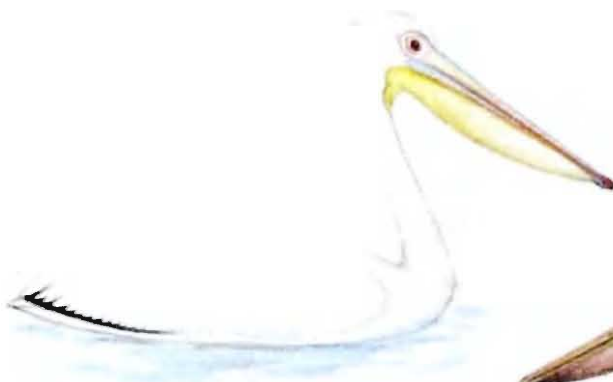
4 Blacknecked Grebe



5 Little Grebe



6 Horned Grebe



7 White Pelican



8 Spottedbilled Pelican 



9 Dalmatian Pelican 



10 Large Cormorant



11 Indian Shag



13 Darter 



12 Little Cormorant



14 Great Whitebellied Heron



15 Eastern Grey Heron



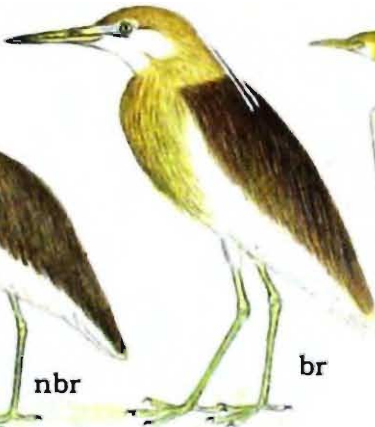
16 Eastern Purple Heron



17 Little Green Heron



18 Indian Pond Heron



Bird in flight



21 Eastern Large Egret

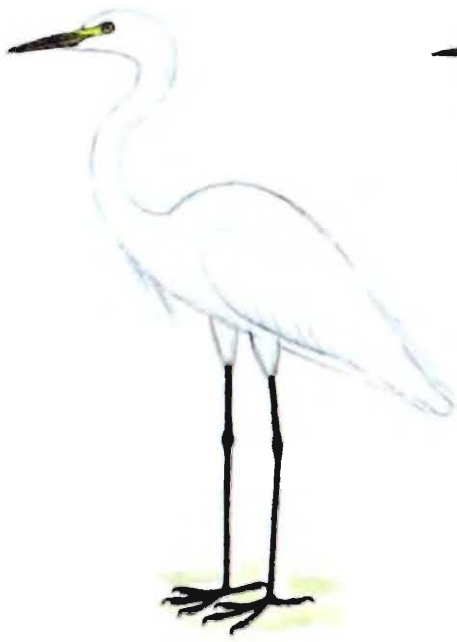


19 Cattle Egret



Bird in flight





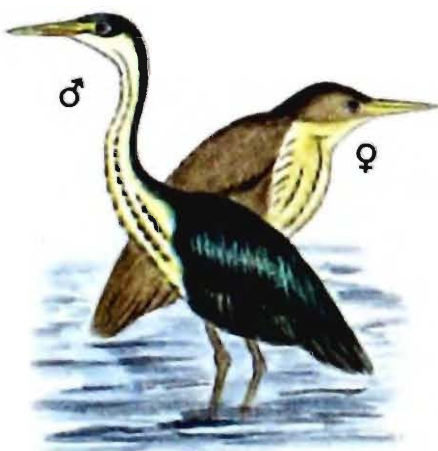
22 Smaller Egret



23 Little Egret



24 Indian Reef Heron



29 Black Bittern



26 Little Bittern



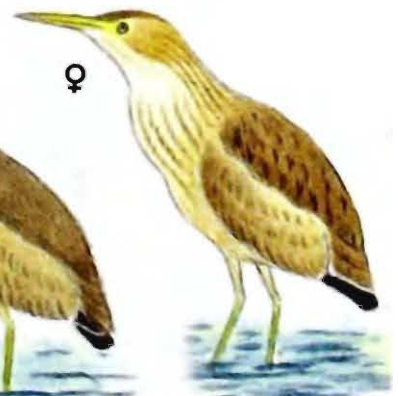
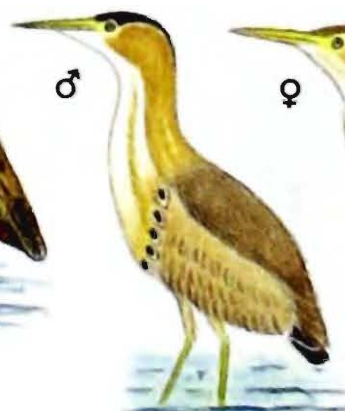
27 Chestnut Bittern



25 Night Heron



30 Bittern



28 Yellow Bittern



31 Painted Stork



33 Whitenecked Stork



*Bird in flight*



32 Openbill Stork



36 Blacknecked Stork



34 White Stork



35 Black Stork

Plate 6

Storks, Ibises, Spoonbill



38 Lesser Adjutant



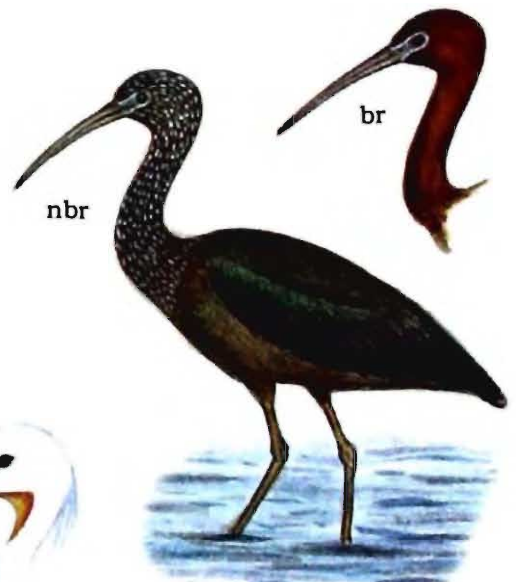
*Bird in flight*



37 Adjutant Stork



39 White Ibis



41 Glossy Ibis



40 Indian Black Ibis



42 Spoonbill

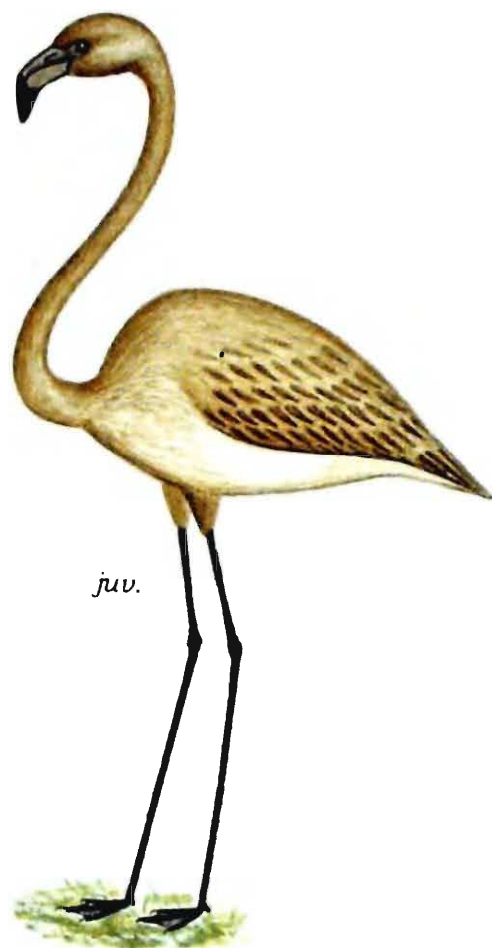


**Flamingos**

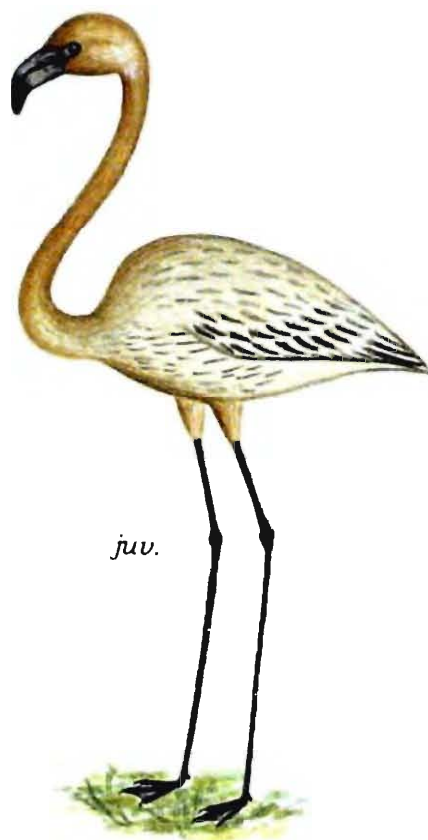
**Plate 7**



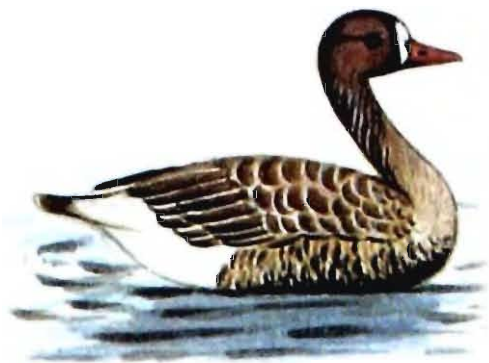
**43 Flamingo**



**44 Lesser Flamingo**







**46 Lesser Whitefronted Goose**



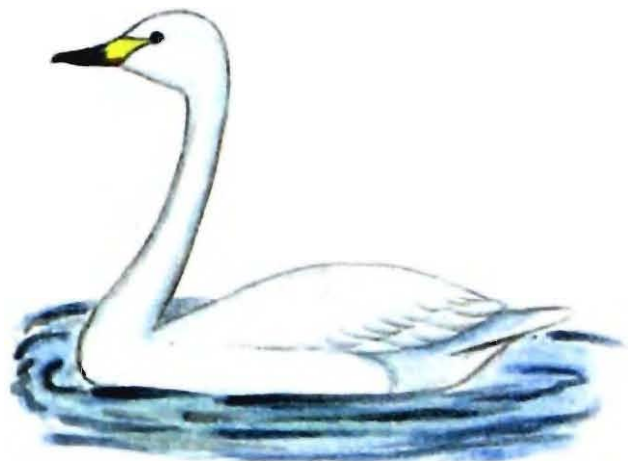
**45 Whitefronted Goose**



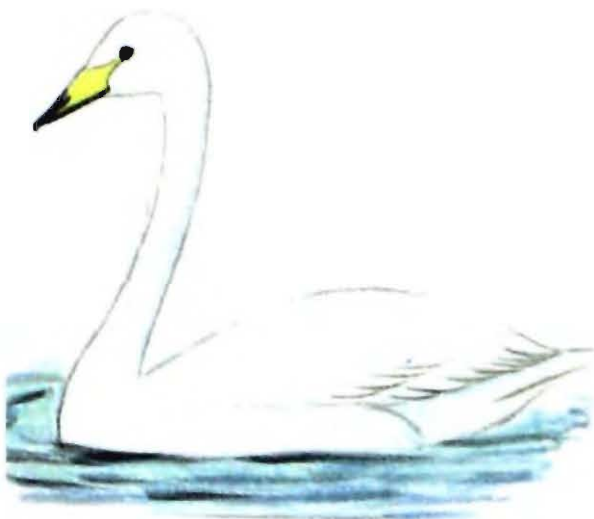
**49 Lesser Snow Goose**



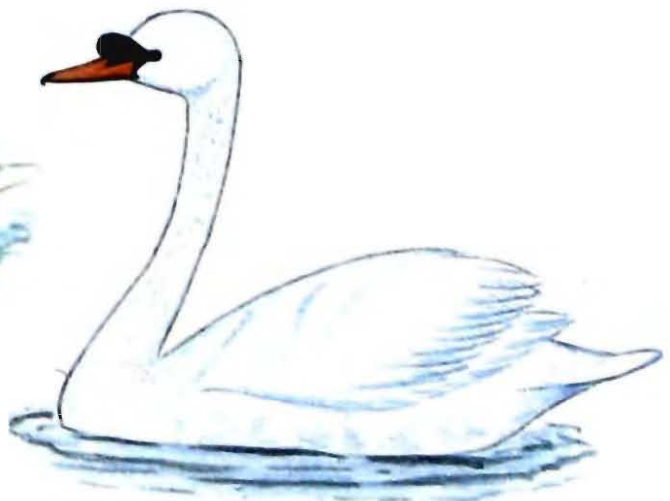
**48 Barheaded Goose**



**50 Bewick's Swan**



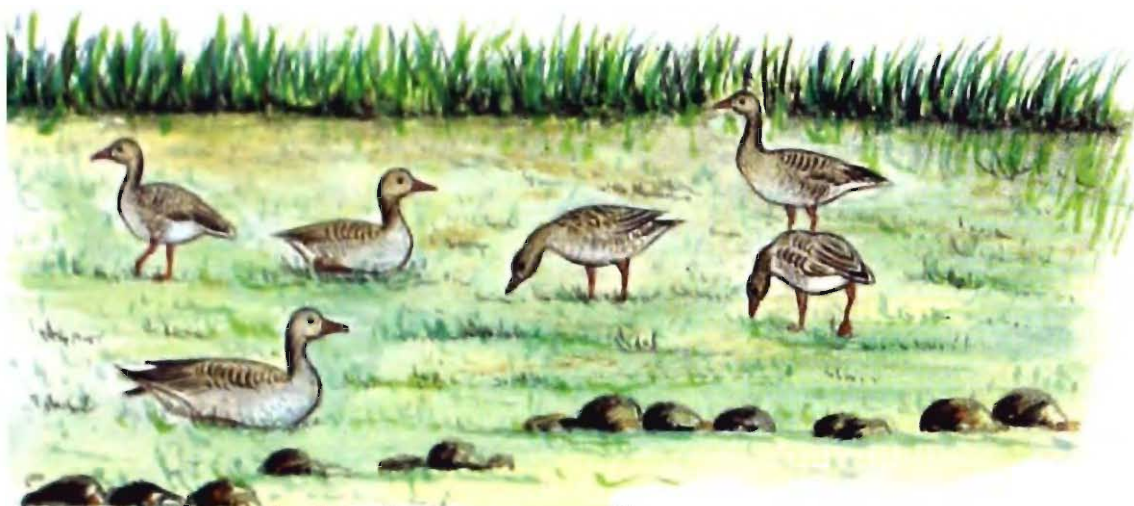
**51 Whooper Swan**



**52 Mute Swan**



47 Eastern Greylag Goose



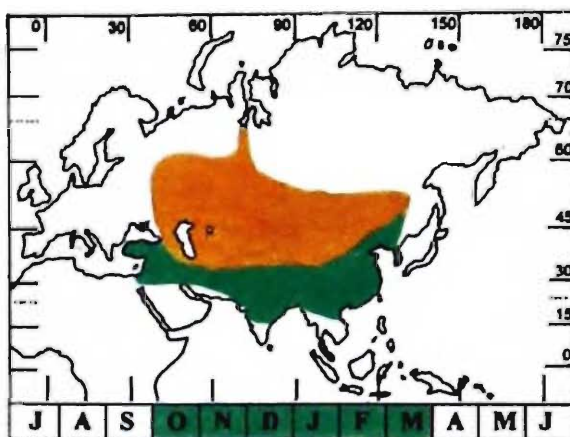
Wintering Ducks foraging on the bank of a reservoir



Pair in flight



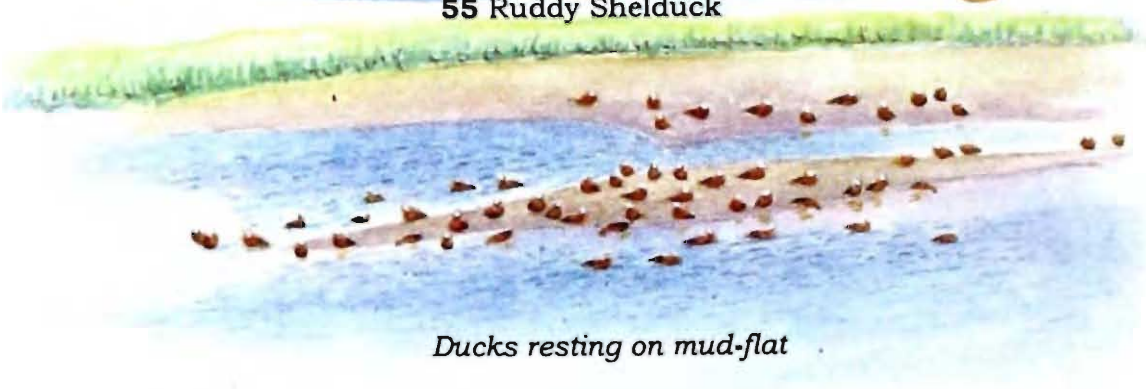
Male in eclipse







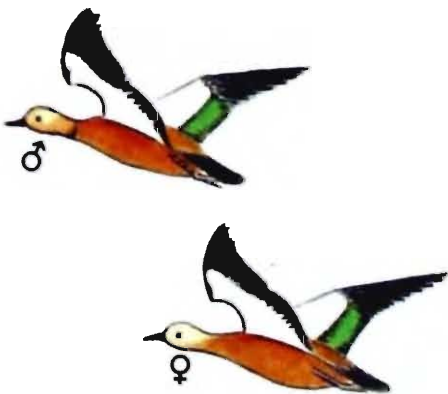
55 Ruddy Shelduck



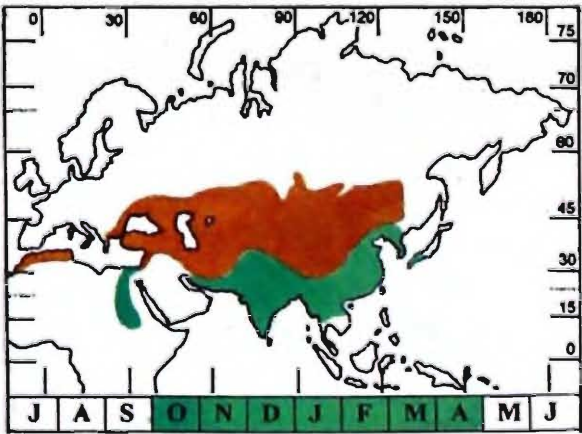
*Ducks resting on mud-flat*



*Ducks feeding in river bed*

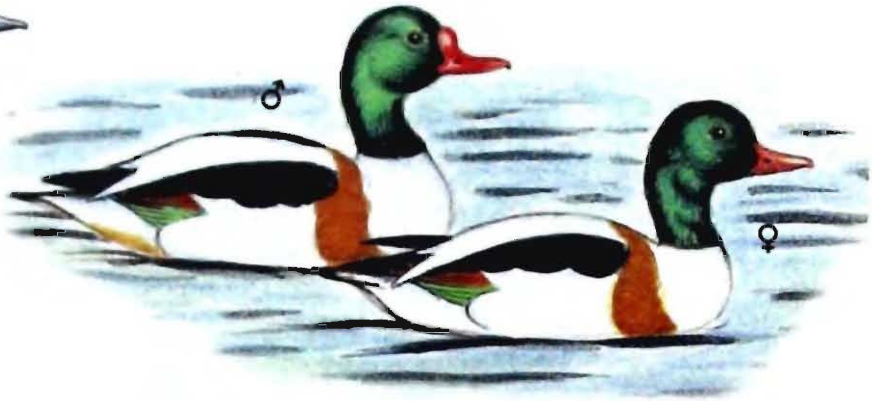


*Pair in flight*





53 Lesser Whistling Teal



56 Common Shelduck



54 Large Whistling Teal



60 Baikal Teal



71 White-eyed Pochard



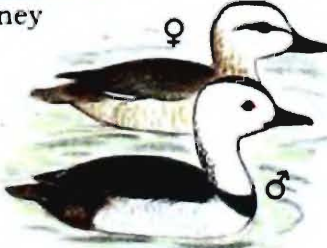
66 Garganey



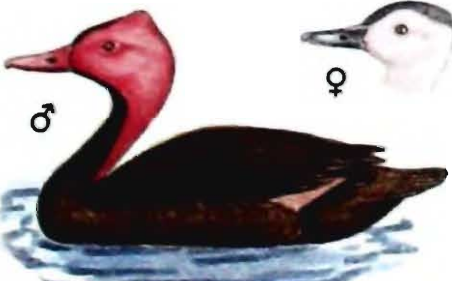
64 Falcated Teal



74 Cotton Teal

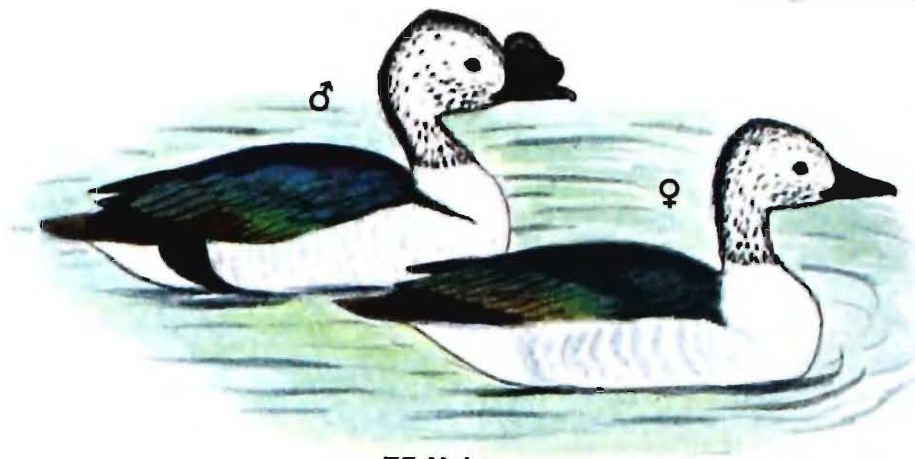


57 Marbled Teal

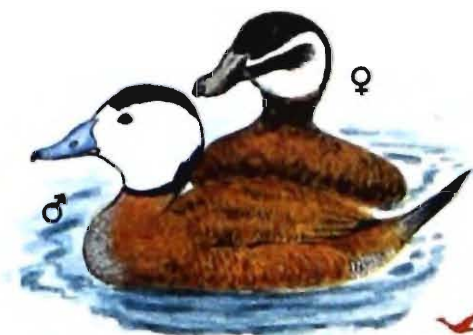


68 Pinkheaded Duck

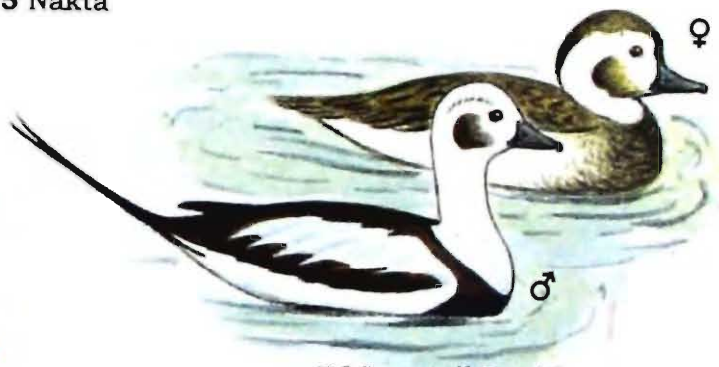




75 Nakta



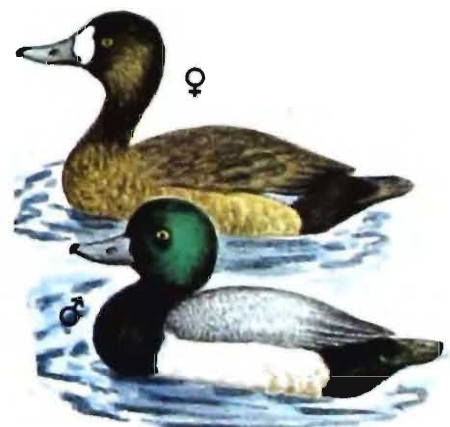
80 Whiteheaded Stiff-tailed Duck



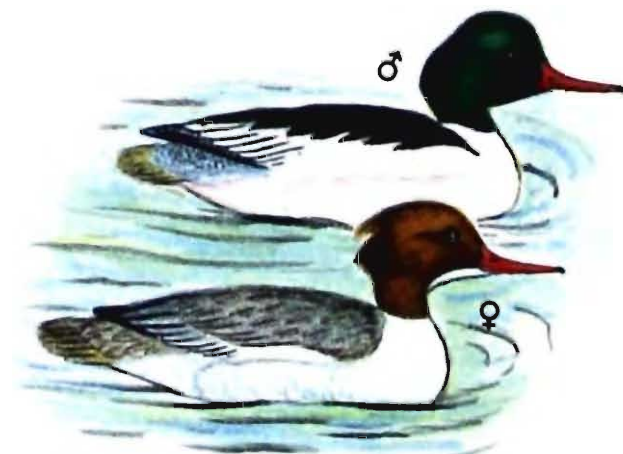
76 Longtail Duck



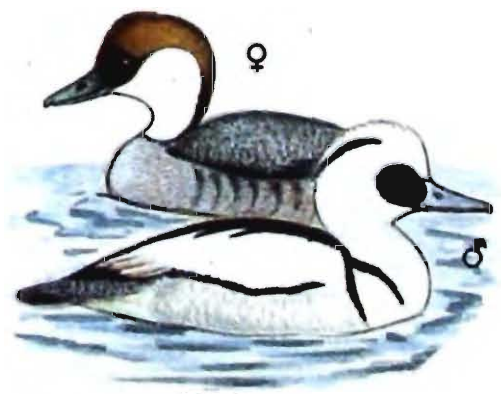
77 Goldeneye Duck



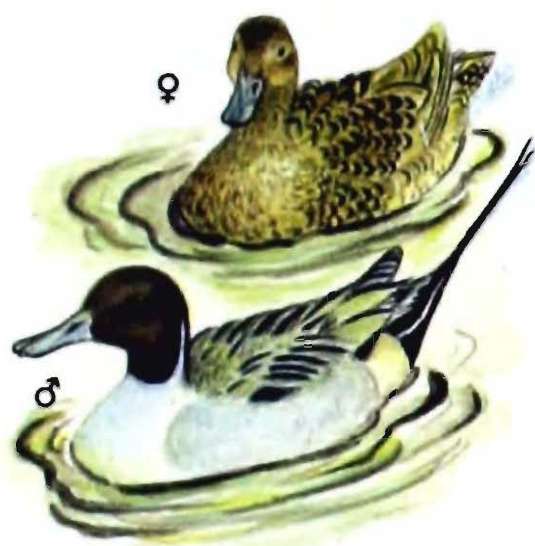
73 Scaup Duck



79 Eastern Merganser



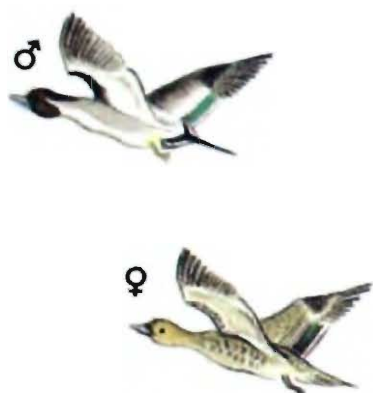
78 Smew



58 Pintail



*Male in eclipse*



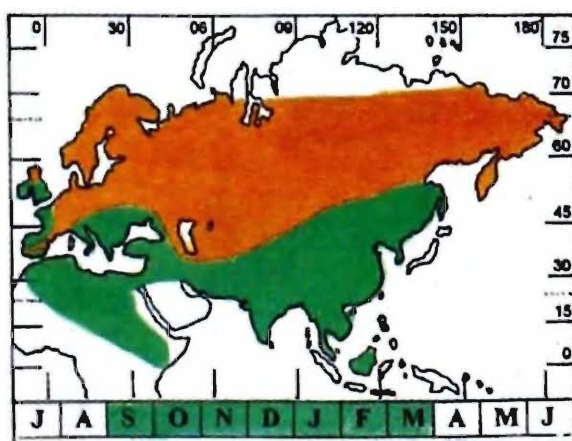
*Pair in flight*



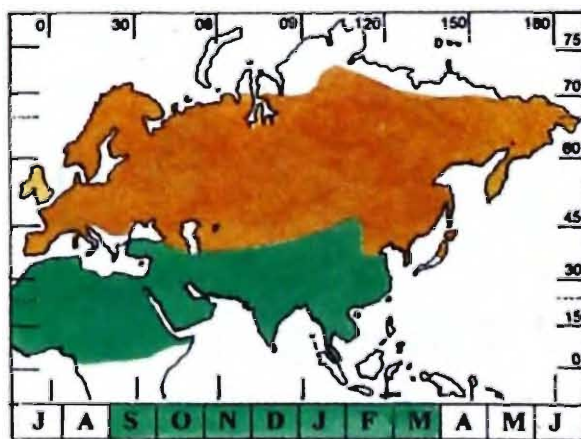
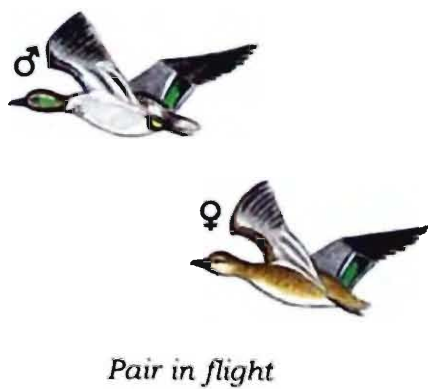
*Male swimming with cocked tails*



*Ducks feeding by upending*

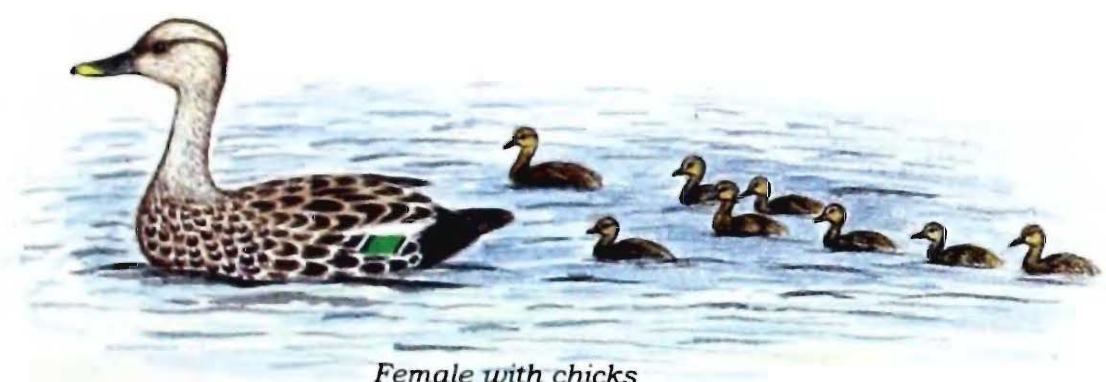








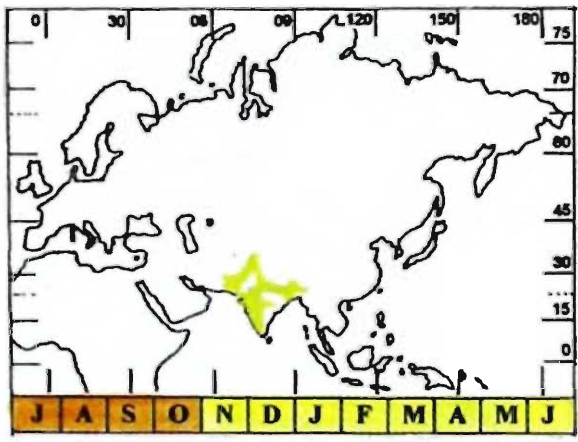
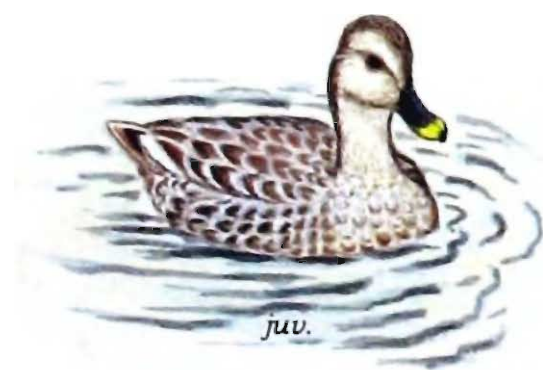
61 Spotbill Duck



Female with chicks



Pair in flight



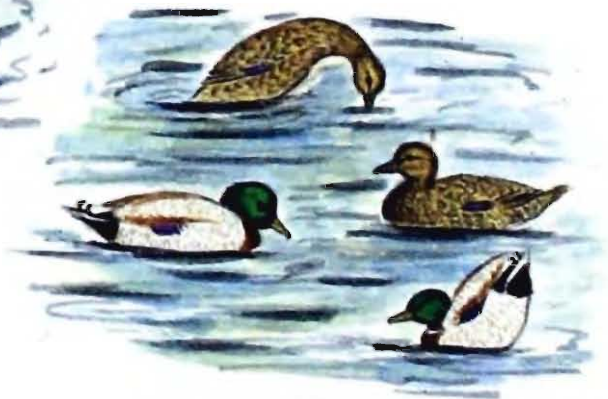




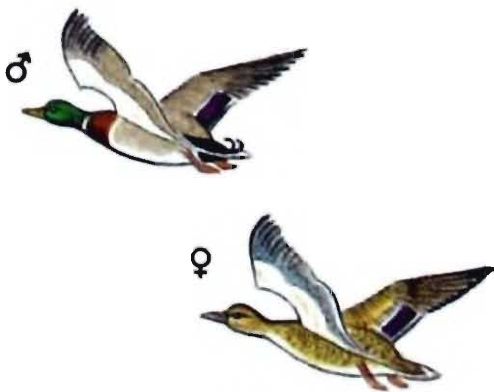
62 Mallard



Male in eclipse

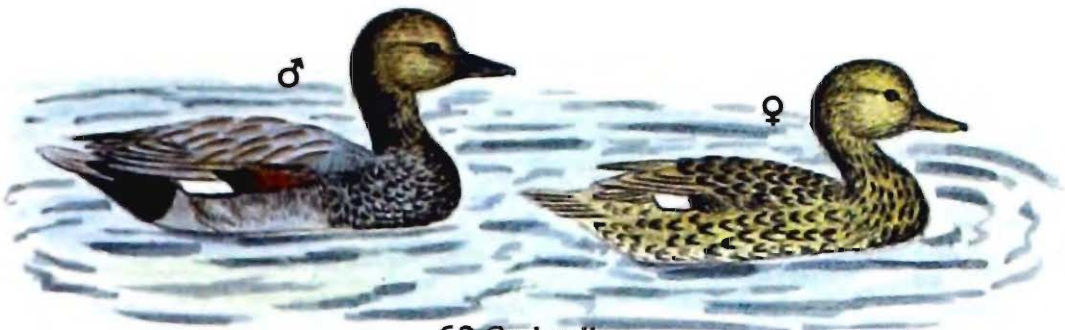


Surface feeding by ducks



Pair in flight

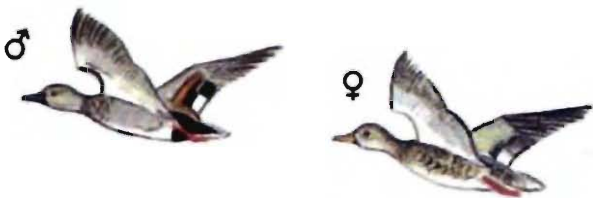




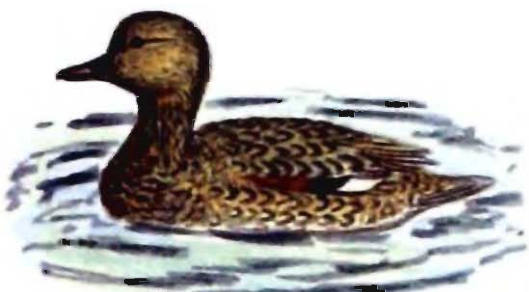
63 Gadwall



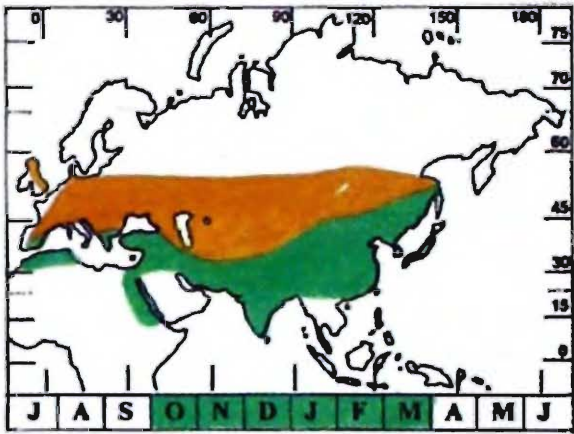
*Foraging by ducks*



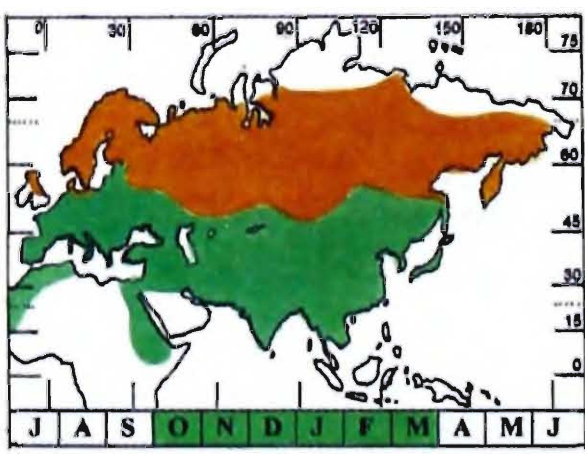
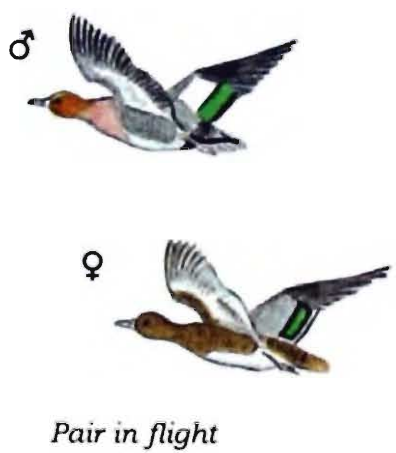
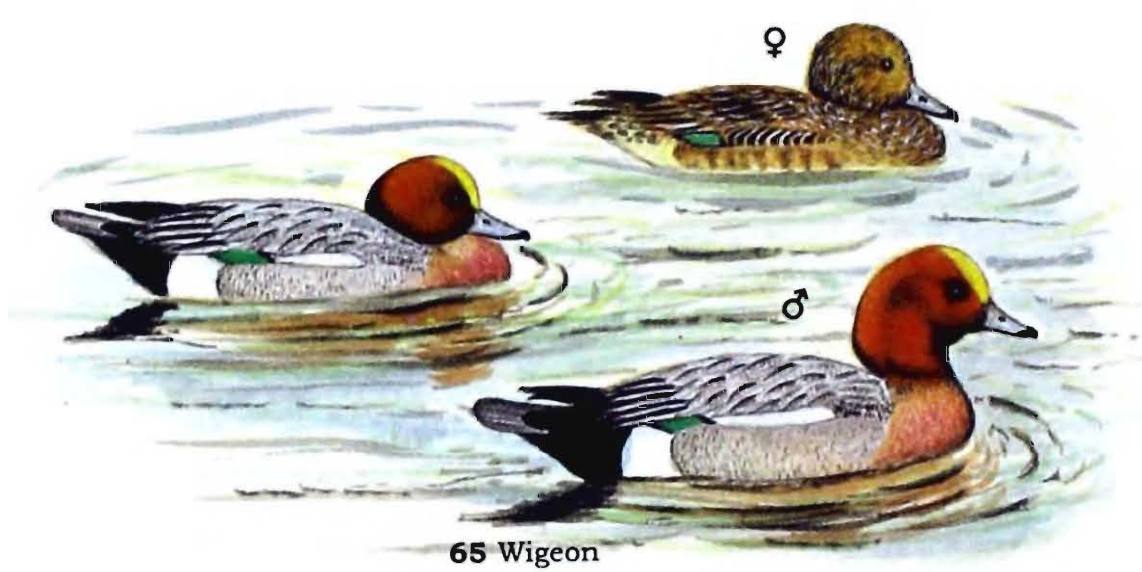
*Pair in flight*

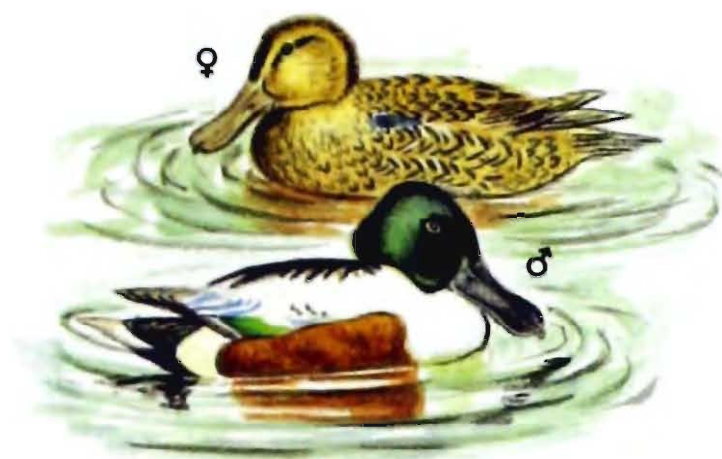


*Male in eclipse*

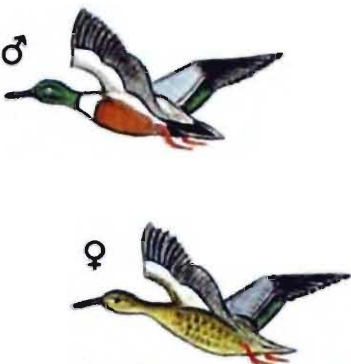








67 Shoveller



Pair in flight



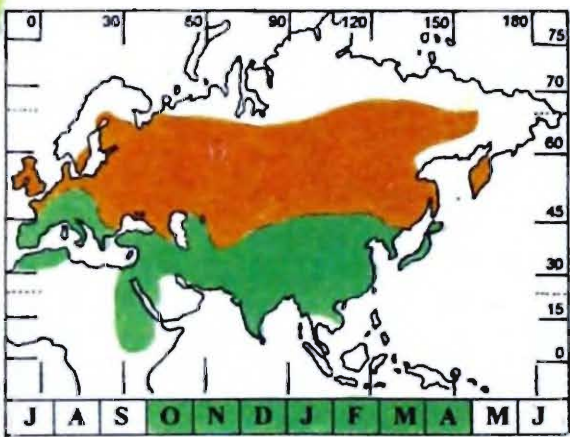
Ducks in preferred habitat



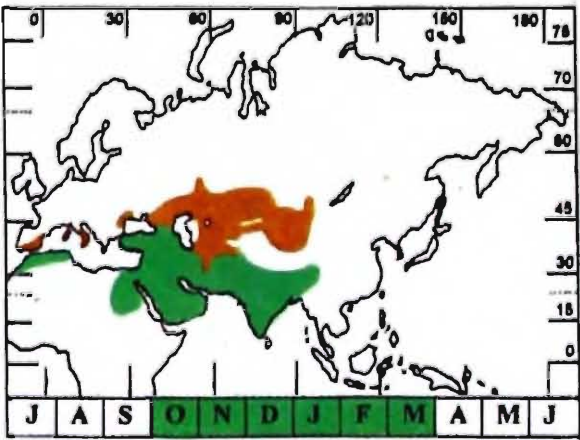
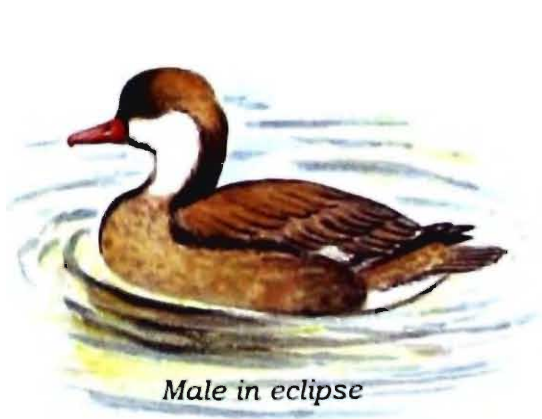
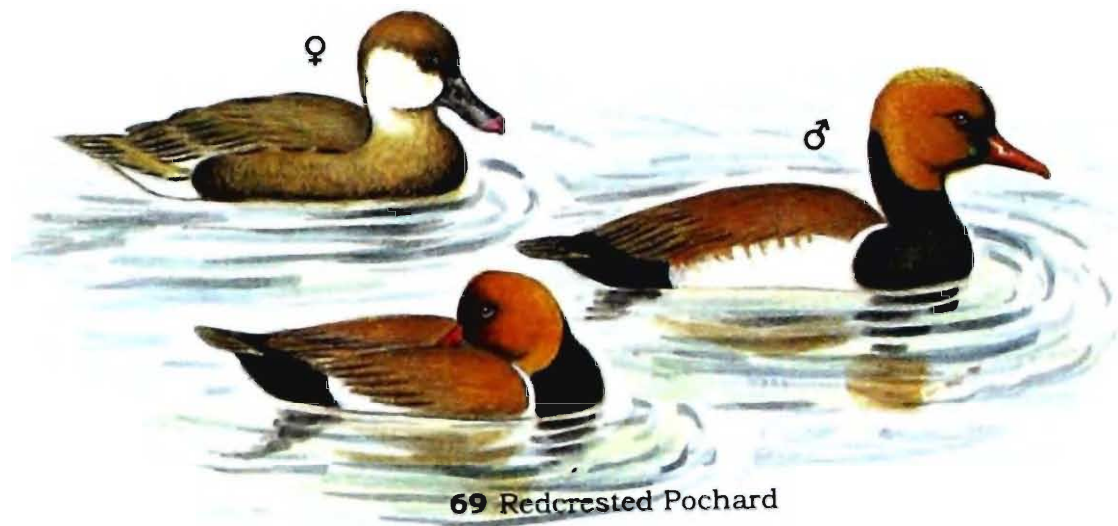
Male in eclipse



Duck dabbling in surface water

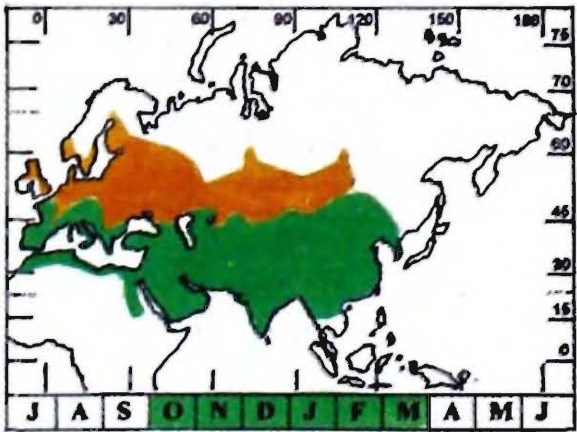
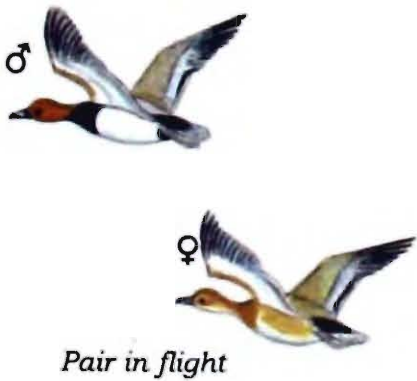








*Feeding ducks*





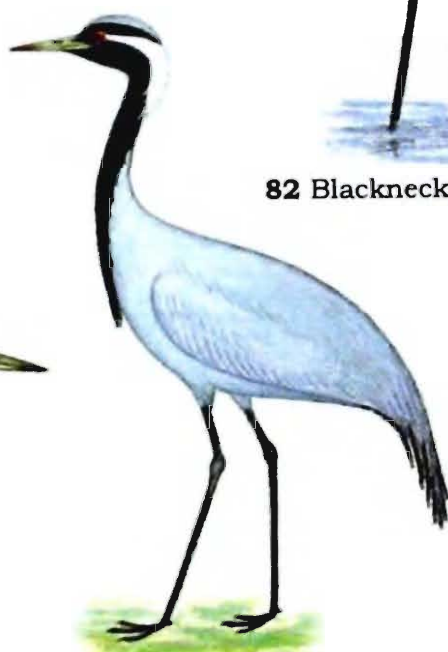




**81 Eastern Common Crane**



**82 Blacknecked Crane** ✓



**85 Demoiselle Crane**



**83 Indian Sarus Crane** ✓



**84 Siberian Crane** ✓





86 Turkestan Water Rail



87 Indian Bluebreasted  
Banded Rail



88 Indian Banded Crake



89 Corncrake



91 Eastern Baillon's  
Crake



90 Little Crake



92 Spotted Crake



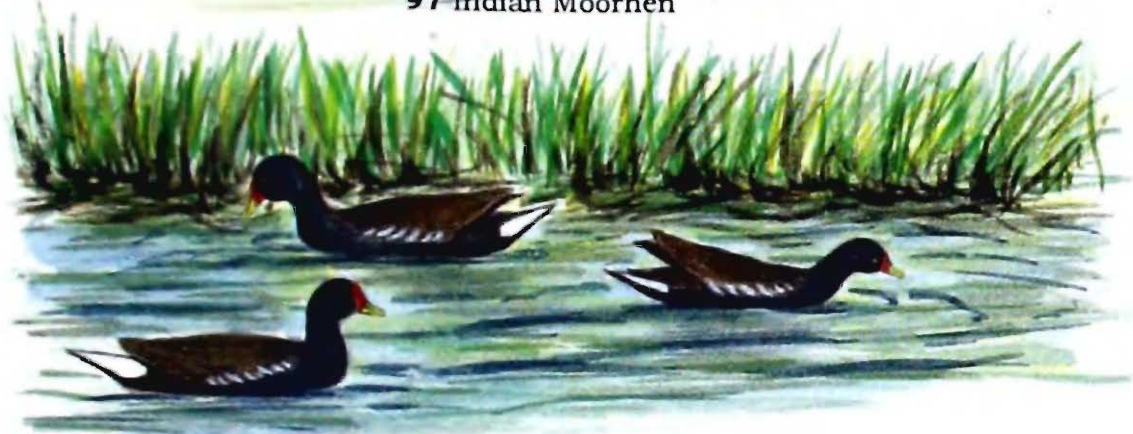
93 Northern Ruddy Crake



94 Brown Crake



97 Indian Moorhen



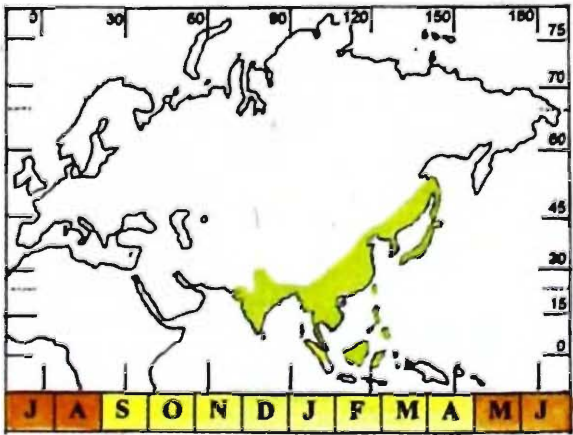
Moorhens in their preferred habitat



Feeding in marsh



Bird in flight







99 Coot



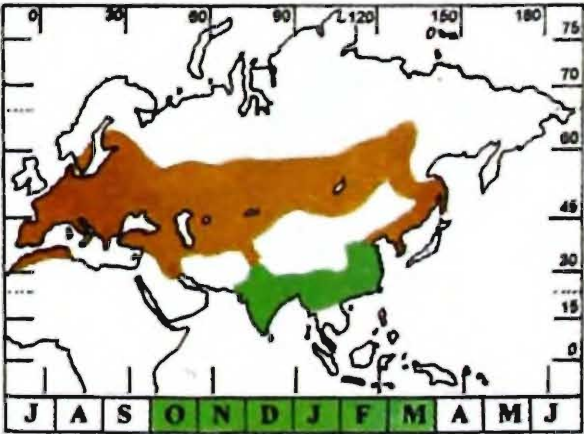
Surface feeding by ducks



A flock



Bird in flight





95 Chinese Whitebreasted Waterhen



96 Kora



98 Indian Purple Moorhen



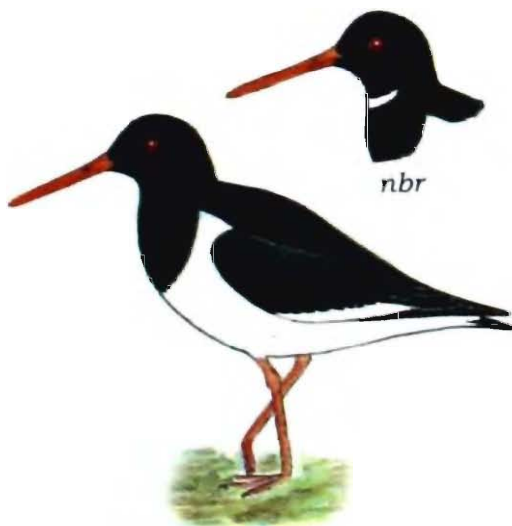
101 Bronzewinged Jacana



100 Pheasant-tailed Jacana



103 Whitetailed Lapwing



102 Oystercatcher



104 Sociable Lapwing





105 Peewit



106 Greyheaded Lapwing 



107 Redwattled Lapwing



108 Spurwinged Lapwing



109 Yellow-wattled Lapwing



110 Blackbellied Plover



111 Golden Plover



112 Eastern Golden Plover





113 Large Sand Plover



114 Eastern Ringed Plover



116 Indian Little Ringed Plover



117 Kentish Plover



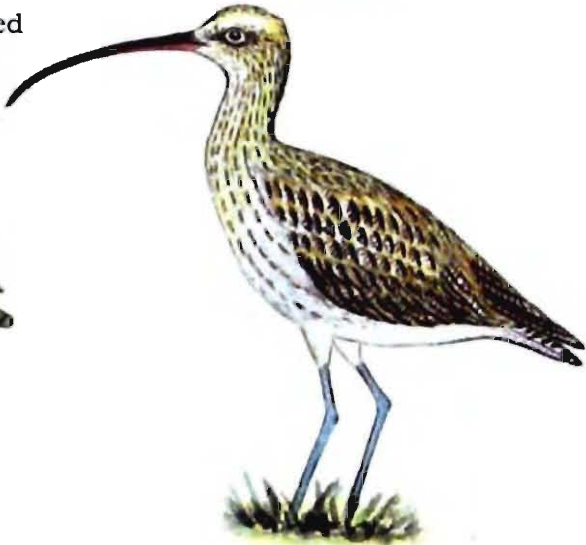
118 Longbilled Ringed Plover



119 Pamirs Lesser Sand Plover



120 Whimbrel



122 Eastern Curlew



123 Blacktailed Godwit



124 Bartailed Godwit



125 Spotted Redshank



127 Eastern Redshank



128 Marsh Sandpiper



130 Green Sandpiper



131 Wood Sandpiper



129 Greenshank



132 Terek Sandpiper



133 Common Sandpiper



134 Turnstone



135 Snipebilled Godwit



136 Eastern Solitary Snipe



137 Wood Snipe



138 Pintail Snipe



140 Jack Snipe



139 Common Snipe



141 Woodcock



142 Sanderling





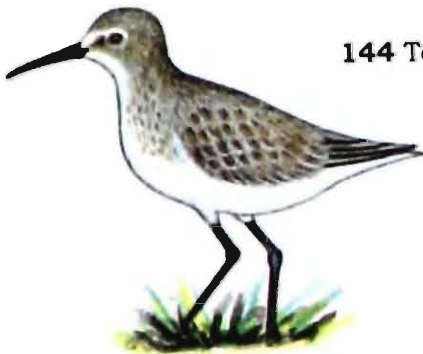
143 Little Stint



144 Temminck's Stint



145 Longtoed Stint



146 Dunlin



147 Curlew-Sandpiper



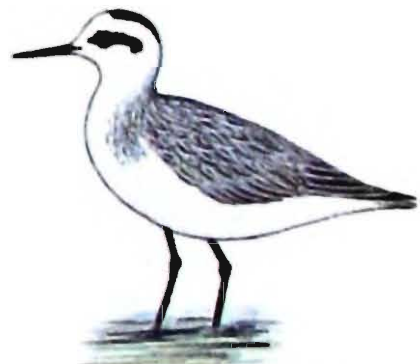
148 Broadbilled Sandpiper



149 Buffbreasted Sandpiper



150 Ruff



151 Rednecked Phalarope



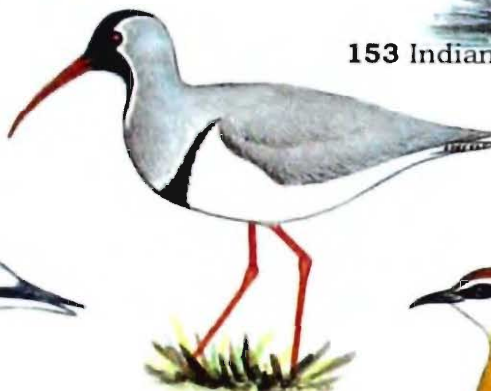
152 Painted Snipe



153 Indian Blackwinged Stilt



154 Avocet



155 Ibisbill



158 Indian Courser



157 Great Stone Plover



156 Indian Stone Curlew



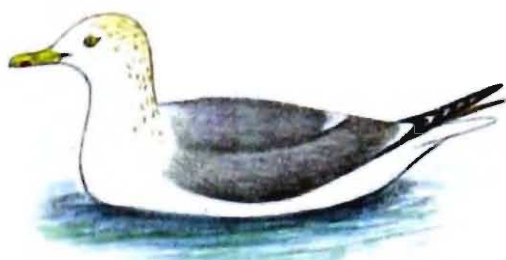
159 Collared Pratincole



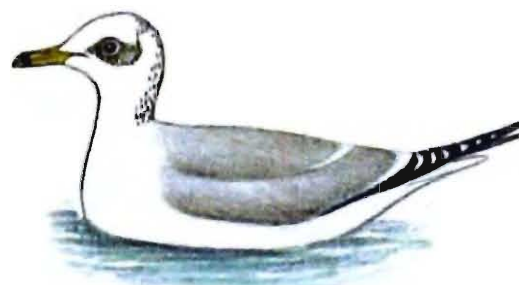
160 Large Indian Pratincole



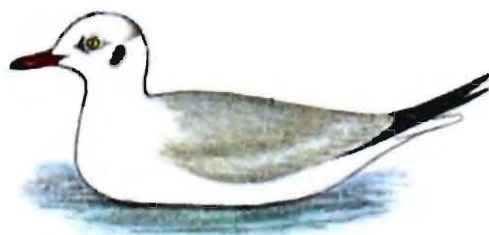
161 Small Indian Pratincole



162 Yellowlegged Herring Gull



163 Great Blackheaded Gull



164 Brownheaded Gull



165 Blackheaded Gull



166 Slenderbilled Gull



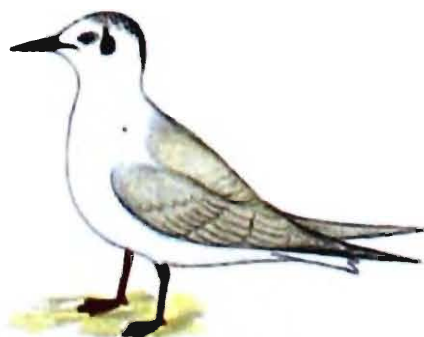
167 Little Gull



168 Mew Gull



169 Indian Whiskered Tern



170 Whitewinged Black Tern

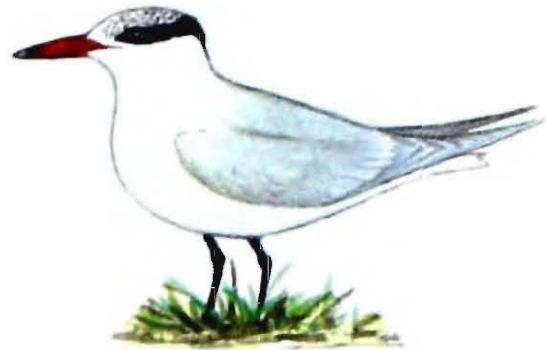


171 Black Tern





172 Gullbilled Tern



173 Caspian Tern



174 Indian River Tern



175 Tibetan Common Tern



177 Blackbellied Tern



176 Arctic Tern



178 Little Tern



179 Sandwich Tern



180 Indian Skimmer



181 Brahminy Kite



182 Whitetailed Sea Eagle



183 Ringtailed Fishing Eagle



184 Himalayan Greyheaded Fishing Eagle



185 Osprey



186 Redcapped Falcon



**188** Indian Pied Kingfisher



**189** Central Asian Small Blue Kingfisher



**187** West Himalayan Pied Kingfisher



**192** Whitebreasted Kingfisher



**191** Brownheaded Storkbilled Kingfisher



**194** Blackcapped Kingfisher





195 Indian Greythroated  
Sand Martin



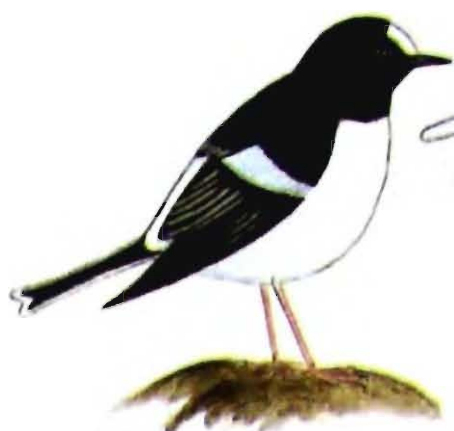
196 Western Swallow



198 Indian Cliff Swallow



197 Indian Wiretailed  
Swallow



199 Little Forktail



200 Blackbacked Forktail



201 Slatybacked  
Forktail



202 Western Spotted Forktail



203 Plumbeous Redstart



204 Whitecapped Redstart



205 Whitebreasted Dipper



206 West Himalayan  
Brown Dipper



209 Blackbacked Yellowheaded  
Wagtail



210 Grey Wagtail





211 Indian White Wagtail



212 Masked Wagtail



213 Hodgson's Pied Wagtail



214 Whitefaced Pied Wagtail



215 Swinhoe's Pied Wagtail



216 Large Pied Wagtail

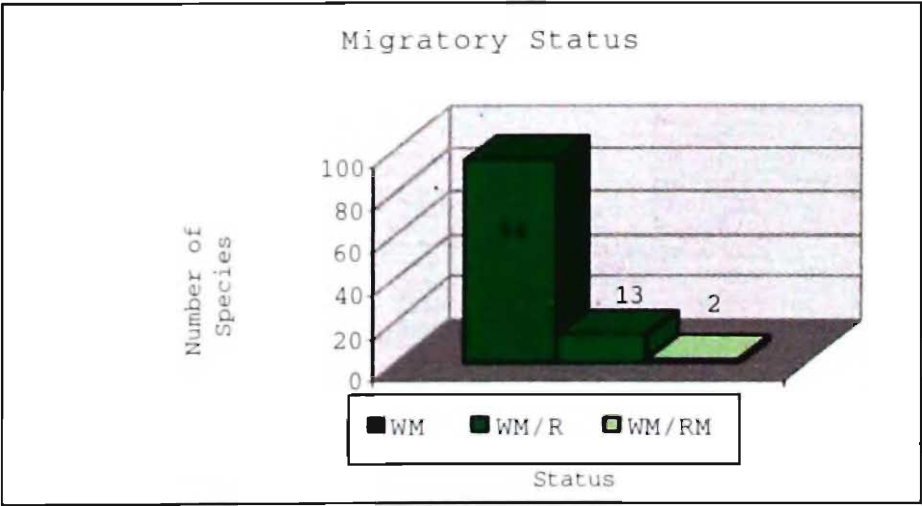
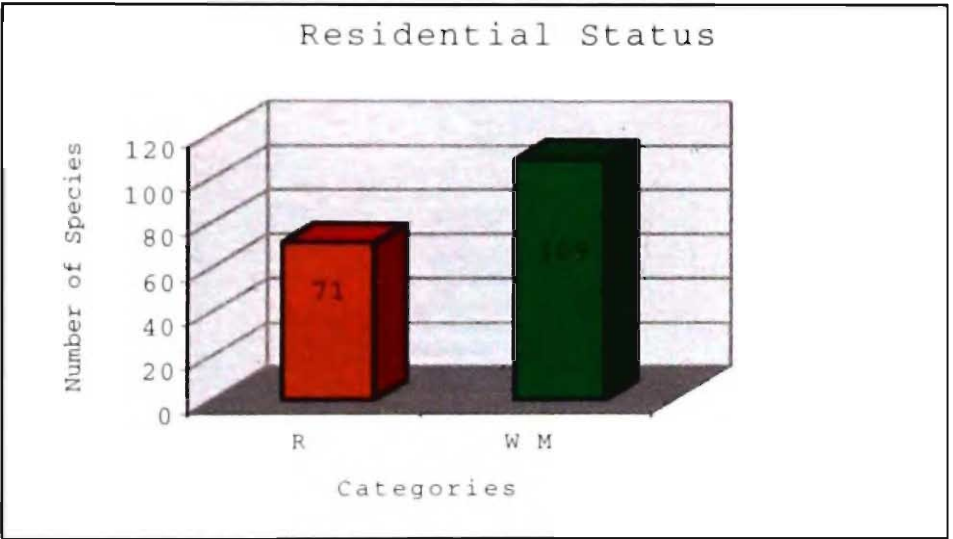
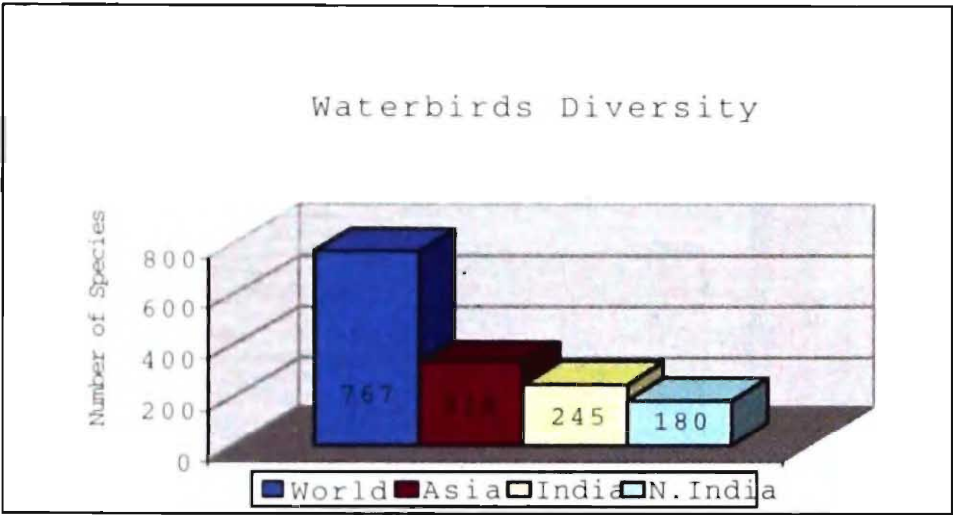
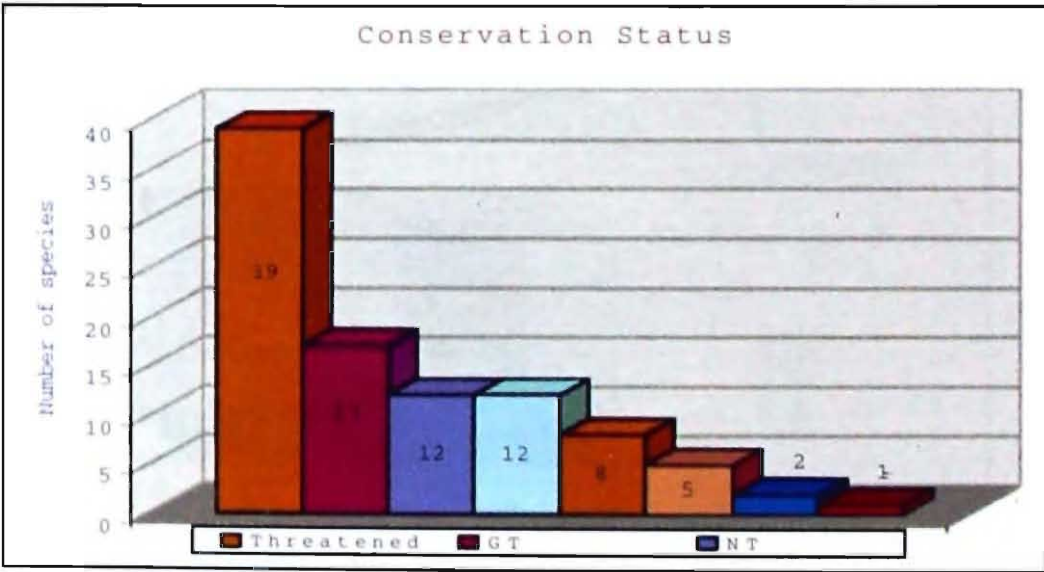
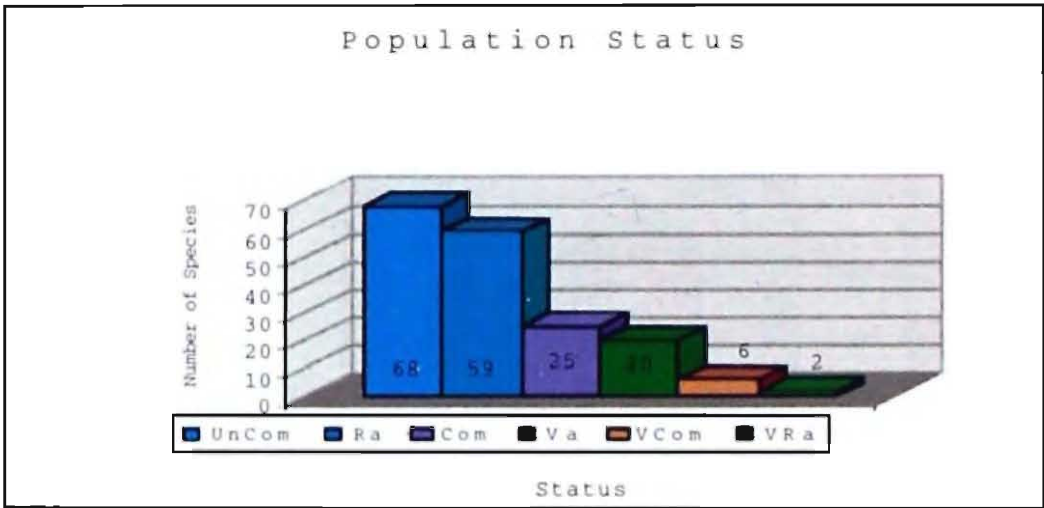
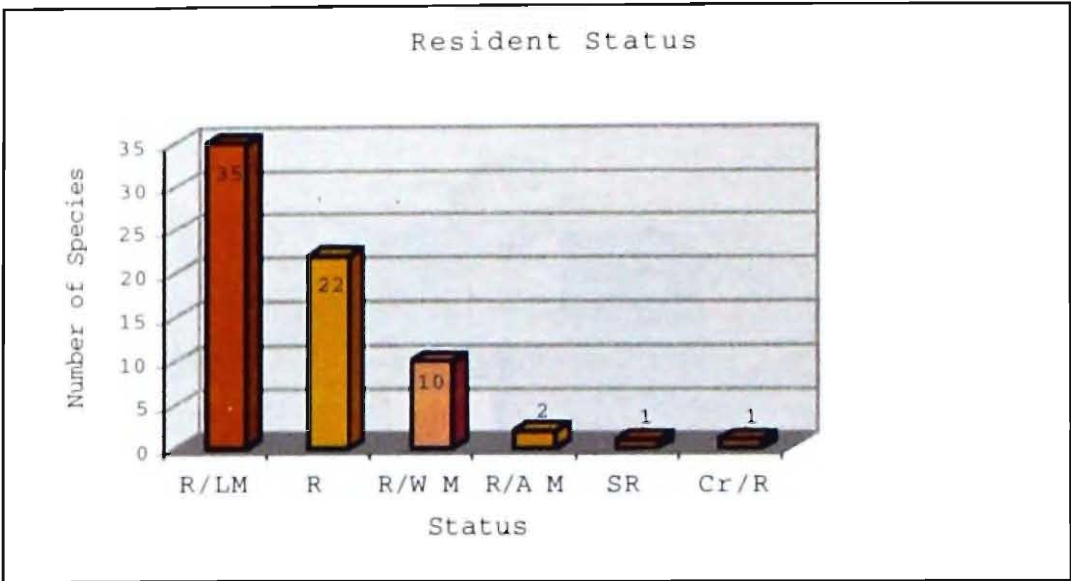


Plate 42





**8** Spottedbilled Pelican



**9** Dalmatian Pelican



**14** Great Whitebellied Heron



**38** Lesser Adjutant



**37** Adjutant Stork



**84** Siberian Crane



**46** Lesser Whitefronted Goose



**82** Blacknecked Crane





**80** Whiteheaded Stifftailed Duck



**180** Indian Skimmer



**68** Pinkheaded Duck



**104** Sociable Lapwing



**137** Wood Snipe



**177** Blackbellied Tern



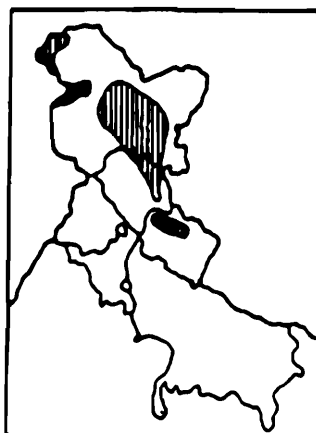
**57** Marbled Teal



**182** Whitetailed Sea Eagle

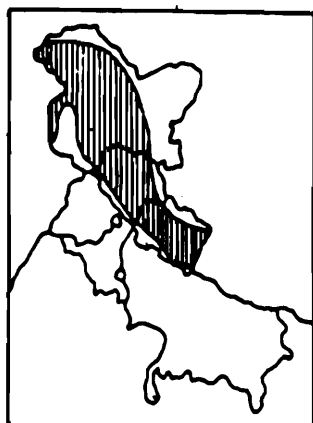


**183** Ringtailed Fishing Eagle



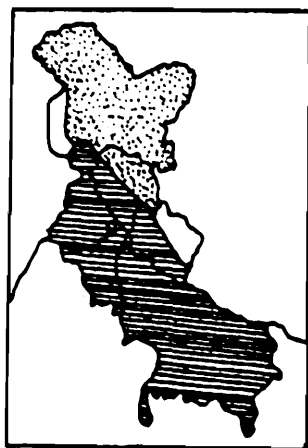
flowing high-altitude mountain streams. **Habits:** Aquatic, perches on rocks in mid-stream, highly territorial; breeds from 3000-4800m. **Status and Distribution:** Resident, restricted to Himalayas, in India from Ladakh to Arunachal Pradesh, common north of the main Himalayan range, scarce in south.

**206(1775) West Himalayan Brown Dipper.** *Cinclus pallasii tenuirostris* Bonaparte; *Dungal*; Myna ±; c. 20 cm; **R/AM/Com C** (Fig. 206)



**Diagnostics:** Sexes alike. Entirely brown. **Habitat:** Mountain streams and lakes. **Habits:** Solitary, perches on rocks in hill streams, dives from a floating position like a Dabchick, breeds from 450-4000 m. **Status and Distribution:** Resident, common, restricted Himalayas from N Pakistan to Arunachal Pradesh; undertakes limited altitudinal movements.

**207(1881) Northern Yellowheaded Wagtail.** *Motacilla citreola citreola* Pallas; **208(1882) Western Yellowheaded Wagtail.** *Motacilla citreola werae* (Buturlin); **209(1883) Blackbacked Yellowheaded Wagtail.** *Motacilla citreola calcarata* Hodgson; *Pilkya*; Sparrow with a long tail; c. 17 cm; **R/WM/Com C**; (Fig. 209)



**Citrine Wagtail, *Motacilla citreola* (I)**

**Diagnostics:** Male with yellow head and underparts, black mantle. Female with broad yellow supercilium which joins the yellow of throat, crown grey, underparts mainly yellow. **Habitat:** Summers on marshy patches below glaciers and melting snow, winters around lakes, jheels and tanks. **Habits:** Highly gregarious during

winter, generally occurs at wetlands. **Status and Distribution:** Resident in Himalayas from N Pakistan to Himachal Pradesh, winter migrant to plains.

**210(1884) Grey Wagtail.** *Motacilla caspica caspica* (Gmelin); *Balkatara*; Sparrow, with a long tail; c. 17 cm; **R/SM/Com C** (Fig. 210)

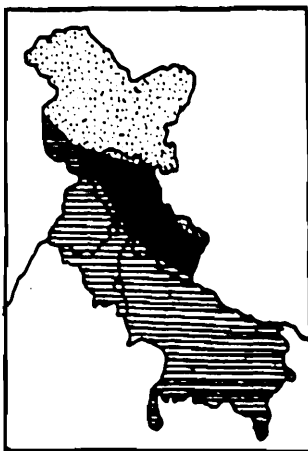
*Motacilla cinerea* (I)



**Diagnostics:** *Male:* head and back grey, supercilium white, wings dark brown with whitish margins. *Female:* Throat buff, underparts pale. **Habitat:** Undisturbed rocky mountain streams with rocky banks during summers, seeps in plains and foothills during winter. **Habits:** Solitary, runs around small streams and seeps in forests. **Status and Distribution:** Resident, summers in Himalayas between 1800-3900 m; winters in plains and foothills.

**211(1885) Indian White Wagtail.** *Motacilla alba dukhunensis* Sykes; Bulbul; c. 18 cm; **R/WM/Com C**; (Fig. 211); **212(1886) Masked Wagtail.** *Motacilla alba personata* Gould (Fig. 212); **213(1887) Hodgson's Pied Wagtail.** *Motacilla alba alboides* Hodgson (Fig. 213); **214(1888) Whitefaced Pied Wagtail.** *Motacilla alba leucopsis* Gould (Fig. 214); **215(1890) Swinhoe's Pied Wagtail.** *Motacilla alba baicalensis* Swinhoe (Fig. 215)

**White Wagtail, *Motacilla alba* (I)**



**Diagnostics:** Sexes alike. Black and white head pattern, mantle grey or black, wing-coverts largely black. Considerable variations occur in breeding adults. **Habitat:** Inhabits streams and rivers in hills during summer, winters in open country near marshes, rivers, streams, canals, lakes etc. **Habits:** Swiftly moves around wetlands and fields. Wags its tail

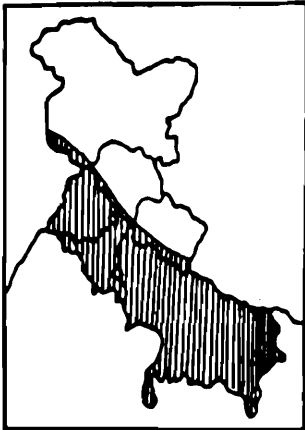


continually up and down. **Status and Distribution:** Widespread and common all over India. Resident in Himalayas, but undertakes short altitudinal movements and winters in plains and foothills of N India up to 1500 m.

**216(1891) Large Pied Wagtail.** *Motacilla maderaspatensis* Gmelin; Bulbul; c. 21 cm; **R/Com C** (Fig. 216)

**White-browed Wagtail (I)**

**Diagnostics:** A large Wagtail with black and white plumage that distinguishes it from the all other wagtails,



wing-coverts largely white. **Habitat:** Banks of rivers, canals, lakes and irrigation barrages. **Habits:** Generally sedate and confiding, inhabits clear, rocky smooth running streams with grassy islands. **Status and Distribution:** Resident almost throughout India except NW Himalayas, though found up to 1500 m, widespread in plains.



## 5. SELECTED READINGS

- Ali, S. 1996. *The Book of Indian Birds*. Twelfth revised and enlarged centenary edition. Bombay Natural History Society and Oxford University Press, Mumbai, pp. liv+1-354.
- Ali, S. and Ripley, S.D. 1983. *A Pictorial Guide to the Birds of the Indian Subcontinent*. Oxford University Press, Delhi, pp.1-177
- Ali, S. and Ripley, S.D. 1969-78. *Handbook of the Birds of India and Pakistan* (Vols.1-3). Oxford University Press, Bombay.
- Baker, E.C. Stuart. 1922-31. *Fauna of British India: Birds* (8 vols). Taylor and Francis, London.
- Berwick, S.H. and Saharia, V.B. (eds.). 1995. *The Development of International Principles and Practices of Wildlife Research and Management. Asian and American Approaches*. Oxford University Press, Delhi, pp. 1-ix+1-481.
- Collar, N.J., Corsby, M.J. and Stattersfield, A.J. (1994). *Birds to Watch. 2: The World List of Threatened Birds*. BirdLife International, Cambridge pp. 1-407
- Delacour, J. 1954-64. *The Waterfowl of the World* (4 vols.). Country Life, London.
- Directory of Indian Wetlands. 1993. WWF-India, New Delhi and AWB-Kuala Lumpur, xvi+264 pp., 32 maps.
- Ganguli, Usha. 1975. *A Guide to the Birds of Delhi Area*. Indian Council of Agricultural Research, New Delhi, pp. 1-ix+1-301, 20 colour pls.

- Gaur, R. K. 1994. *Indian Birds*. Brijbasi Printers Ltd., New Delhi, pp. 1-120.
- Gopal, B. (compiler). 1995. *Handbook of Wetland Management*. WWF-India, New Delhi, pp. 1-305.
- Grimmett, R., Inskipp, C. and Inskipp T. 1998. *Birds of the Indian Subcontinent*. Oxford Univ. Press Delhi, pp. 1-888.
- Grewal, B. 1995. *Birds of India*. Guide Book Company Ltd. Hong Kong and Gulmohur Press Pvt. Ltd., Delhi, pp.i-xxxvi+1-193.
- Grewal, B. 1995. *A Photographic Guide to Birds of India and Nepal*. New Holland (Publishers) Ltd., London, pp. 1-144.
- Grewal, B. 2000. *Birds of the Indian Subcontinent*. Local Colour Limited, Hong Kong. Helge Ole Bergesen, Magnar Norderhaug and Georg Parmann (eds.). 1992. *Green Globe Yearbook*. Oxford Univ. Press, New York, pp. 1-303.
- IUCN (1990). *1990 IUCN Red List of Threatened Animals*. IUCN, Gland, Switzerland and Cambridge, U.K, pp. i-xxiv+1- 92.
- Kazmierczak, K. and Raj Singh. 1999. *A Birdwatchers' Guide to India*. Prion Ltd., U.K.
- Lopez, A. and Mundkur, T. (eds.). 1997. *The Asian Waterfowl Census 1994-96. Results of the Coordinated Waterbirds Census and an Overview of the Status of Wetlands in Asia*. Wetlands International, Kuala Lumpur, pp.i-xiv+1-118.

- Mani, M.S. 1974. *Ecology and Biogeography in India*. Dr. W. Junk b.v. Publishers, The Hague, pp. i-xix, 1-773.
- Menon, V. 1992. *Waterfowl Identification Manual North India*. Srishti, WWF-India, and AWB, pp. 1-45.
- Ramsar Sites of India: Chilka Lake*. Rahul N. Ram et al., WWF-India, New Delhi (1994), pp. 1-69.
- Ramsar Sites of India: Harike Lake*. Ladhar et al., WWF-India, New Delhi (1994), pp. 1-57
- Ramsar Sites of India: Keoladeo National Park*. Lalitha Vijayan, WWF-India, New Delhi (1994), pp. 1-77.
- Ramsar Sites of India: Loktak Lake*. H. Tombi Singh and R.K. Shyamananda Singh, WWF-India, New Delhi (1994), pp. 1-69.
- Ramsar Sites of India: Sambhar Lake*. Brij Gopal and K.P. Sharma, WWF-India (1994), pp. 1-37
- Ramsar Sites of India: Wular lake*. WWF-India (1994).
- Ripely, S.D. 1982. *A Synopsis of the Birds of India and Pakistan*. 2<sup>nd</sup> ed. Oxford Univ. Press, BNHS, Bombay, pp. i-xxvi, 1-652.
- Sonobe, K. and Usui, S. (eds.) (1993). *A Field Guide To the Waterbirds of Asia*. Wild Bird Society of Japan with Asian Wetland Bureau, pp. 1-224.
- Tak, P.C. and J.P. Sati, 1997. **Aves**, pp. 699-821. In : *State Fauna Series 6, Fauna of Delhi*, 903 pp. Zoological Survey of India, Calcutta.

The Wildlife (Protection) Act, 1972 (*as amended up to 1993*).  
Natraj Publisher, Dehra Dun (1997), pp. 1-158.

Zoological Survey of India, 1994. *The Red Data Book On Indian Animals, part 1: Vertebrata (Mammalia, Aves, Reptilia and Amphibia)*. Zoological Survey of India, Calcutta, pp.i-xxd+1-534.

## ANNEXURES

### I: Checklist of Indian Waterbirds

#### I Order GAVIIFORMES

##### I Family GAVIIDAE: Divers

- \*1(1) *Gavia artica suschkini* (Zarudny). Blackthroated Diver (WM)
- 2(2) *G. stellata* (Pontoppidan). Redthroated Diver (WM)

#### II Order PODICIPEDIFORMES

##### II Family PODICIPEDIDAE: Grebes

- \*3(3) *Podiceps c. cristatus* (Linnaeus). Great Crested Grebe (WM)
- \*4(3a) *P. griselgena* (Boddaert). Rednecked Grebe (WM)
- \*5(4) *P. n. nigricollis* Brehm. Blacknecked Grebe (WM)
- \*6(5) *P. ruficollis capensis* Salvadori. Little Grebe or Dabchick (R)
- \*7 *P. auritus* (Linnaeus). Horned or Slavonian Grebe (WM)

#### III Order PELECANIFORMES

##### III Family PELECANIDAE: Pelicans

- \*8(20) *Pelecanus onocrotalus* Linnaeus. White or Rosy Pelican (R)
- \*9(21) *P. p. philippensis* Gmelin. Spottedbilled or Grey Pelican (R)
- \*10(22) *P. p. crispus* Bruch. Dalmatian Pelican (WM)

##### IV Family PHALACROCORACIDAE: Cormorants, Darter

- \*11(26) *Phalacrocorax carbo sinensis* (Shaw). Large Cormorant (R)
- \*12(27) *P. fuscicollis* Stephens. Indian Shag (R)
- \*13(28) *P. niger* (Vieillot). Little Cormorant (R)
- \*14(29) *Anhinga rufa melanogaster* Pennant. Darter or Snake-bird (R)

#### IV Order CICONIIFORMES

##### V Family ARDEIDAE: Herons, Egrets, Bitterns

- \*15(33) *Ardea insignis* Hume. Great Whitebellied Heron (R)
- 16(34) *A. goliath* Cretzschmar. Giant Heron (Va)
- 17(35) *A. c. cinerea* Linnaeus. European Grey Heron (WM)
- \*18(36) *A. c. rectirostris* Gould. Eastern Grey Heron (R)
- \*19(37) *A. purpurea manilensis* Meyen. Eastern Purple Heron (R)
- \*20(38) *Butorides striatus javanicus* (Horsfield). Little Green Heron (R)
- 21(39) *B. s. spodiogaster* Sharpe. Andaman Little Green Heron (R)
- \*22(42) *Ardeola g. grayii* (Sykes). Indian Pond Heron or Paddybird (R)
- 23(43) *A. bacchus* (Bonaparte). Chinese Pond Heron (R)



- \*24(44) *Bubulcus ibis coromandus* (Boddaert). Cattle Egret (R)
- \*25(45) *Ardea a. alba* Linnaeus. Large Egret or Great White Heron (WM)
- \*26(46) *A. a. modesta* J.E.Gray. Eastern Large Egret (R)
- \*27(47,48) *Egretta l. Intermedia* (Wagler). Smaller or Median Egret (R)
- \*28(49) *E. g. garzetta* (Linnaeus). Little Egret (R)
- \*29(50) *E. gularis schistacea* (Hemprich & Ehrenberg). Indian Reef Heron(R)
- 30(51) *E. sacra* (Gmelin). Eastern Reef Heron (R)
- \*31(52) *Nycticorax n. nycticorax* (Linnaeus). Night Heron (R)
- 32(53) *Gorsachius m. melanolophus* (Raffles). Malay or Tiger Bittern (R)
- 33(54) *G. melanolophus minor* Hachisuka. Nicobar Tiger Bittern (R)
- \*34(55) *Ixobrychus m. minutus* (Linnaeus). Little Bittern (R)
- \*35(56) *I. cinnameus* (Gmelin). Chestnut Bittern (R)
- \*36(57) *I. sinensis* (Gmelin). Yellow Bittern (R)
- \*37(58) *I. f. flavicollis* (Latham). Black Bittern (R)
- \*38(59) *Botaurus s. stellaris* (Linnaeus). Bittern (WM)

#### VI Family CICONIIDAE: **Storks**

- \*39(60) *Mycteria leucocephala* (Pennant). Painted Stork (R)
- \*40(61) *Anastomus oscitans* (Boddaert). Openbill Stork (R)
- \*41(62) *Ciconia e. episcopus* (Boddaert). Whitenecked Stork (R)
- \*42(63) *C. c. ciconia* (Linnaeus). White Stork (WM)
- 43(64) *C. c. boyciana* Swinhoe. Eastern White Stork (WM)
- \*44(65) *C. nigra* (Linnaeus). Black Stork (WM)
- \*45(66) *Ephippiorhynchus a. asiaticus* (Latham). Blacknecked Stork (R)
- \*46(67) *Leptoptilos dubius* (Gmelin). Adjutant Stork (R)
- \*47(68) *L. javanicus* (Horsfield). Lesser or Haircrested Adjutant (R)

#### VII Family THRESKIORNITHIDAE: **Ibises, Spoonbill**

- \*48(69) *Threskiornis aethiopica melanocephala* (Latham). White Ibis (R)
- \*49(70) *Pseudibis p. papillosa* (Temminck). Indian Black Ibis (R)
- \*50(71) *Plegadis f. falcinellus* (Linnaeus). Glossy Ibis (R)
- \*51(72) *Platalea leucordia major* Temminck & Schlegel. Spoonbill (R)

#### VIII Family PHOENICOPTERIDAE: **Flamingos**

- \*52(73) *Phoenicopterus roseus* Pallas. Flamingo (R)
- \*53(74) *P. minor* (Geoffroy). Lesser Flamingo (R)

### V Order **ANSERIFORMES**

**IX Family ANATIDAE: Ducks, Geese, Swans**

- 54(75) *Branta ruficollis* (Pallas). Redbreasted Goose (WM)  
55(77) *Anser fabalis rossicus* Buturlin. Tundra Bean Goose (WM)  
\*56(79) *A. a. albifrons* (Scopoli). Whitefronted Goose (WM)  
\*57(80) *A. erythropus* (Linnaeus). Lesser Whitefronted or Dwarf Goose (WM)  
\*58(81) *A. a. rubrirostris* Swinhoe. Eastern Greylag Goose (WM)  
\*59(82) *A. indicus* (Latham). Barheaded Goose (WM/R)  
\*60(83) *A. c. caerulescens* (Linnaeus). Lesser Snow or Blue Goose (WM)  
\*61(84) *Cygnus columbianus bewickii* Yarrell. Bewick's or Western Whistling Swan (WM)  
\*62(86) *C. cygnus* (Linnaeus). Whooper Swan (WM)  
\*63(87) *C. olor* (Gmelin). Mute Swan (WM)  
\*64(88) *Dendrocygna javanica* (Horsfield). Lesser Whistling Teal or Tree Duck (R)  
\*65(89) *D. bicolor* (Vieillot). Large Whistling Teal (R)  
\*66(90) *Tadorna ferruginea* (Pallas). Ruddy Shelduck or Brahminy Duck (WM/R)  
\*67(91) *T. tadorna* (Linnaeus). Common Shelduck (WM)  
\*68(92) *Marmaronetta angustirostris* (Menetries). Marbled Teal (WM)  
\*69(93) *Anas acuta* Linnaeus. Pintail (WM)  
\*70(94) *A. c. crecca* Linnaeus. Common Teal (WM)  
\*71(95) *A. formosa* Georgi. Baikal, Clucking or 'Formosa' Teal (WM)  
72(96) *A. gibberifrons albogularis* (Hume). Grey, Andaman or Oceanic Teal (R)  
\*73(97) *A. p. poecilorhyncha* J.R. Forster. Spotbill Duck (R)  
74(98) *A. p. haringtoni* (Oates). Burmese Spotbill Duck (R)  
75(99) *A. p. zonorhyncha* Swinhoe. Eastern Grey Duck (WM)  
\*76(100) *A. platyrhynchos* Linnaeus. Mallard (WM/R)  
\*77(101) *A. s. strepera* Linnaeus. Gadwall (WM)  
\*78(102) *A. falcata* Georgi. Falcated or Bronzecapped Teal (WM)  
\*79(103) *A. penelope* Linnaeus. Wigeon (WM)  
\*80(104) *A. querquedula* Linnaeus. Garganey or Bluewinged Teal (WM)  
\*81(105) *A. clypeata* Linnaeus. Shoveller (WM)  
\*82(106) *Rhodonessa caryophyllacea* (Latham). Pinkheaded Duck (R,Ex)  
\*83(107) *Netta rufina* (Pallas). Redcrested Pochard (WM)  
\*84(108) *Aythya ferina* (Linnaeus). Common Pochard (WM)  
\*85(109) *A. nyroca* (Guldenstadt). White-eyed Pochard or Ferruginous Duck

(WM/R)

- 86(110) *A. baeri* (Radde). Baer's Pochard or Eastern White-eye (WM)  
\*87(111) *A. fuligula* (Linnaeus). Tufted Duck (WM)  
\*88(112) *A. m. marila* (Linnaeus). Scaup Duck (WM)  
89(113) *Aix galericulata* (Linnaeus). Mandarin Duck (WM)  
\*90(114) *Nettapus c. coromandelianus* (Gmelin). Cotton Teal or Quacky-duck (R)  
\*91(115) *Sarkidiornis m. melanotos* (Pennant). Nakta or Comb Duck (R)  
92(116) *Cairina scutulata* (S. Muller). Whitewinged Wood Duck (R)  
\*93(117) *Clangula hyemalis* (Linnaeus). Longtail Duck or Old Squaw (WM)  
\*94(118) *Bucephala c. clangula* (Linnaeus). Goldeneye Duck (WM)  
\*95(119) *Mergus albellus* Linnaeus. Smew (WM)  
\*96(121) *M. merganser orientalis* Gould. Eastern Merganser (WM)  
97(122) *M. serrator* Linnaeus. Redbreasted Merganser (WM)  
\*98(123) *Oxyura leucocephala* (Scopoli). Whiteheaded Stiff-tailed Duck (WM)

## VI Order GRUIFORMES

### X Family GRUIDAE: **Cranes**

- \*99(320) *Grus grus lilfordi* Sharpe. Eastern Common Crane (WM)  
\*100(321) *G. nigricollis* Przevalski. Blacknecked Crane (R)  
101(322) *G. monacha* Temminck. Hooded Crane (WM)  
\*102(323) *G. a. antigone* (Linnaeus). Indian Sarus Crane (R)  
103(324) *G. a. sharpii* Blandford. Burmese Sarus Crane (R)  
\*104(325) *G. leucogeranus* Pallas. Siberian or Great White Crane (WM)  
\*105(326) *Anthropoides virgo* (Linnaeus). Demoiselle Crane (WM)

### XI Family RALLIDAE: **Rails, Coots**

- \*106(327) *Rallus aquaticus korejewi* Zarudny. Turkestan Water Rail (R/WM)  
107(328) *R. a. indicus* Blyth. Indian Water Rail (WM)  
\*108(329) *R. striatus albiventer* Swainson. Indian Bluebreasted Banded Rail (R)  
109(330) *R. s. obscurior* (Hume). Andaman Bluebreasted Banded Rail (R)  
110(331) *Rallina fasciata* (Raffles). Malayan or Redlegged Banded Crane (R)  
\*111(332) *R. eurizonoides amauroptera* (Jerdon). Indian or Slatylegged Banded Crane (R)  
112(333) *R. canningi* Blyth. Andaman Banded Crane (R)  
\*113(334) *Crex crex* Linnaeus. Corncrake or Landrail (WM)

- 114(335,336) *Porzana parva* (Scopoli). Little Crane (WM)
- 115(337) *P. pusilla pusilla* (Pallas). Eastern Baillon's Crane (WM/R)
- 116(338) *P. prozana* (Linnaeus). Spotted Crane (WM)
- 117(339) *Amaurornis fuscus bakeri* (Hartert). Northern Ruddy Crane (R)
- 118(340) *A. f. zeylonicus* (Baker). Southern Ruddy Crane (R)
- 119(341) *A. bicolor* (Walden). Elwes's Crane (R)
- 120(342) *A. akool akool* (Sykes). Brown Crane (R)
- 121(343) *A. phoenicurus chinensis* (Boddaert). Chinese Whitebreasted Waterhen (R)
- 122(344) *A. p. phoenicurus* (Pennant). Ceylonese Whitebreasted Waterhen (R)
- 123(345,345a) *A. p. insularis* Sharpe. Andamans Whitebreasted Waterhen (R)
- 124(346) *Gallinix c. cinerea* (Gmelin). Kora or Watercock (R)
- 125(347) *Gallinula chloropus indica* Blyth. Indian Moorhen (R)
- 126(347a) *G. c. orientalis* Horsfield. Malay Moorhen (R)
- 127(349) *Porphyrio porphyrio poliocephalus* (Latham). Indian Purple Moorhen (R)
- 128(350) *Fulica atra atra* Linnaeus. Coot. (WM/R)

#### XXII Family HELIORNITHIDAE: **Finfoot**

- 129(351) *Hellopais personata* (G.R.Gray). Masked Finfoot (R)

#### VII Order CHARADRIIFORMES

#### XIII Family JACANIDAE: **Jacanas**

- 130(358) *Hydrophasianus chirurgus* (Scopoli). Pheasant-tailed Jacana (R)
- 131(359) *Metopidius indicus* (Latham). Bronzewinged Jacana (R)

#### XIV Family HAEMATOPODIDAE: **Oystercatchers**

- 132(360) *Haematopus o. ostralegus* Linnaeus. Oystercatcher or Sea-Pie (WM)

#### XV Family CHARADRIIDAE: **Plovers, Sandpipers, Snipes**

##### Subfamily CHARADRIINAE: Plovers

- 133(362) *Vanellus leucurus* (Lichtenstein). Whitetailed Lapwing (WM)
- 134(363) *V. gregarius* (Pallas). Sociable Lapwing (WM)
- 135(364) *V. vanellus* (Linnaeus). Peewit, Lapwing or Green Plover (WM)
- 136(365) *V. cinereus* (Blyth). Greyheaded Lapwing (WM)
- 137(366) *V. l. indicus* (Boddaert). Redwattled Lapwing (R)

- \*138(369) *V. spinosus duvaucelli* (Lesson). Spurwinged Lapwing (R)
- \*139(370) *V. malabaricus* (Boddaert). Yellowattled Lapwing (R)
- \*140(371) *Pluvialis squatarola* (Linnaeus). Blackbellied or Grey Plover (WM)
- \*141(372) *P. a. apricaria* (Linnaeus). Golden Plover (WM)
- \*142(373) *P. dominica fulva* (Gmelin). Eastern Golden Plover (WM)
- \*143(374) *Charadrius leschenaultii* Lesson. Large Sand Plover (WM)
- 144(375) *C. melanops* Vieillot. Australian Blackfronted Plover (Va)
- 145(377) *C. asiaticus veredus* Gould. Eastern Sand Plover (Va)
- \*146(378) *C. hiaticula tundrae* (Lowe). Eastern Ringed Plover (WM)
- \*147(379) *C. dubius curonicus* Gmelin. European Little Ringed Plover (WM)
- \*148(380) *C. d. jerdoni* (Legge). Indian Little Ringed Plover (R)
- \*149(381) *C. a. alexandrinus* Linnaeus. Kentish Plover (R)
- 150(382) *C. a. seebohmi* Hartert & Jackson. Ceylon Kentish Plover (R)
- \*151(383) *C. placidus* J.E.Gray. Longbilled Ringed Plover (WM)
- \*152(384) *C. mongolus atrifrons* Wagler. Pamirs Lesser Sand Plover (R/WM)

**Subfamily SCOLOPACINAE: Curlews, Sandpipers, Snipes, Woodcock**

- \*153(385) *Numenius p. phaeopus* (Linnaeus). Whimbrel (WM)
- 154(386) *N. p. variegatus* (Scopoli). Eastern Whimbrel (WM)
- \*155(387) *N. a. aurquata* (Linnaeus). Curlew (WM)
- \*156(388) *N. a. orientalis* C.L.Brehm. Eastern Curlew (WM)
- \*157(389) *Limosa l. limosa* (Linnaeus). Blacktailed Godwit (WM)
- 158(390) *L. l. melanuroides* Gould. Eastern Blacktailed Godwit (WM)
- \*159(391) *L. l. laponica* (Linnaeus). Bartailed Godwit (WM)
- \*160(392) *Tringa erythropus* (Pallas). Spotted or Dusky Redshank (WM)
- \*161(393) *T. t. totanus* (Linnaeus). Common Redshank (WM)
- \*162(394) *T. t. eurhinus* (Oberholser). Eastern Redshank (WM/R)
- \*163(395) *T. stagnatilis* (Bechstein). Marsh Sandpiper or Little Greenshank (WM)
- \*164(396) *T. nebularia* (Gunnerus). Greenshank (WM)
- \*165(397) *T. ochropus* Linnaeus. Green Sandpiper (WM)
- \*166(398) *T. glareola* Linnaeus. Wood or Spotted Sandpiper (WM)
- 167(399) *T. guttifer* (Nordmann). Spotted Greenshank or Armstrong's Sandpiper (WM)
- \*168(400) *T. terek* (Latham). Terek Sandpiper or Avocet-Sandpiper (WM)
- \*169(401) *T. hypoleucos* Linnaeus. Common Sandpiper (R/WM)
- \*170(402) *Arenaria i. interpret* (Linnaeus). Turstone (WM)

- \*171(403) *Limnodromus semipalmatus* (Blyth). Spinebilled Godwit or Asian Dowitcher (WM)
- \*172(404) *Capella s. solitaria* (Hodgson). Eastern Solitary Snipe (R)
- \*173(405) *C. nemoricola* (Hodgson). Wood Snipe (R)
- \*174(406) *C. stenura* (Bonaparte). Pintail Snipe (R)
- 175(407) *C. megala* (Swinhoe). Swinhoe's Snipe (WM)
- 176(408) *C. media* (Latham). Great Snipe (WM)
- \*177(409) *C. g. gallinago* (Linnaeus). Common or Fantail Snipe (WM)
- \*178(410) *C. minima* (Brunnich). Jack Snipe (WM)
- \*179(411) *Scolopax r. rusticola* Linnaeus. Woodcock (R/WM)
- 180(413) *Calidris tenuirostris* (Horsfield). Eastern Knot (WM)
- \*181(414) *C. albus* (Pallas). Sanderling (WM)
- 182(415) *C. ruficollis* (Pallas). Eastern Little Stint (WM)
- \*183(416) *C. minutus* (Leisler). Little Stint (WM)
- \*184(417) *C. temminckii* (Leisler). Temminck's Stint (WM)
- \*185(418) *C. subminutus* (Middendorff). Longtoed Stint (WM)
- 186(419) *C. acuminatus* (Horsfield). Asian Pectoral or Sharptailed Sandpiper (WM)
- \*187(420,421) *C. a. alpinus* (Linnaeus). Dunlin (WM)
- \*188(422) *C. testaceus* (Pallas). Curlew-Sandpiper (WM)
- 189(423) *Eurynorhynchus pygmaeus* (Linnaeus). Spoonbilled Sandpiper (WM)
- \*190(424) *Limicola f. falcinellus* (Pontoppidan). Broadbilled Sandpiper (WM)
- 191(425) *L. f. sibirica* Dresser. Eastern Broadbilled Sandpiper (WM)
- \*192(425a) *Tryngites subruficollis* (Vieillot). Buffbreasted Sandpiper (WM)
- \*193(426) *Philomachus pugnax* (Linnaeus). Ruff (WM)

Subfamily PHALAROPINAE: Phalaropes

- 194(427) *Phalaropus fulicarius* (Linnaeus). Grey Phalarope (WM)
- \*195(428) *P. lobatus* (Linnaeus). Rednecked Phalarope (WM)

XVI Family ROSTRATULIDAE: **Painted Snipe**

- \*196(429) *Rostratula b. benghalensis* (Linnaeus). Painted Snipe (R)

XVII Family RECURVIROSTRIDAE: **Stilts, Avocet, Ibisbill**

- \*197(430) *Himantopus h. himantopus* (Linnaeus). Indian Blackwinged Stilt (R)

\*198(432) *Recurvirostra avosetta* Linnaeus. Avocet (WM)

\*199(433) *Ibidorhyncha struthersii* Vigors. Ibisbill (R)

XVIII Family DROMADIDAE: **Crab Plover**

200(434) *Dromas ardeola* Paykull. Crab Plover (WM)

XIX Family BURHINIDAE: **Stone Curlews, Thick-knees**

201(435) *Burhinus oedicnemus saharae* (Reichenow). Persian Stone Curlew (R)

\*202(436) *Burhinus oedicnemus indicus* (Salvadori). Indian Stone Curlew (R)

\*203(437) *Esacus magnirostris recurvirostris* (Cuvier). Great Stone Plover (R)

\*204(438) *E. m. magnirostris* (Vieillot). Australian Stone Plover (R)

XX Family GLAREOLIDAE: **Coursers, Pratincoles**

205(439) *Cursorius c. cursor* (Latham). Creamcoloured or Desert Courser (WM)

\*206(440) *C. coromandelicus* (Gmelin). Indian Courser (R)

207(441) *C. bitorquatus* (Blyth). Jerdon's or Doublebanded Courser (R)

\*208(442) *Glareola p. pratincola* (Linnaeus). Collared Pratincole or Swallow-Plover (R)

\*209(443) *G. p. maldivarum* J.R. Forster. Large Indian Pratincole or Swallow-Plover (R)

\*210(444) *G. lactea* Temminck. Small Indian Pratincole or Swallow-Plover (R)

XXI Family LARIDAE: **Gulls, Terns**

211(449) *Larus hemprichii* Bruch. Sooty Gull (WM)

\*212(450) *L. argentatus heuglini* Bree. Yellow-legged Herring Gull (WM)

213(451) *L. a. mongolicus* Sushkin. Pinklegged Herring Gull (WM)

\*214(453) *L. ichthyaetus* Pallas. Great Blackheaded Gull (WM)

\*215(454) *L. brunnicephalus* Jerdon. Brownheaded Gull (WM)

\*216(455) *L. R. ridibundus* Linnaeus. Blackheaded Gull (WM)

\*217(456) *L. genei* Breme. Slenderbilled Gull (WM)

\*218(457) *L. minutus* Pallas. Little Gull (WM)[*L. marinus* Linnaeus. Greater Blackbacked Gull]

\*219 *L. canus* Linnaeus. Mew Gull (WM)

\*220(458) *Chlidonias hybrida indica* (Stephens). Indian Whiskered Tern (WM/R)

221(459) *C. leucoptera* (Temminck). Whitewinged Black Tern (WM)

\*222(459a) *C. n. niger* (Linnaeus). Black Tern (WM)



- \*223(460) *Gelochelidon n. nilotica* (Gmelin). Gullbilled Tern (R)
- 224(461) *G. n. affinis* (Horsfield). Javan Gullbilled Tern (R)
- \*225(462) *Hydroprogne c. caspia* (Pallas). Caspian Tern (R)
- \*226(463) *Sterna aurantia* J.E. Gray. Indian River Tern (R)
- \*227(465) *S. hirundo tibetana* Saunders. Tibetan Common Tern (R/WM)
- 228(466) *S. dougallii korrsstes* (Hume). Roseate or Rosy Tern (R)
- \*229(466a) *S. macrura* Naumann. Arctic Tern (WM)
- 230(267) *S. repressa* Hartert. Whitecheeked Tern (R)
- 231(468) *S. s. sumatrana* Raffles. Eastern Blacknaped Tern (R)
- \*232(470) *S. acuticauda* J.E.Gray. Blackbellied Tern (R)
- 233(471) *S. a. anaethetus* Scopoli. Philippine Brownwinged Tern (WM)
- 234(473) *S. a. antarctica* Lesson. Southern Brownwinged Tern (R)
- 235(474) *S. fusca nubilosa* Sparrman. Sooty Tern (R)
- \*236(475) *S. a. albifrons* Pallas. Little Tern or Ternlet (R)
- 237(476) *S. a. saundersi* Hume. Blackshafted Ternlet (R)
- 238(477) *S. a. sinensis* Gmelin. Whiteshafted Ternlet (R)
- 239(478) *S. bergii velox* Cretzschmar. Red Sea Large Crested Tern (R)
- 240(479) *S. b. bengalensis* Lesson. Indian Lesser Crested Tern (R)
- \*241(480) *S. s. sandwicensis* Latham. Sandwich Tern (WM)
- 242(481) *Anous stolidus pileatus* (Scopoli). Noddy Tern (R)
- 243(482) *A. tenuirostris worcesteri* (McGregor). Whitecapped Noddy (WM)
- 244(483) *Gygis alba monte* Mathews. Indian Ocean White or Fairy Tern (R)
- \*245(484) *Rnchops albigollis* Swainson. Indian Skimmer or Scissorbill (R)

\*Species recorded from northern India, i.e., Jammu and Kashmir, Himachal Pradesh, Punjab, Chandigarh, Haryana, Uttranchal, Delhi and Uttar Pradesh.

## **II. Conventions on Conservation of Birds, Wildlife Trade and Related Legislature**

### **(i) Convention on Biological Diversity – CBD**

#### **Objectives**

To conserve biological diversity, sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including appropriate access to genetic resources and appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding.

#### **Scope**

*Legal scope:*

Open to all States.

*Geographic Scope:*

Global.

#### **Date and place of adoption**

5 June 1992, Rio de Janeiro, Brazil

#### **Entry into force**

29 December 1993.

Number of States/Parties

171 signatories as of December 1993

#### **Secretariat**

United Nations Environment Programme (UNEP),

PO Box 30552, Nairobi,

Kenya

### **(ii) Convention on International Trade in Endangered Species of Wild Fauna and Flora – CITES (UNEP)**

#### **Objectives**

To ensure, through international cooperation, that the international trade in species of wild fauna and flora does not threaten the conservation of the species concerned;

To protect certain endangered species from over exploitation by means of a system of import/export permits.

### **Scope**

#### *Legal Scope*

Open for to all States.

#### *Geographic scope*

Global.

### **Date and place of Adoption**

3 March 1973, Washington DC

Entry into force

1 July 1975

### **Number of States/Parties**

114 parties, including 75 developing countries, as of March 1992

### **Affiliated protocols, appendices and organisations**

**Appendix I** offer the highest protection and prohibits (with limited exemptions) commercial international trade in wild-caught specimens of species threatened with extinction;

**Appendix II** assigns the responsibility to exporting states to limit, through a permit system, such trade in species as could become threatened with extinction if there were no such restriction;

**Appendix III** requires Parties to control trade in specimens of species, which have been protected in certain states and listed by those states;

**Appendix IV** contains model permits.

### **Secretariat**

UNEP/CITES Secretariat

6 rue de Maupas,

CP 78,

CH-Lausanne 9,

Switzerland

### **Scientific Authorities (In India)**

1. Director, Zoological Survey of India, Calcutta
2. Director, Botanical Survey of India, Calcutta
3. Director, Central Marine Fisheries Research Institute, Cochin

### **(iii) *Convention on the Conservation of Migratory Species of Wild Animals – CMS (UNEP)***

#### **Objectives**

To conserve those species of wild animals that migrate across or outside national boundaries by restricting harvests, conserving habitat and controlling other adverse factors.

#### **Legal Scope**

Open to all States and regional economic integration organisations.

#### **Geographic Scope**

Global.

#### **Date and place of adoption**

23 June 1979, Bonn

Entry into force

1 November 1983

#### **Number of States/Parties**

51 Parties from Africa, Central and South America, Asia, Europe and Oceania, as of 1997

#### **Affiliated protocols, appendices and organisations**

The convention aims to conserve terrestrial, marine and avian migratory species throughout their migratory range. Parties to CMS work together to conserve migratory species and their habitats by providing strict protection for the endangered migratory species listed in Appendix I of the Convention; by concluding multilateral Agreements for the conservation and management of migratory species listed in Appendix II; and by undertaking cooperative research activities.

CMS has a unique role to play in focusing attention on and addressing the conservation needs of the 76 endangered species presently listed in Appendix I, including, among others, the Siberian Crane.

Seven agreements had been concluded as of 1997 under the auspices of CMS. These include, besides others, conservation of African-Eurasian migratory waterbirds, western and central Asian populations of the Siberian Crane and the Slenderbilled Curlew.

**Secretariat**

UNEP/CMS Secretariat  
Ahrstrasse 45  
P.O. Box 201448  
D-5300 Bonn 2  
Germany

**(iv) *Convention on Protection of Migratory Birds between India and (former USSR) Russia***

Realising the importance of bird protection at the international level and considering that a large number of birds which nest in the USSR and winter in India migrate between both the countries and are under constant threat due to human pressure, a treaty on protection of migratory birds between India and (former USSR) Russia was signed in 1984 for cooperation in protection of bird populations and their habitat.

Under the treaty the government of India and the former USSR have agreed as follows:

**Article I**

- 1) in this convention, the term 'Migratory Birds' means;
  - (a) the species of birds for which there is positive evidence of migration between the two countries from the recovery of bands or other markers; and the species of birds with subspecies common to both countries and in the absence of

- (a) subspecies, the species of birds common to both countries.
- 2) the species of birds defined as 'Migratory Birds' in paragraph 1 of this article are birds listed in the appendix to this convention.

## **Article II**

- 1) the contracting parties shall prohibit taking of migratory birds and collection of their eggs. Any sale, purchase or exchange of these birds or their eggs, taken illegally alive or dead and any sale, purchase or exchange of the products thereof or their parts shall also be prohibited other than for mutually agreed purposes.
- 2) each contracting party may fix hunting season in its country bearing in mind preservation of normal reproduction of migratory birds.

## **Article III**

- 1) the contracting parties agrees that to preserve the species and subspecies of birds that are in danger of extinction, measures of special protection are desirable. Each party will inform the other regarding such remedial measures.
- 2) Each contracting party shall control the export of species and subspecies of birds specified in paragraph 2 of this article as well as the products thereof or their parts.

## **Article IV**

- 1) the contracting parties shall exchange data and publications' pertaining to research on migratory birds and birds in danger of extinction.
- 2) the contracting parties shall promote coordinated and joint research programs on migratory birds that are in danger of extinction as well as on their preservation.

## **Article V**

- 1) Each contracting party shall endeavor to set up sanctuaries and other necessary establishments for the management and protection of migratory birds as well as those are in danger of extinction together with their natural environment.
- 2) each contracting party shall endeavor to take other appropriate measures to preserve and improve the natural environment of birds protected under Articles II and III.

## **Article VI**

Each contracting party agrees to take measures necessary for the attainment of the objectives of this convention.

## **Article VII**

The contracting parties shall hold consultations regarding implementation of this convention at the request of any one of them.

## **Article VIII**

This convention shall not be interpreted as inconsistent with or modifying neither any agreement in force between the contracting parties nor any international obligations adopted by each party.

## **Article IX**

This convention shall be subject to ratification or confirmation by the contracting parties and shall be in force for a period of 15 years with automatic extension for each successive period of five years unless either contracting party declares its desire to terminate it.

(v) **Convention on Wetlands of International Importance, Especially as Waterfowl Habitat. The Ramsar Convention**



## **Objectives**

To stem the progressive encroachment on and loss of wetlands now and in future, recognising the fundamental ecological functions of wetlands and their economic, cultural, scientific and recreational value;

To coordinate international efforts for this purpose.

## **Scope**

Legal scope

Membership opens to all States, members of the United Nations or members of the specialised agencies and the IAEA.

*Geographic scope*

Global.

## **Date and place of adoption**

2 February 1971, Ramsar, Iran

## **Entry into force**

21 December 1975

Number of States/Parties

65 Parties, as of January 1992.

## **Affiliated protocols, appendices and organisations**

The Ramsar Bureau collaborates closely with the *World Conservation Union (IUCN)* and the *International Waterfowl and Wetlands Research Bureau (IWRB)* (now *Wetland International*)

## **Rules and standards**

Parties shall:

Designate at least one national wetland for inclusion in a *List of Wetlands of International Importance*;

Formulate and implement their planning so as to promote the conservation of wetlands included in the List, and as far as possible the wise use of wetlands in their territory;

Establish wetland nature reserves, cooperate in the exchange of information and train personnel for wetland management;

Cooperate for the management of shared wetlands and shared wetland species.

**Secretariat**

Ramsar Convention Bureau,  
Rue Mauverney 28  
CH-1196 Gland,  
Switzerland

**(vi) The World Conservation Union – IUCN**

**Objectives**

Secure the conservation of nature, especially of biological diversity, as an essential foundation for the future;

Ensure where the earth's natural resources are used that this is done in a wise, equitable way;

Guide the development of human communities towards enduring harmony with other components of the biosphere.

**Secretariat**

The World Conservation Union (IUCN),  
Avenue du Mont-Blanc,  
CH-1196 Gland,  
Switzerland

**(vii) World Wide Fund for Nature – WWF**

**Objectives**

Conserve nature and ecological processes by preserving genetic, species and ecosystem diversity; Ensure that the use of renewable resources is sustainable both now and in the longer term;

Promote actions to reduce pollution and wasteful exploitation and consumption;

Create awareness of threats to the natural environment.

### **Secretariat**

World Wide Fund for Nature (WWF),  
World Conservation Center,  
Avenue du Mont-Blanc,  
CH-1196 Gland,  
Switzerland

## **(VIII) Wetlands International**

This is a Global non-profit wetland conservation organisation created by the integration of the Asian Wetland Bureau, the International Waterfowl and Wetlands Research Bureau, and Wetlands for Americas. It has a global network with three main regional setups, *i.e.*, Asia Pacific; Africa, Europe, Middle East; and The Americas.

### **Objectives**

Coordinate conservation, management and assessment projects on wetlands at the international level;

Provide technical and financial support to national and local projects on wetlands;

Help in capacity building of relevant agencies.

Its major achievements include the launching of *Convention on Wetlands of International Importance Especially as Waterfowl Habitat: Ramsar Convention, Ramsar, 1971*

## **(VIIIa) Asian Waterfowl Census**

### **Background**

The Asian Waterfowl Census (AWC) is a coordinated international scheme for collecting field data on waterbirds and wetlands since 1987 under the coordination of Wetlands International (formerly the Asian Wetland Bureau and the International Waterfowl and Wetlands Research Bureau).

### **Objectives**

Obtain information on an annual basis of waterbird populations at wetlands in the region during the non-

breeding period of most species (January), as a basis for evaluation of sites and monitoring of populations;

Monitor on an annual basis the status and conditions of wetlands; and

Encourage a greater popular interest in waterbirds and wetlands, and thereby promote their conservation.

AWC is conducted during the 2<sup>nd</sup> or 3<sup>rd</sup> week of January across the region and undertaken by volunteer participants.

The census is coordinated by a number of regional coordinators at the National level. India has nine coordinators.

The coordinators organise a network of volunteer participants from all walks of life with varying levels of skills in identification and counting of birds.

In addition to waterbird species as recognised by the Ramsar Convention, counts of species of birds of prey (raptors) that are regularly encountered at wetlands.

The above information is entered into standard databases using customised dBase IV programs at the Wetlands International Asia Pacific office in Malaysia. Processing of the data is in dBase IV<sup>TM</sup> and Microsoft<sup>TM</sup> and Excel<sup>TM</sup>.

Information collected from the census is published in a series of annual reports, which can be obtained from the Secretariat of Wetlands International Asia Pacific at the address given below.

For the purposes of the report, countries and territories providing information are divided into three main regions: South Asia (Bangladesh, India, Nepal, Pakistan and Sri Lanka), South-East Asia (Brunei Darussalam, Indonesia, Lao PDR, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand and Vietnam) and East Asia (China, Hong Kong, Japan, Republic of Korea and Taiwan). Information on shorebirds is included from Australia.

**Secretariat**

Wetlands International Asia Pacific  
Institute of Postgraduate Studies and Research  
University of Malaya  
50603 Kuala Lumpur  
Malaysia  
E-mail: [wiap@wiap.nasionet.net](mailto:wiap@wiap.nasionet.net)

**(ix) International Council for Bird Preservation (ICBP)**

ICBP is a non-profit, non-governmental, international federation of conservation organisations and people with a special interest in and focus on birds, working in partnership with a large global network covering more than 120 countries.

ICBP's purpose is to conserve the natural diversity and distribution of the world's bird species, and their habitats and ecosystems and, through this, to work for the diversity of all life on earth and the sustainability of human use of natural resources.

**(x) BirdLife International**

BirdLife International is a global partnership of conservation organisations, represented in over a hundred countries. BirdLife seeks to conserve all bird species on earth and their habitats and, through this, it works for the world's biological diversity. It identifies and monitors worldwide the most threatened bird species and the most critical sites for the conservation of avian diversity.

BirdLife International pursues a programme of:  
Scientific research and analysis  
Advocacy and policy development  
Field actions and country conservation programs  
Network and capacity building

**Secretariat**

BirdLife International Office  
Wellbrook Court, Girton Road,  
Cambridge CB 3 0NA, UK  
E-mail: [birdlife@birdlife.org.uk](mailto:birdlife@birdlife.org.uk)

### **(xi) Indian Bird Conservation Network (IBCN)**

This is a network of ornithologists, bird watchers and organisations working for the conservation of wild birds in India. Its mission is to promote conservation of birds and their habitat through development of a national network of individuals, organisations and the government. It is a non-political open network to help in exchange of information and ideas between the network partners.

Each state of the union of India will have a state coordinator for a term of two years, who will promote participation of the people working in his state for bird conservation.

IBCN publishes a quarterly newsletter '*mistnet*'.

#### **Secretariat:**

Bombay Natural History Society  
Hornbill House,  
Dr. Salim Ali Chowk,  
Shaheed Bhagat Singh Road,  
Mumbai 400 023  
E-mail: bnhs@bom4.vsnl.net.in

### **(xii) Indian Important Bird Areas (IBA) Programme**

The Indian Important Bird Area Programme is a collaborative project between the Bombay Natural History Society (BNHS) and the Royal Society for the protection of birds (RSPB), UK and the BirdLife International. It was launched in India by BNHS in March 1999.

#### **Aims**

The main thrust of the IBA programme is to identify and protect the network of sites critical for the long-term survival of bird populations. The main aims can be summarised as follows:

To form a sound basis for the development of national conservation strategies, including the protected areas programme;

To highlight sites which are threatened or inadequately protected;

To help build a national and regional network of ornithologists and conservationists;

To guide the work of national NGOs;

To influence global conventions like CBD and Ramsar;

To influence regional migratory agreements.

The IBA programme will gather as much information as possible on key bird species and sites that are important for them, especially those neglected or less studied in the past. The important sites will be identified by active participation of interested persons.

### **Criteria and Categories**

*Criterion 1. Globally Threatened Species.* The site regularly holds a significant number of a globally threatened species or other species of global conservation concern as per the new IUCN criteria for threatened status.

*Criterion 2. Restricted-Range Species.* Those that have a total world range of less than 50,000 sq. km. An area where the range of two or more restricted-range species overlaps is known as an Endemic Bird Area (EBA).

*Criterion 3. Biome Restricted Assemblages.* The site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one biome. The criterion covers all those species that are neither globally threatened nor restricted-range but reflect the state of any habitat.

*Criterion 4. Congregations.* A site may qualify any one of the criteria listed below:

- i) Site known or thought to hold, on a regular basis, >1% of a biogeographic population of a congregatory waterbirds

This population or threshold numbers are defined by BirdLife International in consultation with Wetland



International, which helps in selecting a site on the basis of these criteria.

- ii) Site known or thought to hold, on a regular basis, >20,000 waterbirds or > 10,000 pairs of seabirds of one or more species.
- iii) Site known or thought to exceed thresholds set for migratory species at bottleneck sites.

These are the sites that birds use as major flyways during migration and are vulnerable to hunting. However, protection of such areas or sites is important in order to ensure safe migration of birds.

### **Secretariat**

Bombay Natural History Society,  
Hornbill House, Dr. Salim Ali Chowk,  
SB Singh Road, **Mumbai – 400 023**

### **LEGISLATURE**

#### **The Wildlife (Protection) Act, 1972**

(No.53 of 1972) (9<sup>th</sup> September, 1972)

**1. Short title, extent and commencement:** - (1) This Act may be called the Wildlife (Protection) Act, 1972.

(2) It extends to the whole of India, except the State of Jammu and Kashmir.

Hunting of wild animals has been prohibited under Sec. 9 of the Wildlife (P) Act 1972. No person is allowed to hunt any wild animal specified in Schedules I, II, III and IV except as provided under sections 11 and 12 of the Act. The Act also prohibits collection or trade in specified plants (whether alive or dead or part or derivative), i.e., those listed in schedule IV of the Wildlife (P) Act 1972, from any forest land and any area specified by notification by the Central Government under section 17A of the Act. Schedule VI of the Act lists all the six plants of Indian origin presently included in App. I of CITES. Similarly, the Act disallows trade in all kind of imported ivory, including that of African elephant. Export or import of wild animals and their parts

and products is allowed, however, for the purpose of scientific research and exchange of animals between zoos and is subject to licensing by the Director General of Foreign Trade (DGFT).

Amended in 1991 to include regular overpossession and cultivation of notified plant species.

**Schedule I:** Lists the rare and endangered species, which are totally protected throughout the country, living or dead or part there of.

**Schedule II:** Lists special game species that deserve more stringent protection, for which licenses can be issued under special circumstances.

**Schedule III and IV:** comprise special and small games.

**Schedule V:** Deals with vermin's such the common crow, fruit bats, mice and rats.

### **National Organisations in India**

#### **1. Bombay Natural History Society (BNHS)**

The BNHS was founded in 1883, and is the largest non-governmental organisation in the subcontinent engaged in the conservation of natural resources, education and research in natural history. An invaluable collection of over 26,000 birds is housed in its HQ in Bombay. The society undertakes programmes on awareness with training programmes for the Indian Army, journalists and trekkers. The scientists of the society have established a national bird-ringing programme and are carrying out very important research on Indian birds.

#### **Address**

Hornbill House,  
Dr. Salim Ali Chowk,  
Shaheed Bhagat Singh Road,  
Mumbai 400 023  
E-mail: bnhs@bom4.vsnl.net.in

## **2. Salim Ali Centre for Ornithology and Natural History (SACON)**

SACON was set up in 1990 and has the following main objectives:

- i) to study India's biological diversity so as to promote its conservation and sustainable use;
- ii) to study the ecology of Indian Avifauna with special reference to its conservation.

### **Address**

Kalampalayam,  
Coimbatore 641 010 (TN)

## **3. Wildlife Institute of India (WII)**

The WII was set up in 1982 and has the following objectives:

- i. to train biologists and managers for protected area management and wildlife research;
- ii. to conduct and coordinate applied wildlife research;
- iii. to provide consultancy services in conservation matters; and
- iv. create a database leading to national wildlife information system.

### **Address**

Post Bag No. 18,  
Chandrabani,  
Dehra Dun 248 001  
Email: [wii@wii.gov.in](mailto:wii@wii.gov.in)

## **4. Zoological Survey of India (ZSI)**

The ZSI was established in 1916 and carries out surveys on Faunal Diversity of the country. The National Zoological Collection at ZSI HQ, Calcutta houses more than one million specimens of all faunal groups. It has 16 Regional Stations in various ecosystems.

### **Address**

Prani Vigyan Bhawan,  
535, M Block, New Alipur,  
Calcutta 700 053  
E-mail: [dirzsi@wb.nic.in](mailto:dirzsi@wb.nic.in)

# INDEX

## Scientific names

Number in **Bold** refer to plate numbers

### **Alcido**

*atthis bengalensis* -, 178

*atthis pallasii* **37**, 178

### **Amaurornis**

*akool akool* **24**, 99

*fuscus bakeri* **24**, 98

*phoenicurus chinensis* **27**, 99

### **Anas**

*acuta* **13**, 71

*clypeata* **19**, 78

*crecca crecca* **14**, 71

*falcata* **11**, 76

*formosa* **11**, 72

*penelope* **18**, 76

*platyrhynchos* **16**, 74

*poecilorhyncha* **15**, 73

*querquedula* **11**, 77

*strepera strepera* **17**, 75

### **Anastomus**

*oscitans* **5**, 52

### **Anhinga**

*rufa melanogaster* **2**, 40

### **Anser**

*albifrons albifrons* **8**, 62

*anser rubrirostris* **9**, 63

*Caerulenscens caerulenscens* **8**, 65

*erythropus* **8**, 63

*indicus* **8**, 64

### **Anthropoides**

*virgo* **23**, 93

### **Ardea**

*alba alba* -, 45

*alba modesta* **3**, 45

*cinerea rectirostris* **3**, 42

*insignis* **3**, 41

*perpurea manillensis* **3**, 42

### **Ardeola**

*grayii grayii* **3**, 44

### **Arenaria**

*interpretes interpretes* **31**, 125

### **Aythya**

*ferina* **21**, 80

*fuligula* **22**, 82

*marila marila* **12**, 82

*nyroca* **11**, 81

### **Botaurus**

*stellaris stellaris* **4**, 51

### **Bucephala**

*clangula clangula* **12**, 86

### **Bubulcus**

*ibis coromandus* **3**, 44

### **Burhinus**

*oedicnemus indicus* **33**, 141

### **Butorides**

*striatus javanicus* **3**, 43

### **Calidris**

*albus* **31**, 131

*alpinus alpinus* **32**, 133

*minutus* **32**, 131

*subminutus* **32**, 133

*temminckii* **32**, 132

*testaceus* **32**, 134

### **Capella**

*gallinago gallinago* **31**, 129

*minima* **31**, 130

*nemoricola* **31**, 127

*solitaria solitaria* **31**, 127

- stenura* 31, 128
- Ceryle**  
*lugubris continentalis* 37, 177  
*rudis leucomelanura* 37, 178
- Cinclus**  
*cinclus cashmeriensis* 39, 184  
*pallastii tenurostris* 39, 185
- Chalmarrornis**  
*leucocephalus* 39, 184
- Charadrius**  
*alexandrius alexandrius* 29, 115  
*dubius curonicus* -, 114  
*dubius jerdoni* 29, 114  
*hiaticula tundarae* 29, 113  
*leschenaultii* 29, 113  
*placidus* 29, 115  
*mongolus artifrons* 29, 116
- Chlidonias**  
*hybrida indica* 34, 150  
*leucoptera* 34, 151  
*niger niger* 34, 151
- Ciconia**  
*ciconia ciconia* 5, 54  
*episcopus episcopus* 5, 53  
*nigra* 5, 54
- Clangula**  
*hyemalis* 12, 85
- Crex**  
*crex* 24, 96
- Cursorius**  
*coromandelicus* 33, 143
- Cygnus**  
*columbianus bewickii* 8, 66  
*cygnus* 8, 66  
*olor* 8, 67
- Dendrocygna**  
*bicolor* 11, 68
- javanica* 11, 67
- Egretta**  
*intermedia intermedia* 4, 46  
*garzetta garzetta* 4, 46  
*gularis schistacea* 4, 47
- Enicurus**  
*immaculatus* 38, 182  
*maculatus maculatus* 38, 183  
*schistaceus* 38, 183  
*scouleri scouleri* 38, 182
- Ephippiorhynchus**  
*asiaticus asiaticus* 5, 55
- Esacus**  
*magnirostris*  
*recurvirostris* 33, 142
- Falco**  
*peregrinus babylonicus* 36, 177
- Fulica**  
*atra atra* 26, 102
- Gallixrex**  
*cinerea cinerea* 27, 100
- Gallinula**  
*chloropus indica* 25, 101
- Gavia**  
*arctica suschkini* 1, 31
- Gelochelidon**  
*nilotica nilotica* 35, 152
- Glareola**  
*lactea* 33, 145  
*pratincta maldivarum* 33, 144  
*pratincta prtincta* 33, 144
- Grus**  
*antigone antigone* 23, 91  
*grus lilfordi* 23, 89  
*leucogeranus* 23, 92  
*nigricollis* 23, 90
- Haematopus**  
*ostralegus ostralegus* 27, 105

**Haliaeetus***albicilla* 36, 175*leucoryphus* 36, 175**Haliastur***indus indus* 36, 175**Halcyon***pileata* 37, 180*smyrnensis fusca* 179*smyrnensis smyrnensis* 37, 179**Himantopus***himantopus himantopus* 33, 141**Hirundo***fluvicola* 38, 181*rustica rustica* 38, 180**Hydrophasianus***chirurgus* 27, 103**Hydroprogne***caspia caspia* 35, 153**Ibidorhyncha***sthruthersii* 33, 140**Ichthyophaga***nana plumbea* 36, 176**Ixobrychus***cinnamomeus* 4, 49*flavicollis flavicollis* 4, 50*minutus minutus* 4, 48*sinensis* 4, 50**Larus***argentatus heuglini* 34, 146*brunnicephalus* 34, 147*canus* 34, 149*genei* 34, 149*ichthyaetus* 34, 147*minutus* 34, 149*ridibundus ridibundus* 34, 148**Leptotilos***dubius* 6, 55*javanicus* 6, 56**Limicola***falcinellus falcinellus* 32, 135**Limnodromus***semipalmatus* 31, 126**Limosa***lapponica lapponica* 30, 119*limosa limosa* 30, 118**Marmaronetta***angustirostris* 11, 70**Mergus***abellus* 12, 87*merganser orientalis* 12, 87**Metopidius***indicus* 27, 104**Motacilla***alba alboides* 40, 186*alba baicalensis* 40, 186*alba dukhunensis* 40, 186*alba leucopsis* 40, 186*alba personata* 40, 186*caspica caspica* 39, 186*citreola calcarata* 39, 185*citreola citreola* 185*citreola werae* 185*maderaspatensis* 40, 186**Mycteria***leucocephala* 5, 52**Netta***rufina* 20, 79**Nettapus***coromandelianus**coromandelianus* 11, 83**Numenius***arquata arquata* -, 117*arquata orientalis* 29, 117*phaeopus phaeopus* 29, 117

**Nycticorax**

*nycticorax nycticorax* 4, 47

**Oxyura**

*leucocephala* 12, 88

**Pandion**

*haliaetus haliaetus* 36, 176

**Pelargopsis**

*capensis capensis* 27, 179

**Pelecanus**

*onocrotalus* 2, 35

*philippenensis philippenensis* 2, 36

*philippenensis crispus* 2, 37

**Phalacrocorax**

*carbo sinensis* 2, 38

*fuscicollis* 2, 38

*niger* 2, 39

**Phalaropus**

*lobatus* 32, 137

**Philomachus**

*pugnax* 32, 136

**Phoeniconaias**

*minor* 7, 61

**Phoenicopterus**

*roseus* 7, 60

**Platalea**

*leucordia major* 6, 59

**Plegadis**

*falcinellus falcinellus* 6, 59

**Pluvialis**

*apricaria apricaria* 28, 111

*dominica fulva* 28, 112

*squatarola* 28, 111

**Podiceps**

*auritus* 1, 34

*cristatus cristatus* 1, 32

*griseigena* 1, 32

*nigricollis nigricollis* 1, 33

*ruficollis capensis* 1, 33

**Porphyrio**

*porphyrio poliocephalus* 27, 101

**Porzana**

*parva* 24, 96

*porzana* 24, 97

*pusilla pusilla* 24, 97

**Pseudibis**

*papillosa papillosa* 6, 58

**Rallina**

*eurizonodes amauroptera* 24, 95

**Rallus**

*aquaticus korejewi* 24, 94

*striatus albiwenter* 24, 94

**Recurvirostra**

*avosetta* 33, 140

**Rhodonessa**

*caryophyllacea* 11, 79

**Rhyacornis**

*fuliginosus fuliginosus* 39, 183

**Riparia**

*paludicola chinensis* 38, 180

**Rostratula**

*benghalensis*

*benghalensis* 33, 138

**Rynchops**

*albicollis* 35, 157

**Sarkidiornis**

*melanotos melanotos* 12, 84

**Scolopax**

*rusticola rusticola* 31, 130

**Sterna**

*acuticauda* 35, 155

*albifrons albifrons* 35, 156

*aurantia* 35, 153

*hirundo tibetana* 35, 154

*macrura* 35, 155

*sandvicensis*  
*sandvicensis* **35**, 157

**Tadorna**

*ferruginea* **10**, 68  
*tadorna* **11**, 69

**Threskiornis**

*aethiopica melanocephala* **6**, 57

**Tringa**

*erythropus* **30**, 120  
*glareola* **30**, 123  
*hypoleucos* **30**, 125  
*nebularia* **30**, 122  
*ochropus* **30**, 123

*stagnatilis* **30**, 121

*terek* **30**, 124

*totanus eurhinus* **30**, 120

*totanus totanus* 120

**Tryngites**

*subruficollis* **32**, 136

**Vanellus**

*cinereus* **28**, 108  
*gregarius* **27**, 106  
*indicus indicus* **28**, 109  
*leucurus* **27**, 106  
*malabaricus* **28**, 110  
*spinosus duvaucelii* **28**, 109  
*vanellus* **28**, 107



## INDEX

### Common English Names

#### **Adjutant 6, 55**

Lesser (Haircrested) **6, 56**

#### **Avocet 33, 42**

#### **Bittern 4, 51**

Black **4, 50**

Chestnut **4, 49**

Little **4, 48**

Yellow **4, 50**

#### **Coot 26, 102**

#### **Cormorant**

Large **2, 38**

Little **2, 39**

#### **Courser, 143**

Indian **33, 143**

#### **Crake**

Brown **24, 99**

Corn (Landrail) **24, 96**

Eastern Baillon's **24, 97**

Indian (Slatylegged

Banded) **24, 95**

Little **24, 96**

Northern Ruddy **24, 98**

Spotted **24, 97**

#### **Crane**

Blacknecked **23, 90**

Demoiselle **23, 93**

Eastern Common **23, 89**

Indian Sarus **23, 91**

Siberian (Great White) **23, 92**

#### **Curlew 29, 117**

Eastern **29, 117**

Indian Stone **33, 141**

#### **Dabchick (Little Grebe) 1, 33**

#### **Darter (Snake-bird) 2, 40**

#### **Dipper**

West Himalayan Brown **39, 185**

Whitebreasted **39, 184**

#### **Diver**

Blackthroated **1, 31**

#### **Dowitcher, Asian 31, 129**

#### **Duck**

Brahminy **10, 68**

Comb (Nakta) **12, 84**

Ferruginous (White-  
eyed Pochard) **11, 81**

Goldeneye **12, 86**

Longtail (Old Squaw) **12, 85**

Pinkheaded **11, 79**

Quacky (Cotton Teal) **11, 83**

Scaup **12, 83**

Spotbill **15, 74**

Tufted **22, 82**

Whiteheaded

Stiffailed **12, 88**

#### **Dunlin 32, 133**

#### **Eagle**

Himalayan Greyheaded

Fishing **36, 176**

Ringtailed (Pallas's  
Fishing ) **36, 176**

Whitetailed Sea **36, 175**

#### **Egret**

Cattle **3, 44**

Eastern Large **3, 45**

Large

(Great White Heron) -, **45**

Little **4, 46**

Smaller (Median) **4, 46**

#### **Falcon**

Redcapped (Barbary) **36, 177**

**Flamingo 7, 60**

Lesser 7, 61

**Forktail**

Blackbacked 38, 182

Little 38, 182

Slatybacked 38, 183

Western Spotted 38, 183

**Gadwall 17, 77****Garganey**

(Bluewinged Teal) 11, 77

**Godwit**

Bartailed 30, 119

Blacktailed 30, 118

Snipebilled (Asian  
Dowitcher) 31, 136

**Goose**

Barheaded 8, 64

Eastern Greylag 9, 63

Lesser Whitefronted  
(Dwarf) 8, 63

Lesser Snow (Blue) 8, 65

Whitefronted 8, 62

**Grebe, 31**

Blacknecked 1, 33

Great Crested 1, 32

Horned (Slavonian) 1, 34

Little (Dabchick) 1, 33

Rednecked 1, 32

**Greenshank 30, 121****Gull**

Blackheaded 34, 148

Brownheaded 34, 147

Great Blackheaded 34, 147

Little 34, 149

Mew 34, 149

Slenderbilled 34, 149

Yellowlegged Herring 34, 146

**Heron**

Eastern Grey 3, 42

Eastern Purple 3, 42

Great Whitebellied  
(Large Egret) 3, 41

Indian Pond (Paddy  
Bird) 3, 44

Indian Reef 4, 47

Little Green 3, 43

Night 4, 47

**Ibis**

Glossy 6, 59

Indian Black 6, 58

White 6, 57

**Ibisbill 33, 140****Jacana**

Bronzewinged 27, 100

Pheasant-tailed 27, 103

**Kingfisher**

Blackcapped 37, 180

Brownheaded  
Storkbilled 37, 179

Central Asian Small  
Blue 37, 178

Indian Pied 37, 178

Indian Small Blue -, 178

Indian Whitebreasted -, 179

West Himalayan Pied 37, 177

Whitebreasted 37, 179

**Kite**

Brahminy 36, 175

**Kora (Watercock) 27, 100****Lapwing**

Greyheaded 28, 108

Peewit (Lapwing,  
Green Plover) 28, 109

Redwattled 28, 109

Sociable 27, 106

- Spurwinged **28**, 109  
 Whitetailed **27**, 106  
 Yellow-wattled **28**, 110  
**Mallard** **16**, 74  
**Martin**  
     Indian Greythroated  
     Sand **38**, 180  
**Merganser**  
     Eastern **12**, 87  
**Moorhen**  
     Indian **25**, 101  
     Indian Purple **27**, 101  
**Nakta**  
     (Comb Duck) **12**, 84  
**Openbill** **5**, 52  
**Osprey** **36**, 176  
**Oystercatcher** (Sea-Pie) **27**,  
     105  
**Paddybird** **3**, 44  
**Painted Snipe** **33**, 138  
**Peewit** **28**, 107  
**Pelican**  
     Dalmatian **2**, 37  
     Spottedbilled (Grey) **2**, 36  
     White (Rosy) **2**, 35  
**Phalarope**  
     Rednecked **32**, 137  
**Pintail** **13**, 71  
**Plover**  
     Blackbellied (Grey) **28**, 111  
     Eastern Golden **28**, 112  
     Eastern Ringed **29**, 113  
     European Little Ringed -, 114  
     Golden **28**, 111  
     (Great Stone) **33**, 142  
     Indian Little Ringed **29**, 114  
     Kentish **29**, 115  
     Large Sand **29**, 113  
     Long-billed Ringed **29**, 115  
     Pamirs Lesser Sand **29**, 116  
**Pochard**  
     Common **21**, 80  
     Redcrested **20**, 79  
     White-eyed  
     (Ferruginous Duck) **11**, 81  
**Pratincole**  
     Collared (Swallow-  
     Plover) **33**, 144  
     Large Indian **33**, 144  
     Small Indian **33**, 145  
**Rail**  
     Indian Bluebreasted  
     Banded **24**, 94  
     Turkestan Water **24**, 94  
**Redshank**  
     Common -, 120  
     Eastern **30**, 120  
     Spotted (Dusky) **30**, 120  
**Redstart**  
     Plumbeous **39**, 181  
     Whitecapped  
     (River Chat) **39**, 184  
**Ruff** **32**, 136  
**Sanderling** **31**, 131  
**Sandpiper**  
     Broadbilled **32**, 133  
     Buffbreasted **32**, 136  
     Common **31**, 125  
     Curlew **32**, 134  
     Green **30**, 123  
     Marsh (Little  
     Greenshank) **30**, 121  
     Terek (Avocet) **30**, 124  
     Wood (Spotted) **30**, 123

**Shag**

Indian 2, 38

**Shelduck**

Common 11, 69

Ruddy

(Brahminy Duck) 10, 68

**Shoveller 19, 78****Skimmer**

Indian (Scissorbill) 35, 157

**Smew 12, 87****Snipe**

Common (Fantail) 31, 129

Eastern Solitary 31, 129

Jack 31, 130

Pintail 31, 128

Wood 31, 127

**Spoonbill 6, 60****Stilt**

Indian Blackwinged 33, 139

**Stint**

Little 32, 131

Longtoed 32, 133

Temminck's 32, 132

**Stork**

Adjutant 6, 55

Black 5, 54

Blacknecked 5, 55

Lesser, or Haircrested  
Adjutant 6, 56

Openbill 5, 52

Painted 5, 52

White 5, 54

Whitenecked 5, 53

**Swallow**

Indian Cliff 38, 181

Indian Wiretailed 38, 181

Western 38, 180

**Swan**

Bewick's (Western  
Whistling) 8, 66

Mute 8, 67

Whooper 8, 66

**Teal**

Baikal (Clucking,  
Formosa) 11, 72

Bluewinged  
(Garganey) 11, 77

Common 14, 71

Cotton (Quacky-  
duck) 11, 83

Falcated (Bronze- capped) 11, 76

Large Whistling 11, 68

Lesser Whistling  
(Tree Duck) 11, 67

Marbled 11, 70

**Tern**

Arctic 35, 155

Black 34, 151

Blackbellied 35, 155

Caspian 35, 153

Gullbilled 35, 152

Indian River 35, 153

Indian Whiskered 34, 153

Little (Ternlet) 35, 156

Sandwich 35, 157

Tibetan Common 35, 154

Whitewinged Black 34, 151

**Ternlet (Little Tern) 35, 156****Tree Duck 11, 67****Turnstone 31, 125****Wagtail**

Blackbacked

Yellowheaded 39, 185

Grey 39, 186

Hodgson's Pied 40, 186

**Indian White 40, 186**  
**Large Pied 40, 187**  
**Masked 40, 186**  
**Northern Yellowheaded -, 185**  
**Swinhoe's Pied 40, 186**  
**Western Yellowheaded -, 185**  
**Whitefaced Pied 40, 186**  
**Watercock (Kora) 27, 100**

**Waterhen**  
Chinese Whitebreasted 27, 99  
**Whimbrel 29, 117**  
**Whistling Teal**  
Large 11, 68  
Lesser (Tree Duck) 11, 67  
**Wigeon 18, 76**  
**Woodcock 31, 130**



# Waterbird-count Data Sheet

**Date :** \_\_\_\_\_ **Time :** \_\_\_\_\_ **Duration:** \_\_\_\_\_

Name/number of observers: \_\_\_\_\_

**Weather:** \_\_\_\_\_ **Locality:** \_\_\_\_\_ **Coordinates :** \_\_\_\_\_

**District:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Vegetation:** \_\_\_\_\_

**Type of Habitat:**      a) lake   b) river   c) pond   d) reservoir

**Biogeographic Zone : \_\_\_\_\_ Conservation Status of Habitat: \_\_\_\_\_**

[illegible][illegible]

*Please send it to*

**Dr. Arun Kumar  
Northern Regional Station  
Zoological Survey of India  
218, Kaulagarh Road, P.O. IPE  
Dehra Dun - 248 195  
e.mail : zsisawal@sancharnet.in**



# Waterbird-count Data Sheet

**Date :** \_\_\_\_\_ **Time :** \_\_\_\_\_ **Duration:** \_\_\_\_\_

Name/number of observers: \_\_\_\_\_

**Weather:** \_\_\_\_\_ **Locality:** \_\_\_\_\_ **Coordinates :** \_\_\_\_\_

**District:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Vegetation:** \_\_\_\_\_

**Type of Habitat:**      a) lake   b) river   c) pond   d) reservoir

**Biogeographic Zone : \_\_\_\_\_ Conservation Status of Habitat: \_\_\_\_\_**

[illegible][illegible]

*Please send it to*

**Dr. Arun Kumar  
Northern Regional Station  
Zoological Survey of India  
218, Kaulagarh Road, P.O. IPE  
Dehra Dun - 248 195  
e.mail : zsisawal@sancharnet.in**

# Waterbird-count Data Sheet

**Date :** \_\_\_\_\_ **Time :** \_\_\_\_\_ **Duration:** \_\_\_\_\_

Name/number of observers: \_\_\_\_\_

**Weather:** \_\_\_\_\_ **Locality:** \_\_\_\_\_ **Coordinates :** \_\_\_\_\_

District: \_\_\_\_\_ State: \_\_\_\_\_ Vegetation: \_\_\_\_\_

**Type of Habitat:**      a) lake   b) river   c) pond   d) reservoir

**Biogeographic Zone :** \_\_\_\_\_ **Conservation Status of Habitat:** \_\_\_\_\_

[illegible][illegible]

*Please send it to*

**Dr. Arun Kumar  
Northern Regional Station  
Zoological Survey of India  
218, Kaulagarh Road, P.O. IPE  
Dehra Dun - 248 195  
e.mail : zsisawal@sancharnet.in**

# Waterbird-count Data Sheet

Date : \_\_\_\_\_ Time : \_\_\_\_\_ Duration: \_\_\_\_\_

Name/number of observers: \_\_\_\_\_

**Weather:** \_\_\_\_\_ **Locality:** \_\_\_\_\_ **Coordinates :** \_\_\_\_\_

**District:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Vegetation:** \_\_\_\_\_

**Type of Habitat:**      a) lake   b) river   c) pond   d) reservoir

**Biogeographic Zone : \_\_\_\_\_ Conservation Status of Habitat: \_\_\_\_\_**

[illegible][illegible]

*Please send it to*

**Dr. Arun Kumar  
Northern Regional Station  
Zoological Survey of India  
218, Kaulagarh Road, P.O. IPE  
Dehra Dun - 248 195  
e.mail : [zsisiwal@sancharnet.in](mailto:zsisiwal@sancharnet.in)**

# Waterbird-count Data Sheet

**Date : \_\_\_\_\_ Time : \_\_\_\_\_ Duration: \_\_\_\_\_**

Name/number of observers: \_\_\_\_\_

**Weather:** \_\_\_\_\_ **Locality:** \_\_\_\_\_ **Coordinates :** \_\_\_\_\_

District: \_\_\_\_\_ State: \_\_\_\_\_ Vegetation: \_\_\_\_\_

**Type of Habitat:**      a) lake   b) river   c) pond   d) reservoir

**Biogeographic Zone : \_\_\_\_\_ Conservation Status of Habitat: \_\_\_\_\_**

[illegible][illegible]

*Please send it to*

**Dr. Arun Kumar  
Northern Regional Station  
Zoological Survey of India  
218, Kaulagarh Road, P.O. IPE  
Dehra Dun - 248 195  
e.mail : zsisawal@sancharnet.in**



# Waterbird-count Data Sheet

**Date :** \_\_\_\_\_ **Time :** \_\_\_\_\_ **Duration:** \_\_\_\_\_

Name/number of observers: \_\_\_\_\_

**Weather:** \_\_\_\_\_ **Locality:** \_\_\_\_\_ **Coordinates :** \_\_\_\_\_

District: \_\_\_\_\_ State: \_\_\_\_\_ Vegetation: \_\_\_\_\_

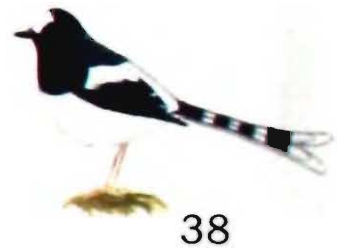
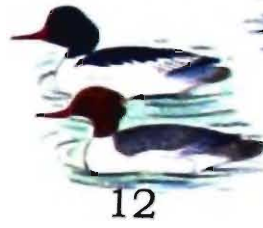
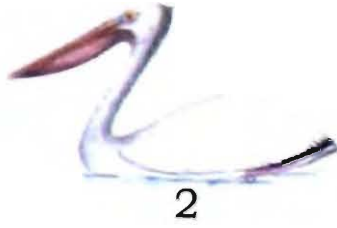
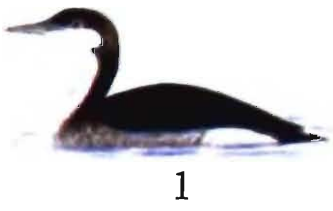
**Type of Habitat:**      a) lake   b) river   c) pond   d) reservoir

**Biogeographic Zone : \_\_\_\_\_ Conservation Status of Habitat: \_\_\_\_\_**

[illegible][illegible]

*Please send it to*

**Dr. Arun Kumar  
Northern Regional Station  
Zoological Survey of India  
218, Kaulagarh Road, P.O. IPE  
Dehra Dun - 248 195  
e.mail : zsisival@sancharnet.in**





Library of the  
ZOOLOGICAL SURVEY OF INDIA  
Call No 590.05/.0421/Misc/cxc  
Accession No 12008 P  
Shelf No \_\_\_\_\_