

The Birds of West and Equatorial Africa

By

David Armitage Bannerman

M.B.E., M.A., Sc.D., F.R.S.E.

Honorary Associate, British Museum (Natural History). Past Vice-President of the British Ornithologists Union. Hon. Fellow of the American Ornithologists Union and of the Société Ornithologique de France.

with a Foreword by

Sir Alan Burns, G.C.M.G.

Late Governor and Commander-in-Chief of the Gold Coast



VOLUME ONE

Struthionidae to Picidae

With 54 full-page plates of which 30 are in colour and 433 figures in the text



Oliver and Boyd

Edinburgh: Tweeddale Court

London: 98 Great Russell Street, W.C.

First Published 1953

Printed in Great Britain at
The Kynoch Press, Birmingham
for Oliver and Boyd Ltd., Edinburgh

FOREWORD

I KNEW the first five volumes of Dr. Bannerman's *The Birds of Tropical West Africa* long before I knew and became friends with Dr. Bannerman himself, and like so many others I waited impatiently for the later volumes. It was, alas, not until after I had left West Africa that I was able to complete my set, the eighth and last volume only appearing last year to mark the end of a great work and to crown the author's reputation for erudition and industry.

It is, however, those early volumes, stained by travel and much use in Nigeria and the Gold Coast, that I cherish most, old and trusted friends which can never be replaced in my affections even by this new work, of which I am, in some sort, the godfather. These old friends had only two faults, that they were incomplete and that they were bulky and heavy. The first fault has now, happily, been overcome, but, by the addition of three more volumes, the second fault has been increased. It is, indeed, an incurable fault, inherent in a standard work of this kind.

For this reason, and because the first volumes of the original work are out of print, I welcome this new and sturdy child, which will be an invaluable companion to those who wish to have their West African bird-book in a portable form.

The "large Bannerman," as the older book will probably be called, has been used and valued by ornithologists as an authoritative work, and it has given immense pleasure to amateurs like myself who are interested in birds but know too little about them. I believe that the "small Bannerman" will quickly win for itself as many friends, and will stimulate bird-lovers in West Africa to acquire some knowledge of this fascinating subject.

ALAN BURNS

4th February, 1952

PREFACE

In this work it has been my object to provide a guide to the birds of West and Equatorial Africa which can be used by field naturalists and travellers through the country as well as by residents. It is based on my *Birds of Tropical West Africa* (8 vols., 1928–51), but the subject-matter has been rewritten and the contents of the final volume, an addendum to the previous seven volumes, has been incorporated.

It has been my object to present in condensed form a history of the birds of West Africa up to the end of 1950, when the manuscript was completed, in as small a space as possible. To reduce to three volumes measuring 9 in. × 5¾ in. the contents of eight volumes measuring 10¾ in. × 7 in. has proved a task of considerable difficulty and has only been made possible by the strictest economy of space. Furthermore the scope of the work has been slightly enlarged to include in the paragraph on Distribution the names of the most important subspecies in eastern Africa which are representative of West African birds. It has been found by analysis that of the 1,536 species and subspecies which inhabit West Africa quite 75% range right across the continent, and if it is not exactly the same race which occurs in the Belgian Congo, Kenya Colony, Uganda, and the Egyptian Sudan, then those countries have their geographical representative which will be found mentioned in my text. It is hoped, therefore, that these "handbooks"—as they are intended to be—will be found almost as useful to naturalists and bird-watchers resident in our East African Colonies and in Equatorial Africa as those in Upper and Lower Guinea, for whom it is particularly intended.

The illustrated key in the larger work which, I am informed, has proved so useful as a means of identification has been retained in its entirety and will be found in the first volume instead of being divided in sections. Much of the letterpress accompanying the drawings has been rewritten.

The keys in the main text have been taken from my larger work, as I have been given to understand that they work well in practice. The only alterations from the original occur when a new bird has been discovered and must be included. The introduction of a single new species into a key generally requires every paragraph to be recast.

In these volumes I have dispensed with the technical descriptions so necessary to museum workers and described each bird in simple

language, remarking the chief points which will strike the observer in the field or when a bird is handled.

All synonymy which occupied so much space in my larger work has been omitted. The English name and the Latin name alone head each article, and after the Latin name the name of the author who first described the species. When the author's name appears *without* brackets it indicates that the species when first described was placed in the same genus as is now employed. If the author's name appears *in brackets* that fact indicates that the bird was originally placed in a different genus from the genus which is now used. Many authors of species wrote in very early days, from 1758 onwards, and it can easily be understood that many new genera have been instituted since the days of Linnæus as the system of zoological nomenclature expanded. Under each species a reference to the original description is given *at the end* of the article.

The notes on habits have been compressed and are necessarily short, but there are still many African birds concerning which we know next to nothing of their life-history. There are countless blanks waiting to be filled in. Instead of dealing with each subspecies under a separate heading, as was done in *Birds of Tropical West Africa*, I have discussed the species as a whole under one heading, and in the final paragraph entitled *Distribution and Races* I have given the range of the various races within the limits dealt with and their distinctions as succinctly as possible.

The egg measurements and descriptions of eggs are taken mainly from the published writings of Ronald Shuel, the Rev. F. C. R. Jourdain (who described Shuel's Nigerian collection), and Dr. W. Serle, who has made wonderful contributions to our knowledge of the breeding biology of West African birds.

In the eight volumes of *Birds of Tropical West Africa* I was careful to acknowledge as fully as possible the help I had received from many ornithologists in the field, and to give full credit to all who had sent me field notes or specimens, acknowledging the source from which my information had been gathered, and often quoting verbatim the notes which were sent to me. In this abridged edition it has been impossible to do so, the necessity to conserve space outweighing all other considerations.

The pioneers of West African ornithology, Boyd Alexander, Ansorge, G. L. Bates, Braham, W. A. Forbes, Lewis Fraser, Hopkinson, Sir Harry Johnston, Robin Kemp, Willoughby Lowe, Antón Reichenow, Riggenbach and Sjöstedt, to name the principal authors of our knowledge, formed a solid foundation upon which others could build, and their grand work has been carried on by many enthusiastic field naturalists whose notes are used in these pages.

The chief contributors of recent years, in addition to Bates,

Lowe, and Hopkinson, are Glover M. Allen, Louis Blancou, Anthony Brown, Leslie Brown, Sir Bernard Bourdillon, P. W. J. Boughton-Leigh, Dr. P. A. Buxton, T. E. Edwardson, P. R. Foulkes-Roberts, Dennis Golding, Dr. A. I. Good, K. M. Guichard, Capt. W. Halswell, F. C. Holman, Major-General H. P. W. Hutson, S. A. Leslie, H. V. B. Lloyd-Phillips, Admiral Lynes, Député René Malbrant, Stephen Marchant, H. F. Marshall, J. R. Marshall, C. M. Morrison, Robert Newton, Dr. William Serle, Ronald Shuel, David Snow, R. L. Thomas, Dr. G. R. Walker, J. B. Welman, Dr. J. M. Winterbottom, J. Dent Young, and Charles Young, while many others mentioned by name in my larger volumes have been responsible for other valuable contributions of which I am deeply sensible.

Acknowledgment must be made to the Governments of our four West African Colonies and Protectorates who generously have allowed me to make use of the text figures from the eight official volumes and to reproduce thirty-seven of the coloured plates. Many of the blocks were destroyed in the London blitz, but the artists' originals escaped damage. Four paintings by Mr. George Lodge are new and have been borrowed from Sir Frederick Jackson's *Birds of Kenya Colony and the Uganda Protectorate*. I am particularly indebted to Lady Jackson for allowing me to use these beautiful plates from her husband's book.

I am indebted also to Mrs. Willoughby Lowe for permission to reproduce the picture by Henrik Gronvëld of the Giant Swift which her husband discovered in Sierra Leone. I named this new swift in honour of Willoughby Lowe, who has done more than any other naturalist to further our knowledge on African birds.

To my many colleagues in the great museums of Europe and America—especially to Dr. James P. Chapin of New York and Dr. Erwin Stresemann of Berlin—for their unfailing help and encouragement I once more accord my gratitude, but to none am I more indebted than to Capt. Claud H. B. Grant, who has always been ready to help in whatever way I have made calls upon him. He and I have worked together as "scientific workers" in the British Museum since 1915, and the benefit I have derived from his knowledge has been incalculable.

A book of this nature requires very careful indexing, and I am glad that Mr. H. Bench Usher of the British Museum staff has been able to compile it with his usual skill.

I would like to express my thanks to Mr. Thomas Jenkins of Oliver and Boyd for the care which has been expended on this work. My wife has helped me considerably with the proof-reading throughout. Finally, I must express my indebtedness to Sir Alan Burns, G.C.M.G., late Governor and Commander-in-Chief of the

Gold Coast, who has contributed the Foreword. His kind encouragement during the preparation of this and the previous work will never be forgotten by the author. D. A. B.

BORELAND OF SOUTHWICK
STEWARTRY OF KIRKCUDBRIGHT
October 1952

ILLUSTRATIONS

COLOUR PLATES

PLATE		FACING PAGE
1	LESSER FLAMINGO	192
4	GEESE	220
	Knob-billed Goose	
	Spur-winged Goose	
5	MARTIAL EAGLE	272
6	RIVER EAGLE	289
8	FRANCOLINS	317
	Latham's Francolin	
	Scaly Francolin	
13	BUSTARDS	368
	Sudan Bustard	
	Denham's Bustard	
26	PIGEONS	513
	Long-tailed Dove	
	Speckled Pigeon	
	Blue-headed Dove	
	Yellow-bellied Fruit Pigeon	
27	PARROTS	528
	Long-tailed Parrakeet	
	Brown-necked Parrot	
	Scarlet-bellied Senegal Parrot	
	Yellow-bellied Senegal Parrot	
28	WHITE-FACED OWL	545
30	TOURACO AND PLANTAIN-EATER	557
	White-crested Touraco	
	Violet Plantain-eater	

PLATE FACING PAGE

32 ROLLERS 636
West African Broad-billed Roller
Abyssinian Roller
Blue-bellied Roller
Rufous-crowned Roller

33 KINGFISHERS 657
Guinea Shining-blue Kingfisher
Cameroon Shining-blue Kingfisher
Congo Blue-breasted Kingfisher
Nigerian Blue-breasted Kingfisher

34 CUCKOOS AND BEE-EATERS 672
Yellow-throated Cuckoo
Klaas' Cuckoo
Emerald Cuckoo
White-bellied or Didric Cuckoo
Black Bee-eater
Carmine Bee-eater
Red-throated Bee-eater
Swallow-tailed Bee-eater
Blue-headed Bee-eater

BLACK AND WHITE PLATES

2 AFRICAN BLACK DUCK 209

3 WHITE-FACED DUCK 213

7 RING-NECKED FRANCOLIN 308

9 GREY-BREASTED HELMET GUINEA-FOWL 320

10 CRESTED GUINEA-FOWL 324

11 PLUMED GUINEA-FOWL 333

12 WHITE-BREASTED GUINEA-FOWL 337

14 NUBIAN BUSTARD 372

15 SENEGAL BUSTARD 381

PLATE		FACING PAGE
16	Black-bellied Bustard	385
17	Painted Snipe	388
18	Great Snipe	397
19	Spotted Sand-grouse	448
20	Chestnut-bellied Sand-grouse	465
21	Coroneted Sand-grouse	468
22	Lichtenstein's Sand-grouse	477
23	Four-banded Sand-grouse	484
24	African Button-quail	493
25	Natal Button-quail	496
29	Red-tipped Crested Touraco	548
31	Giant or Blue Plantain-eater	560
35	Brown-cheeked Hornbill	689
36	Yellow-casqued Hornbill	704
37	Black-casqued Hornbill	707

ILLUSTRATED KEY

WITH EXPLANATIONS ON FACING PAGES

The drawings in this key are
by the late Henrik Grönvold

This is not intended as a key to the Orders, Sub-orders, and Families of the Class Aves except as they are represented in West and Central Africa.

Order STRUTHIONIFORMES

Family Struthiondiae



Order COLYMBIFORMES



Sub-order PODICIPIDES



Family Podicipidae



Order PROCELLARIIFORMES



Family Hydrobatidae



Family Procellariidae



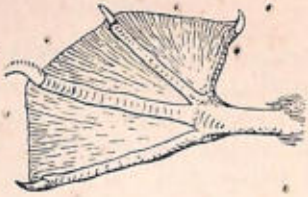
THE order STRUTHIONIFORMES embraces the Ostriches, large flightless birds which stand 6–8 ft. in height and weigh some 300 lb. The male is black and white, the female brown; the head and neck are bare of feathers. From all other birds they are distinguished by having only two toes, as illustrated opposite.

The order COLYMBIFORMES includes both the Divers and the Grebes, but as the former do not occur in the tropics we need concern ourselves only with the Grebes. These form a cosmopolitan assemblage embracing many species, all of which are included in the single family PODICIPIDAE.

Grebes are diving birds with a compact body covered with dense silky plumage. The legs are situated far back, as depicted in the top figure on the opposite page; the feet are highly characteristic, the tarsus is flattened and each toe separately webbed, thus differing from all other water birds, as shown in the illustration. As would be expected of a bird spending most of its lifetime in the water, the wings are weak, but the birds are none the less capable of sustained flight. A mere tuft of downy feathers represents the tail. The bill is straight and pointed. Only two representatives of the family are resident in our area, the African Great-crested Grebe and the African Little Grebe, the heads of which are depicted opposite.

The Albatrosses, Petrels and Shearwaters contained in the order PROCELLARIIFORMES differ from all other birds in having external nostrils enclosed in a cylindrical tube situated on the dorsal surface of the beak. The two families, into which fall the Petrels and Shearwaters, which come within our limits, may be recognised by the structure of the bill. In HYDROBATIDAE the nasal tubes have a single circular aperture; in PROCELLARIIDAE the nasal aperture is double and the medium septum clearly visible. The three front toes are fully webbed as shown opposite, and the hind toe is rudimentary. Albatrosses, which are the largest members of the order, with a wing-span up to 12 ft., are birds of the southern hemisphere and do not range north of the Equator. Petrels and Shearwaters, on the other hand, are world-wide and are distributed over the Arctic, Temperate and Tropical oceans of both hemispheres. Maritime birds, they come ashore only to breed, preferring for the purpose desolate, little-frequented islands.

Order PELECANIFORMES



Family Phaëthontidae



Family Sulidae



Family Phalacrocoracidae



Family Anhingidae



Family Fregatidae

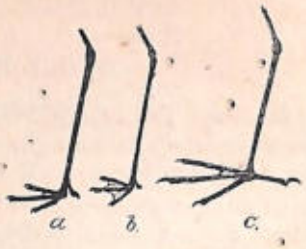


Family Pelecanidae



THE order PELECANIFORMES includes a somewhat heterogeneous group of fairly large birds characterised by having all four toes joined together by webs, as in the illustration opposite. No bird other than these has the hind toe joined by a web to the inner toe. No general description can be applied to the Stegnapodes, as they are sometimes termed, for all are so different in appearance. In this assemblage, in which the salient characteristic of each family is depicted opposite, we group the Tropic Birds with very narrow and greatly elongated central tail-feathers; the Gannets and Boobies with heavy bills, the upper mandible curving gently downwards but never ending in a hook, having long pointed wings and wedge-shaped tails; the Cormorants and Shags with stout bills ending in a hooked nail and mandibles not serrated, the nostrils reduced to two narrow slits and exceptionally stiff tails, the legs situated far back on the trunk; the Darters with long tapering compressed bill, the edges of the mandibles toothed (or serrated), a long snake-like neck in which is a remarkable crook or kink, long pointed wings and a long rounded tail, spending most of their life in water; the Frigate or Man o' War Birds with strongly forked tail and remarkable naked gular pouch of the males, capable of expansion like a balloon in the breeding season, having very long pointed wings and cruel bill ending in a hooked nail; and finally the Pelicans with their characteristic gular pouch, the bill flattened with a raised keel along the upper mandible and a small hook at the tip. These six families are illustrated on the opposite page in the sequence in which I have dealt with them here. The Stegnapodes are one and all fish-eating birds, some, such as the Frigates and Tropic Birds, which are entirely maritime, having exceptional powers of flight and being encountered hundreds of miles from land, flying as if they never required to rest. Others, such as the Darters and Shags are renowned for their powers of swimming and diving. For grace and beauty the palm must certainly be given to the Tropic or Bo'sun Birds, two species of which come within our limits.

Order CICONIIFORMES



Sub-order ARDEAE



Family Ardeidae



Sub-order CICONIAE*



Family Ciconiidae



Family Ciconiidae



Family Ciconiidae



Family Plataleidae



Family Plegadidae



Sub-order PHOENICOPTERI

Family Phoenicopteridae



---

* Aberrant families of Ciconiae



Family Scopidae



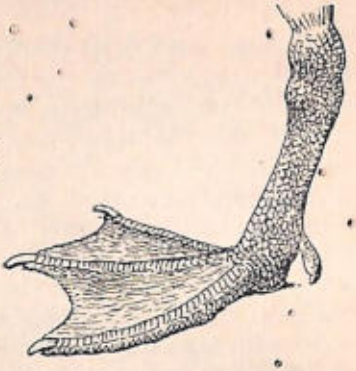
Family Balaenicipitidae

THE order CICONIIFORMES embraces three sub-orders: the Ardeae, which include the Herons and Bitterns; the Ciconiae, in which we place the Storks, Spoonbills and Ibises; and the Phoenicopteri, the Flamingos, the last somewhat abberrant members which have the front toes completely webbed, as in the upper figure and a sharply decurved bill, the mandibles being furnished with lamellae (see lower figure). Characteristic of the whole order are the long legs bare of feathers. The great length of the middle toe, so marked a feature in the Herons, Egrets and Bitterns and to a less extent in Storks, Spoonbills and Ibises, is common to the whole order with the exception of the Flamingos. In the last named the middle toe is very short in comparison with the great length of the tarsus.

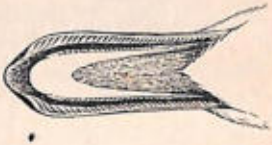
In the ARDEAE there is a single family ARDEIDAE, which include the Herons and Bitterns. In this family a partial web joins two or three front toes, the claw on the middle toe is pectinated (see illustration) and the hind toe is on the same level as the inner toe. Typical heads of a Heron and a Bittern are figured opposite. The members of this sub-order are all aquatic, frequenting marshes, rivers and shores. All secure their food by fishing in the shallows and swamps, and their bills are modified to that end as well as their legs. They vary in size from the diminutive Dwarf Heron, standing little more than 12 in., to the Giant Heron, which is over 3 ft. in height. The plumage is equally varied, and many don ornamental plumes in the breeding season.

In the CICONIAE we include three families: CICONIIDAE for the Storks, PLATALEIDAE for the Spoonbills and PLEGADIDAE for the Ibises. In all these birds a partial web joins the outer and middle toes; the claw on the middle toe is short, blunt and not pectinated, and the short hind toe is raised above the level of the front toes. Although resembling Herons in some respects the Storks, Ibises and Spoonbills are not so dependent on the presence of marsh and stream, and some of the first named live in comparatively dry country. The heads of these birds depicted opposite illustrate how diverse is the shape of the bill, adapted as it is to various ends. A curious aberrant member, the Hammerhead Stork, is placed in a family to itself, SCOPIDAE, and is remarkable for the astonishingly large nests which it builds and for its strongly compressed bill, which viewed from the side appears to be almost flat. In the PLATALEIDAE (Spoonbills) we have another remarkable bill widened at the tip to form a flat spoon, which it waves from side to side with a semi-circular motion. In comparison the bill of the PLEGADIDAE (Ibises) is long, narrow and downcurved. The characters of the Flamingos have already been mentioned. Two species come within our limits. Finally we have the remarkable bill of the Shoebill Stork (*Balaeniceps rex*), figured on the bottom right-hand corner of the opposite page. It lives in the Sudd area of the Nile and in a restricted area of French Equatorial Africa.

Order ANSERIFORMES



Sub-order ANSERES



Family Anatidae

Genus Plectropterus



Genus Thalassornis



Genus Dendrocygna



Genus Spatula



THE order ANSERIFORMES embraces two sub-orders, one of which is restricted to forms found in South America. The other sub-order Anseres includes the Swans, Geese and Ducks, of which the first named do not occur within our limits.

Geese and Ducks, on the other hand, are very well represented in Africa, and these we place in the family ANATIDAE. A short, stout tarsus is characteristic of the whole group; the front toes are fully webbed but the hind toe is free and very small, as can be seen from the accompanying drawing. The most characteristic feature of the Anatidae is the bill, broad and depressed in shape, the maxillae overlapping the mandible, both being furnished with highly developed lamellae. These can be seen in the accompanying text figure of the under side of the bill. In no other birds except the Flamingos are these laminated edges to the bill present. At the tip of the bill is a hard bony process known as a nail, which in most species curves downwards, forming a small hook. In all ducks and geese the front toes are fully webbed, while the hind toe is free; the legs are placed far back on the trunk; the tarsus is short, though generally longer in the Tree-ducks.

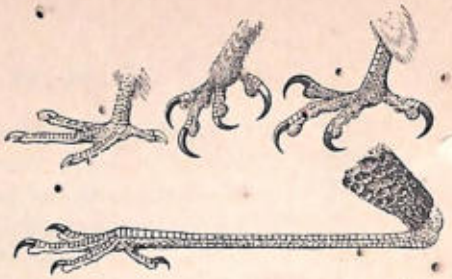
In spite of the heavy body, the Anatidae are mostly strong fliers, the wings being pointed and the tail generally short, varying in shape and in the number of the tail-feathers. Like all aquatic birds, the plumage is very dense. The drakes are generally more handsome than the ducks, but in some cases the sexes are alike.

There is great variation in size in the geese. The Spur-wing is an enormous bird weighing some 13 lb., while the Dwarf Goose, which few would recognise as a goose at all, is smaller than a Teal. In the numerous ducks found in our area the distinction in size is not nearly so marked.

The members of the sub-order Anseres are cosmopolitan in their distribution, and as already indicated, we place them in a single family. The four geese which come within our limits are all African residents, the most curious of which is the Comb Goose or Knob-bill, the males of which are remarkable for the huge comb on the bill which is developed during the breeding season.

Of the eighteen ducks which are listed in these pages two are resident Tree-ducks, three are tropical African species which do not migrate, and the rest are migratory, two from south of the Equator, and nine from Europe which are present only during the winter months and do not breed in Africa. Depicted on the opposite page are the heads of (reading from the top) the Spur-winged Goose, White-backed Duck, Tree-duck and Shoveller.

Order FALCONIFORMES



Sub-order ACCIPITRES



Family Sagittariidae



Family Aegypiidae

Genus Torgos



Genus Necrosyrtes



Family Pandionidae



Family Falconidae



THE order FALCONIFORMES includes all the diurnal birds of prey, the African members of which fall into the sub-order Accipitres. These last are subdivided into four families: *Sagittariidae* (Secretary Birds), *Aegypiidae* (Vultures), *Pandionidae* (Ospreys), and *Falconidae* which includes a large assemblage of Falcons, Cuckoo-Falcons, Kites, Buzzards, Eagles and Hawks of many species.

In the illustrations opposite an attempt has been made to show at a glance the chief characteristics of the four families. The upper figures depict the feet and tarsi of a Vulture (note short claws); an Eagle (note feathered tarsus and curved claws); a Falcon (note unfeathered tarsus and curved claws) and, below, the leg of the Secretary Bird. Two characteristic heads of Accipitres are shown below, that on the left being of an Eagle, on the right of a Vulture. Next depicted is the Secretary Bird in a family to itself; the bill is accipitrine, the head crowned with elongated plumes springing from the occiput. The legs are very long and are feathered to the tibio-tarsal joint; the feet are powerful but the toes short.

In the AEGYPIIDAE are included all the Vultures and Griffons, large birds with a wing expanse of 5–9 ft. The skin of the face (and sometimes of the crown and neck) is entirely bare or sparsely covered with down or hairy-like feathers. Most Vultures have a ruff at the base of the neck, and their powers of flight as well as their eyesight are phenomenal. The two heads figured are those of the Nubian Vulture and the Hooded Vulture. Within our area we can claim six species.

The PANDIONIDAE is the family name of the Osprey, whose foot is remarkable in that the outer toe is reversible, the soles of the feet are covered with spines, and the long curved claws are exceptionally sharp and strongly curved. Note, too, the horny scales on the tarsus. The tibia is feathered beyond the tibio-tarsal joint.

The FALCONIDAE embrace all the other diurnal birds of prey in Africa, varying in size from the huge Eagles to the tiny Sparrow-Hawks and Pygmy Falcons. For the characters of this complicated group the reader must turn to my larger work, as there is no space here to deal with them. The five heads representative of the *Falconidae* on the opposite page are, from the top, an Eagle, a Falcon (note single "tooth" on upper mandible), a Cuckoo-Falcon (note two "teeth" on upper mandible), a Bat-Hawk (note slit-shaped nostrils) and a Vulturine Palm-Hawk (note Vulture-like bill and head). In this family there are fifty species in West Africa alone, which I place in twenty-seven genera. The plumage changes which most of them undergo are most complicated, and many do not assume the adult dress for several years.

Order GALLIFORMES

Genus Coturnix



Genus Numida



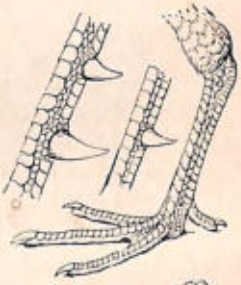
Genus Francolinus



Genus Francolinus



Sub-order GALLI



Family Phasianidae



Family Phasianidae



THE order GALLIFORMES is divided into three sub-orders, with only one of which, the Galli or Phasiani, we are concerned in this work. It includes all the true game birds, which, among other characters, have the hind toe raised above the level of the front toes and have the feet and legs adapted for scratching in the soil. The Hemipodes, which include the Button-Quails and the Quail-Plover, are no longer considered as belonging to the order but now find a place between the Sand-Grouse and the Pigeons.

The sub-order Galli is divided into two families—the *Tetraonidae* for the Grouse and their allies and the *Phasianidae* for the Pheasant and Francolin-like birds. The Grouse do not come within our limits; the Francolins, on the other hand, are well represented in tropical Africa. In the PHASIANIDAE I group in this work the Francolins, the Stone-Partridge, the true Quails and the Guinea-fowls, which some authorities prefer to place in distinct sub-families. I have avoided that subdivision whenever it has been found practical, using it only to split up a large unwieldy family such as we have in the *Ploceidae* or Weaver Birds.

In appearance there is considerable difference in the four groups instanced above, and it is a matter of opinion whether their relationship can be expressed by generic division alone. For the most part all members of the *Phasianidae* agree in having strong, unfeathered tarsi, the males in the Francolins (though not in the other groups) being furnished with one or more strong spurs on each leg. The bill is short and powerful, the upper mandible slightly arched and overhanging the lower, and the nostrils are exposed, never hidden by feathers. The wing is rounded and comparatively short; even so, many Francolins are renowned for their powerful flight. The tail is medium in length, the number of tail-feathers varying in the different genera. In West Africa there are twenty-two species (with their races) embraced in this family.

From the sporting point of view, the Francolins, of which there are at least twelve kinds in our area (and the number can be greatly increased by the inclusion of Kenya and Uganda within our limits), are the most important, followed closely by the Guinea-fowl, five of which find a place in the following pages. The remarkable and very beautiful Vulturine Guinea-fowl (*Acryllium vulturinum*) is found only in East Africa, and the still more curious Congo Peacock (*Afropavo congensis*) has also to be omitted in this work, as neither comes within the confines of West Africa proper. Characteristic heads, legs and wings exhibited in the *Phasianidae* are illustrated on the page facing.

Order RALLIFORMES



Family Rallidae

Genus Himantornis



Genus Canirallus



Genus Rallus



Genus Crex



Genus Sarothrura (head)



Genus Sarothrura (tail)



Genus Porphyrio



Genus Gallinula



Rallidae in general



Family Heliornithidae



Genus Podica



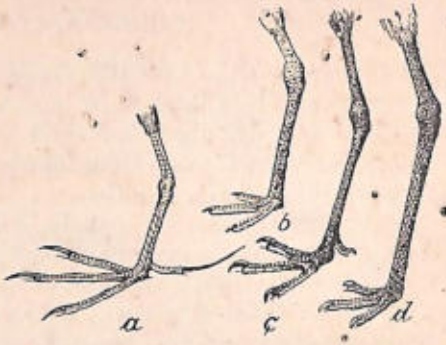
THE order RALLIFORMES as represented in Africa includes two families, the true Rails in the family *Rallidae* and the remarkable Finfoot in the family *Heliornithidae*, which is certainly ralline in its affinities though more Grebe-like in its appearance. It will be discussed separately hereafter.

The birds which we include in the family RALLIDAE are all adapted for life among thick undergrowth—the body is laterally compressed, enabling the bird to steal easily and noiselessly through dense reed-beds. The wings are for the most part weak; in some species, which are not, however, represented in Africa, they are rudimentary, and the birds in consequence are flightless. Of the species occurring in West Africa all are capable of flight, and some, notwithstanding their rounded wings, are enabled to make long sustained journeys. In this connection the European Corncrake which winters in Africa is called to mind, and it is suspected that the Pygmy Rails (*Sarothrura*) are capable of much greater flights than is generally supposed. The plumage of all Rails is very soft and close-fitting. The legs are long and slender and are remarkable for the length of the toes; the hind toe is elevated above the level of the foot (see Fig. *b* opposite). In all the Rails the bill is straight or with the upper mandible slightly arched. It varies considerably in length in the different species, as can be seen from the representative genera figured on the opposite page. The tail is very short, and in the *Rallidae* the number of tail-feathers varies from 10 to 14 (usually 12). That of the Pygmy Rails is extremely soft and disintegrated and is illustrated opposite. The second tail figured in the column typifies the normal fan-shaped ralline appendage.

It will be noted that the Gallinules (*Porphyrio*) and Moorhens (*Gallinula*) are both represented in this family, both with a bare horny shield on the forehead as illustrated opposite. Rails vary tremendously in size, from the Nkulengu Rail (*Himantornis*), some 17 in. in length, to the Pygmy Rails (*Sarothrura*), which are little more than 5 in. from bill to tail-tip. Within our limits we recognise fifteen species, which are placed in eleven genera.

In Africa there is only one representative of the allied family HELIORNITHIDAE, which is placed in the genus *Podica*. In appearance not far removed from a Grebe, its actions are entirely ralline. The foot (Fig. *a*) is unique, the toes have scalloped webs, and the nails are short; the bill is straight and stout, the head narrow and the neck long and thin, the plumage very close, adapted to a life spent in water. The graduated tail is remarkable (see bottom figure opposite), being composed of eighteen stiff, narrow and tapering feathers. The wing is surprisingly long for an aquatic bird of its habits and has a blunt knob on the carpal joint. There is only one species of Finfoot in Africa, which is divided into several races.

Order GRUIFORMES



Sub-order GRUAE



Family Balearicidae

Genus Balearica



Family Otididae

Genus Lissotis



Genus Neotis



Family Burhinidae

Genus Oedicnemus



Family Jacanidae

Genus Actophilornis

THE order GRUIFORMES is composed of a heterogeneous assembly of birds belonging to such widely differing families as the Cranes, Bustards, Thick-knees and Jacanas, all linked by characters in their structure, pterylosis, morphology, condition of young and so forth. Typical of the order are the legs and feet illustrated at the top of the page facing. All are specially adapted to the way of life of the various members.

In the family BALEARICIDAE we group the true Cranes, species with short stout toes with sharp hooked claws; the hind toe is small and elevated above the front toes; the tibia is bare for the greater part of its length; the legs are long and very strong. In the Crowned Crane, illustrated opposite, a tuft of stiff, straw-coloured bristles springs from the occiput, while a patch on the cheeks is bare of feathers; pendant wattles hang from the throat. The only other Crane in our area (as a visitor from south-west Asia) is the Demoiselle, with long ornamental plumes falling from the base of the neck and a tuft of disintegrated feathers behind the eye. This most graceful bird is entirely grey and has remarkably long pointed secondaries in the wing.

In the family OTIDIDAE, in which we place the Bustards, the head is peculiarly flattened, as may be seen in the figures opposite depicting the Black-bellied Bustard (top) and Denham's Bustard (below). Figure *d* is typical of the leg and foot of a Bustard, the point to note being the absence of the hind toe, giving the bird a three-toed foot; the toes are short and broad, well adapted to swift and silent running. Bustards are huge birds, a large male turning the scale at 22 lb. Seven species are now found within our limits.

The third family to mention is the BURHINIDAE, in which are grouped the Thick-knees or "Norfolk Plovers." The head of *Oedicnemus*, the only genus in Africa, is figured as representing the family. Note the abnormally large eye, the short and blunt bill and the broad skull. Like the Bustards, the Thick-knees have no hind toe (see Fig. *b*) and have a thickened tibio-tarsal joint. These birds are renowned for the speed at which they can travel and for their weird voice, which is heard at dusk. Four species occur in our area.

In the last family, JACANIDAE, is the Jacana or Lily-trotter, with its very long fine toes and lengthened hind claw (see Fig. *a* opposite), enabling the bird to walk or run over water-lily leaves and other aquatic vegetation. The head is also depicted (lower figure), in which the horny shield on the forecrown is a feature. Two species of this family occur in our area.

Order
CHARADRIIFORMES



Sub-order
LIMICOLAE (Part)

Family Rostratulidae

Family Charadriidae

Sub-family Charadriinae

Genus Leucopolius



Genus Squatarola



Genus Charadrius



Genus Afroxyechus



Sub-family Vanellinae

Genus Hoplopterus



Genus Anomalophrys



Genus Afribyx



Genus Himantopus



Sub-family Recurvirostrinae



Sub-family Haematopodinae



THE order CHARADRIIFORMES includes a vast assemblage of birds which at first sight appear to have little connection with one another. The main group, the LIMICOLAE, embrace the true Waders, as they are commonly termed, and with these are closely associated the LARI-LIMICOLAE, a group which includes such widely differing forms as Coursers and Gulls. The whole assemblage may be described as limicoline, littoral, paludicoline and pratincoline birds, which are placed in this single order by reason of a number of anatomical characters common to all.

The *Limicolae* are illustrated on pages 18 and 20 and the *Lari-Limicolae* on page 22. The reasons for the classification which I have adopted are discussed in *The Birds of Tropical West Africa*, vol. ii, pp. 81–83 and 191. It is based on the anatomical researches of Dr. Percy R. Lowe, formerly head of the British Museum Bird Department.

To enable the reader to find in which sub-order a particular bird is placed, the following list may be consulted.

Sub-order *Limicolae* includes Painted Snipe, Sand-Plovers, Grey Plovers, Ringed and Banded Plovers, Steppe Plovers, Spur-wings, Lapwings and Wattled Plovers, Stilts, Avocets, Oyster-catchers, Snipe, Stints, Sandpipers, Shanks, Sanderlings, Ruffs, Turnstones, Knots, Godwits, Curlews, Whimbrels and Phalaropes.

Sub-order *Lari-Limicolae* includes Egyptian Plovers (Crocodile Birds), Pratincoles, Gulls, Terns, Skuas and Scissor-bills.

The *Limicolae* are again divided into three families:

1. *Rostratulidae*, to include the Painted Snipe, the sole representative, whose head and foot are figured opposite. The bill is Snipe-like but shorter than that of a Common Snipe and is not pitted as it is in the true Snipe. The female is the most brightly coloured of the sexes, and the species is believed to be polyandrous.
2. *Charadriidae*, embracing the four sub-families enumerated opposite, includes:
   (*a*) The Shore and Steppe Plovers (*Charadriinae*), of which, from the top, there is illustrated Kittlitz Plover, Grey Plover with foot as in Fig. *b*, Ringed Plover with foot as in Fig. *a*, and Forbes' Plover.
   (*b*) The Lapwing-like Plovers (*Vanellinae*), illustrated by the Spur-wing, Brown-chested and Wattled Plovers, all having legs and feet as in Fig. *c*, and the Stilt with its long fine bill and long shanks with partly webbed toes as in Fig. *f*.
   (*c*) The Avocet (*Recurvirostrinae*) is another single representative of its family, remarkable for its fine recurved bill and the long thin shanks and webbed toes as in Fig. *e*.
   (*d*) The Oyster-catchers (*Haematopodinae*), with their stout blunt bill, heavy tarsus and partly webbed feet, as in Fig. *d* opposite.
3. *Scolopacidae*, discussed on page 21.

Order
CHARADRIIFORMES

Sub-order
LIMICOLAE (Part)



Family Rostratulidae

Family Charadriidae

Sub-family Charadriinae

Genus Leucopolius



Genus Squatarola



Genus Charadrius



Genus Afroxyechus



Sub-family Vanellinae

Genus Hoplopterus



Genus Anomalophrys



Genus Afribyx



Genus Himantopus



Sub-family Recurvirostrinae



Sub-family Haematopodinae



THE order CHARADRIIFORMES includes a vast assemblage of birds which at first sight appear to have little connection with one another. The main group, the LIMICOLAE, embrace the true Waders, as they are commonly termed, and with these are closely associated the LARI-LIMICOLAE, a group which includes such widely differing forms as Coursers and Gulls. The whole assemblage may be described as limicoline, littoral, paludicoline and pratincoline birds, which are placed in this single order by reason of a number of anatomical characters common to all.

The *Limicolae* are illustrated on pages 18 and 20 and the *Lari-Limicolae* on page 22. The reasons for the classification which I have adopted are discussed in *The Birds of Tropical West Africa*, vol. ii, pp. 81–83 and 191. It is based on the anatomical researches of Dr. Percy R. Lowe, formerly head of the British Museum Bird Department.

To enable the reader to find in which sub-order a particular bird is placed, the following list may be consulted.

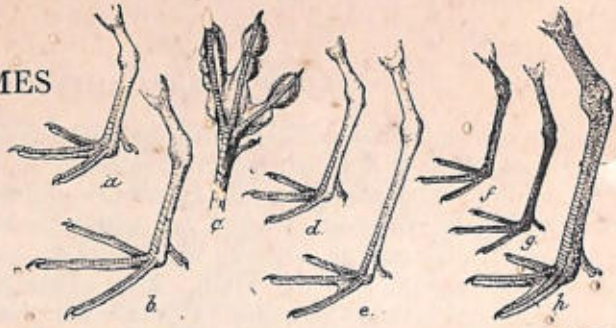
Sub-order *Limicolae* includes Painted Snipe, Sand-Plovers, Grey Plovers, Ringed and Banded Plovers, Steppe Plovers, Spur-wings, Lapwings and Wattled Plovers, Stilts, Avocets, Oyster-catchers, Snipe, Stints, Sandpipers, Shanks, Sanderlings, Ruffs, Turnstones, Knots, Godwits, Curlews, Whimbrels and Phalaropes.

Sub-order *Lari-Limicolae* includes Egyptian Plovers (Crocodile Birds), Pratincoles, Gulls, Terns, Skuas and Scissor-bills.

The *Limicolae* are again divided into three families:

1. *Rostratulidae*, to include the Painted Snipe, the sole representative, whose head and foot are figured opposite. The bill is Snipe-like but shorter than that of a Common Snipe and is not pitted as it is in the true Snipe. The female is the most brightly coloured of the sexes, and the species is believed to be polyandrous.
2. *Charadriidae*, embracing the four sub-families enumerated opposite, includes:
   (*a*) The Shore and Steppe Plovers (*Charadriinae*), of which, from the top, there is illustrated Kittlitz Plover, Grey Plover with foot as in Fig. *b*, Ringed Plover with foot as in Fig. *a*, and Forbes' Plover.
   (*b*) The Lapwing-like Plovers (*Vanellinae*), illustrated by the Spur-wing, Brown-chested and Wattled Plovers, all having legs and feet as in Fig. *c*, and the Stilt with its long fine bill and long shanks with partly webbed toes as in Fig. *f*.
   (*c*) The Avocet (*Recurvirostrinae*) is another single representative of its family, remarkable for its fine recurved bill and the long thin shanks and webbed toes as in Fig. *e*.
   (*d*) The Oyster-catchers (*Haematopodinae*), with their stout blunt bill, heavy tarsus and partly webbed feet, as in Fig. *d* opposite.
3. *Scolopacidae*, discussed on page 21.

Order
CHARADRIIFORMES
(*continued*)



Sub-order
LIMICOLAE
(*continued*)

Family Scolopacidae

Sub-family Scolopacinae

Genus Capella

Genus Lymnocryptes



Sub-family Eroliinae

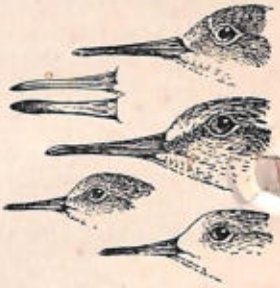
Genus Erolia

Genus Limicola

Genus Calidris

Genus Erolia

Genus Crocethia



Genus Philomachus



Sub-family Arenariinae

Genus Arenaria



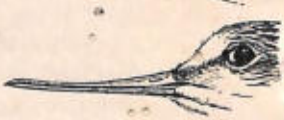
Sub-family Tringinae

Genus Actitis

Genus Tringa



Genus Glottis



Sub-family Limosinae

Genus Limosa

Genus Numenius



Sub-family Phalaropodinae

Genus Phalaropus



THE family SCOLOPACIDAE, the third division of the *Limicolae*, is distinguished from the other two limicoline families by well-marked anatomical characters, references to which are given in my larger work. On the opposite page the heads of birds typical of the six sub-families are depicted which, reading from the top, illustrate (1) the Common and Jack Snipe (*Scolopacinae*); (2) the Dunlin, bill of Broad-billed Sandpiper, Knot, Stint, Sanderling and Ruff (*Eroliinae*); (3) the Turnstone (*Arenariinae*); (4) Common Sandpiper, Redshank and Greenshank (*Tringinae*); (5) Godwits and Curlews (*Limosinae*); (6) Phalaropes (*Phalaropodinae*).

The great diversity in the bills exhibited by this family is well brought out in the drawings, and no less differences are to be found in the feet and legs, which are representative of the six sub-families enumerated. The drawings at the top of the page opposite depict (*a*) Turnstone, (*b*) Snipe, (*c*) Phalarope (note the scalloped webs), (*d*) Knot, (*e*) Redshank, representing all *Tringinae*, (*f*) Sanderling, unique in that it lacks a hind toe, (*g*) Dunlin, representing all the *Eroliinae* except the Sanderling, (*h*) Curlew, with its stout tarsus and toes.

No trouble will be experienced in placing in their correct sub-family some of these birds. The bill of the Snipe, the foot of the Phalaropes, the bills of the Curlews and Godwits and that of the Turnstone are all diagnostic characters. It is the members of the *Eroliinae* and *Tringinae* which present so many difficulties. The features which distinguish these two groups are anatomical and are not therefore visible in life or from examination of the skin alone. Some species, such as the Greenshank and Redshank, are easily placed, but many others can only be distinguished after considerable experience.

When in their winter quarters—for all are migrants to Africa from their breeding grounds in Europe and Asia—the *Scolopacidae* (excepting the Snipes) are sombrely garbed, but many assume a handsome dress as the breeding season approaches and then they are barely recognisable as the same bird in winter. All are inhabitants of shore, marsh or river bank, while the *Phalaropodinae* when not breeding remain at sea. The majority of these which are dealt with hereafter are familiar birds of passage through Great Britain and should be known to European ornithologists.

Occasionally some of these birds, as for instance the Turnstone, Sanderling and Dunlin, remain in the tropics sufficiently long to have assumed—at any rate partially—their summer plumage. Others, such as the Wood and Common Sandpiper and the Greenshank, have been found in tropical Africa during months when they should be breeding in Europe, pointing to these and some other species not all quitting the tropics every year.

Order CHARADRIIFORMES
(*continued*)



Sub-order LARI-LIMICOLAE

Family Glareolidae
Sub-family Cursoriinae
Genus Cursorius



Genus Pluvianus



Sub-family Glareolinae
Genus Glareola (head)



Genus Glareola (tail)



Genus Galachrysia (tail)

Family Stercorariidae
Genus Stercorarius



Family Laridae
Sub-family Larinae
Genus Larus



Genus Larus



Sub-family Sterninae
Genus Gelochelidon



Genus Hydroprogne



Genus Sterna



Genus Chlidonias



Genus Anous



Sub-family Rynchopinae
Genus Rynchops



THE sub-order LARI-LIMICOLAE is represented in West Africa by three families, the GLAREOLIDAE, embracing the Pratincoles and Coursers, the STERCORARIIDAE the Skuas, and the LARIDAE the Gulls, Terns and Skimmers. The characters of the various sub-families into which these groups are divided are indicated on the page opposite. The illustrations of the legs and feet represented by this sub-order are as follows: *a–b* Pratincoles (note the hind toe); *c*, Coursers and Egyptian Plovers, with hind toe absent; *d*, stout tarsus and completely webbed foot of Skuas; *e*, very short tarsus and incised webs of Skimmer; *f*, webbed foot of Kittiwake (note the absence of hind toe); *g*, Terns; *h*, webbed foot of all Gulls except Kittiwake.

Of this assemblage only the Coursers and Pratincoles are land birds; the former are short-winged, long-legged birds which can run incredibly fast, as do most terrestrial species which lack a hind toe. Pratincoles, on the other hand, have long narrow wings, a forked tail and short legs with a hind toe present, but they too can run fast on occasion. Much of their time is spent on the wing.

Illustrating the *Cursoriinae* opposite are the heads of Temminck's Courser, and below of the Egyptian Plover. The *Glareolinae* are represented by the head of a Common Pratincole and by the strongly forked tail of *Glareola* and the slightly forked one of *Galachrysia*.

The STERCORARIIDAE may be recognised by the powerful hooked bill representative of all Skuas. This Gull-like bird has a heavy leg and foot (see *d* above). Two species come within our limits, both entirely maritime.

The LARIDAE we subdivide into three sub-families: *Larinae* (the Gulls), *Sterninae* (the Terns) and *Rynchopinae* (the Skimmers). These groups are represented by the heads (reading from the top) of the Grey-headed Gull, Atlantic Gull, Gull-billed Tern, Caspian Tern, Common Tern, Black Tern and Noddy; and representing the *Rynchopinae*, the head of the Skimmer with its remarkable bill, both mandibles being flattened laterally, the lower exceeding the upper in length. Though placed in a sub-family to itself, the Skimmer is closely allied to the Terns. With its forked tail and greatly elongated narrow wings it is a species which should not be difficult to recognise.

Order COLUMBIFORMES



Sub-order PTEROCLI



Family Pteroclididae

Genus Pterocles

Genus Pterocles



Sub-order TURNICES



Family Turnicidae

Genus Turnix



Genus Ortyxelos



Sub-order COLUMBAE



Family Columbidae

Genus Columba



Genus Oena



Genus Aplopelia



Genus Vinago



THE order COLUMBIFORMES was divided in my larger work to include three sub-orders, embracing the pigeons (*Columbae*), the Sand-Grouse (*Pterocli*) and the Button-Quails (*Turnices*), each group being represented in our area by a single family. These three families are depicted on the opposite page. The four legs and feet figured at the top of the page opposite represent those of (*a*) Pigeon, (*b*) Sand-Grouse, (*c*) Button-Quail, (*d*) Quail-Plover.

First in sequence are the PTEROCLIDIDAE (Sand-Grouse), birds which are structurally close to the Pigeons. All have short legs and the tarsi feathered to the toes, the hind toe being minute. The body is pigeon-like, especially when seen on the ground. Heads of the Four-banded Sand-Grouse (upper) and the Coronetted Sand-Grouse (lower figure) are illustrated. Sand-Grouse have long pointed wings and are capable of travelling great distances over desert wastes to drinking places. The tail is peculiar to the various species; in some it is fan-shaped as in *P. quadricinctus*; in others the middle feathers are elongated and end in fine filaments, as in *P. exustus* and *P. senegallus*. Five species have been reported from West Africa, but only one, the Four-banded, is universally distributed.

The second family is that of the TURNICIDAE, embracing the Button-Quails (*Turnix*) and the Quail-Plover (*Ortyxelos*); their heads are figured opposite and also their legs. In neither is a hind toe present. *Turnix* has the appearance of a small Partridge, and *Ortyxelos* has been described as having the characters of a Bush-Lark and Quail combined. Both are ground-frequenting birds, the former having two representatives in our area.

The COLUMBIDAE (Pigeons) are illustrated on the opposite page by a foot and tarsus typical of the group. Note the very short tarsus, partly feathered, as in all the Pigeons, and the comparatively long toes with sharply curving nails. The four heads (reading from the top figure) are representative of the Scaly Pigeon (*Columba*), the Long-tailed Dove (*Oena*), the Lemon-Dove (*Aplopelia*), and the Green Fruit Pigeon (*Vinago*), characteristic of the various genera. In all Pigeons the bill is usually weak, a fleshy cere covering the base of the upper mandible in which the nostrils are situated. Pigeons are powerful on the wing and are found in every type of country, some being restricted to the forest, some to the savanna and some to the semi-arid belt. Only the Fruit Pigeons (*Vinago*) can be termed brightly coloured in West Africa. Of the twenty-four species in our area the majority have plumage of grey, slate, chestnut, brown or vinous as the principal ground colour, sometimes relieved with a metallic green or purple sheen on the mantle and occasionally brilliant metallic spots on the wings.

Order PSITTACIFORMES



Family Psittacidae

Genus Psittacus



Genus Poicephalus



Genus Psittacula



Genus Agapornis



THE order PSITTACIFORMES contains the Parrots, a very large group of birds confined chiefly to the tropical countries of the world. Nine species are found in West Africa, all in the family PSITTACIDAE. They occur in both forest and savanna country, and many are powerful fliers. All Parrots have a specialised foot, the toes being zygodactylous, that is to say, two toes are directed forwards and two backwards. This feature is clearly demonstrated in the drawing on the opposite page, and in life is of great assistance to the birds in gripping the fruit and nuts upon which they feed, carrying the food to their bills with their feet or tearing it open with their powerful bills.

Typical of many in the family is the bill of the Grey Parrot (*Psittacus*), the topmost of the four heads on the opposite page. The nostrils are situated in a cere or soft membrane which covers the base of the upper mandible. The bill is large and powerful, the lower mandible wide and cup-shaped; the upper mandible, which is itself movable, is also swollen and overlaps the lower, tapering to a sharp hooked point.

In many species the area round the eye is naked, but is seldom so pronounced as in the Grey Parrot. This feature is less marked in the head figured next below, depicting the Brown-necked Parrot (*Poicephalus*), in which the bill is highly developed, the upper mandible ending in a needle-like point.

In most Parrots the tail is square, and in African species is composed of twelve feathers. In the Love-birds (*Agapornis*), the lower figure on the opposite page, the tail is wedge-shaped. These birds are the smallest representatives of the *Psittacidae* and the bill is proportionately small, as the drawing indicates.

Immediately above the Love-bird the head of the Senegal Parrakeet is illustrated; like that of the Love-bird, the bill is short and rather blunt, but the feature of the Senegal Parrakeet is its tail, very long and graduated, the narrow middle feathers being about 10 in. in length.

Parrots are brightly coloured birds and draw attention to their presence by their loud, raucous cries and screeching notes. Gifted with an abnormally large brain and sense of mimicry—especially those species in the genus *Psittacus*—some individual birds are able to copy human speech to a remarkable degree, the Common Grey Parrot of West Africa being the classic example in this respect, though some South American species run it very closely. As pets there is no family of birds so popular both with Europeans and Africans

Order STRIGIFORMES



Family Tytonidae
Genus Tyto



Family Strigidae
Sub-family Striginae



Genus Asio



Genus Strix



Genus Otus



Genus Otus



Genus Ptilopsis



Genus Jubula



Genus Carine



Genus Glaucidium



Genus Bubo



Sub-family Ketupinae



Genus Scotopelia

THE order STRIGIFORMES includes all the Owls, which are birds of prey of world-wide distribution. They are divided into two families, the TYTONIDAE for the Barn Owls and the STRIGIDAE comprising all the other genera. The order is well represented in Africa.

In the STRIGIDAE we have two sub-families, all but the Fishing Owls (*Ketupinae*) being included in the *Striginae*. The most obvious external character in the Owls is to be found in the face. The large eyes are directed forward, each surrounded by a symmetrical disc of feathers, those above the bill meeting in the Barn Owls to form an elevated ridge. In the *Strigidae*, on the other hand, the facial disc is not so pronounced, the base of the bill being almost concealed by stiff, forwardly directed bristles. An outer circle or ruff surrounds both discs, passing behind the opening of the ears. The aperture of the ears is unusually large. The bill is in most Owls decidedly weak, the upper mandible being sharp at the tip and strongly hooked over the lower. A sharply defined cere is present. In some species a tuft of elongated feathers, which can be erected at will, is situated above the eye.

The plumage is wonderfully soft and loosely attached. Even the wing-feathers are exceptionally soft and velvety to the touch, enabling the bird to fly with the minimum of noise. The wings are in most species fairly long, and as the Owl flies to and fro, quartering the ground on the look-out for prey, the wings are beaten rather slowly. In many genera the tarsi are closely feathered to the toes. Only in the Fishing Owls (*Scotopelia*) is the lower part of the shank bare. All Owls are furnished with exceptionally sharp claws, the outer toe being reversible. Owls are mainly nocturnal in their habits, preying chiefly upon rodents, except the Fishing Owls, which prey upon fish. Some species live largely upon insects.

In the illustrated key the feet represent (*a*) the Barn Owls (*Tytonidae*), with sparsely feathered tarsus, (*b*) the Fishing Owls (*Ketupinae*), with bare tarsus, (*c*) the closely feathered tarsus of most other Owls (*Striginae*). The faces illustrated opposite represent (from the top): Barn Owls (*Tyto*), Marsh Owls (*Asio*), Wood Owls (*Strix*), Sandy Scops Owl (*Otus*), Cinnamon Scops (*Otus*), White-faced Owl (*Ptilopsis*), Maned Owl (*Jubula*), Little Owls (*Carine*), Owlets (*Glaucidium*), and Eagle Owls (*Bubo*).

The bottom two figures are representative of the Fishing Owls, which we place in the genus *Scotopelia*. Note the rough scales on the bare tarsus, the strong claws and the soles of the feet, furnished, as in the Osprey (which also captures fish), with little sharp spines.

Order MUSOPHAGIFORMES



Family Musophagidae



Genus Turacus

Genus Musophaga



Genus Corytheola



Genus Crinifer



THE order MUSOPHAGIFORMES embraces the Touracos and the Plantain-eaters, which are placed in a single family, MUSOPHAGIDAE. In all the members of this family the bill is powerful and compressed, with a raised culmen, the upper mandible being arched. The foot figured at the top of the opposite page is characteristic of the whole family. The tarsus is bare and, like the toes, covered with scutes; the toes are semi-zygodactyle, that is to say, toe iv is capable of being turned partly back. The claws are short and abruptly curved. Below the foot there are figured four heads representative of the genera *Turacus*, *Musophaga*, *Corytheola* and *Crinifer*.

All are comparatively large birds, the Touracos being about the size of a Pigeon, and the Blue Plantain-eater considerably larger. Some, such as the Masked Plantain-eaters (*Musophaga*), are remarkable for the large frontal shield which extends far on to the forehead.

In every species the tail is long and broad and composed of ten feathers. The wing is short and rounded except in *Corytheola* and *Crinifer*, when it is proportionately longer. The members of this family in the genera *Turacus* and *Corytheola* are adorned with striking plumage, green, blue and violet, with feathers shining and glossy. All are crested with the single exception of one of the Plantain-eaters, which has short, fur-like feathers on the crown. A striking feature common to the Touracos and Plantain-eaters is the crimson-coloured primaries, the pigment in which can be dissolved and contains copper and has been named turacin.

In the genus *Corytheola*, in which is placed the Blue Plantain-eater, the head is adorned with a giant crest and the body plumage is a combination of bright verditer-blue and pale green. It is one of the most striking birds in the whole of Africa.

In West Africa there are eleven species in the *Musophagidae*, which we place in five genera. The only genus not illustrated opposite is *Proturacus*, which resembles *Turacus* in every particular but has the nostrils slit-shaped instead of round. That is also a characteristic of the Grey Plantain-eater (*Crinifer*), whose head is depicted at the foot of the opposite page.

Order CUCULIFORMES



Family Cuculidae

Sub-family Cuculinae

Genus Cuculus



Genus Chrysococcyx



Genus Pachycoccyx



Sub-family Centropodinae

Genus Centropus



Genus Ceuthmochares



Order COLIIFORMES



Family Coliidae

Genus Colius

THE order CUCULIFORMES embraces the Cuckoos in the sub-family *Cuculinae* and the Coucals and Yellowbills in the sub-family *Centropodinae*, which together form the family CUCULIDAE. A foot representative of each sub-family is shown opposite. Fig. *b* represents the foot of the European Cuckoo, which is typical of all. Note the short tarsus with overhanging feathers, the zygodactyle foot, two toes directed forwards and two backwards, and short claws all of the same length. Three heads typical of the true Cuckoos are illustrated below, the Great Spotted Cuckoo, the Emerald Cuckoo and the Thick-billed Cuckoo, whose mandibles are thicker than in any other species.

Fig. *c* at the top of the page is typical of the foot of the Coucals (*Centropus*). Note the bare tarsus free from overhanging feathers and especially the elongated hind claw. The two heads illustrating the *Centropodinae* depict a Coucal and Yellowbill (*Ceuthmochares*).

In the true Cuckoos (*Cuculinae*) the wing is flat against the body and except in *Cercococcyx* is long, reaching beyond the upper tail-coverts. In the *Centropodinae*, on the other hand, the wing is curved to fit round the body when closed, and is short, invariably falling short of the upper tail-coverts. In the true Cuckoos (*Cuculinae*) the members are parasitic on other birds and do not make their own nests or rear their own young. The Coucals and Yellowbills, on the contrary, are not parasitic, but build nests of their own and rear their young.

The *Cuculinae* include some of the most brilliantly coloured birds in Africa (see facing p. 672), and there is as much variation in size as in coloration. There are twenty-three species within our limits in the *Cuculidae*, which we place in eight genera.

THE order COLIIFORMES includes the Mouse-birds or Colies (COLIIDAE), a very distinct group, which have many structural peculiarities. All resemble one another closely in appearance. The body is small, about the size of a Sparrow's, but the tail of ten feathers is extremely long and the rectrices are narrow, with very stiff shafts. The tail is graduated in all the members of the family. In some species it is 10 in. in length. The two heads figured depict the Chestnut-backed Mouse-bird and the Blue-naped Mouse-bird. These heads and the shape of the bill are typical of all species. The foot, too, is illustrated. Normally three toes are directed forwards and one backwards, but the hind toe is capable of being turned forwards.

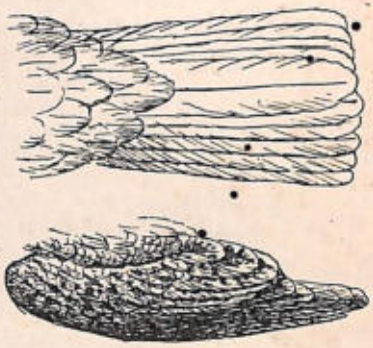
Colies are dull-coloured, the plumage is soft and loosely attached, grey or brown relieved with a blue nape-patch or with black on the throat or chestnut on the rump. Much of their time is spent creeping about in the foliage, using their bills as well as their feet. Three species come within our limits; all are placed in the genus *Colius*.

Order CAPRIMULGIFORMES



Family Caprimulgidae

Genus Caprimulgus



Genus Scotornis



Genus Cosmetornis



Genus Macrodipteryx



THE order CAPRIMULGIFORMES includes the single family CAPRIMULGIDAE, in which we place the Nightjars. In some respects they have affinities with the Owls. Their plumage is soft and loosely attached to the skin, they are capable of silent flight, and all have large eyes like most nocturnal species or those which fly at dusk. All Nightjars have very wide gapes, often guarded with stiff bristles, enabling them to seize with the minimum effort the night-flying insects upon which they feed.

The wings are long and narrow, composed of ten primaries. In some species the ninth primary is remarkably specialised, forming a racquet or extended train. The tail may be square, rounded or much graduated and is composed of ten rectrices. The bill and feet are weak, three toes are forwardly directed, one toe anteriorly.

Nightjars are the most difficult of all birds to detect when on the ground or on a branch, their plumage blending so remarkably with the earth or lichen-covered wood. When on a branch they never perch across it but always along it. In coloration the plumage is a mixture of grey, brown, buff, black and white. The males usually differ from the females in having more white on the wings and tail, while the corresponding area in the female is either buff or yellow.

In all Nightjars the third toe has the claw pectinated, i.e. comb-like on the inner edge, the legs are short, and the tarsus is bare of feathers in some species but in others more or less feathered.

Below the head and foot, representative of the whole order on the page opposite, there are figured the tail and wing of the European Nightjar, next the markedly graduated rectrices of the Long-tailed Nightjar (*Scotornis*), the specialised wing of the Pennant-winged Nightjar (*Cosmetornis*) with its elongated ninth primary which is shed after the breeding season, and finally the specialised wing of the Standard-wing Nightjar (*Macrodipteryx*), in which the ninth primary is very long in the male bird but only the terminal portion is furnished with barbs. This plume is also shed after breeding. The females of both *Cosmetornis* and *Macrodipteryx* have the ninth primary normal in length, as depicted in the drawings.

In our area we include fifteen species, one a migrant from Europe, while the others are all resident African species. They represent four genera, and all are included in the family *Caprimulgidae*.

Order CYPSELIFORMES



Family Micropodidae



Sub-family Micropodinae
Genus Micropus



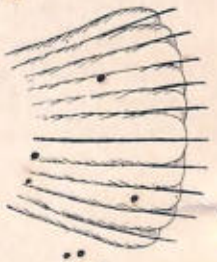
Genus Cypsiurus



Genus Colletoptera



Sub-family Chaeturinae
Genus Chaetura



THE order CYPSELIFORMES includes the Swifts, which are contained in the family MICROPODIDAE. That again is divided in our area into two sub-families, the *Micropodinae* embracing the Swifts, in which all four toes are directed forwards (Fig. *b*) except those in the genus *Cypsiurus* (Fig. *a*), in which the tail is normal, and the *Chaeturinae*, in which the hind toe is reversible (Fig. *c*) and the tail specialised. In outward appearance Swifts may be recognised by the striking formation of the long, narrow wing, an example of which is illustrated at the top of the opposite page. The peculiarly flattened inner edge of the anterior part of the wing is a character which attracts attention when a Swift is handled; moreover the extremely short secondaries are a unique formation in the wing of any African bird.

A Swift's head, as depicted opposite, is flat and broad; the bill is triangular in shape, short and very weak, as shown in Fig. *b'*. It has been drawn from above and is characteristic of all members of the family *Micropodidae*. The gape is very wide and the eye is large.

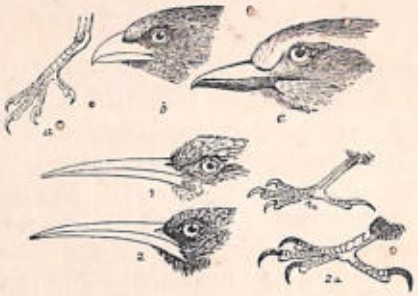
The tail of all species in the sub-family *Micropodinae* is variable in shape and composed of ten feathers. In the genus *Micropus*, which includes the majority of Swifts in our area, it is strongly forked, as in the top illustration. In the genus *Cypsiurus* (the Palm-Swifts) the tail is more graduated than in the *Micropus* group and the outer rectrices are much elongated, as depicted opposite. In strong contrast is the tail of species in the genus *Colletoptera*, which includes the Little Swifts, and is practically square when opened.

Finally we have the Spine-tailed Swifts, which we place in the separate sub-family *Chaeturinae*. As will be seen from the lower illustration, the tail is remarkable in having the shafts of the feathers elongated beyond the webs, ending in needle-like points. I retain all the Spine-tailed Swifts in our area in the genus *Chaetura*. In this group we find the fastest fliers of all known birds.

In plumage Swifts are sombrely coloured grey-brown, brown, mouse-colour or black, relieved with a white patch on the throat or a white band across the rump. Swifts are cosmopolitan in distribution; sixteen species occur in West Africa.

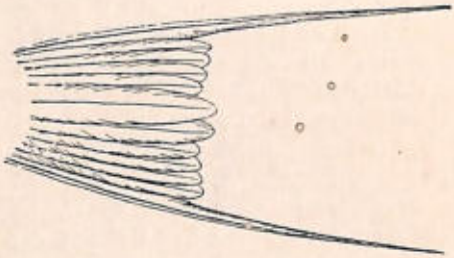
Order CORACIIFORMES

Sub-order CORACII

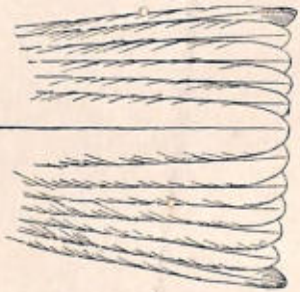


Family Coraciidae

Genus Coracias



Genus Eurystomus
(tail)



Genus Eurystomus
(wing)



Family Upupidae
Genus Upupa



Family Phoeniculidae
Genus Phoeniculus



THE order CORACIIFORMES as embraced in my larger work has been divided into three sub-orders: (1) Coracii for the Rollers, Hoopoes and Wood Hoopoes; (2) Alcedines for the Kingfishers, and (3) Meropes for the Bee-eaters. Outwardly these groups are very dissimilar, but anatomically and in their pterylosis they have certain characteristics which unite them together. The most obvious external character is to be found in the structure of the foot. The soles are broad and flattened in all but the *Coracii*, the forwardly directed toes being joined for part of their length and the third and fourth toes united for most of their length in the Kingfishers and the Bee-eaters. In all groups the reversed hind toe is well developed. All the members of these sub-orders have very thin skins; the young are hatched naked and blind, and all lay white eggs in holes. They are represented by drawings on the opposite page of the heads and feet of Rollers (*a*, *b*, *c*), Hoopoes (1 and 1*a*), and Wood Hoopoes (2 and 2*a*).

The Coracii are divided into three families as depicted opposite, first of which is the CORACIIDAE, in which we place the Rollers. Typical tails and a wing characteristic of this family are shown opposite. Rollers form a brightly coloured group of birds varying from the size of a Jay to that of a Starling. Their wings are long and broad, the secondaries falling far short of the primaries in length, giving the wing a characteristic narrowed appearance at its base. The tarsus is short, the feet are stout, and the soles broad and flattened. The bill is heavy, with a sharply curved hook at the tip. Rollers have gained their English name from the extraordinary aerial antics in which they indulge. We place them in two genera in our area, *Coracias* and *Eurystomus*; the outer rectrices are sometimes elongated in the former but never in the latter. In West Africa there are six species, and all are attractively coloured. One of these is a migrant from Europe.

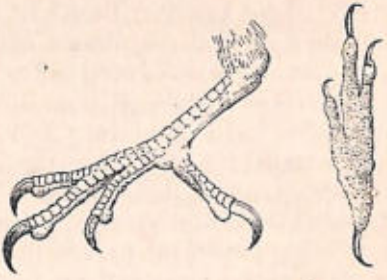
The UPUPIDAE is the next family to be considered, in which we place the Hoopoes. All have the head furnished with a large crest, as depicted opposite. The bill, too, is characteristic, very fine and slender. The species exhibit very similar colouring, varying from warm cinnamon-brown to rufous-chestnut, with bands of white, black and buff on the back and wings. The head figured is that of the European Hoopoe.

The PHOENICULIDAE embrace the Wood Hoopoes, which have the crown-feathers short, very unlike the true Hoopoes in appearance. Slim in build, their colouring is mainly blue and green, the feathers with metallic gloss. The tail is long and graduated, often ornamented with white apical spots. The wings are short and rounded. The bill, as shown in the illustration, is shorter than in *Upupa*. In our area are three genera, into which fall six species.

Order CORACIIFORMES
(continued)

Sub-order ALCEDINES

Family Alcedinidae



Genus Megaceryle



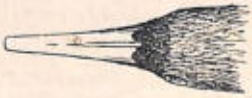
Genus Alcedo



Genus Myioceyx



Genus Myioceyx



Genus Halcyon



Genus Halcyon



THE next sub-order of the CORACIIFORMES to be discussed is the Alcedines or Kingfishers, which are placed in a single family ALCEDINIDAE. Facing is an illustration of a foot typical of all Kingfishers. The hind toe is long and all the toes are furnished with sharp claws. The forwardly directed toes are partially united, the third and fourth toes being fused to the last joint. Note also the broad sole as shown in the right-hand text figure.

One of the chief characters of the family is to be found in the bill. In most species this is long and straight and distinctly heavy for the size of the bird. In most genera the bill ends in a sharp point, but in *Myioceyx* the mandibles appear shorn off at the tip. In the genus *Alcedo* the mandibles are laterally compressed and perceptibly keeled, while in *Halcyon* they are swollen, the upper being more or less depressed, with a flattened culmen.

Representative heads of the Kingfishers are depicted opposite, illustrating the diversity in the shape of the bills. Reading from the top, the genera and species represented are: *Megaceryle maxima*, *Alcedo quadribrachys*, *Myioceyx lecontei* (side view), *Myioceyx lecontei* (dorsal view), *Halcyon malimbicus* and *Halcyon leucocephala*.

In the past two sub-families were recognised; those species with a compressed and keeled bill being placed in *Alcedininae*, those with a rounded or flattened culmen in the *Halcyoninae*. The members of the former are mainly fish-eaters, while those in the latter are mainly insectivorous. I reluctantly discarded this division in my larger work, as there were too many exceptions.

It comes as a surprise to many to realise that there are Kingfishers which live entirely upon an insect diet and spend their lives away from water, but such is the case. Even among those which are mainly fish-eaters there are some species which take their toll of insect life, and the division into sub-families on that basis cannot be substantiated. In size there is great variation from *Ispidina picta*, which is 4 in. from bill to tail, to *Megaceryle maxima*, which is 18 in. in total length.

Few bird families can rival the Kingfishers in the brilliancy of their plumage, their colouring being a joy to the eye wherever they are encountered. Kingfishers are to be found in all types of country, and whereas water is essential to some, others are equally at home in waterless tracts; some are inhabitants of rivers, the sea coast or water-holes; others are restricted to the bush, and some again to the forest. Within our limits we recognise thirteen species, which are placed in seven different genera.

Order CORACIIFORMES
(*continued*)
Sub-order MEROPES



Family Meropidae

Genus Merops



Genus Merops



Genus Aërops



Genus Melittophagus



Genus Melittophagus



Genus Melittophagus



Genus Dicrocercus



Genus Bombylonax



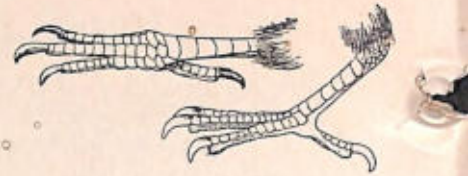
THE last sub-order in the CORACIIFORMES is Meropes, the Bee-eaters, which are placed in a single family MEROPIDAE. In the drawing opposite a head and foot typical of the sub-order are shown. In all Bee-eaters the head is very similar to that of *Merops malimbicus* illustrated; a long, rather flat head and fine, gently decurved bill. The foot shown on the right illustrates the short and weak tarsus, the soles being flattened and the forwardly directed toes partially united, the third and fourth toes being fused to the last joint and the second and third toes united to a lesser extent.

The tail consists of twelve feathers and in structure exhibits considerable variation in the different genera. Eight characteristic tails are shown in the drawings, the three uppermost depicting the tails of *Merops apiaster*, *Merops orientalis viridissimus* and *Aërops albicollis*, in all of which the central feathers are elongated beyond the others, with varying width of the plumes. The next three are characteristic of *Melittophagus*, i.e. *M. pusillus*, *M. bullocki* and *M. mentalis*. Below is the strongly forked tail of *Dicrocercus hirundineus* and below that the tail of *Bombylonax breweri*.

Bee-eaters are not large birds and vary in length from 6 to 10½ in. The wings are long and pointed and the birds are capable of considerable flights. The inner remiges are exceptionally long, which results in the wing being double-pointed when closed. All the members of this family are conspicuous for the brightness of their plumage and the variety of colours exhibited. The sexes are alike, and whenever seen they attract attention by the gracefulness of their flight and often by the twittering sounds which a flock emits on the wing. As their name implies, they feed on insects and are particularly fond of bees, wasps and dragonflies. All manner of flies are devoured, and however unwelcome the birds may be to those who keep bees, they are worthy of strict protection for the amount of good which they do in other ways.

Of wide distribution in the Old World, Bee-eaters are well represented in the temperate and tropical regions of Africa, and of these no fewer than thirteen species come within our limits and are placed in five different genera.

Order BUCEROTIFORMES



Family Bucerotidae



Sub-family Bucerotinae

Genus Bycanistes

Genus Lophoceros



Genus Tropicranus

Genus Ceratogymna



Sub-family Bucoracinae



Genus Bucorvus



Order TROGONIFORMES



Family Trogonidae

THE order BUCEROTIFORMES includes the Hornbills, which are placed in a single family BUCEROTIDAE. Characteristic of the order is the foot, of which an illustration is given showing the broad sole and the second, third and fourth toes partially united. The tarsus is comparatively short in the sub-family *Bucerotinae* but much longer and very thick in *Bucoracinae* (the Ground Hornbills). Another peculiarity is to be found in the structure of the wing, in which the under wing-coverts do not completely hide the base of the quills; in some genera they appear to have been scraped of their natural covering, as depicted in the drawing.

The most striking feature in the Hornbills is undoubtedly the bill, of which various examples are shown opposite. The mandibles are large, often surmounted by a huge casque which makes the owner look top-heavy; in reality these casques are extremely light; a horny shell is supported internally by a cellular bony tissue of extreme delicacy. In most species of Hornbill the eyelids are furnished with stiff black eyelashes.

Hornbills are mostly black and white or brown in colour and vary in size very greatly from the Dwarf Hornbill, which measures about 15 in. from bill to tail, to the huge Ground Hornbill (*Bucorvus*), which is as large as a Turkey and is over 40 in. in length. Many intermediate-sized birds occur in our area. The sexes are usually alike in plumage but may be distinguished by the different shape of the bills. The larger birds are noted for the extraordinary rushing sound made by their wings during flight.

The nesting habits of the Hornbills are remarkable. In the genera *Bycanistes* and *Lophoceros* (we know less concerning the *Ceratogymna* species) the male bird walls in the female in the hole of a tree, leaving an entrance just sufficiently large to pass through food to his mate while she is incubating.

Hornbills are represented by thirteen species in West Africa. The Ground Hornbill is retained in a separate sub-family *Bucoracinae* from the rest of the genera, which we place in *Bucerotinae*. The Ground Hornbill has the casque open as depicted in the drawing, while in the species in the *Bucerotinae* it is closed when present.

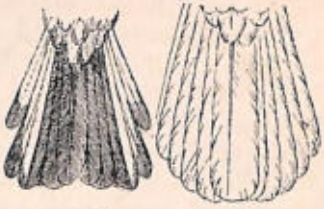
The heads depicted on the opposite page represent from the top the genera *Bycanistes*, *Lophoceros*, *Tropicranus* (the Long-tailed Hornbill) and *Ceratogymna*, below which are the foot and head of *Bucorvus* (the Ground Hornbill).

IN the order TROGONIFORMES we place the Trogons (*Trogonidae*), brightly coloured birds with shining green upper parts and rose-coloured under parts. A head and foot are depicted opposite. The foot is unique in that toes 1 and 2 are directed backwards, and 3 and 4 forwards. Two forest-frequenting species occur in our area.

Order PICIFORMES

Sub-order CAPITONI





Family Capitonidae



Family Indicatoridae



Sub-order PICI



Family Picidae



Sub-family Picinae



Sub-family Picuminae



Sub-family Jynginae



THE order PICIFORMES is divided into two sub-orders, (1) the Capitoni, to include the Barbets and Honey-Guides, (2) the Pici, to include the Woodpeckers, Piculets and Wrynecks. Both these groups have zygodactylous feet, the second and third toes directed forwards, the first and fourth backwards. The *Capitonidae* or Barbets are illustrated by the heads of various genera: (1, 2) *Gymnobucco*, (3) *Pogoniulus*, (4) *Trachyphonus*, (5) *Pogonornis*.

Barbets are with few exceptions heavily built birds with powerful bills often furnished with strong bristles at the gape. The plumage is for the most part brilliant except in *Gymnobucco*, where it is dull brown. There are twenty-two species in our area.

The other family of the Capitoni is the INDICATORIDAE (Honey-Guides), of which two species are illustrated: the Least Honey-Guide (*Indicator minor*) and the Black-throated Honey-Guide (*I. indicator*). These are small birds from 4 to 8 in. in length and all inconspicuously coloured; they are parasitic in their nesting habits and famous for the habit (proved in one species) of guiding human beings to the nests of bees. There are ten species in our area placed in four genera. One species, the Lyre-tailed Honey-Guide, is remarkable for the structure of the tail and for the noise it makes in flight.

The PICIDAE, in the sub-order Pici, are divided into three sub-families as shown opposite. The *Picinae*, in which the shaft of the tail-feathers is stiff, the twelve feathers being graduated and tapering to a point as shown in the left text figure of the three tails representative of the Pici. Below is a head typical of all the *Picinae* (Woodpeckers), showing the strong wedge-shaped bill. The feet are long and furnished with powerful claws, permitting the bird to climb at any angle on a vertical surface. Woodpeckers have very long tongues, pointed and barbed at the tip and supplied with a glutinous substance, causing insects to adhere to it. A variety of plumage is exhibited in this group, the sexes being dissimilar; the males usually possess brighter colours on the head. Widely spread in the forested area and savannas of West Africa, we recognise nineteen species placed in three different genera.

The *Picuminae* (Piculets) have evenly rounded tails of eight soft feathers, as shown in the upper text figure. In the head figured opposite attention may be drawn to the short bill and the naked area round the eye. There is only one species, *Verreauxia africana*, a minute bird only 3 in. in length but with the habits of a Woodpecker.

The *Jynginae* (Wrynecks) have a rather long, slightly rounded tail of flexible feathers (see right-hand lower figure) remarkable for the shortness of the outer rectrices, also very short wings. The sexes are alike. An inhabitant of wooded country, the species is renowned for the snake-like movements of the head and neck. Two species occur in our area, one resident and one migratory from Europe.

Order PASSERIFORMES

Sub-order EURYLAEMI

Family Eurylaemidae



Genus Smithornis



Sub-order MESOMYODI

Family Pittidae

Genus Pitta



Sub-order ACROMYODI

Family Alaudidae



Genus Alaemon



Genus Galerida



Genus Eremalauda



Genus Eremopterix



Families Eurylaemidae, Pittidae and Alaudidae

THE vast order PASSERIFORMES includes all the families of birds which have not already been dealt with in the previous pages. The three sub-orders, into which the perching birds of Africa fall, are indicated in the illustrated key on the opposite page. The first two are represented each by a single family—the EURYLAEMIDAE or broadbills, of which a full text figure is given, and a view of a typical bill as seen from above, and secondly the PITTIDAE or pittas, brightly coloured birds which live chiefly on the forest floor, and of which there are two species in our area. Both the above-mentioned families have Oriental affinities.

The broadbills are noteworthy for the breadth of the mandibles, the tip of the upper ending in a sharp hook; stout nasal bristles are present and the eyes are large; the wing is short and rounded and the tail is also short, composed of twelve even-lengthed feathers. A characteristic feature shared by the three species in our area is the concealed patch of white feathers on the back, which can be displayed at will.

The pittas (or ant-thrushes) are about the size of a thrush but with very short tails. The legs and toes are strong and the stance is upright. Most gaudily coloured, the two African species are ornamented with patches of green, scarlet, cobalt, black, white and buff. The feathers are long and loose, but the bird always appears neat and compact. One species is figured in colour on Plate 39, in which the three species of broadbills are also depicted.

Apart from the two families instanced, all the other Passerine families are included in the sub-order Acromyodi and fall into what Garrod and Forbes termed oscines, birds in which the syringeal muscles have been specialised. The first of these families is appropriately the ALAUDIDAE or larks, renowned for their powers of song. Unlike many Passeres, the larks form a compact family the members of which can be recognised in the field without much difficulty. When handled a useful aid to family definition is the hind claw, which is always much longer than the front claws. Moreover in all larks the back of the tarsus is scutellated (see text figure opposite). Larks are inhabitants of open grassy or barren spaces and in coloration closely resemble the ground upon which they live.

Within our limits we find twenty species which we place in ten different genera. Four of these are represented by the heads of the Bifasciated Lark (*Alaemon*), the Crested Lark (*Galerida*), Dunn's Lark (*Eremalauda*) and the Finch-Lark (*Eremopterix*). The different patterns of bill are clearly portrayed in the drawings opposite.

Family Motacillidae

Sub-family Motacillinae



Genera
Motacilla
and
Budytes





Sub-family Anthininae



Genus Anthus



Genus Macronyx





Family Motacillidae

THE family MOTACILLIDAE includes the two sub-families MOTACILLINAE for the wagtails and yellow wagtails and ANTHINAE in which are grouped the pipits and longclaws. Four genera are illustrated on the page opposite.

Like the larks, the members of this family have the inner secondaries long, so that when closed the wing appears to have two points. They are distinguished from larks (which the pipits resemble superficially) by having the sides of the tarsus covered with an unbroken sheath, while the front is made up of more or less fused scutes. The distinction can be seen best if the drawings of the three legs on the page opposite are compared with that which illustrates the larks on the previous page of drawings. In both wagtails and pipits the tail is composed of twelve feathers, while the wing has nine primaries.

In the drawings opposite which illustrate the wagtails the upper figure is typical of a wagtail's foot, the tarsus is very fine and the claws are rather short. Next is a drawing of a Pied Wagtail (*Motacilla aguimp*), typical of all species in this genus, below which is figured one of the Yellow-breasted Wagtails of the *Budytes flavus* group, in which the tail is shorter than in the species we group in *Motacilla*. The genus *Budytes* approaches the pipits (*Anthus*) more closely than *Motacilla*. In the latter genus the tail is longer than the wing; in *Budytes* it is always shorter.

Wagtails are the most graceful of all birds in form and movement, their long tails constantly vibrating as they run to and fro. In colour they are either black and white; black, grey and white; or a combination of grey, green and yellow. In our area we recognise five species, which are placed in two genera.

Pipits in the genus *Anthus* have shorter tails than the wagtails, shorter even than those in the *Budytes* group. In addition they have rather longer toes and the hind claw is also longer except in the Tree-Pipit, in which it is remarkable for being short and abruptly curved (see Fig. *a* inset). While wagtails are mainly terrestial in their habits, pipits, though also mainly ground birds, habitually soar in the air and more often perch on trees.

Closely allied to the true pipits are the long-claws, species which we place in the genus *Macronyx*. They are remarkable for the length of the hind claw, as can be seen in the illustration opposite. In the only species in West Africa, *M. croceus*, the colouring is brighter than is usual in the pipits, yellow below with a black crescent. Moreover it is much larger than any other pipit we have to deal with. The genus is represented in East Africa in addition by several other species, one of which has a rose-coloured breast.

Family Timaliidae



Genera
Turdoides
and
Phyllanthus



Genus Argya



Genus Hypergerus



Genus Ptyrticus



Genus Illadopsis



Genera
Pseudoalcippe
and
Horizorhinus



Genus Amaurocichla



Genus Macrosphenus



Family Timaliidae

THE family TIMALIIDAE or babblers includes a number of genera whose affinities are imperfectly understood. Of Old World distribution, the Timaliidae may be roughly defined as medium- or small-sized birds, none larger than a thrush, with short, rounded, concave wings fitting close to the body; a variable bill, often with a shrike-like hook at the tip, rictal bristles often strongly developed, and very stout feet and tarsi. The tail, normally of twelve feathers, is usually broad, and in most genera is square or rounded, exceptions being found in *Argya* and *Hypergerus*, in which it is highly graduated. The colour of the various plumages exhibited is diverse; in most babblers it is dull brown, chestnut, olive, grey and black predominating. Within our area there are twenty-two species, which we place in twelve different genera.

It will be seen in the drawings opposite how variable is the bill as represented in the various genera portrayed. It will be noted that only two feet are illustrated; the upper figure is more or less representative of all genera in the Timaliidae with the exception of *Illadopsis* figured lower down, in which the foot is particularly weak. The species which are grouped in the genera *Turdoides* and *Phyllanthus* are true babblers, which cannot be said of some of the others whose characteristics are illustrated opposite.

It has been justly said when discussing the Timaliidae that the characters of the species comprising the family are so varied that a general definition that will include all the members belonging to it, and exclude those that do not, is almost impossible. We have but to instance the birds in the genus *Macrosphenus*, in which the bill is long and straight, the upper mandible hooked at the tip, the nostrils slit-shaped and the feathers of the back silky, long and fluffy, illustrated by the lower figures on the opposite page, and compare the members of that genus with those in *Pseudoalcippe*, with their short stumpy bill and short rounded wing, to realise how divergent are some genera from *Turdoides* and *Phyllanthus* which have been instanced as typical babblers.

The last-named genus is represented by the whole figure of *Phyllanthus atripennis*, the Black-winged Babbler, figured on the extreme left of the page. Most aberrant of all is *Amaurocichla*, with long fine bill, the tail of only ten feathers, and the wing in which the outermost primary is equal in length to the third. The only known species, *bocagei*, is an inhabitant of an island and is unique. It may be quite wrongly placed in the *Timaliidae*.

Family Pycnonotidae



Genus Pycnonotus



Genus Trichophorus



Genus Bleda



Genus Thescelocichla



Genus Pyrrhurus



Genus Baeopogon



Genus Ixonotus



Genus Phyllastrephus



Genus Calyptocichla



Genus Arizelocichla



Genus Andropadus



Family Pycnonotidae

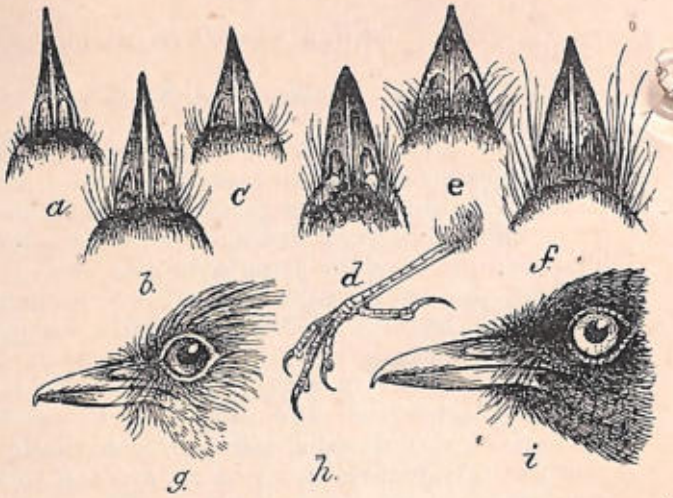
THE family PYCNONOTIDAE embraces a great number of genera which from time immemorial have been known as bulbuls. It is a more compact group than the babblers and the members composing it are more easily defined. It has not been used to the same extent by systematists as a waste-paper basket into which everything was dumped which did not show clear affinities with some recognised group. That has been the fate of the babblers which the bulbuls have escaped.

Bulbuls are moderate-sized birds, none much smaller than a sparrow or much larger than a thrush; all have feeble flight and spend their lives in second-growth forest undergrowth, thickets and gardens. They feed chiefly on berries and fruit, more rarely on caterpillars and the larvae of insects. The various species are characterised by having short concave wings, rather short tarsi and weak toes. Some species, as those in the genus *Trichophorus*, have a distinct crest, but the majority are uncrested. In the genus mentioned curious long hairs spring from the nape and fall over the mantle. In skins these hairs are not noticed unless lifted up for examination. The bill is straight and fairly stout, and in all species the upper mandible is hooked at the tip. The tail, of twelve feathers, is in most genera square or rounded but is longer and more fan-shaped in *Thescelocichla*. Characteristic of all are the long, stiff rictal bristles which spring from the gape.

Bulbuls are not brightly coloured birds; a few species have the under parts mostly yellow, but in the majority duller colours such as olive green, brown and grey predominate. The upper surface is mostly uniform in colour, but many have a rust-red or reddish-brown tail in contrast to the olive or brown back. Very shy except in the Common Bulbul (*Pycnonotus*), which frequents habitations, these birds are not often conspicuous, preferring to hide in the undergrowth, where they keep closely concealed.

In our area we recognise no fewer than thirty-two species, which I have placed in eleven different genera. Characteristic features of all these genera have been figured on the page opposite. Attention may be drawn to the curious foot in *Bleda*, in which the middle and outer toe are fused to the first joint; to the amount of white in the tail of *Baeopogon*, quite square in shape when opened in contrast to the fan-shaped tail exhibited by *Thescelocichla* figured just above, and to the notched upper mandible in the genus *Andropadus*, typical of all species in the genus. The insert figure on the extreme left represents *Phyllastrephus flavicollis soror*, the White-throated Leaf-love.

Family
Muscicapidae



Genus Muscicapa



Genus Melaenornis



Genus Fraseria



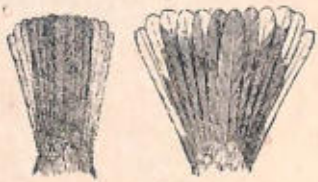
Genus Artomyias



Genus Chloropeta



Genus Stizorhina



Family Muscicapidae

THE family MUSCICAPIDAE, which includes all the flycatchers, is one of the larger groups with which we have to deal. The many genera embrace a truly heterogeneous assemblage, and as flycatchers have close affinities with other large groups such as the *Sylviidae* (warblers), *Turdidae* (thrushes), *Timaliidae* (babblers) and even with *Laniidae* (shrikes), it is not always easy to decide to which a particular species is most closely allied. Only of recent years the broadbills have been removed from the *Muscicapidae* and placed with the *Eurylaemidae* on structural characters which were not formerly recognised.

In size flycatchers are all small birds, few being larger than a sparrow. Their chief character is to be found in the bill, which in some species is nearly as broad at the base as it is long, with the culmen much flattened; the gape is very wide and is furnished with strong bristles. In the upper illustrations on the opposite page bills of birds in the genera, (*a*) *Hyliota*. (*b*) *Fraseria*. (*c*) *Alseonax*, (*d*) *Batis*, (*e*) *Pedilorhynchus* and (*f*) *Tchitrea*, give some indication of the variety exhibited by the family.

A side view of the head of (*g*) *Muscicapa* and (*i*) *Bias* shows the hook at the tip of each mandible characteristic of this entire group. Figure *h* represents a typical flycatcher's leg, which is usually weak, an exception being in the genus *Chloropeta*, which should perhaps be removed to the *Sylviidae*, as unlike the *Muscicapidae*, the young have spotted tongues. The foot of *Chloropeta natalensis* is illustrated towards the foot of the page. In this genus the tail has ten feathers; in all other genera recognised here twelve feathers are present.

On the page opposite six genera have some salient feature presented. For the remaining genera recognised the reader must turn to the page following. Of the genera depicted opposite, *Melaenornis* is represented by a single species in West Africa with all-black plumage; *Fraseria* is remarkable for the scolloped under parts; *Pedilorhynchus* has an exceptionally broad but short bill; *Artomyias* has almost the outline of a martin, with slightly forked tail and long narrow wings. *Chloropeta* has been discussed above, and *Stizorhina* is represented by the tails of two species, *S. fraseri* and *S. finschi*, which apart from the pattern of the tail are very similar in plumage. These two Rusty Flycatchers are further remarkable for having their counterparts in an entirely different genus of the *Turdidae*, which differ from one another in the same way as do the two flycatchers, i.e. in the pattern of the tail.

The remaining genera in the family *Muscicapidae* will be dealt with on page 59.

Family Muscicapidae (*continued*)

Genus Megabyas



Genus Bias



Genus Hyliota



Genus Batis



Genus Platysteira



Genus Dyaphorophyia



Genus Erythrocercus



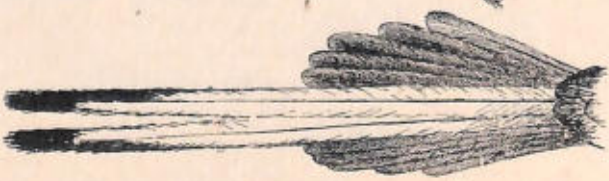
Genus Erannornis



Genus Trochocercus



Genus Tchitrea



Family Muscicapidae

HEAD typical of *Megabyas*, the female is striped on the under side. There is no crest on the crown and rictal bristles are prominent.

Head typical of the genus *Bias*, the male is black and white, the female chestnut. A crest is conspicuous in both sexes.

Head typical of *Hyliota*, the bill long with arched culmen, nostrils exposed.

Members of the genus *Batis* are all much alike in appearance, the males with black, the females with chestnut crop-bands. No eye-wattles present. Long soft feathers on the lower back have prompted the name Puff-back Flycatchers for this group.

In *Platysteira* the eye-wattles above the eye in both sexes are characteristic. As in *Batis*, the male has a black crop-band, but the female often has the entire breast chestnut-maroon.

In *Dyaphorophyia* the males have large eye-wattles, usually brilliant in colour, both above and below the eye, the plumage glossy. The female has either no eye-wattle or one much reduced and the plumage duller.

The minute bird depicted is *Erythrocercus mccallii*. It has the crown and also the tail bright rufous, contrasting with the back.

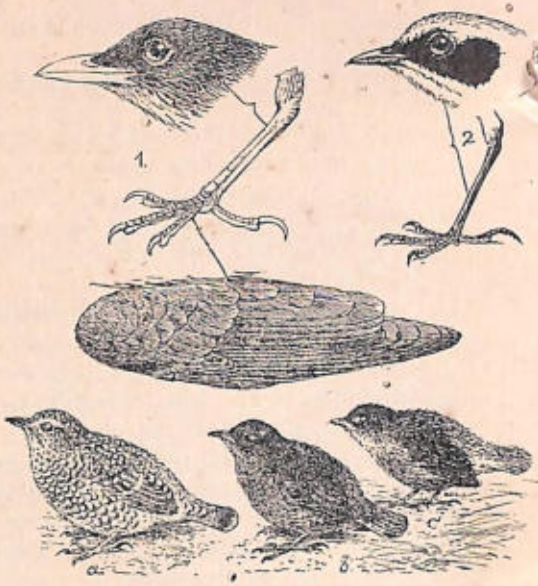
The genus *Erannornis* is represented by the Fairy Blue Flycatcher (*E. longicauda*), whose plumage is verditer-blue throughout. The tail figured opposite is the same colour and strongly graduated in shape.

In *Trochocercus* the head is crested and the gape furnished with strong bristles. The tail is but slightly graduated.

In the genus *Tchitrea* we place the Paradise Flycatchers, some members of which are dimorphic, the males showing every combination of black, white and chestnut, but usually having a glossy steel-green or blue-grey crest. In some the head is crested, in others not. Rictal bristles are short. The main character is in the tail, the central feathers of the adult males being greatly elongated to, in some cases, 13 in. In females and young males these plumes are short.

The family *Muscicapidae* is well represented in Africa. In our area alone there are 57 species, which are placed in 20 genera. Sixteen of these have their salient features illustrated on pp. 56 and 58. The four genera not here listed are *Ficedula*, *Alseonax*, *Parisoma* and *Bradornis*, the members of which are all very closely allied to *Muscicapa*.

Family Turdidae



Genus Turdus



Genus Geokichla



Genus Neocossyphus



Genus Monticola



Family Turdidae

THE family TURDIDAE embraces not only the true thrushes (*Turdus*) but many genera which for one reason or another have been allied with it. Such for instance are the wheatears, the chats, robin-chats, alethes, redstarts, nightingales and various allied forms. The genera into which the thrush family is divided will be found illustrated on the opposite page and the two following pages.

The wide composition of the family precludes any precise diagnosis. Even the character of the young having spotted plumage is not without its exceptions, for both in *Neocossyphus* and *Myrmecocichla* the young resemble the adult, and the same is probably true of *Cercotrichas*. For all that the character is a useful guide, as all but the genera mentioned subscribe to it.

In size the thrushes and their allies vary from that of the widespread African Thrush *Turdus libonyanus* or the White-crowned Robin-Chat, which measures nearly 11 in. from bill to tail, to the smaller robin-chats in the genus *Cossypha* and the Scrub-Robins (*Erythropygia*), the latter barely exceeding 6 in. in length.

In the eight drawings at the top of the opposite page there are shown (Fig. 1) the head, foot and wing of a typical member of the family, and on the right (Fig. 2) are the head and foot of a wheatear with more slender tarsus and weak toes. The tarsus in both is fused, covered by one plate or fused scutes. The wing is that of *Turdus libonyanus*, which is more or less representative of the whole family. The three young birds illustrate (*a*) a normal chick of the *Turdidae*, and chicks of (*b*) *Myrmecocichla* and (*c*) *Neocossyphus*, the last two differing little from the dress of the adult.

The four figures below represent four genera: *Turdus*, the true thrushes, not unlike our European thrush or blackbird; *Geokichla*, the Ground Thrushes, with shorter tail and distinctive colour pattern, the head and wings marked with black and usually orange under parts; *Neocossyphus*, the Ant Thrushes, which have not spotted young and with wings bearing incipient spurs; and *Monticola*, which embraces two species of Rock-Thrush, the males with slate-blue colouring (one with a reddish tail) and females with barred or mottled under parts. These and many other genera to be illustrated hereafter compose this great family, which in West Africa is represented by 43 species placed in 20 genera.

All types of terrain are frequented by the *Turdidae*; the rock chats live among cliffs, the wheatears in the deserts, alethes and robin-chats (the latter renowned for their voice) frequent the depths of the forest; the redstarts and nightingales the savannas. Some live high up in mountains, others on the plains. There is, in fact, no part of our area where some member of the family does not occur.

Family Turdidae (*continued*)



Genus Oenanthe





Genus Cercomela

Genus Pentholaea



Genus Thamnolaea



Genus Myrmecocichla



Genus Saxicola



Genus Cossypha



Family Turdidae

THE genus *Oenanthe* includes the wheatears; the upper figure illustrated is *Oenanthe oenanthe* which is typical of most in the genus, the plumage harmonising closely with the desert ground frequented, an exception being *Oe. leucopyga* figured below, which is black and white. In every species the basal part of the tail-feathers is white and the rump too in all but one species. The wing is pointed, and the birds are capable of sustained flight. The tarsi are exceptionally fine.

The genus *Cercomela* contains two species in our area—small birds, slender in build and dull in plumage, one with a black, the other with a red tail. The rectrices are rather long and the bill is fine and compressed.

In the genus *Pentholaea* the plumage is blackish, the males having a white frontal patch and, in the bird figured (*P. albifrons limbata*), a white shoulder-patch in addition. The black feet and legs are very slender and weak.

The genus *Thamnolaea* includes several typical cliff-chats, larger than the chats in the genera already mentioned. They have long broad tails and rather long, rounded wing. Males are mostly blackish, with rufous on rump and white on shoulders, more rarely on the crown.

The genus *Myrmecocichla* is represented in our area by two species, one black with some white on the wings, the other (figured opposite) all brown with a white quill lining. The legs and tarsi are stout.

The genus *Saxicola* contains the stone-chats and whinchats, small neat-looking birds with rounded wings, slender black legs and short bills. Both have some white at the base of the tail, and the male stonechats have distinctive coloration, black head, chestnut breast-band, white rump and belly.

In the genus *Cossypha* the members mainly have rufous-orange under parts and the same colour in the tail; all have white in some form on the head, either on the crown or with a broad white eye-brow. In size the species vary from under 6 in. to 10 in. in length. The wing is rather short and rounded; the outer primary is more than half the length of the next.

Family Turdidae (*continued*)

Genus Cossyphicula



Genus Sheppardia



Genus Stiphrornis



Genus Alethe



Genus Cichladusa

Genus Erythropygia



Genus Cercotrichas

Genus Phoenicurus



Genus Luscinia



Family Turdidae

In the genus *Cossyphicula* the only species contained therein is characterised by a broad flattened bill with long bristles at the gape. The tail is very short, and in coloration the bird, *C. roberti*, is very like a European Redbreast with an exceptionally large eye.

The genus *Sheppardia*, in which we place the Whiskered Robin, is characterised by the slightly arched bill with extremely long wide-spreading bristles springing from the gape as shown in the illustration. It has an orange-rufous breast, white belly and olive upper parts. It lives in the depths of the forest.

The genus *Stiphrornis* includes the forest robin with bright orange breast, white belly and a prominent white spot in front of the eye; the rest of the plumage is olive-green. Feet and tarsi are weak and the tail is short. The bill is noticeably fine and compressed.

In the genus *Alethe* we include a number of ground-dwelling forest birds, about 7–8 in. in length with whitish under parts and chestnut upper parts. The wing is rather long, the tail square at the tip and normal in length; the feet and tarsi are rather powerful.

In *Cichladusa* we find birds which are rather larger than the Alethes, reddish-brown above with characteristic rufous and rather long tails. Feet and tarsi are powerful. The black bill is compressed and slightly arched. The young of the Morning-Warbler have not been examined.

The genus *Erthropygia* contains small birds, all of which have large white spots on the wing-coverts, a well-defined white eyebrow stripe, black moustachial streaks, a rufous rump and strongly graduated rufous tail tipped with white. *E. hartlaubi* is figured opposite.

The genus *Cercotrichas* contains a single species, *C. podobe*, characterised by the very long tail about $4\frac{1}{2}$ in. in length, strikingly graduated with broad white tips. In body plumage the bush-robin is slate-black, but the quills have chestnut inner webs. The wing is short and rounded, the bill black and rather fine.

In *Phoenicurus* we place the redstarts with their distinctive fairly long and red tails, the bill short, straight and slender, the wing long and pointed. The Common Redstart is the only species which occurs in our area as a winter visitor from Europe.

The genus *Luscinia* embraces the nightingale, which is more like a large warbler than a member of the thrush family, to which it belongs by reason of its spotted young. Rufous-brown above, ashy-white under parts, pale brownish breast and chestnut-brown tail complete the colour scheme. The wing is long and pointed, as becomes a migrant from Europe. Its rich notes may be heard in the tropics before it leaves for its breeding quarters.

Family Sylviidae

Genus Sylvia



Genus Agrobates



Genus Hippolais



Genus Acrocephalus



Genus Lusciniola



Genus Lusciniola



Family Sylviidae

THE family SYLVIIDAE embraces an enormous number of species which are conveniently, but not always accurately, referred to as warblers—a very elastic assemblage which includes in West Africa alone 27 genera and 88 species.

None of the *Sylviidae* have spotted young, as have nearly all those birds which are grouped in the *Turdidae* or thrush family. A great many young warblers have plain yellow under parts or their ventral surface washed with that colour, but colour alone cannot be considered a diagnostic character to the same extent as plumage pattern.

Of their form and shape it is almost impossible to write with any clear definition. Most warblers are small birds, ranging from the genera *Sylvietta* (*circa* 3 in. in length), *Phyllolais* (*circa* 4 in.) or *Spiloptila* (*circa* 5 in.) to the genus *Melocichla*, in which we place the Great Reed Warbler, measuring quite 8 in. from bill to tail.

Very varied again is the colouring displayed, but for the most part warblers are birds of sombre hues, brown, grey and olive predominating in most genera. The brightest-patterned members are found in the genus *Apalis*, while the bright yellow displayed by some species of *Eremomela* helps to brighten a rather dull collection.

In visible structural characters there is so much variation that it is impossible to give any collective description. The bill is generally fine and weak with a high culmen; rictal bristles are inconspicuous even when present. Legs are usually long and, except in some Cane-Warblers (*Calamoecetor*), are slender, the feathering of the thighs seldom reaching beyond the tibia. The wing varies very much in shape. Composed of ten primaries, it is long and pointed in the migratory species, very short and rounded in some sedentary forms. The tail shows even greater structural variation, being usually composed of twelve feathers, but in some genera only ten are present.

Space does not permit even the brief description of characters allowed in my diagnosis of the *Sylviidae* in volume v of my larger work, but that, when possible, should be consulted. All the genera in the *Sylviidae* are figured in the illustrated key in the following pages, and this is perhaps the clearest way to define the many groups.

Reading from the top, the genus *Sylvia* contains numerous species in Africa, several of which are Palaearctic migrants; in *Agrobates* the long, graduated broad tail is the main feature; in *Hippolais* (which includes the Icterine and Melodious Warblers) the flattened fly-catcher-like bill. *Acrocephalus* includes the Reed and Sedge Warblers, dull-coloured birds, plain brown or streaky above, pale and uniform below. Some are resident, others migratory. Last on the page opposite is *Lusciniola;* its striking white eye-stripe and fan-shaped tail are characters to note.

Family Sylviidae

Genus Sylvia



Genus Agrobates



Genus Hippolais



Genus Acrocephalus



Genus Lusciniola



Genus Lusciniola



Family Sylviidae

THE family SYLVIIDAE embraces an enormous number of species which are conveniently, but not always accurately, referred to as warblers—a very elastic assemblage which includes in West Africa alone 27 genera and 88 species.

None of the *Sylviidae* have spotted young, as have nearly all those birds which are grouped in the *Turdidae* or thrush family. A great many young warblers have plain yellow under parts or their ventral surface washed with that colour, but colour alone cannot be considered a diagnostic character to the same extent as plumage pattern.

Of their form and shape it is almost impossible to write with any clear definition. Most warblers are small birds, ranging from the genera *Sylvietta* (*circa* 3 in. in length), *Phyllolais* (*circa* 4 in.) or *Spiloptila* (*circa* 5 in.) to the genus *Melocichla*, in which we place the Great Reed Warbler, measuring quite 8 in. from bill to tail.

Very varied again is the colouring displayed, but for the most part warblers are birds of sombre hues, brown, grey and olive predominating in most genera. The brightest-patterned members are found in the genus *Apalis*, while the bright yellow displayed by some species of *Eremomela* helps to brighten a rather dull collection.

In visible structural characters there is so much variation that it is impossible to give any collective description. The bill is generally fine and weak with a high culmen; rictal bristles are inconspicuous even when present. Legs are usually long and, except in some Cane-Warblers (*Calamoecetor*), are slender, the feathering of the thighs seldom reaching beyond the tibia. The wing varies very much in shape. Composed of ten primaries, it is long and pointed in the migratory species, very short and rounded in some sedentary forms. The tail shows even greater structural variation, being usually composed of twelve feathers, but in some genera only ten are present.

Space does not permit even the brief description of characters allowed in my diagnosis of the *Sylviidae* in volume v of my larger work, but that, when possible, should be consulted. All the genera in the *Sylviidae* are figured in the illustrated key in the following pages, and this is perhaps the clearest way to define the many groups.

Reading from the top, the genus *Sylvia* contains numerous species in Africa, several of which are Palaearctic migrants; in *Agrobates* the long, graduated broad tail is the main feature; in *Hippolais* (which includes the Icterine and Melodious Warblers) the flattened fly-catcher-like bill. *Acrocephalus* includes the Reed and Sedge Warblers, dull-coloured birds, plain brown or streaky above, pale and uniform below. Some are resident, others migratory. Last on the page opposite is *Lusciniola;* its striking white eye-stripe and fan-shaped tail are characters to note.

Family Sylviidae (*continued*)

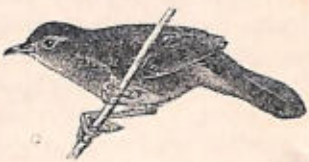
Genus Phylloscopus



Genus Seicercus



Genus Bradypterus



Genus Calamoecetor



Genus Calamonastes



Family Sylviidae

In the text figures drawn by the late Henrik Grönvold which illustrate the key to the *Sylviidae* I have attempted with the artist's help to portray the salient features of each genus, beginning with *Sylvia* on page 66 and ending with the genus *Bathmedonia* on page 74. It is only possible to illustrate one species representative of each genus, but the drawings will assist the reader in his identifications better than pages of description. The latter I have kept as brief and as untechnical as possible.

Warblers must be considered the most beneficial of birds, for though some are partly fruit-eaters their staple diet is insectivorous, and millions of insect pests must be consumed by the warblers in tropical Africa every year. Few warblers can be considered to have attractive voices; their cries are usually weak, but the Cane-Warblers are possessed of deep rich ventriloquial notes, and the Blackcap can truly be considered a songster of exceptional merit.

Five genera are figured opposite to which reference must now be made.

The genus *Phylloscopus* includes a number of well-known warblers which breed in Britain and winter in tropical Africa, among which the Chiff-chaff and Willow Warbler and many others familiar at home may be instanced. These have mainly olive or yellowish plumage with yellow axillaries and under wing-coverts. As with most Palaearctic migrants, the wing is fairly long and the tail square.

The genus *Seicercus* includes a single tropical species in our area which is tit-like in appearance. Its colouring is distinctive—bright green upper parts, black crown and eye-stripe and buff cheeks. The first primary is more than half the length of the second.

The species in the genus *Bradypterus* are remarkable for their extremely short wings and for the rounded or graduated tail, the shafts stiff and the webs "decomposed." Legs and feet are strong, as becomes Swamp-Warblers, which cling to reed-stems.

The genus *Calamoecetor* includes the Cane-Warblers, in which the wing is very short, the first primary long extending beyond the primary coverts. In the various species the tail is long and the feathers are broad, but not with the webs disintegrated as in *Bradypterus*. Mostly large birds (for *Sylviidae*), 5½–6½ in. in length, they have powerful feet and legs. These birds spend their life among reeds, thick grass and low scrub in swampy areas.

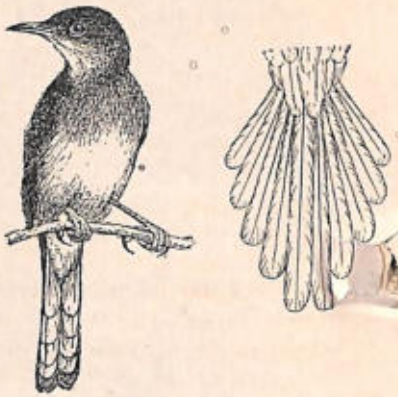
Calamonastes is the last genus figured on the page opposite, represented by a single species, the plumage of which is entirely grey. The wing is rounded and short; the tail of twelve rectrices is fan-shaped, but the four central feathers are almost the same length.

Family Sylviidae (*continued*)

Genus Schoenicola



Genus Apalis



Genus Eminia



Genus Urolais



Family Sylviidae

THE genera illustrated on the opposite page include species which are all easy to recognise, as all have very distinctive features in one way or another. Most difficult to recognise are perhaps the Swamp-Warblers in the first genus mentioned.

The Swamp-Warbler in the genus *Schoenicola* is the only representative in West Africa. It may be recognised by the very long (3½ in.) broad tail, the feathers of which are more graduated than in any other species. The under tail-coverts are exceptionally long and extend half-way down the tail. The wing is rounded and short.

The genus *Apalis* is less easily described than the above. Its members are usually rather bright-coloured and all have a fairly long graduated tail of twelve feathers. In many the outer rectrices are white throughout their length, contrasting with the darker central ones. The wings are short. In appearance the Forest Warblers are neat little birds with distinctive colour pattern.

Eminia is another genus which claims but a single species. The male has a black head and the body plumage chestnut; the tail is graduated and long for the small size of the bird.

The single species in the genus *Urolais* is the possessor of an extremely long tail of ten feathers, the central feathers being twice the length of the next pair; the outer feathers, on the contrary, are so short that they can easily be overlooked. The bill is fine and the wing short and rounded. This is another genus in which only one species is known, restricted apparently to high elevations.

Family Sylviidae (*continued*)

Genus Drymocichla



Genus Phyllolais



Genus Sylvietta



Genus Eremomela



Genus Poliolais



Genus Camaroptera



Genus Cisticola



Genus Cisticola



Family Sylviidae

In the monotypic genus *Drymocichla* the colouring is grey with bright chestnut edging to the wings, the thighs contrasting with the rest of the plumage. The tail of ten rectrices is rather long and graduated, the outermost feathers falling considerably short of the next pair. The tarsus is fine and the feet are comparatively small; the black bill is quite straight. The outermost remex is broad and long, more than half as long as the next; the wing is short and rounded.

In the genus *Phyllolais* we place a very small bird with very fine bill. There is only one species, *pulchella*, the plumage of which is olive-grey above, buff below. The tail is highly graduated and patterned; tarsus fine; wing of medium length.

The genus *Sylvietta* is characterised by the exceedingly short tail, the tip of the folded wings extending to the tip of the tail, and in some instances beyond. All are very small birds; wings are short and rounded, with the first outermost primary more than half the length of the second.

The genus *Eremomela* embraces certain small birds with short, rather stumpy bills, the plumage often with yellow on breast or belly, but one species with black breast-band. Wings are fairly long, and the outer remex is also long.

The genus *Poliolais* is characterised by having the outstretched feet extending considerably beyond the tail and by having the outer pairs of tail-feathers pure white. The tail is slightly rounded, of twelve rectrices. The bill is as long as the crown, and almost straight.

In *Camaroptera* the tail is short. The wing is of medium length, the first primary being more than half as long as the second; the rump-feathers are always soft and abundant, and the general plumage colouring is dark green or dark grey. A distinctive character is to be found in the contrasting colour (yellow-ochre, rufous or brownish) of the feathers of the thighs. The rather long bill is straight and not hooked at the tip.

Cisticola is a large genus comprising forty species. Small to tiny birds, bills of great variety of length and shape, wings short and rounded with ten primaries, third to sixth emarginate. Tail of twelve feathers varying greatly in length, usually graduated and decoratively coloured, with spotted fan pattern or more seldom plain. Many species have a double moult and a breeding dress very dissimilar to the off-season dress; others retain a perennial breeding dress throughout the twelve months. There are nineteen of these Grass-Warblers in our area.

Family Sylviidae (*continued*)

Genus Heliolais



Genus Melocichla



Genus Spiloptila



Genus Prinia



Genus Herpystera



Genus Bathmedonia



Family Sylviidae

In this genus, *Heliolais*, the colour of the plumage is striking. As in many species, the tail, of twelve narrow feathers, is graduated, tipped with white and with subapical black spots. The back is vinous and grey, the wings are chestnut and under parts tawny, white on throat. The bill is rather longer than usual and slightly decurved. The wings are not particularly short in this genus. The feathers covering the rump are loose and long.

In the genus *Melocichla* we place a very large warbler with extremely short rounded wings. The tail is composed of twelve rectrices, long and broad. The bill is powerful, deep and curved; the feet and legs are likewise strong. The feathers on the forehead are stiff, those on the lower back very loose and soft and overhanging. The species in Africa has a pronounced moustachial stripe.

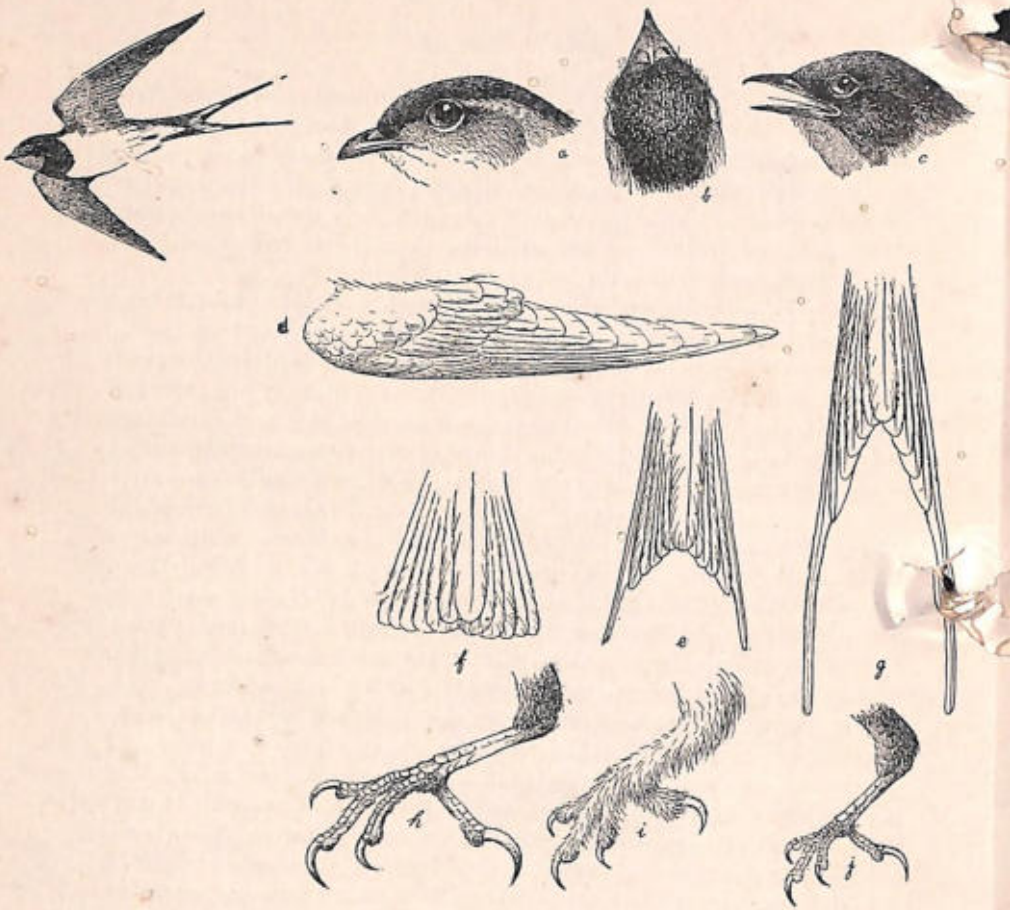
Spiloptila is a monotypic genus, the only species being a diminutive denizen of sandy country on the edge of desert. The feathers of the crown are scale-like and stiff to the touch. The colour pattern and structure are both arresting, the tail is extremely graduated, of twelve feathers, often held at right angles, white-tipped with subapical black bars. The upper parts are palest rufous, under parts satiny white, tinged buff. The wing-coverts are stiff (as the crown feathers) and most conspicuously marked, black with white borders. The bill is weak and decurved; the legs and feet are also rather weak.

In the large genus *Prinia* the tail is always strongly graduated and usually ends in a pattern; the number of rectrices is ten only. The wing is short and very rounded, but the outer first primary is considerably more than half the length of the second in this genus. The bill is slender and almost straight. In colour and colour pattern considerable diversity occurs. The sexes are practically alike in plumage. In almost every species a subterminal dark bar is present on the rectrices.

The genus *Herpystera* is remarkable not only for the flattened upper mandible but for the exceptionally graduated tail. It is even more remarkable for the unique banded pattern of the plumage, which is not found in any species of *Prinia*. *H. bairdii* has, apart from the colour pattern, a more flattened upper mandible than in any *Prinia* and the entire bill is stouter and broader at the base.

Bathmedonia is another monotypic genus, the single species being chiefly noticeable for its colouring—rufous and black in the male. It resembles *Bradypterus* in its short wing and broad tail of graduated feathers, ten in number, with stiff shafts and decomposed webs. The legs are fairly strong. The sexes are dissimilar in plumage. The tail is sometimes carried at right angles to the body. The bill, like the feet, is comparatively stout.

Family Hirundinidae



Sub-family Hirundininae

Genus Hirundo



Genus Pseudhirundo



Family Hirundinidae

THE family HIRUNDINIDAE is one of the better-defined groups of Passeres in which we place the swallows. Of world-wide distribution, the species are for the most part easily recognised as belonging to the family, for all have a superficial likeness to one another. Though not brightly coloured, the upper parts are usually extremely glossy, blue in various shades predominating. In form and shape they have the advantage of being easily recognised. Their flight is characteristic, and being strongly gregarious and widespread they are not easily overlooked.

On the page opposite and the page following the chief characters of the group have been portrayed by the artist, the late Henrik Grönvold, whose clear drawings should enable the birds depicted to be readily recognised. Within our limits we embrace twenty-seven species, which we place in eight genera. It will be observed that I have placed one aberrant species in a distinct sub-family, *Pseudochelidoninae*. All the other West African swallows are included in the *Hirundininae*.

Swallows have the crown rather flat as shown in Figs. *a–c*, with bill varying between the two extremes in *a* and *c*. The wing (*d*) has nine primaries and is long and pointed and lacks apparently the usually diminutive outer remex. Three tails are illustrated: (*f*) *Riparia*, the Sand Martin, square; (*g*) *Hirundo abyssinica*, with medium fork; (*e*) *H. lucida*, strongly forked.

The feet are always weak; in the drawings opposite (*h*) depicts the foot of species in the genus *Hirundo*, (*i*) that of the Common House Martin (*Delichon*), (*j*) *Riparia paludicola*, representing the Sand and Crag Martins.

The genus *Hirundo*, in which we place the European Swallow and a number of African species, including the Red-chested Swallow figured opposite, are typical members of the family, with forked tails ornamented with white spots. In many species the outer rectrices are much attenuated. Four species occur in our area and all have glossy blue upper parts and bills similar to those in the illustrations *a*, *b* and *c*. Swallows in this and the following genus build cup-shaped nests of mud.

The genus *Pseudhirundo* has been created for the Grey-rumped Swallow (*griseopyga*), which is characterised by its remarkably weak bill and slit-like nostrils. It has a forked tail as depicted, like *Hirundo*.

On the page following the remaining genera will be discussed.

Family Hirundinidae (*continued*)
Sub-family Hirundininae

Genus Lecythoplastes



Genus Riparia



Genus Ptyonoprogne



Genus Delichon



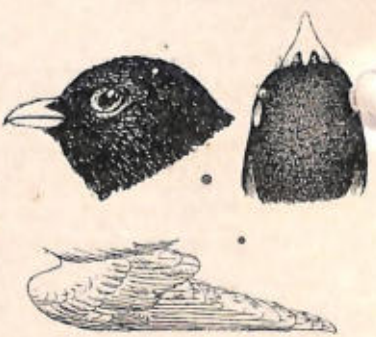
Genus Psalidoprocne



Sub-family
Pseudochelidoninae



Genus
Pseudochelidon



Family Hirundinidae

In the genus *Lecythoplastes* I include two Cliff-Swallows. The one figured with a white rump is *L. preussi*, the other *L. fuliginosa*, entirely dark brown. The tail is slightly forked and the wings are long, reaching when folded beyond the tip of the longest tail-feather. These birds make mud cup-shaped nests which they affix to crags or beams of houses.

In the genus *Riparia* we group the Sand-Martins, of which there are several forms in our area. Two resident species occur (one of which, *R. congica*, is figured opposite) with square or slightly forked tails. To this group belongs the European Sand-Martin, which migrates to West Africa in winter. It may be recognised by the small tuft of whitish feathers at the back of the tarsus, a peculiarity not shared by the other two species. Sand-Martins lay their eggs at the end of tunnels which they excavate themselves.

The Rock or Crag Martins, which we place in the genus *Ptyonoprogne*, are uniformly coloured with conspicuous white spots on all but the outer tail-feathers. The folded wing-tips reach considerably beyond the tail in this genus. Crag Martins build mud nests in colonies on the face of cliffs.

The European House-Martin is the only representative of the genus *Delichon* which visits West Africa as a winter migrant. Its white rump and strongly forked tail and rather large size should proclaim its identity. A unique structural feature is the feathered legs and toes. It builds mud nests against walls and houses but does not breed within our limits.

The genus *Psalidoprocne* embraces the Rough-winged Swallows, so termed on account of the minute hooks with which the outer barbs on the outer primaries of the adult male are furnished, causing a distinctly roughened edge to the wing. The bill is extremely weak and the tail long; in the species illustrated (*P. obscura*) the tail is scissor-shaped but in the other members of the genus is less exaggerated. These swallows nest in the holes in banks.

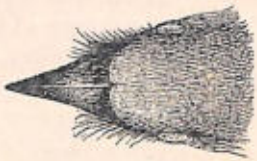
In the genus *Pseudochelidon* we place the very remarkable aberrant species illustrated, *P. eurystomina*. In this genus the wing of nine primaries is very long and pointed, extending when closed far beyond the rectrices; unlike the wing of the *Hirundininae*, it has a definite outward curve when closed. The tail of twelve feathers is square, the tarsus smooth; the most noticeable feature is the orange-scarlet bill, which is not triangular-shaped but shaped as in the illustration opposite. These martins excavate their nests in the nearly level surface of the sand, the burrows running down obliquely for 3–6 ft., at the far end of which they lay their eggs.

Family
Campephagidae











Genus Campephaga



Genus Coracina



Genus Cyanograucalus



Genus Lobotos



Family Campephagidae

THE family CAMPEPHAGIDAE, or cuckoo-shrikes, embraces a group of birds which share the peculiar character of having a heavily cushioned rump, the feathers of which are exceptionally thick and ample and the shafts stiff. If these rump-feathers are lifted up, the short spiny shafts can be felt with the finger. In form and plumage cuckoo-shrikes show considerable variation. The African members are roughly comparable with a starling in size, some slightly larger, some smaller. The bill is usually strong, broad at the base and hooked at the tip; stiff bristles spring from the gape; the nostrils are hidden by small feathers. The foot is moderately strong, the tarsus scutelate in front, smooth behind.

Cuckoo-shrikes have a moderately long wing and tail except in the Blue Cuckoo-Shrike. In this family the sexes differ from each other in coloration, especially in *Campephaga*, in which the males have glossy plumage and in one species a scarlet shoulder-patch, the females being yellow and olive or with barred under parts, as shown in the illustration opposite. In the other genera the sexual distinctions are of a minor degree.

All cuckoo-shrikes, except the *Coracina* group, which are grey or grey and white, are brightly coloured, and in *Cyanograucalus* the plumage is entirely blue of a lovely shade. *C. azureus* is the species figured opposite. Its bill is weak and the tail shorter than in most cuckoo-shrikes.

In one genus, *Lobotos* (the lower figure on the opposite page, and also the third head from the top), the species is remarkable for the orange or yellow fleshy wattles hanging from the gape. There are two species in our area; the one figured is *Lobotos lobatus* with glossy greenish-black head, olive back and chestnut under parts and a yellow wattle; the other with black head, yellow collar and golden under parts, having an orange wattle (*L. oriolinus*). These are rare forest birds.

Those species of which we know the breeding habits build shallow nests in high trees; but we have much to learn about this family, some of whose members are restricted to the primeval forests, others to savanna.

In our area there are eight species, which I place in four genera, as indicated opposite.

Family Dicruridae



Genus Dicrurus



Genus Dicrurus



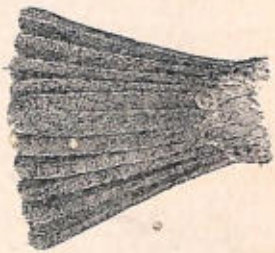
Genus Dicrurus



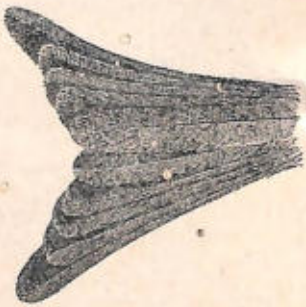
Genus Dicrurus



Genus Dicrurus



Genus Dicrurus



Family Dicruridae

In the family Dicruridae we place a group of birds known universally in the Old World as drongos. They have certain marked characteristics both in structure and in habits which single them out for family rank.

Drongos are noted for their pugnacious habits, attacking with impunity birds ten times their size, for drongos are comparatively small birds, about the size of the European starling. In colour they are, all of them, black glossed with a varying amount of blue or green. Most of the species have red eyes, which give to the owner a peculiarly ferocious look. They make curious flimsy hammock-slung nests, usually suspended far out of reach at a considerable height from the ground. The members of this family in Africa are all placed in the genus *Dicrurus*.

In the drawings opposite the entire figure on the left represents *Dicrurus modestus coracinus*, which may be considered typical of the whole group. A side and dorsal view of the head of this species is given opposite. The stout decurved bill is shrike-like, the gape bristles are prominent, the upper mandible ending in a hook. Below is figured a typical leg, the tarsus scutellated in front, smooth behind; it is distinctly strong. The leg depicted of *D. m. coracinus* is drawn natural size. The wing, of ten primaries, is long and pointed and the birds are capable of swift flight.

I have left till the end the most important feature of the family, the tail. In the drawings opposite there are shown three examples, varying in shape from the square-shaped tail of *D. sharpei* (the middle figure), which when fully extended is almost convex, to the strongly forked tail of *D. modestus* (the lower figure), the largest of all the drongos. A forked tail is usually associated with this family. The upper illustration depicts the tail of *D. adsimilis*, which is only slightly forked, while concave to an even less extent is that of *D. atripennis*, which is not figured. All three tails are drawn half natural size. The number of rectrices is ten only. In the shrikes (*Laniidae*) there are twelve feathers.

Within our limits we recognise four species, which may be found in thick bush in dry areas, in parkland, secondary forest and in the depths of primary forest respectively.

Family Prionopidae



Genus
Prionops



Genus Prionops



Genus Sigmodus



Genus Sigmodus



Family Prionopidae

In the family Prionopidae we place the Helmet-Shrikes, which are chiefly remarkable for their head-feathering. In Africa two genera, *Prionops* and *Sigmodus*, are recognised, examples of which are figured on the page opposite. The full figure on the extreme left represents the Long-crested Helmet-Shrike, *Prionops plumata*, with its extended crest, white-tipped long tail and conspicuous wing-bar. In the same genus is *P. concinnata*, with much shorter helmet-shaped crest. Both these birds have the eye surrounded with a chrome-yellow wattle as shown in the upper illustration. These eye-wattles are found also in *Sigmodus* but are less well developed than in *Prionops*. The feathers on the forehead in both genera are stiff and project forward to hide the nostrils entirely. In some species of *Prionops* these feathers curl inwards to form, where they meet, a peculiar raised ridge. As indicated by the figures, the crest plumes in *Prionops* vary in shape and length. They are not found in *Sigmodus*, in which the head-feathers are shorter and lie close against the skull like a cap.

The bill is strong, sharply hooked at the tip, black in *Prionops*, red in *Sigmodus* except in the young. In *Prionops* the plumage is entirely black and white; in *Sigmodus* there are more colours present —grey-blue, chestnut, black and white.

In both genera the wing is long and has ten primaries. The tail is composed of twelve rectrices; besides being long it is slightly rounded, not graduated. The feet are abnormally strong, the tarsi scutellated on both the side and the front. The texture of the plumage in the *Prionopidae* is much firmer than in the majority of *Laniidae* (the true shrikes), in which the feathers are loose and often disintegrated, particularly on the rump.

The *Prionopidae* are gregarious, moving about collectively, while in the *Laniidae* it is more usual to find the birds singly or in pairs. In West Africa the genus *Prionops* is represented by two species, as I now consider *concinnata* sufficiently distinct to have specific rank, and *Sigmodus* by two species. *Prionops* are birds of parkland and grass woodlands, *Sigmodus* of secondary and primeval forest.

Family Laniidae









Genus Lanius



Genus Corvinella



Genus Laniarius



Genus Dryophoneus



Genus Dryoscopus



Genus Chaunonotus



Family Laniidae

In the family LANIIDAE we group the shrikes other than the Helmet-Shrikes discussed on the previous page. One feature which all the *Laniidae* have in common is the notched and sharply hooked bill, extremely powerful as in the uppermost head figured opposite of *Malaconotus*; less so, but prominently "toothed," as in the next figure below (*Lanius*). Usually the bill is laterally compressed with a high ridge to the culmen, as in the lower figure on the left; but in the figure above it, representing the bill of *Chaunonotus* without any ridge, the culmen is rounded and the bill long. The leg and foot depicted opposite show that it is not particularly powerful. The wing has ten primaries and may be fairly long and pointed as in *Lanius* or short and rounded as in *Dryoscopus*. The tail of twelve feathers is often rather long and generally graduated or rounded.

The shrikes of the thirteen different genera, representing thirty-seven species in our area, are depicted on the opposite and the next page. In many species, particularly in those in the genus *Lanius*, the colouring is black and white; in other genera, such as *Chlorophoneus*, *Malaconotus*, *Telophorus*, etc., red, yellow and green are prominently displayed. The young are often barred, as depicted in the top figure on the extreme left, of *Lanius collaris*.

The genus *Lanius* is the most typical of the shrikes, a representative member of which is *L. excubitor leucopygos* figured opposite, with black facial band and ear-coverts, long graduated tail, grey and white plumage and black and white wings and tail.

Corvinella is characterised by an exceptionally long and much-graduated tail, an exceedingly short bill for the size of the bird, yellow in colour, and, for shrikes, a unique striated colour pattern.

In *Laniarius* the bill is powerful, the wing short, the plumage of the rump abundant, often with partly concealed white spots, a long tail rounded at the tip or in some species graduated. Some are brightly coloured, others black or black and white.

In the genus *Dryophoneus* the sexes are alike in plumage and the young barred. *D. bocagei* is figured opposite.

In the genus *Dryoscopus* the bill is rather short, the mandibles are compressed slightly and the culmen is high. The feathers of the lower back and rump are long and loose, gaining for the birds the name of puff-back. The feet and legs are fairly powerful and the tail is comparatively long, rounded at the tip. The only difference in the sexes is that the male has a white, the female a grey, rump.

The genus *Chaunonotus* may easily be confused with the above. The males are almost indistinguishable, but in the hand *Chaunonotus* may be recognised by its extra long powerful bill with rounded culmen and no ridge. The pure white rump feathers are long, loose and silky and can be puffed out. The sexes are dissimilar in plumage.

Family Laniidae (*continued*)

Genus Nilaus



Genus Tchagra



Genus Antichromus



Genus Chlorophoneus



Genus Telophorus



Genus Malaconotus



Genus Nicator



Genus Neolestes



Family Laniidae

THE genus *Nilaus* has soft mantle and rump feathering and its mottled appearance is conspicuous with stripe over eye and wing-bar. The tail is rather short and practically square; the bill is short and less powerful than in most genera. It is also a smaller bird. *Nilaus afer* is the species figured.

In the genus *Tchagra* the bill is fairly long and powerful, the wing short, concave and rounded, with rufous edges to the primaries; the tail is graduated and fairly long, with a pattern at the tip. The feathers covering the rump are long, loose and ample. A pale eye-stripe is a marked feature. *Tchagra australis* is the species figured.

The genus *Antichromus* is closely allied to the above but has a shorter, blunter bill. The single species which we place in it, *minuta*, has no eye-stripe like the *Tchagra* shrikes and has a heavily mottled back in which black predominates. The rump-feathers are even more abundant and soft than in *Tchagra*, which it resembles in other ways.

The species in the genus *Chlorophoneus* are chiefly an assemblage of brightly coloured Bush-Shrikes, green and yellow, in some cases with red under parts as in the species *C. multicolor* illustrated, with the yellow spots on the wing and tail-tips and the black band through the eye. In this genus the wing is much longer than in the last two genera dealt with on this page. The tail is rounded at the tip.

Only one member of this African genus just comes within our limits in Portuguese Congo. *Telophorus viridis*, the species here figured, is striking in its green plumage, black breast-band and scarlet throat.

The genus *Malaconotus* may be recognised by the exceptionally large, long and heavy bill, strongly hooked, with the upper mandible slightly arched. Nostrils are open and lidless. The wing is of medium length, rather long tail with fan-shaped tip. The colouring is striking, green above with yellow tips to the wing-feathers and either yellow or red under parts. The species figured is *M. lagdeni*.

In the genus *Nicator* we place two somewhat aberrant shrikes *N. chloris* and *N. vireo* (figured), on account of the colour pattern of the wings, green in colour with conspicuous yellow spots. These are easily recognised. The tail is fan-shaped and rather long; the wings are short and rounded.

Neolestes holds but a single species, *N. torquatus*, figured opposite. It has a small bill for a shrike, wedge-shaped tail and rather longer wings than the *Nicator* shrikes. It is an easily recognised species by reason of its black breast and black border to the cheeks and throat, but only comes within our limits in the Lower Congo.

Family Oriolidae







Genus Oriolus









Genus Oriolus





Family Oriolidae

THE family ORIOLIDAE is that in which we place the orioles, a group which is represented in tropical Africa by eight species, of which five occur within our limits. They are all placed in the genus *Oriolus*, of which the illustration on the page opposite of an entire bird, depicting the Golden Oriole, is typical of the family.

The sexes are alike in the Black-headed Golden Orioles, but in the other species in our area the males are brighter than the females and have other minor distinctions. Young birds are sometimes heavily striated on the under parts.

The majority of orioles are more or less sedentary, but one which occurs in West Africa is a migrant and does not remain to breed. Mostly insectivorous and fruit-eating, destroying millions of caterpillars and grubs, they must be considered both beneficial and highly ornamental, well worthy of strict protection. Their flute-like notes are a joy to the ear. Orioles sling their frail nests hammock-wise between the forks of branches and lay very beautiful eggs.

Orioles have fairly strong but small feet and short tarsi with three or four scutes in front and smooth behind, as can be seen in the illustration opposite. In size they resemble a Rock-Thrush, but the bill is much heavier than in the thrush family, with rather broad culmen, and is also fairly long; the upper mandible slightly overlaps the lower. It is reddish in colour in adult birds. The pattern of the head, wing and especially of the tail, gives a clue to the identification of the various species. On the opposite page the three heads depict (from the top) the European Golden Oriole (*O. oriolus*), the African representative (*O. auratus*) and the Black-headed Oriole (*O. brachyrynchus*).

The tail of twelve feathers is prettily patterned; in black and yellow in *O. oriolus* and *O. auratus*, but in *O. brachyrhynchus* and *O. crassirostris* the middle feathers are green and in *O. nigripennis* jet-black. The tails are illustrated in my larger work, vol. v, page 451. They are rather short and graduated. The wing is long and pointed, with ten primaries. Four examples are shown opposite.

Wing of *Oriolus oriolus oriolus*. The broad white tips to the coverts form a noticeable bar. The tips of the primaries are yellow.

Wing of *Oriolus auratus auratus*. This is a very distinctive feature in this species; note the inner remiges with broad yellow fringe.

Wing of *Oriolus brachyrynchus brachyrynchus*. Note the white tips to some of the lesser coverts, and the grey and white edging to the quills.

Wing of *Oriolus nigripennis*. Very similar to that of the species figured immediately above it, but lacking the white tips to the coverts and without the pronounced greyish-white quill margins.

Family Paridae



Genus Melaniparus



Genus Anthoscopus



Family Corvidae







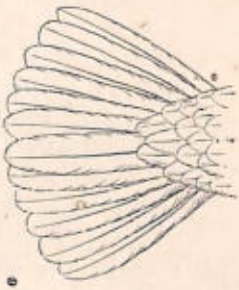


Genus Corvus

Genus Rhinocorax



Genus Rhinocorax



Genus Ptilostomus



Genus Ptilostomus



Families Paridae and Corvidae

THE family PARIDAE or titmice embrace within our limits two very distinct groups. The true tits, being all-black or black and white species, I place in the genus *Melaniparus*, of which a head, showing the fairly stout bill, is depicted opposite. All are about the size of the European Great Tit and have rather long wings and tail. They have much the same habits and make their nests in the holes of trees.

The other genus is *Anthoscopus*, the Penduline Tits, very small birds with brightly coloured foreheads and very fine bills. They weave remarkable hanging nests of felt-like texture with a bottle-neck entrance. A head typical of the Penduline Tits is shown opposite.

The family CORVIDAE includes the ravens, crows and magpie-like birds in West Africa, the first two represented by two genera and the last by an aberrant magpie, *Ptilostomus afer*. There are no jays in West Africa.

In form the crows and ravens resemble the figure of the Pied Crow opposite. They have powerful decurved bills, the nostrils covered with stiff bristles and the forehead often by stiff feathers. In *Corvus* the bristles are forwardly directed, the tail wedge-shaped of twelve feathers, and the foot and tarsus strong. The drawings depicting these characters are of the Brown-necked Raven (*C. ruficollis*). The other genus *Rhinocorax* is represented by the Short-tailed Raven (*R. rhipidura*). The bill is more stumpy and the bristles at the base protrude in a fan-shaped bunch as depicted in the drawing. The tail is slightly rounded and, as in *Corvus*, is made up of twelve feathers.

In the Pied Crow the plumage is black and white and in the two ravens in our area it is black, with an irridescent sheen of blue or purple.

In the genus *Ptilostomus* we place an aberrant magpie which is very unlike the magpie we know in Europe. It is remarkable for its short stumpy bill with short upcurled bristles over the nostrils and for its extremely long and strongly graduated tail composed of only ten feathers, which are stiff and narrow. These features are both depicted in the two lower illustrations facing.

The Piapiac, as *P. afer* is named, is illustrated in colour on Plate 46, facing p. 1212. It is a gregarious species which lives in flocks and builds a nest of twigs or palm fibres. A familiar bird on grazing lands, it follows the flocks and herds and shows a predilection for land upon which the borassus palm is growing. In flight it has a peculiar appearance, the tail being twice the length of the body.

The *Corvidae* are represented in our area by four species, placed in three genera.

Family Sturnidae

Sub-family Eulabetinae



Genus
Cinnyricinclus





Genus
Lamprocolius



Genus
Lamprotornis



Genus Coccycolius



Genus Onychognathus



Genus Pocoptera



Family Sturnidae

THE family STURNIDAE (from which I have now removed the genus *Picathartes*) embraces the true starlings contained in the sub-family *Eulabetinae* and the curious oxpeckers placed in the sub-family *Buphaginae*.

Apart from the two species in the genus *Buphagus*, the eighteen starlings with which we are concerned are classified in eight genera of the *Eulabetinae*, characteristic examples of which are depicted opposite and on the following page.

In the genus *Cinnyricinclus* the sexes differ, the adult male being brilliant metallic amethyst-purple above and white below, the female (and immature) buff and brown above, streaked below on white ground.

The Glossy Starlings in the genus *Lamprocolius* are moderate-sized birds with pointed wings, the outer primary exceptionally long, and more or less square tails. They are noted for their brilliant metallic plumage.

In *Lamprotornis* the species has a very long tail of twelve feathers which is strongly graduated. The plumage is metallic copper, green and purple, with some velvety-black spots on the wing.

The genus *Coccycolius* was proposed for the Emerald Starling, brilliantly garbed in metallic golden-green with purple on the sides of the face and on the abdomen. The wings are narrow and pointed with exceptionally short outer primary. It is smaller than the European Starling.

The genus *Onychognathus* is represented opposite by the full-sized lower figure under the sub-family heading and by two heads showing the differences in the size of the bill. The upper is of *O. fulgidus hartlaubii*, the lower of *O. morio neumanni*, in which the bill is short and deep. The wedge-shaped, evenly graduated tail is long in all the species, the plumage glossy blackish with chestnut wing-pattern conspicuous in flight.

In *Poeoptera*, which monotypic genus is represented by *P. lugubris*, figured opposite, the most remarkable feature is the strongly graduated long tail, also figured separately, in which the middle pair of rectrices protrude considerably beyond the next longest. It is a very small starling, glossy black in plumage with brown, pale-coloured primaries which look worn even directly after the moult. The bill is weak and short, the wings are rather long and pointed, and the feet are also rather weak.

Family Sturnidae (*continued*)
Sub-family Eulabetinae

Genus Grafisia



Genus Spreo



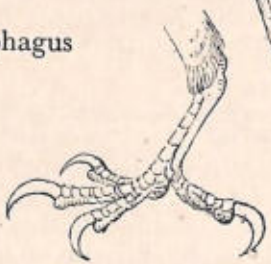
Sub-family Buphaginae







Genus Buphagus



Family Picathartidae



Genus Picathartes



Genus Picathartes



Families Sturnidae and Picathartidae

In the genus *Grafisia* the sexes are unlike in plumage, the male being glossy blue-black with white breast-band, the female grey, the upper parts with a blue gloss. The sole species is *G. torquata*. The tail is medium in length and rounded at the tip, the legs are fairly strong and the bill is moderate.

In this genus, which is also monotypic, the only species, *Spreo pulcher*, figured opposite, is a small bird, smaller than the last although depicted of equal size in the drawing. The tail is decidedly short and square-tipped, the bill moderate, and the legs and feet are exceptionally strong. Both sexes are alike in plumage, brownish head, metallic green upper parts and breast and chestnut belly.

Characters which point to the *Buphaginae* being a sub-family of the *Sturnidae* are mainly anatomical. The Yellow-billed Oxpecker is so named on account of the bird's habit of searching the skin of animals for ticks. Bill, tail and feet are all modified to that end. The bill is heavy, with a sharp cutting edge to the mandibles; the tail of ten stiff rectrices enables the bird to rest on the tail or on an animal's body in the manner of a woodpecker against the bark of a tree. The feet are strong, with short toes and amazingly sharp curved claws, which enable the bird to run over the body of an animal at any angle and retain its foothold in every conceivable position. Only one of the two species, *B. africanus*, occurs within our limits and is portrayed in the small drawing opposite; it is about the size of a European starling and sombrely coloured except for the bill, which is yellow with red tip.

The rock-fowls in the genus *Picathartes* have been elevated to family rank for reason explained in my eighth volume of *The Birds of Tropical West Africa*. The arrival of a living bird in London has convinced me that I was mistaken in placing them in vol. vi as a sub-family of the *Sturnidae*. The birds are distinctly jay-like in their actions, but being such singular birds of great antiquity I consider them best placed in a family, PICATHARTIDAE, having affinities with both the crows and starlings.

Both species, which are restricted to West Africa, are grey above and whitish below, the only bright patch being on the bare skin of the head and neck. The bill is long and heavy, with nostrils in the middle; the tarsus and feet are powerful, enabling the birds to spring a long distance. The wing is short and rounded; the tail rather long, of twelve feathers. The upper figure represents the head of *P. gymnocephalus*, the lower figure (in which the markings are reversed) *P. oreas*. Rock fowls inhabit high rock-strewn primeval forests and live mainly on or near the ground, making remarkable mud nests which they place against rocks or cliff faces.

Family Zosteropidae



Genus Zosterops



Genus Speirops



Family Nectariniidae











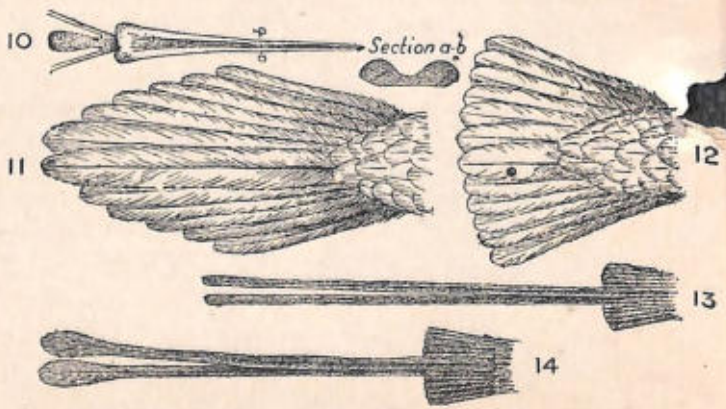












Families Zosteropidae and Nectariniidae

In the family ZOSTEROPIDAE (white-eyes) is included a small group of birds which is divided into two genera. The heads of a representative species of each are depicted opposite—the upper figure of *Zosterops senegalensis*, the lower of *Speirops lugubris*. In both a circle of small white feathers surrounds the eye. In *Zosterops* the species are little more than 4 in. in total length, and the plumage is yellow and green, or white, olive and buff. Their general appearance is shown in the small full figure on the extreme left of *Z. virens stenocricota*. In *Speirops* the species are rather larger (about 6 in.), and in the four species represented in West Africa two have blackish crowns, the others a white head. A curious feature is the tongue, which has brush-like appendages at the tip. Their general appearance is warbler-like.

The family NECTARINIIDAE (sunbirds) embraces a great number of species which occur all over tropical and subtropical Africa, the males being mostly brilliantly coloured birds, the majority with metallic plumage. Sunbirds for the most part are easily recognised and have certain structural peculiarities which differentiate them from other families. On this and the next page some of the main features will be illustrated. The figure of the whole bird opposite depicts *Cinnyris coccinigaster* and is typical of many species. The bill is in most genera long and gently decurved, with the mandibles finely serrated. In the figure numbered 1 opposite, the head of *Cinnyris coccinigaster* has been greatly enlarged to show these serrations as they would appear under a microscope. The nostrils are always visible, and are covered by a membranous lid. The tongue (Fig. 10) is very long and grooved (see section *a–b*) and has a peculiar attachment to the skull. The tail exhibits a variety of shapes, examples of which are depicted opposite. Fig. 11 shows the strongly graduated tail of *Dreptes*, Fig. 12 of *Cinnyris*, Fig. 13 of *Nectarinia* with the protruding middle rectrices, and Fig. 14 of *Hedydipna*, the protruding central feathers of which are racket-tipped.

Much diversity is shown in the shape and length of the bill, as may be seen from the illustrations opposite, which depict the heads (drawn natural size) of (2) *Hedydipna platura*, (3) *Cinnyris superbus*, (4) *Anthreptes collaris*, (5) *Cyanomitra verticalis*, (6) *Nectarinia pulchella*, (7) *Cinnyris senegalensis*, (8) *Anabathmis reichenbachii*, (9) *Dreptes thomensis*. Some definition of the genera accepted in this work will be given on the following pages, where each genus is depicted by a full figure drawing.

Family Nectariniidae (*continued*)

Genus Nectarinia



Genus Hedydipna



Genus Cinnyris



Genus Chalcomitra



Genus Cyanomitra



Family Nectariniidae

In the genus *Nectarinia* the bill is longer than the head and is somewhat curved. The central pair of tail-feathers are elongated in the male. The sexes are different; the males have brilliantly metallic plumage in the breeding season, non-metallic in the females. When not breeding the males assume a dress resembling the adult female and lose their metallic colours except on the lesser wing-coverts, but they retain the long central pair of tail-feathers even during the off-season. The species figured is *Nectarinia pulchella*.

In the genus *Hedydipna* the bill is shorter than the length of the head and barely curved. The central pair of tail-feathers are elongated during the breeding season, after which they are moulted. In the off-season the males go into eclipse plumage resembling the dress of the adult female. The long tail-feathers of the male end in a racket, being broadened towards the tip. The species figured is *Hedydipna platura*.

The genus *Cinnyris* embraces many species. They differ from *Nectarinia* and *Hedydipna* in not having elongated central tail-feathers. The have long, gently curved fine bills as shown in the illustration. In all the species the sexes are dissimilar, the males with bright metallic colours and often with brightly coloured, but not metallic, pectoral tufts of yellow, orange or scarlet; the females are very drab in comparison. The species illustrated is *Cinnyris coccinigaster*, which is typical of the West African species in this genus.

In the genus *Chalcomitra* none of the species have elongated central tail-feathers. The sexes are dissimilar, the males having the metallic colours confined to the crown and throat and sometimes to the rump, the body plumage being for the most part chestnut-brown or blackish. The females lack any metallic colouring and are dull brown and grey. Pectoral tufts are present in some species. The illustration is of *Chalcomitra fuliginosa*.

The genus *Cyanomitra* closely resembles *Cinnyris* the tail being square with no elongated plumes. The sexes are unlike, the females being strikingly different. In *Cyanomitra* the metallic colours are restricted to the head and throat and the general colour of the body plumage is olive or grey, not chestnut or blackish as in *Chalcomitra*. Pectoral tufts are usually present. The species illustrated is *Cyanomitra verticalis*.

Family Nectariniidae (*continued*)

Genus Dreptes



Genus Anabathmis



Genus Anthreptes



Genus Hylia



Family Nectariniidae

THE genus *Dreptes* was created for a remarkable sunbird which inhabits São Thomé. It is by far the largest of the sunbirds, with a wing of 82–94 mm. The bill in the largest males is 39 mm. in length and is sharply decurved. The tarsi are correspondingly powerful. Males and females are alike in plumage, though not in size. Another notable feature is the graduated tail. The metallic colours are restricted to the extreme ends of the feathers.

In the genus *Anabathmis* there are two island forms, *hartlaubii* and *newtonii*, and one mainland representative, *reichenbachii*. In these species the metallic colours are restricted to the throat or the throat and crown, the rest of the plumage being olive or olive-brown, in one species (*newtonii*) relieved with bright yellow on the breast. The outer rectrices have pale or whitish tips in all three species. Yellow pectoral tufts are present in *A. reichenbachii* alone. The bill is only very gently decurved. The species illustrated is *Anabathmis reichenbachii*.

In the genus *Anthreptes* the bill is characteristic, very much shorter and straighter, with no downward curve to the keel of the lower mandible. The plumage shows wide variation; for instance, in *Anthreptes aurantium* the colouring of the male is brilliant and metallic with pectoral tufts present; the sexes are dissimilar. In *A. gabonica* the plumage is mouse-coloured and alike in both sexes with no metallic feathers present and no pectoral tufts—unique colouring for a sunbird. The tail is square. In their habits they resemble in some respects the warblers and are clearly less specialised than the *Nectariniidae* already discussed.

In the genus *Hylia* the bill is shorter than the head and is slender and narrow with a slightly decurved culmen; the nostrils are slit-like and have large lid-membranes; the rictal bristles are minute; the tongue bones have flattened ends like those in the sunbirds, though not so long. The wing is rounded, the outer primary being half the length of the second, which is considerably shorter than the fourth and fifth, the longest primaries. The tail is square and rather short. *Hylia prasina* lays plain white eggs and builds a large globular nest. In these respects it differs widely from sunbirds. Its position in the avian tree must remain uncertain. The single species in this genus, *Hylia prasina*, is illustrated opposite.

Family Certhiidae



Genus Salpornis





Family Fringillidae
Sub-family Fringillinae



Genus Bucanetes



Genus Serinus



Genus Poliospiza



Genus Linurgus



Families Certhiidae and Fringillidae

In the family CERTHIIDAE we place the creepers, a group of birds which have only one representative in tropical Africa—*Salpornis spilonota*, the Spotted Creeper. The plumage is very distinctive covered with white spots as shown in the illustration. The bill is long, depressed and slightly decurved; the tarsus is short but the toes are long, furnished with sharp claws; the tail has twelve soft feathers and is not used as a support as it is in the European Tree-Creeper. It is chiefly found in orchard-bush country.

The family FRINGILLIDAE I divide into three sub-families, the finches, the buntings and the sparrows. The first named, the *Fringillinae*, embraces four genera, which are illustrated opposite. In this group the bill is usually short, stout and conical, with the cutting edge of the mandibles usually smooth and conterminous; the tail is of moderate length of twelve feathers; the tarsi are scutellated anteriorly and covered at the sides by entire laminae. This description is applicable to all the birds figured opposite.

The genus *Bucanetes* is represented by the Trumpeter Bullfinch, a desert-frequenting bird with red bill and sand-coloured plumage washed with rose-colour.

In the genus *Serinus* the basal half of the bill is much swollen and the terminal portion compressed. The figure under the sub-family heading is of *Serinus capistratus*, the Black-faced Canary, while that representing the genus depicts *Serinus mozambicus*, the Yellow-fronted Canary.

In the genus *Poliospiza* the bill is less swollen, generally longer than in *Serinus* and with the sides nearly straight. The bird figured is *Poliospiza gularis*, the seed-eater. The sexes are similar.

In the genus *Linurgus*, which is represented in the drawings by *L. olivaceus*, the Oriole-finch, the colour pattern is striking in the male, the black head and throat being in strong contrast to the bright yellow under parts and collar. The sexes are not alike. It is the only representative of the genus in Africa.

Family Fringillidae (*continued*)
Sub-family Emberizinae



Genus Emberiza



Genus Fringillaria



Sub-family Passerinae



Genus Passer



Genus Auripasser



Genus Gymnoris



Family Fringillidae

THE second sub-family of the *Fringillidae* includes the buntings (*Emberizinae*), which are distinguished from the *Fringillinae* discussed on page 105 by having the cutting edges of the mandibles not conterminous, leaving a gap in the outline of the closed bill. The general appearance of the buntings is indicated in two drawings on the page facing. The figure on the extreme left depicts *Emberiza forbesi*, the Cameroon Little Bunting, while the illustration representing the genus *Emberiza* is that of *E. cabanisi*, Cabanis's Bunting. In *Emberiza* the outer (first) primary is well developed; in the other genus (*Fringillaria*) included in this sub-family the outer primary is rudimentary. The genus *Fringillaria* is very like *Emberiza*, but the members contained therein, unlike the latter, have no white in the tail and no yellow in the plumage. The species illustrated is *Fringillaria tahapisi*, the Cinnamon-breasted Rock-Bunting.

The sub-family *Passerinae* includes the sparrows. The chief structural character is to be found in the wing, in which the outer primary is much reduced and is placed dorsally to the apparently ninth primary, so that the wing appears to consist of only nine primaries. Sparrows are for the most part dull-plumaged birds, brown, grey and white predominating in the colour scheme. All build untidy domed nests with the entrance at the side.

It has become the custom to consider the sparrows a sub-family of the *Ploceidae*, but while acknowledging that they have some features in common, the structural peculiarity of the wing formation mentioned above, which is not shared by the weaver birds, has induced me to retain them as a sub-family of the *Fringillidae*.

The *Passerinae* are represented by three genera in West Africa; the true sparrows (*Passer*), whose general appearance is well illustrated by the figure on the extreme left; the Golden Sparrows (*Auripasser*), one of which, *A. luteus* (figured opposite), has the head and under parts bright yellow and the back chestnut; and finally the Bush-Sparrows (*Gymnoris*), which share with the Rock-Sparrows (*Petronia*), the distinction of having a sulphur-yellow patch on the throat. The Bush-Sparrows are dull-plumaged birds in brown and grey and are found in the semi-arid belt of Africa.

Family Ploceidae

Sub-family Bubalornithinae

Genus
Bubalornis



Sub-family Plocepasserinae

Genus
Plocepasser



Sub-family Sporopipinae

Genus
Sporopipes



Sub-family Ploceinae

Genus
Symplectes





Genus
Phormoplectes



Genus
Othyphantes



Genus
Heteryphantes



Genus
Cinnamopteryx



Family Ploceidae

THE family PLOCEIDAE embraces the weaver birds, a very large group whose headquarters are in the African continent. Six sub-families are recognised: *Bubalornithinae* (1), *Plocepasserinae* (1), *Sporopipinae* (1), *Ploceinae* (54), *Estrildinae* (44), *Viduinae* (9), the numbers in brackets indicating the number of species represented in each within our area. These will be discussed and illustrated under the sub-family headings into which the genera fall.

The sub-family BUBALORNITHINAE includes two genera, *Bubalornis* for the Black Buffalo-Weaver, and *Dinemellia* for the White-headed Buffalo-Weavers, the latter occurring in East Africa but not in West. The former genus has one species only in our area, the male's head being illustrated opposite. It is remarkable for the heavy white bill, the basal half of which becomes swollen during the breeding season. The wing has a very long first primary. Members of this genus build bulky communal nests of thorny twigs and grass.

The sub-family PLOCEPASSERINAE is represented by a single species, which is placed in the genus *Plocepasser*. The head figured is of *P. superciliosus*, a bird which forms a link between the sparrows and the weavers. It may be recognised by its plumage—brown upper parts, chestnut crown and cheeks, white eye-stripe, black moustachial streaks and white under parts, with two white bars on the brown wings. The tail is square and the outer wing primary is about 21 mm. in length. It has communal and social nesting habits.

The sub-family SPOROPIPINAE is likewise represented by a single species in the genus *Sporopipes*. The head figured represents *S. frontalis*, the Scaly-fronted Weaver, having the forehead covered with black scale-like feathers speckled with white. A very small bird, it measures only $4\frac{1}{2}$ in. in length, with a well-developed first primary. The general colour is brown, the neck is light chestnut and under parts are smoke-white. A band of black feathers speckled with white extends below the ear-coverts.

The sub-family PLOCEINAE contains by far the greater number of the African weaver birds. Within our limits there are fifty-four species, which I place in twenty-two genera. In the *Ploceinae* the first (outermost) primary is usually (but not always) well developed, exceeding in length the primary coverts; the members of this sub-family build hanging nests intricately woven, lay coloured or spotted eggs and have young which do not exhibit black spots on the palate. All are fair-sized, about the size of a sparrow, some larger, a few smaller. Their plumage is very varied. On the opposite and the three following pages are depicted representatives of the twenty-two genera recognised. The five genera opposite will be described on page 111.

Family Ploceidae (*continued*)
Sub-family Ploceinae (*continued*)



Genus Melanopteryx



Genus Sitagra



Genus Plesiositagra



Genus Icteropsis



Genus Pachyphantes



Family Ploceidae. Sub-family Ploceinae

THE genus *Symplectes*, illustrated on the previous page, embraces a number of species which are yellow below and dark above, in which no seasonal plumage change takes place. The sexes are alike. The head of *S. amaurocephalus tephronotus* is figured.

The genus *Phormoplectes* has the first primary considerably less than half of the length of the second. The bill is much finer than in *Symplectes*. In this genus are some handsome species with black wings and tail and yellow backs and under parts. Sexes are dissimilar. The head of *P. insignis* is figured.

In the genus *Othyphantes* the bill is heavier than in either of the aforementioned genera. The first primary is long—about half the length of the second. Most of the species in it are olive above, yellow below, the sexes differing in their head markings. There is a marked seasonal change of dress. The head figured is *O. baglafecht neumanni*.

The genus *Heteryphantes* contains a species remarkable for its plumage pattern, the whole being black except for the golden head. The sexes are unlike, the male having a black throat with yellow border. The outer primary is half the length of the second; the wings are short and rounded. The head figured is *H. melanogaster*.

The genus *Cinnamopteryx* was proposed for the Chestnut-and-Black Weaver, *castaneofuscus*, with powerful bill and the sexes dissimilar, the male being chestnut and black, the female striped.

The genus *Melanopteryx* contains two species, the males of which have black plumage. In *M. nigerrimus* (the full figure at top of opposite page) the female is olive and black above, olive and yellow below. In *M. albinucha* both sexes are black. *M. nigerrimus* is figured.

In the genus *Sitagra* we find some small yellow-breasted weavers, the males of which are usually recognisable by their black heads or black throat and forehead; the females are generally brown with streaky plumage. The head depicted is *S. luteola*.

The genus *Plesiositagra* includes the Common Village Weaver, of which a full figure is given. Larger birds than those in *Sitagra*, the males are yellow breasted with black markings on the head and sometimes on the mantle. Females are dull-coloured and sparrow-like. The males in the off-season resemble the females.

In *Icteropsis* I place a single species, *I. subpersonata*, remarkable for the long narrow bill and for a graduated tail with pointed tips.

The genus *Pachyphantes* contains only one species. In breeding dress both sexes are alike except that the hen has a blackish crown. Both sexes have a seasonal change, when they assume a cinnamon and brown streaky dress, a unique occurrence among weavers. Figured opposite is the male in breeding dress of *P. pachyrhynchus*.

Family Ploceidae (*continued*)
Sub-family Ploceinae (*continued*)

Genus Thomasophantes



Genus Hyphantornis



Genus Hyphanturgus



Genus Xanthophilus



Genus Malimbus



Genus Neospiza



Genus Amblyospiza



Family Ploceidae. Sub-family Ploceinae

In the genus *Thomasophantes* we place an insular species with a fairly long, slender, gently decurved bill, long first outer primary half the length of the second, a short rounded tail, and normal wings and feet. The sexes are much alike and the plumage is distinctive. The only species is *Thomasophantes St. Thomae.*

The genus *Hyphantornis* is here restricted to another island species remarkable for its very large size. The bill is huge—27 mm. from the base—the culmen smooth with rounded surface and sharply decurved at the tip. The wings are short, the first primary short and broad, about one-third the length of the second. The sexes are unlike. The only species is *Hyphantornis grandis.*

In the genus *Hyphanturgus* are three West African species, the males differing from the females by having black throats. All have a black streak through the eye. The bill is strong; wings are short and rounded, with the first primary less than half the length of the second. The tail is moderate. There is no seasonal change of plumage. The head depicted is *Hyphanturgus brachypterus.*

The genus *Xanthopilus* includes several species with green and yellow or golden and olive plumage, unstriped and without black face or throat markings. In *X. aurantius* the bill, feet and tarsi are much weaker than in the other two species. The head figured is of *Xanthophilus xanthops.*

In the genus *Malimbus* all are black-plumaged, with crimson or scarlet markings on the head, breast or under tail-coverts. The sexes differ. The wing is more pointed than rounded, with the first primary well developed. All are forest-frequenting birds, building closely woven pendant nests in large colonies. The head figured is *Malimbus malimbicus.*

The genus *Neospiza* has been placed with the weavers, but its correct position is unknown. I believe it to be better placed in the *Fringillidae* between *Poliospiza* and *Linurgus*, but see text. The plumage is uniform reddish brown. The most striking feature is the boat-shaped bill. A well-marked keel or ridge stands up prominently; the upper mandible is very powerful. The wing is short, with the four long outermost primaries almost equal. The single species, *Neospiza concolor*, is restricted to an island.

In the genus *Amblyospiza* the bill is short and stout, as deep as it is long and slightly compressed laterally, the lower mandible swollen at the base and very broad. The wing is short and rounded with conspicuous white bar in male, with the third, fourth and fifth primaries almost equal in length, the first being very short and much reduced. The tail is short and rounded at the tips. The sexes entirely dissimilar, the female being white below, heavily streaked. The head and left wing illustrated depict *Amblyospiza albifrons.*

Family Ploceidae (*continued*)
Sub-family Ploceinae (*continued*)

Genus Anaplectes



Genus Brachycope



Genus Quelea



Genus Euplectes



Genus Coliuspasser



Family Ploceidae. Sub-family Ploceinae

THE genus *Anaplectes* embraces three African species. That which occurs in West Africa has a slender, bright red bill, the culmen barely decurved and the lower mandible straight. The wing is long and pointed, with the outer primary short and narrow, the second and fifth almost equal in length. The tail is short and square-tipped. Males in breeding dress have a bright scarlet head and breast and black cheeks. A seasonal change of plumage takes place. The nest is suspended from twigs, with long entrance spout. The head is of *Anaplectes melanotis*.

The genus *Brachycope* forms a link between the true weavers and the bishops. The bill is short and deep, the wing rather short and rounded. First primary is very short. The tail is extremely short. The feet are strong. The sexes are unlike. The nest resembles that of bishop birds. The head figured is *Brachycope anomala*.

In *Quelea* the bill is stout, very sharp and conical, the round nostrils nearly concealed by feathers of the forehead. The wing is long and pointed, with the primary extremely narrow, falling far short of primary coverts. The primaries are edged with yellow in both sexes. The tail is short and square; upper tail-coverts are exceptionally long and tapering to points. The sexes are unlike and the plumage is subject to great variety during seasonal change of dress, the males assuming eclipse plumage. Woven nests are purse-shaped. The figure depicts the male of *Quelea quelea*.

In the genus *Euplectes* the males assume a magnificent breeding dress in which velvety-black set off by scarlet, yellow or orange are the main features; the feathers of the ruff and rump can be raised for display. The bill is short and broad at the base; the nostrils are round and partially concealed. The wing is short and rounded, with the first primary very narrow but of varying length. The tail is always shorter than the wing and rounded at the tip. In some species the upper tail-coverts are remarkably developed. After breeding the males go into eclipse and then resemble the brown-striped females. The nests are usually in large colonies, dome-shaped with side entrance. The head figured is *Euplectes hordeacea*.

In the genus *Coliuspasser* the males have a distinct breeding dress in which the tail is greatly elongated, sometimes to three times the length of the wing. The wing itself is short and rounded, with the first outer primary minute, not exceeding the primary coverts in length. The bill is short and stout, gently decurved, with nostrils close to the frontal feathers. Breeding males have velvety-black plumage set off with yellow or orange shoulder-patches, which latter are retained during the off-season dress, when males revert to brown-streaked plumage. Nests are spherical in shape with side entrance. The figure depicts *Coliuspasser phoenicea bocagei*.

Family Ploceidae (*continued*)
Sub-family Estrildinae

Genus Spermestes



Genus Amauresthes



Genus Euodice



Genus Parmoptila



Genus Pholidornis



Genus Nigrita



Family Ploceidae. Sub-family Estrildinae

THE sub-family ESTRILDINAE includes a group of birds in which the first outermost primary is usually (except in *Clytospiza* and *Spermophaga*) minute, often sharp and attenuated, equal to or falling short of the primary coverts. They build domed nests with side entrance which are not woven and not pendant, and lay pure white eggs. The young are remarkable for the pattern of black spots or lines on the palate and, in some genera, small coloured wattles or lobes at the gape. The majority are small or very small birds which are very brightly coloured, with highly specialised colour pattern; a number have red on the rump or upper tail-coverts, while others exhibit spotting or barring on the under parts.

In our area I recognise forty-four species, which are placed in eighteen genera, described on this and the following pages.

In *Spermestes* all the species have dark glossy throats and white bellies and fine barring on the rump or flanks. Tail and wings are short and rounded; the bill is very short and stumpy. The sexes are alike. The nest resembles a ball with side opening placed in the fork of a tree; it is not pendant. The figure depicts *Spermestes cucullatus*.

In *Amauresthes* the single species has no barring on rump or wings and is larger and heavier in build than any *Spermestes*. The bill is larger and longer with flat-topped upper mandible; the tarsus is stout. The tail is fan-shaped and broad. Builds a domed nest. The figure depicts *Amauresthes fringilloides*.

The genus *Euodice* has the general colour uniform light brown with black or white rump; the black tail is strongly graduated; feathers of the crown are scale-like in appearance but soft. The bill is thick and conical; wings are short and rounded. Builds an untidy round nest of grass and loose feathers. The figure depicts *Euodice cantans*.

The genus *Parmoptila* has a unique bill, fine and pointed; the under parts are closely spotted; the males have red foreheads. The tail is longer than in preceding genera and rounded. Builds a large dome-shaped nest of dry leaves. *Parmoptila woodhousei* is illustrated.

In the genus *Pholidornis* we have one of the smallest of African birds. The bill is extremely fine and short. The wings are short and rounded; the tail is short and square; the crown and breast have heavy black shaft-stripes, and the rump and belly are yellow. Builds a very large domed felted nest, with overhanging entrance, invariably attached to a bramble. The figure depicts *Pholidornis rushiae*.

The genus *Nigrita* embraces several West African species with various colours, grey and black; grey and chestnut; brown, white and glossy blue being represented. The bill is short and stumpy with well-marked culmen; the wing is more pointed than rounded; the tail is fan-shaped. The nest is a bulky mass of dry grass and leaves, not woven, suspended on branches. *N. canicapilla* is figured.

Family Ploceidae (*continued*)
Sub-family Estrildinae (*continued*)

Genus Clytospiza



Genus Cryptospiza



Genus Spermophaga



Genus Pirenestes



Genus Amadina



Genus Ortygospiza



Family Ploceidae. Sub-family Estrildinae

In the genus *Clytospiza* are two species which are notable for their spotted under parts. The bill is narrow and fine-pointed; the nostrils are almost concealed. The wing is short and rounded, not reaching the tip of the tail-coverts. The first primary is long and broad. The tail is fan-shaped, composed of broad feathers, especially in *C. monteiri* remarkable for the bright chestnut under parts spotted with white. The bird figured is *Clytospiza monteiri*.

In *Cryptospiza* the bill is heavier than in the last genus, the nostrils being entirely concealed. The wing and tail are much as described for *Clytospiza*, but the first primary is minute. Crimson and olive-green are the predominant colours in the West African representative, and the sexes differ very little. The head figured is that of *Cryptospiza reichenovii*.

The genus *Spermophaga* embraces several brilliantly coloured birds with scarlet and black plumage and pearl-blue bills. The bill is extremely heavy, with swollen mandibles and broad base, and nostrils large and almost hidden. The wings are rounded, with the first primary long. The tail is broad and rounded at the tip. Feathers of the rump are loose and disintegrated. The sexes are dissimilar, males with a plain black, females with white-spotted, bellies. The figure depicts *Spermophaga haematina*.

The genus *Pirenestes* is characterised by the peculiar structure of the bill, the mandibles being as broad as they are long. The culmen is straight, and the edge of the cutting mandible is furnished with a tooth. Plumage of males is black and crimson, of females brown. The wing is very short and rounded, with the first primary very short and narrow. Size, but not structure, of bill varies greatly in the species. The head figured depicts *Pirenestes ostrinus*.

In *Amadina* there is one West African representative remarkable for the sandy-brown plumage transversely barred with black. The sexes are distinguished by the male having a crimson throat-band. The bill is short and decurved; wings are rather narrow and pointed, with the first primary minute. The tail is more square-tipped than fan-shaped and edged with white. The figure depicted is *Amadina fasciata*.

In *Ortygospiza* the only species is divisible into many races. The bill is short and conical, the wings more pointed than rounded, with the first primary minute and barely visible. The species is noted for the heavily banded under parts and the chestnut patch on the breast. Total size is very small—about $3\frac{1}{2}$ in. The tail is exceptionally short and square-tipped. The species figured is *Ortygospiza atricollis*.

Family Ploceidae (*continued*)
Sub-family Estrildinae (*continued*)

Genus Mandingoa



Genus Pytilia



Genus Lagonosticta



Genus Estrilda



Genus Nesocharis



Genus Uraeginthus



Family Ploceidae. Sub-family Estrildinae

In the genus *Mandingoa* the bill is almost straight and sharp-pointed, with the nostrils hidden; the wing is short but pointed, with the first primary minute; the tail is fan-shaped, falling short of the outstretched feet. The plumage is green above, the belly being covered with white spots in both sexes. The female lacks vermilion cheeks. The species depicted is *Mandingoa nitidula schlegeli*.

In *Pytilia* are several well-marked species, the males usually with red on the head; all have barred under parts and in some species red or yellow edging to the flight-feathers. The wing is fairly long and pointed, with the first primary very short and narrow. The bill is sharp and compressed at the base; the tail is short and square. The species figured is *Pytilia phoenicoptera*.

The genus *Lagonosticta* includes a wide number of species. All are small birds, with pink on the rump and the sides decorated with minute white dots or specks. The bill is small and rather sharp, but longer than in *Estrilda*. The wing is variable, with outer long primary sometimes emarginate. The tail is broad and round at the tip. Its habits are less gregarious than *Estrilda*, a genus which has much in common. The species figured is *Lagonosticta rubricata polionota*.

The genus *Estrilda* is not easily separated from the above. Many species are included, commonly with upper parts finely barred and almost invariably with red on the rump or upper tail-coverts. In the West African representatives the bill is very small, the wing variable but generally short and rounded, with the first long (second) primary never emarginate. The tail is moderate and graduated. The sexes differ, but slightly if at all except in *E. subflava*. The species figured depicts *Estrilda astrild occidentalis*.

The genus *Nesocharis* includes two West African species, in one of which, *N. shelleyi*, the colour pattern is striking, the dark head, grey collar and olive back and wings being set off with a black tail. The other *N. capistrata*, is mostly grey and olive, with black on throat. In the former species the tail is very short and square, in the latter much longer, broader and fan-shaped. The bill in both is fairly heavy in comparison with the last two genera. The wings are short and rounded. The figure depicts *Nesocharis shelleyi bansoensis*.

The genus *Uraeginthus* is remarkable for the turquoise blue of the breast, rump and tail in both the species represented, the rest of the plumage being drab brown. The tail is long and narrow and strongly graduated; the wing is moderate, not exceeding the tail-coverts; the sexes are alike or very similar, the male of one being distinguished by having crimson ear-coverts. The species depicted is *Uraeginthus bengalus*.

Family Ploceidae (*continued*)
Sub-family Viduinae

Genus Hypochera



Genus Vidua



Genus Vidua

Genus Steganura



Genus Steganura

Genus Anomalospiza



Family Ploceidae. Sub-family Viduinae

THE sub-family VIDUINAE as here defined includes a rather heterogeneous assembly which, so far as is known, do not build nests of their own but are parasitic on other species, laying white or cream-coloured eggs in the nests of other birds. Like most of the *Estrildinae*, they have the first outermost primary minute and narrow, and in two genera at least, *Vidua* and *Hypochera*, the young have the same characteristic palate markings. In all the species in this group the males assume a special breeding dress, after which they go into eclipse plumage resembling the female dress. *Anomalospiza* is tentatively included in the sub-family VIDUINAE but may equally well be placed in *Ploceinae*. I include nine species in the four genera.

In the genus *Hypochera* the males have a black breeding dress glossed with green, blue or purple; when not breeding they resemble the brown-striped female. The bill is conical and pinkish white. The wing is double-pointed, with the inner remiges almost as long as the outer. The tail is short and square-tipped; the upper tail-coverts are very long. Young have palate and tongue markings. Nesting habits are not well known. *H. chalybeata* is figured.

The genus *Vidua* contains the Pin-tailed Whydah, which when breeding has a black and white dress with the four central tail-feathers greatly elongated, narrow and ribbon-like. The bill is short and conical; the wing-formula is as in *Hypochera*. In non-breeding dress the male is like the female, with streaky brown plumage with white stripes on crown and above the eye. Nesting habits are believed to be parasitic. The figures represent *Vidua macroura*, male and female.

The genus *Steganura* has the wing formula like *Vidua*, but the structure of the tail is unique. In breeding dress the central rectrices are enormously elongated, with the plumes very broad and "set on end," carried vertically to the plane of the back, the central pair lying with their inner webs facing each other. The breeding male has a black head, back, wings and tail and a chestnut collar and breast. In eclipse plumage the males resemble the streaked brown and black female. Nesting habits are unknown. The figures represent *Steganura orientalis aucupum*, male and female.

The genus *Anomalospiza* includes a single species, the cuckoo-weaver, and its correct position in the avian tree is unknown. Dr. Chapin would place it near *Quelea*, but agrees we have much to learn concerning it. It is finch-like in appearance and is believed to be parasitic upon *Cisticola*, which prompted me to include it in the *Viduinae*. The breeding male is yellow, but assumes a brownish dress out of season resembling more the female. The bill is stout and stumpy; the first primary is minute. *Anomalospiza imberbis* is figured opposite.

THE BIRDS OF WEST AND EQUATORIAL AFRICA

ORDER STRUTHIONIFORMES

FAMILY STRUTHIONIDAE

NORTH AFRICAN OSTRICH

Struthio camelus camelus Linnæus

This, the largest living bird, cannot be mistaken for any other species. Apart from its huge size—a full-grown cock stands between 6 and 8 ft., including the neck, and weighs about 300 lb.—it is remarkable for having only two toes. The male is black and white in colour; the female is brown and smaller in size. The naked neck of the male is pink, of the female grey-brown; the head in both is exceptionally flat.

Ostriches are shy birds, endowed with phenomenal eyesight. In the wild state they are given to roaming over a huge expanse, frequenting grassy plains or country where the ground is hard, sandy, and covered with acacia bush. Sometimes as many as five hens may be seen with one cock in the breeding season, and three hens are quite usual. Out of the breeding season the birds may be seen in small troops wandering over the plains. They feed principally on low shrubs and on the leaves of small trees and are fond of a creeper which is parasitic on the acacia. Creeping gourds from which they can obtain moisture form a staple article of diet. Ostriches have been seen on rare occasions to drink at a river.

If alarmed, the birds will run long distances at a great speed, and no living animal can beat an ostrich when going all out—not even a cheetah.

The nest is merely a depression in sandy or grass-covered soil. Clutches of ten or more eggs are laid, a single hen often laying fourteen to sixteen eggs, uniformly cream-coloured with deep pores and very thick shells. Several hens will sometimes lay in the same nest, when anything from thirty to forty eggs may be found. The

ostrich breeds only once a year. Eggs vary in size, e.g. 140–170 × 120–140 mm.

Distribution. Northern Africa south of the Atlas Mountains, the Egyptian Sudan and the Danikil coast. In western Africa from Upper Senegal to Upper Niger Territory, said to be restricted in the Algerian-Moroccan Sahara to the region which lies between the Wells of Tilemsi el Fasi on lat. 30° N. and the dunes of Adrar and of Tagant in Mauretania.

Ostriches caught as young live in a semi-domesticated state in Bornu and in French Niger and sometimes escape to go wild. They occur in Damergu and have been seen 150 km. north of Lake Chad.

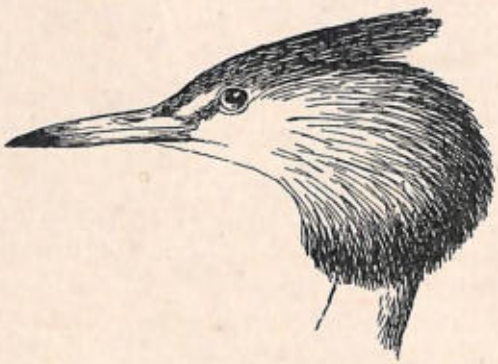
ORDER COLYMBIFORMES

FAMILY PODICIPIDAE

AFRICAN GREAT CRESTED GREBE

Podiceps cristatus infuscatus Salvadori

In the adult male and female the crown is black; the tippet and elongated feathers on each side of head are black, the tippet being bordered with rufous; there is a white line in front of eye but not



one above it; cheeks, throat and entire under parts are of glistening white. The neck, sides of body and rest of the upper surface are brown. Wings are brown, save secondaries and lesser coverts, which are mostly white. The tail is a small tuft of soft brownish feathers. The bill is brownish horn in colour; the eye is crimson; the legs and feet are olive and greenish yellow. The wing is 170–192 mm.

There should be no difficulty in recognising this large grebe, which is a most striking bird in full plumage with facial ruff extended—a tippet of rufous and black contrasting with the white cheeks. Slender in build, it swims low in the water, exposing only the dark back. The glistening white breast is visible only when engaged in its toilet as the bird careens on its side. In flight the greenish-yellow legs are carried stretched out behind. From bill to tail it measures about 20 in., and when in flight the white patches on the short wings are conspicuous. Usually it prefers to escape danger by diving and can travel a long way under water before surfacing.

Its food is procured mainly under water, and consists of fish, crustaceans, snails, tadpoles, aquatic insects and weeds.

Pairs keep together throughout the year. The hen may usually be distinguished from the cock by slightly smaller size and less fully developed facial ruff. The nest is a collection of sodden weeds, fresh or rotting, built on a platform of lily roots or similar herbage and found in various positions, but always floating. Many nests may be placed close together. The eggs are chalky white with a bluish or greenish tinge when fresh, two or three in number, which are covered over by the hen when leaving the nest. The chicks are fascinating little creatures and are often carried on the back of the parent. The eggs vary much in size, e.g. 50–55 × 32–36 mm.

Distribution. Found locally over the greater part of Africa south of the Sahara but seems to have been rarely encountered in western Africa and is recorded only from Senegal and Gambia. Whether it is resident in any part of the coast, or even migratory, is still unknown. Even in eastern Africa it is absent from lakes where it might be expected to be numerous, such as Lake Victoria, though it is common on Lake Naivasha.

AFRICAN LITTLE GREBE

Poliocephalus ruficollis capensis Salvadori

This is the dabchick of tropical Africa, whose small size (10–12 in. in total length, with wing measuring 96–100 mm.) and lack of ear-tufts or tippets distinguish it from the last species; brown above with an oily green gloss on the head, and with rufous throat and cheeks, a black chin, white belly and red eye, it is not difficult to recognise. Its bill and feet are both black. Owing to its poorly developed wings it rises with difficulty from water, but once well away it flies easily and fast, showing a certain amount of white in the secondaries.

Practically the whole of its life is spent on water—tubkis, fresh-water lakes, small ponds, reservoirs, marshy lagoons, mountain crater lakes and still reaches of rivers. In diving and swimming under water it is incomparable. Small fish, molluscs, larvae, insects and small snails form its diet, with vegetable matter as a variety. It swims low in the water, ready on the slightest provocation to dive.



Resident in most localities where it is found; local movements take place when ponds dry up, and in the dry season there may be a concentration of birds in a small area. The nest is built in water, constructed of dead vegetable matter, usually built up from the bottom in shallow water or else anchored in water 5–6 ft. deep. Unless suddenly disturbed it will cover its eggs before departure, and if there is not time to do so before leaving it will return for the purpose. It breeds in July and August in Nigeria, when its trilling note may be heard. Its eggs are bluish white in colour with a chalky surface and measure about 35·2–38 × 23·6–25·3 mm.

Distribution. Found widely in Africa and south-eastern Asia. Within our limits it is not uncommon, particularly in northern Nigeria and in the Provinces of Zaria, Kano, Bornu and Sokoto, but it occurs in the southern Provinces also. In the Inundation Zone of the Niger it has seldom been recorded. Altitude is no barrier to it, as its appearance on a crater lake at 6,300 ft. goes to prove. It has been recorded from all our Colonies in varying numbers.

ORDER PROCELLARIIFORMES

FAMILIES HYDROBATIDAE AND PROCELLARIIDAE

PETRELS AND SHEARWATERS

Space in this volume does not permit individual treatment of the birds contained in this maritime order. Each species is discussed separately in volume i of my larger work.

Of the fourteen species which have occurred in West African waters some have their nearest breeding places in Madeira, the Canaries and Cape Verde Islands; others are inhabitants of the temperate north Atlantic, such as Leach's Petrel, wandering into tropical and subtropical seas in the winter. Others again, such as Wilson's Petrel and the Greater Shearwater, breed in the southern Atlantic and/or Antarctic, wandering northwards after breeding.

The breeding place of the White-throated Petrel (*Fregetta tropica*), first described from a specimen obtained off Sierra Leone, still remains to be discovered, and whether it resorts to the islets in the Gulf of Guinea to rear its young has yet to be proved.

All the birds in this order Tubinares differ from other birds in that their nostrils are external and are enclosed in a cylindrical tube. The three toes are fully webbed, the hind toe being rudimentary. All are maritime, coming ashore only to breed or to shelter in caves or under boulders. The greater part of their life is spent at sea, upon which they can alight freely.

For the purpose of identification, in the hand only, I have included the keys to the species from my larger volume.

Key to the Petrels and Shearwaters which have been recorded from West African seas

1. Under parts entirely white 2
   Under parts entirely dusky 6
   Under parts parti-coloured 11
2. Size large (wing over 12 in.); upper parts grey-brown *Atlantic Great Shearwater* and *Cape Verde Is. Great Shearwater*
   Size smaller (wing under 10 in.); upper parts grey or sooty 3
3. Upper parts pale (brownish, strongly washed with grey), forehead white 4
   Upper parts dark (blue-black or sooty brown), no white on forehead 5
4. Large (wing over 9 in.); no distinct white eyebrow, webs of feet mainly dusky .. *Fea's Soft-plumaged Petrel*
   Small (wing under 6½ in.); a distinct white eyebrow, webs of feet yellow; under side of wing white *Frigate Petrel*
5. Back sooty brown; wing over 9 in. *Manx Shearwater*
   Back sooty brown; wing under 7½ in.; inner web of primaries mostly dusky *Cape Verde Is. Little Shearwater*
   Back blue-black; wing under 7½ in.; inner web of primaries mostly white .. *Madeiran Little Shearwater*
6. No white on rump or upper tail-coverts 7
   White on rump or upper tail-coverts 8
7. Size large (wing about 12 in.); plumage entirely brown, chin white .. .. *Atlantic Sooty Shearwater*
   Size small (wing about 7½ in.); plumage entirely sooty, no white on chin .. .. *Bulwer's Petrel*
8. White upper tail-coverts tipped with black 9
   White upper tail-coverts not tipped with black 10

9. Size very small (wing under $4\frac{3}{4}$ in.); upper parts blackish, tail square, bill fine .. .. .. *Storm Petrel*
   Size larger (wing over $5\frac{1}{2}$ in.); upper parts brownish, tail slightly forked, bill heavy *Madeiran Fork-tailed Petrel*
10. Upper parts black, upper tail-coverts entirely white; tail square .. .. *Wilson's Petrel*
    Upper parts brown, upper tail-coverts streaked with brown; tail markedly forked *Leach's Fork-tailed Petrel*
11. Breast and middle of belly brown, remainder of under side and rump white, large white patch on under side of wing; size small .. .. *Atlantic White-throated Petrel*
    Breast and under parts white, only middle of belly brown, no white on rump; size very large *Greater Shearwater*

ORDER PELECANIFORMES

Key to the Frigate Birds, Tropic Birds, Pelicans, Gannets, Darters and Cormorants

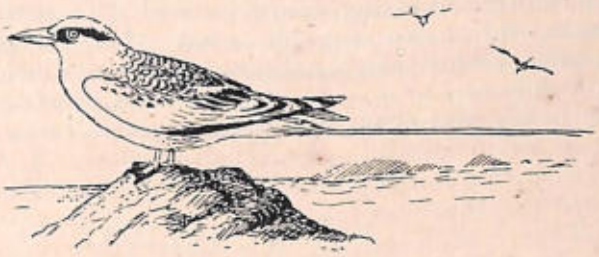
1. Tail very strongly forked; wings very long; webs between toes strongly incised .. *Fregatidae* (Frigate Birds), p. **138**
   Tail rounded or wedge-shaped; wing not remarkably long; web between toes not incised 2
2. Middle tail-feathers greatly lengthened and very narrow *Phaëthontidae* (Tropic Birds), p. **130**
   Middle tail-feathers not greatly lengthened, not narrow 3
3. Bill greatly flattened; nostrils visible *Pelecanidae* (Pelicans), p. **139**
   Bill rounded above, pointed; nostrils not visible *Sulidae* (Gannets), p. **132**
   Bill compressed and pointed; edges of mandibles serrated *Anhingidae* (Darters), p. **136**
   Bill rounded, strongly hooked; edges of mandibles not serrated .. .. *Phalacrocoracidae* (Cormorants), p. **134**

FAMILY PHAËTHONTIDAE

Tropic Birds

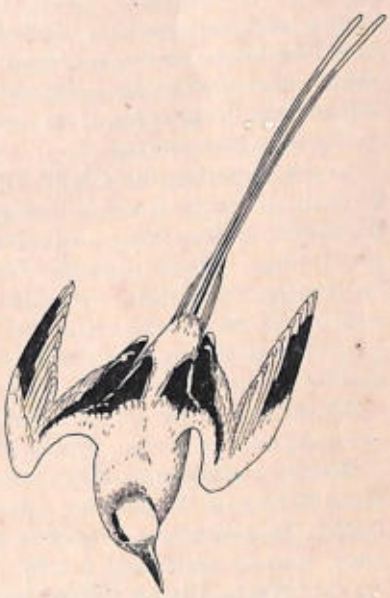
Two species of Tropic Bird occur in West African waters. The Red-billed Tropic Bird (*Phaëthon aethereus* (Linn.)) is the larger of the two, with a wing over 11 in. (305–315 mm.) in length and a coral-red bill. It has a superficial resemblance to a large tern with very

narrow wings, but the enormously elongated middle pair of tail-feathers about 24 in. in length save it from confusion with all sea birds except the next species. The adult, apart from the long



tail-feathers, measures about 21 in. in length and is mostly white in plumage, the upper parts being narrowly barred with black; there is a black border to the wings and a black band through the eye. The red-billed species breeds in the Cape Verde Islands and on rare occasions wanders down the West African coast.

The other species, the Yellow-billed Tropic Bird (*Phaëthon lepturus ascensionis* (Mathews)), is a smaller bird with a wing under 11 in. (253–265 mm.). The tail is furnished with the same characteristic elongated central rectrices about 18 in. long. Shining white in plumage, with the upper parts unbarred, it may be recognised, apart from its greenish-yellow bill, by the jet-black bands down the wing and scapulars, as illustrated in the accompanying figure. The Yellow-billed Tropic Bird has a closer association with West Africa than the red-billed species, for it breeds on three islets off São Thomé in the Gulf of Guinea and probably on some inaccessible rocks off Fernando Po. The range of this Tropic Bird is the South Atlantic, where it nests on Fernando Noronha and on Ascension, in addition to the islands mentioned.



Both species of Tropic Bird spend much of their life at sea, when their wonderfully graceful flight can be admired to perfection from

the deck of a steamer. The red-billed species breeds in holes and caverns or in clefts of rocky headlands, but the Yellow-billed Tropic Bird is reported to nest also on tangled ferns and creepers 20 ft. or more from the ground, as well as in rock crevices. Only one egg is laid, with cream ground, dotted, smeared and blotched with reddish brown, with smears of purple or red. There are great individual variations; some finely mottled, others coarsely blotched. There is little difference in the type of eggs laid by these two Tropic Birds except size, that of *Phaëthon lepturus ascensionis* being smaller.

FAMILY SULIDAE

Gannets and Boobies

Two gannets find their way to the shores of West Africa. The COMMON GANNET (*Morus bassanus bassanus*) migrates south in autumn from its breeding grounds around the British Isles but probably does not proceed much south of Gambia. The adults may be recognised by their shining white plumage tinged with yellow on head and neck, very large size (about 34 in. in length) and pointed white tail. Young birds are speckled black and white and have a pied appearance; the latter are far more numerous in tropical waters than the adults, about 90% being immature. It has been shown that they will remain in these latitudes for three years before returning north to the breeding grounds.

Another species, the CAPE GANNET (*Morus capensis*), comes up from the south; it is one of the principal guano-producing birds of the South African islets and is known to reach the Gold Coast in its wanderings. About the same size as the Common Gannet, it may be distinguished from that bird by having an almost black tail, which is a good field character when fully mature; moreover the bare strip of skin on the chin is continued for nearly 5 in. down the middle of the throat.

Neither of these gannets breeds within hundreds of miles of West Africa, so we can ignore their breeding habits.

Besides the gannets there are three boobies which belong to the same family of the Sulidae. Two of these, the Ascension Masked Booby (*Sula dactylatra dactylatra*) and the Red-footed Booby (*Sula sula sula*), may be dismissed briefly. They should not really figure in a list of West African birds; as neither has definitely occurred, though there is every likelihood of one or both doing so.

The MASKED BOOBY has the whole of the upper parts, throat and chest white, and the tail, wings and scapulars dark brown. It is much smaller than the British gannet (total length about 26 in.)

and is remarkable for the blue-black colouring of the bare skin on the throat and face. The legs and feet are yellowish-slate colour.

The RED-FOOTED BOOBY is slightly smaller than the Masked Booby and when adult is entirely white except the quills and edges of the wing, which are blackish. Its bright vermilion legs, if visible, should identify it. Another character to observe is the rather long *white* tail, thus distinguishing it at a glance from the Masked Booby with its mainly black tail.

Boobies cover immense distances in the non-breeding season, and the fact that the Red-footed Booby breeds in the West Indies, South Trinidad, etc., hundreds of miles from West African waters, does not preclude its crossing the Atlantic any more than the occurrence of the Masked Booby, which breeds on Ascension and also in the West Indies, would be particularly surprising.

There is one more species, the Brown Booby, and that we must discuss separately, as it breeds within our limits.

BROWN BOOBY

Sula leucogaster leucogaster (Bodd.)

This is the only booby or gannet which has brown upper parts, a brown head and brown throat, brown wings and brown tail, only the under side from the lower breast to the under tail-coverts being white. It is a striking bird in flight, the white under wing-coverts then being very noticeable as a white band down the otherwise dark wing. It has a flattened head, with long pointed yellowish-white bill, and naked bluish-slate skin on the face; the neck is held straight out, as seen in the text figure. In total length it measures from bill to tail 28½ in. Wing measurements are 380–422 mm.

This booby lives in immense colonies, preferring uninhabited islands or deserted headlands. The birds spend the day at sea, capturing the fish upon which they live by diving from a height, just as our British gannet may be seen doing. As darkness falls the birds come ashore and remain all night on the rocks. In the Cape Verde Islands they are said to nest all the year round and are not discriminating in the choice of their nesting place; no building materials are used. Two or three eggs are laid, with long intervals between each laying. Eggs are pale blue covered with a chalky-white substance and measure 37–43·5 × 53–64 mm. Young are at first naked but in two weeks are covered with snow-white down.

Distribution. The tropical Atlantic and Indian Oceans. In the former it ranges from the Bahamas and West Indies south to Fernando Noronha off Brazil and across the Atlantic to the Cape Verde Islands and the islets in the Gulf of Guinea. It is abundant in

inaccessible rocks off Fernando Po and some of the smaller islets. In the Cape Verde Islands it breeds chiefly on Razo and the Rombos group, but is recorded from nine of the islands in the archipelago.

FAMILY PHALACROCORACIDAE

WHITE-BREASTED CORMORANT

Phalacrocorax lucidus (Lichtenstein)

This fine cormorant closely resembles our British bird in size and has a total length of about 35 in. with a wing expanse of 4½ ft. Its black plumage glossed with oily green is relieved by white on the cheeks, throat, sides of neck and the upper breast. It has a rather short, fan-shaped tail, but the chief field character is the white breast, by which it may be distinguished at a distance. The wing measures 306–342 mm.

It is not a common bird anywhere on the west coast of Africa, but when seen is usually in pairs or alone. It has the same characteristic habits of the family and may be observed sitting on a buoy or old stump with wings spread out in the manner so often witnessed in *Phalacrocorax carbo* at home. It flies strongly once its heavy body—its weight is 6 lb.—is launched, rising clumsily and beating the surface with its wings, but swims and dives with wonderful dexterity in search of its fish prey.

For rearing its young it prefers islands or rocks off the coast, laying its pale blue eggs with chalky-white covering in nests among the rocks or in low trees or bushes.

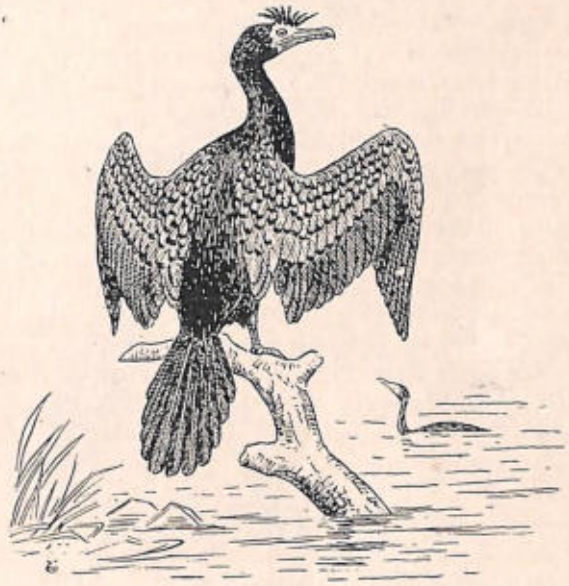
Distribution. Recorded as breeding in the Cape Verde Islands, from which it visits the opposite coast, where it ascends the Gambia River as far as MacCarthy Island. Reported also from the shores of the Rio de Oro. It is not recorded from the Gulf of Guinea, but there are records from Maidugari, Bornu, and from Lake Chad (Jan. 1933) of either this or the East African representative. In southern Africa *P. lucidus* breeds on many islands round the coast. Its place is taken in north-eastern Africa by *P. lugubris* Rüppell, which has a slightly narrower bill but is barely separable.

LONG-TAILED SHAG

Phalacrocorax africanus africanus (Gmelin)

A considerably smaller bird than the last species, not more than 22 in. in total length, with wing expanse of 32 in., the Long-tailed Shag is one of the most familiar birds of both coastal and inland

waters, frequenting equally fresh and salt water. The adult appears black glossed with green; the bare skin of the face is red, as are also the eyes, the wing being 202–226 mm. A short crest ornaments the crown. Young birds have white cheeks, throat and under parts and brown speckled back. During the heat of the day it may be seen sunning itself in characteristic attitude on tree stump, buoy or fish-trap. In the water it swims low, sinking the body so that at times only the long neck remains above water. Being comparatively light, it can rise easily and then fly strongly with head and neck fully stretched out.



This is one of the commonest fish-eating birds of the large West African rivers such as the Niger and Benue, and in the dry season when the sandbanks are exposed large numbers may be seen on the banks. If disturbed it prefers flight to taking refuge in diving but on the whole is fairly tame.

When the large rivers are in flood and the sandbanks submerged, the Long-tailed Cormorants leave their usual haunts, and between April and September the majority depart for an unknown destination. Non-breeding birds probably remain behind, which would account for many birds being found at that season on the smaller streams and swamps. It is an astonishing fact that no one has found this cormorant nesting in West Africa on the mainland north of the equatorial forest, and Dr. Chapin's theory that the birds make a

regular migration to a breeding area which lies south of lat. 3° N. is the most likely explanation. In the dry season there is always a good deal of local movement in evidence, as well as morning and evening flights.

A strongly gregarious species at night, this cormorant roosts in vast assemblies on some island sandbank or in smaller numbers in company at times with darters and herons in some favourite tree in a village.

It breeds in colonies beyond our limits in such localities as Lake Victoria, where its numbers are legion. On São Thomé breeding birds have been taken in November and December. In Uganda there are apparently two breeding seasons, between March and June and between October and December. The nest (in Uganda) is placed in trees overhanging water and is made of reeds, rushes, grasses and water-lily stems. On the coast or on islands it is said to utilise seaweed for the purpose. Two to four eggs are laid, chalky white with, when fresh laid, a greenish tinge. They measure about 45–48 × 30–31 mm.

Distribution. Almost the whole of Africa from Gambia and Upper Egypt to the Cape Province (Berg River); also the island of São Thomé. Within our limits widely spread in the dry season, but numbers are very much reduced in the wet season. Recorded from rivers, streams, coastal lagoons, inland marshes and found in all political divisions embraced in this book and on certain small islands. Reported to have bred on São Thomé. A subspecies occurs in Madagascar.

FAMILY ANHINGIDAE

AFRICAN DARTER OR SNAKE-BIRD

Anhinga rufa rufa (Lacépède)

THE African Darter is a familiar bird in West Africa and cannot easily be mistaken. The body plumage of the adult bird in breeding dress appears glossy greenish black, streaked with white on either side of the back and wing-coverts; the head and neck are dark above and light below, separated by a conspicuous white streak below a black one. The neck is extremely long—nearly 12 in., with a peculiar kink in it—and the long, sharply pointed bill is greenish-horn colour; the eye is golden. Immature and non-breeding birds are browner, as is also the female, which has the back of the neck rufous instead of dark brown. All four toes are joined by a web. The wing measures 315–363 mm.

Although it is to be found frequenting tidal creeks, the Snake-bird is commonly to be seen on the more quiet reaches and backwaters of the big rivers and on the smaller streams which intersect the country. Numerous in the Inundation Zone of the Niger, it may just as likely be met with on some tubki or isolated pool, or maybe on some reservoir or coastal lagoon.



The name Snake-bird is derived from the birds' habit of swimming below the surface with only the long, snake-like neck exposed, waving to and fro like a snake. In the manner of a cormorant it will sit for hours in the sun with its wings half spread on some snag or overhanging bough. Beneath the water its speed is amazing, and the dexterity with which it captures the fish which form its staple food beggars description. Fish are captured by a spear-like thrust of the bill assisted by the peculiar bend in the neck, at the eighth or ninth vertebrae, which acts like a spring; the fish is brought to the surface between the mandibles, thrown into the air and caught head downwards before being swallowed. In the air the Snake-bird can fly powerfully with rapid wing-beats and alternately sail, and may be seen, sometimes many together, settled in a large tree at a considerable distance from water. They have settled roosting places in tree or reed-bed or in bushes overhanging water, where as many

as a hundred will congregate at a time. The darter usually breeds in colonies, building its nest of sticks in some convenient tree and occasionally lining it with water plants.

Three or four eggs of an elongated oval shape are laid, pale greenish or bluish white without much chalk on the surface. Eggs measure 52–56 × 34–37 mm.

Distribution. The whole of Africa from about lat. 18° N. southwards. It is generally distributed throughout all political divisions in our area wherever conditions are possible and is well known throughout our British Colonies. Allied races occur in Madagascar, Syria and the Oriental region.

FAMILY FREGATIDAE

FRIGATE BIRDS

Two species of the Frigate, or Man o' War Birds as sailors prefer to name them, may be encountered in West African waters. Both are easily recognised by their large size, long pointed wings, formidable long hooked bill, and especially by the very long scissor-forked tail, the outer feathers being 410–470 mm. in length, i.e. about 18 in.

The males are remarkable for the naked gular pouch, which can be expanded like a balloon at the time of sexual display. They are unknown to settle on the water but wander hundreds of miles from land.

The larger of the two, Lowe's Frigate Bird (*Fregata magnificens lowei*), is the only one which is likely to be seen north of the Cameroons. Mainly black above, glossed with purple and brown below, the male has a red gular patch bare of feathers; the female is more easily recognised, as the breast is white and she lacks the gular patch. A full-grown male measures about 38·5 in., with wing about 615 mm.

Renowned the world over for its exceptional powers of flight, the Frigate Bird pursues and harries other fish-eating species in the same manner as a skua, forcing its victim to disgorge its last meal. A marvel in the air, it is correspondingly ungainly on the ground, from which it has difficulty in rising. Lowe's Frigate Bird has been taken in Gambia and can easily reach any part of the coast from its breeding place in the Cape Verde Islands, where it is said to nest on an islet, Sal Rei off Boa Vista, but is a familiar object off the other larger islands. Its breeding places have not been described, but a closely allied form in the West Indies makes a bulky nest of sticks on low bushes or even on grass tussocks, where it lays a single white egg covered with creamy lime.

The other species with which we are concerned is the Ascension Island Frigate Bird, *Fregata aquila* (Linn.). It is rather smaller than the last species described and the females have a brown breast, which is a unique feature among the females of this family. The male, which has a smaller bill than *F. m. lowei*, shares with that species a brilliant scarlet pouch in the breeding season. Its habits are similar to those of its larger relative. It has been recorded once from the Congo coast and may easily wander further north.

FAMILY PELECANIDAE

THE PELICANS

Key to the African species

1. Feathers of forehead terminating at base of culmen in a point; colour of plumage white tinged pink, including back 2
   Feathers of forehead terminating at base of culmen in a concave line; colour of plumage ash-grey, back vinaceous .. .. .. *Pelecanus rufescens*, p. 140
2. Size large (wing normally over 655 mm.) (♂700–730 mm.); bill over 350 mm. *Pelecanus onocrotalus onocrotalus*, p. 140
   Size smaller (wing normally under 655 mm.), bill under 350 mm. .. .. .. *Pelecanus onocrotalus roseus*, p. 139

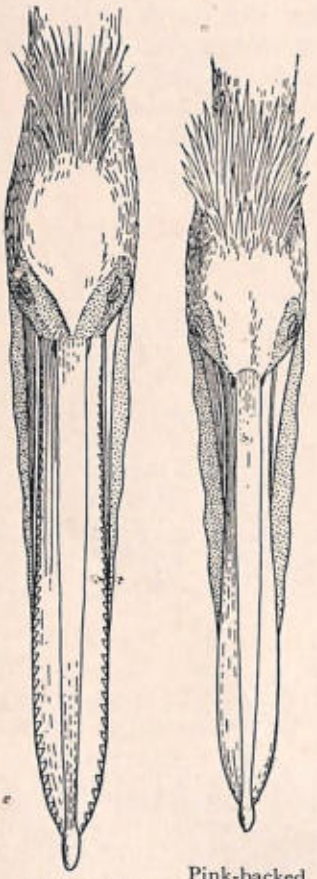
ROSY PELICAN

Pelecanus onocrotalus roseus (Gmelin)

THE whole of the plumage of the Rosy Pelican is white tinged with rose-colour; the crop patch is straw yellow or golden buff; the bare skin on the face is bluish pink, the pouch yellow; the bill is yellowish, with red stripes on the upper mandible radiating from the edge; the feet are orange. Wing measures 620–655 mm.

Its huge size and grotesque appearance should proclaim its identity from afar, but only on close inspection will the distinction between it and the Pink-backed Pelican (which is grey) be noticeable. In flight the wings appear very rounded, with the primaries broadly extended towards the tip. Strong on the wing, it flies with head drawn back, not like a goose or gannet with neck extended. The habits of this pelican differ little from those of the Pink-backed Pelican, which is much more familiar to residents in West Africa and will be discussed more fully hereafter.

Distribution. Eastern and southern Asia and most of tropical and sub-tropical Africa, particularly the coastal regions and the Nile, recorded from Sunda Island and the Philippines in winter. Within our limits it has been found in the Inundation Zone of the Niger and in Gambia, Togoland, the Gold Coast, Nigeria, Lake Chad, French Niger and Sudan, Ubangi-Shari and Lower Congo but intermittently. Flocks up to a hundred strong have been recorded in winter. There is no evidence of breeding.



Rosy Pelican — Pink-backed Pelican

The larger but otherwise similar bird, *P. o. onocrotalus* (Linn.), only to be distinguished by its measurements (and then with difficulty), has been recorded from Lake Chad (wing 711 mm.). It breeds in Europe and Asia from Hungary to India and may occur in winter in tropical Africa with its smaller relations.

PINK-BACKED (OR GREY) PELICAN

Pelecanus rufescens (Gmelin)

The Grey Pelican is a smaller bird than its white relatives, and the colour of the plumage—pale grey, with the back and rump vinaceous and white belly washed with pink—should enable it to be identified. The pouch is flesh-colour lined transversely with sulphur; the bill is grey or pink, and the feet are yellowish cream. The wing measures 570–620 mm. Immature birds are brownish and have whiter rumps than the adult.

In flight and clumsy gait this bird resembles the White Pelican. Though so ungainly on the ground the Grey Pelican has wonderful powers of flight, and may be seen soaring on motionless wings in wide circles at a great height from the ground. It lives entirely upon fish, of which it consumes vast quantities, and at the end of the day V-shaped flights may be observed returning to their roosts. When perched on a tree it stands with its legs slightly bent, and its appearance,

with its pouch fluttering in the breeze, is then often grotesque. Although not so gregarious by nature as the Rosy Pelican, it may be seen at times in very large companies on the sandbanks.

Within our limits its nesting colonies are nearly always in trees, but it will also breed on sandy islands in river estuaries. In West Africa its colonies are usually situated north of lat. 12° in the Northern Territories of the Gold Coast, Nigeria, etc., sometimes within the walls of native towns, as at Sokoto and Kano. The breeding season is a long one and lasts from the end of August until the end of March. From mid-April to mid-August the colonies are deserted. The nests are built in large trees, especially baobabs, and are made entirely of dry sticks, the result being fairly compact but crude platforms upon which two ovate white eggs are laid which measure 76·5–84·8 × 49–53·8 mm. As many as thirty to forty nests may be built in the same tree, which is resorted to year after year and is sometimes shared by nesting wood-ibises and marabous.

Distribution. Ranges in Africa from Gambia and the White Nile south to Cape Province, also to the Gulf of Aden and Madagascar. It is by far the most numerous pelican in our area, frequenting the estuaries, bays and lagoons of the coasts and ascending the large rivers far into the interior. It is common in the Inundation Zone of the Niger and along the upper reaches of the large rivers, also on Lake Chad. Breeds for the most part north of lat. 12° N. It is a resident bird.

ORDER CICONIIFORMES

FAMILY ARDEIDAE

A new key to the Bitterns, Herons, and Egrets in the family Ardeidae*

1. Size large (wing 300–350 mm.); ground colour tawny buff; upper parts variegated with black and brown, under parts streaked with brown; crown black; wings blackish, vermiculated with chestnut; neck-feathers elongated to form a ruff or shield .. *Botaurus stellaris stellaris*, p. **164**
   Plumage not as described above 2
2. With 10 tail-feathers; wing seldom exceeds 165 mm. (6½ in.) 3
   With 12 tail-feathers; wing usually exceeds 165 mm. (6½ in.) 4

* The discovery within our limits of the Yellow-billed Egret (*Mesophoyx intermedius brachyrhynchus*) since vol. i of my *The Birds of Tropical West Africa* appeared has necessitated rewriting the key which was given in that volume so as to include it. Opportunity has also been taken to simplify its reading.

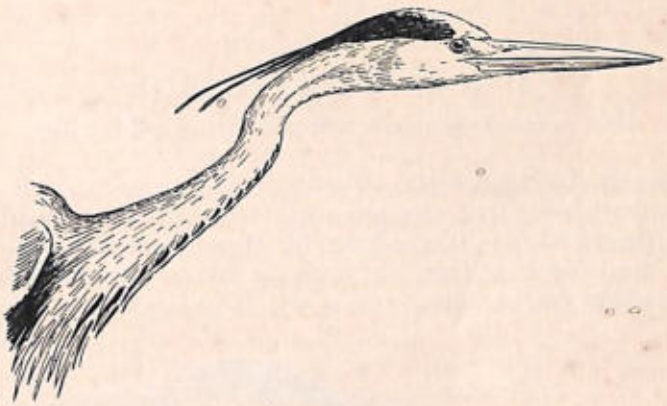
3. Upper parts uniform slate-blue, under parts streaked heavily with black .. .. *Ardeirallus sturmii*, p. 163
Upper parts parti-coloured; neck chestnut; under parts not heavily streaked with black *Ixobrychus minutus payesii*, p. 162
4. Size large (wing over 330 mm. (13 in.)) 5
Size smaller (wing under 330 mm. (13 in.)) 9
5. With chestnut on under parts 6
Without any chestnut on under parts 7
6. Wing under 15½ in.; black on crown *Pyrrherodia purpurea*, p. 145
Wing over 19½ in.; no black on crown *Typhon goliath*, p. 147
7. Colour mainly grey 8
Colour white throughout *Casmerodius albus melanorhynchus*, p. 148
8. Neck and mantle black, under wing-coverts white *Ardea melanocephala*, p. 144
Neck and mantle grey, under wing-coverts grey *Ardea cinerea*, p. 143
9. Primaries and secondaries white 10
Primaries and secondaries not white 13
10. Crown white 11
Crown not white 12
11. Bill black (over 75 mm.); tarsi black and feet yellowish *Egretta garzetta*, p. 151
Bill yellow (not over 75 mm.); tarsi yellow and feet black *Mesophoyx intermedius brachyrhynchos*, p. 150
12. Crown vinaceous (white in immature birds, but bill under 75 mm.) .. .. *Bubulcus ibis*, p. 154
Crown streaked .. .. .. *Ardeola ralloides*, p. 155
13. Plumage transversely barred black and buff *Tigriornis leucolopha*, p. 161
Plumage not transversely barred 14
14. Wing under 203 mm. (8 in.) *Butorides striatus atricapillus*, p. 157
Wing over 203 mm. (8 in.) 15
15. Plumage uniform blackish or blue-grey, sometimes with white on throat; feet contrasting in colour with tarsi; eyes small 16
Plumage not uniform blackish or blue-grey; feet not contrasting in colour with tarsi; eyes large 17
16. Throat white .. .. .. *Demigretta gularis*, p. 152
No white on throat .. *Melanophoyx ardesiaca*, p. 149
17. Concealed white patch in middle of back and rufous on neck .. .. *Nycticorax leucōnotus*, p. 160
No concealed white patch on back or any rufous on neck .. .. *Nycticorax nycticorax nycticorax*, p. 158

GREY HERON

Ardea cinerea cinerea Linnæus

THE Grey Heron of tropical Africa is exactly the same bird as that with which we are so familiar in England. The pale grey colouring of the body, the white cheeks and forehead and the elongated black crest are well-known features. The wing measures 430–470 mm., the tarsus 142–166 mm.

Except in the breeding season it is for the most part a solitary bird and is usually to be seen wading in the shallows of river, pool or lagoon or standing motionless and silent, waiting to spear some unhappy fish or frog. Perched in a tree, it adopts a hunched position



with the long neck sunk between its shoulders. Its flight is characteristic of its family: the huge rounded wings are slowly beaten, the head is drawn back and the long legs are fully extended. Only when disturbed will it utter a deep croak.

Resident all the year round, its numbers are reinforced by migrants from Europe. A flock of 300 birds was recently seen on the banks of the Barra-Issa (French Sudan) in October, which pointed to an arrival on a large scale, and I have records of birds seen 100 miles from land off Sierra Leone.

The habits of the Grey Heron are too well known to need much notice. Its food and behaviour are similar to that of the other herons in our area. The resident birds breed during the rains, returning about April to the trees in which they nest, often in the vicinity of native villages. The nest is bulky and made of sticks, in which three to five pale greenish-blue eggs are laid. Average of 100 British-taken eggs: 59·94 × 43·24 mm. (after Jourdain).

Distribution. The greater part of Europe and Asia and the whole of Africa in winter. In West Africa it is recorded from every political division and from the Cape Verde Islands in winter, and it will no doubt be found on the islands in the Gulf of Guinea, though I have no information of its breeding except on the mainland. Nesting colonies appear to be very thinly distributed in British Possessions. On the other hand, it is found generally throughout the area in the coastal lagoons and the rivers, pools, reservoirs and lakes of the interior. Not restricted to the swamps, it may be encountered on grasslands and farms in open country. The majority are probably migrants or non-breeding birds, as it may be encountered all the year round, but I have only accounts of its nesting in Kano and Bauchi Provinces of Nigeria. It must surely be much more widespread than that as a breeding species.

BLACK-HEADED HERON

Ardea melanocephala melanocephala Vigors *and* Children

This purely African species is slightly smaller in size than the Grey Heron, with wing 370–420 mm. and tarsus 136–145 mm. It may be distinguished from it and from all other herons in Africa by its black head, neck and mantle, only the throat being white with black streaks on the sides; wings and tail are dark slate above, but



in flight the white under side of the wing is conspicuous; the grey under side is ornamented by a bunch of grey plumes at each side of the breast. The feet and legs are nearly black.

A common species in West Africa, it is for all that somewhat local and is subject to partial migration. It is not so wedded to the swamps as are herons in general and may be encountered far from water and in the dry season will visit forest clearings. Often this heron

may be seen on cultivated village clearings and in the open savanna. During the rains it is not nearly so much in evidence, as the birds then congregate in their nesting colonies. The food of the species is by no means restricted to fish, for rats and other rodents, frogs, snakes, crickets and locusts form a large part of its menu. When roosting it chooses a tree—not necessarily a high one—from which it commands an uninterrupted view of its surroundings and to which it will constantly return. It seems, from notes in my possession, to be partly nocturnal in its habits.

The nesting season extends in Upper Guinea from April to June; the herons build their bulky nests of sticks with finer lining of twigs and herbaceous stems on the outermost branches of tall trees, sometimes at a height of 100 ft. or more. A dozen or so nests may sometimes be found in the same tree as the nests of the Buff-backed Heron and Sacred Ibis, but as many as thirty nests have been found in an isolated tree in the Inundation Zone and in single cotton trees in the Gold Coast. The eggs, three or four in number, are plain greenish blue and the surface glossless. The average of thirty-three eggs is 58·46 × 42·45 mm.

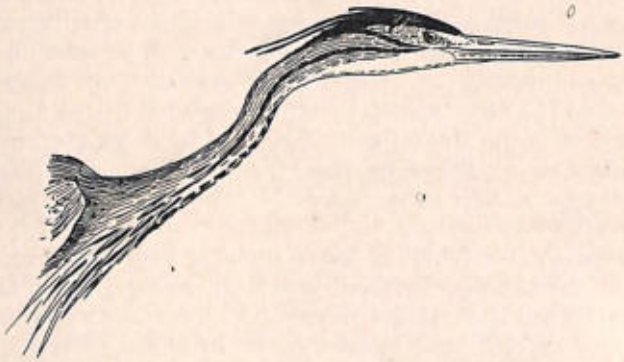
Distribution. The whole of Africa from the Senegal River and the Sudan to the Cape. It is found commonly in the Inundation Zone of the Niger but is not found everywhere along the large rivers, only occurring locally. Numerous in the vicinity of Lake Chad and often seen far from water in open savanna, it is rarely met with in the coastal creeks. In Lower Guinea and the British and French Cameroons it appears to be a dry-season visitor from October to April, but in the north of its range, as in parts of French Sudan and French Niger, it may be seen all the year round. It is recorded from all British Possessions in West Africa.

PURPLE HERON

Pyrrherodia purpurea purpurea (Linnæus)

MEDIUM in size (wing 330–383 mm., tarsus 115–130 mm.), rather smaller and slighter than the Black-headed Heron, this species may be recognised when adult by the brown rather than grey upper parts but especially by the chestnut and black under parts. The black streaks down the side of the neck are noticeable at close range. At a distance it merely appears darker and to have a thinner neck than the other two mentioned. The under side of the wing is rufous. All three species have brownish-yellow bills and yellow eyes, and there is little distinctive about the light brown legs except in the case of the Black-headed Heron, which has noticeably darker legs than the others.

Unlike the other members of the family we have discussed, the Purple Heron is never found far from water. It keeps, for preference, to the denser swamps and reed-beds but wanders to the coastal creeks, where it may be seen standing motionless on trees along the creeks or flying across an open stretch of water. It does not habitually frequent the seashore, but many will congregate on the coastal lagoons. Observers agree that it is the most timid of the herons, especially in the swamps, when its long neck is reared up at the slightest sign of danger; it has a habit of becoming rigid when



observed. At times it will perch on an isolated palm from which a good view of their surroundings is assured. Along such big rivers as the Benue and Niger it is not a common species but may be seen here and there throughout the length of the Niger, more especially in swampy areas. On the whole it must be reckoned a rather uncommon bird within our limits in comparison with the other herons, but owing to its shy disposition and secluded habitat many must escape detection. Its diet is more restricted to fish, frogs and insects than that of its larger relations, which wander more freely over the land.

It nests in inaccessible parts of swamps, building a rather flat nest of dry reeds and rushes in colonies in the reed-beds. Eggs are three to five in number, pale bluish green in colour, and average 50–59 mm. × 39·5–43 mm.

Distribution. Apparently resident throughout tropical Africa. As it is also a species spread widely over Europe east to Turkistan, it no doubt has its numbers augmented in winter. Within our restricted area its status has already been discussed. Found wherever there are swamps and reed-beds, it is locally but generally distributed. To British Cameroon it is said to be a dry-season visitor only.

GOLIATH HERON

Typhon goliath (Cretzschman)

THE largest of all the herons, standing over 3 ft. in height with grey upper parts and rufous-chestnut under parts, it is easily recognised. The crest, of the same colour as the under parts of the body, distinguishes it from the very much smaller Purple Heron, which latter has a crest of black plumes. The wing of the Goliath Heron measures 500–585 mm. and the tarsus 185–235 mm.

It is usually encountered in pairs or singly and is nowhere common. It keeps much to lonely marshes and streams but is also to be met with on such large rivers as the Gambia, Niger and Benue, where single examples may be encountered every few miles on the sandbanks. It is rarer on the shore but occasionally frequents the mouths of rivers and mangroves. Like all herons, the flight is laboured, with the wings much rounded.

It lives principally upon fish, frogs and aquatic life, advancing slowly and deliberately through the shallows until its prey is sighted. The whole body is then gradually inclined forward and the head and neck rotated until they lie flush with the surface, when the fish or frog is speared with a lightning lunge. It may sometimes be seen perched on the top of a tree by some backwater, when its large size arrests attention. Normally it is very difficult to approach, as it is one of the most shy of its family.

It nests in the swamps either on beaten-down sedge upon which reeds and rushes are arranged, or at times on a low bush. Two to four eggs are laid which are uniform pale blue. A clutch taken in Uganda measured 72 × 52 mm., which is small for the size of the bird.

Distribution. The greater part of Africa from the Sudan and Senegal to the Cape. In West Africa it is distinctly a local species, though recorded from many places, including all British territories. It is a resident bird and is unlikely to travel far from its favourite swamps or river. Fairly generally distributed throughout the area from the Senegal to the Congo, it may be encountered in suitable environment from the mangrove swamps and estuaries of the coast to the Upper Niger and Senegal Rivers, to the Inundation Zone and to Lake Chad—everywhere, in fact, where its food abounds except on the sandbanks of the larger rivers, keeping to the swamps, where it can quickly escape detection. It is usually solitary.

AFRICAN GREAT WHITE HERON

Casmerodius albus melanorhynchos (Wagler)

THE Great White Egret frequents the same localities as the Little Egret, from which it may be distinguished by its larger size and much longer neck. The wing measures 360–400 mm. and tarsus



152–163 mm. Its plumage is pure white throughout. In the breeding season the bill is probably yellow, but sitting birds with partly black bills have been recorded by reliable observers. The long

ornamental plumes hanging from the scapulars are present only in the breeding dress. Legs and feet are black at all seasons.

This is a solitary bird; its haunts are the rivers and streams, where it may be seen standing in the shallows of a quiet backwater or slowly wading in a lagoon, ever alert to spear its prey. Along the larger rivers it may often be seen on shore or rock, and sometimes numbers up to twenty will gather on a lake, but in their fishing they keep to themselves. It is not uncommon to see a little party winging their way to a roosting place, which may be a large tree in a village, trees on the edge of a lake or lagoon or a mangrove swamp, to the bushes of which the birds return regularly night after night. It is a shy bird and normally prefers solitude to the haunts of man, but in the breeding season as many as fifty have been found nesting in a single tree in a busy trading station, and for the purpose of rearing its young it seems to prefer company, as it does at times when roosting with darters and other egrets.

The nest is usually in trees, when it is composed of dry reeds and rushes on a platform of sticks lined with finer rushes and plant stems. The tree may be in a village compound or one overhanging water and usually the nest is placed at a fair height from the ground. When situated in a reed-bed the nest may be low down within 3 ft. of the water. The clutch is normally four and the eggs are pale blue, measuring about 56–57 × 39–40 mm.

Distribution. Resident and widely spread from Senegal and the Sudan to the Cape but somewhat local, as in the Belgian Congo. It is found throughout West Africa and may be met with from lagoon and coastal estuaries and along the large rivers to localities far in the interior such as Lake Chad and the Inundation Zone of the Niger. It is not an uncommon species, and only exceptionally is it now shot for its plumes. Natives do not harm it.

BLACK HERON

Melanophoyx ardesiaca (Wagler)

APPROXIMATELY the same size as the Reef Heron (wing 230–255 mm., tarsus 82–85 mm.), this is the only member of the Heron family in our area which is entirely dark slate colour without a trace of white in the plumage. A striking feature is the black legs contrasting with the orange toes on the rare occasions when the latter can be seen. This character is shared by the Reef Heron alone, but that bird always has a white throat and never, as in the Black Heron, a black bill. Another point of distinction is in the crest, which is ample in the Black Heron but consists in the Reef Heron of only two long narrow plumes.

The Black Heron is evidently far from being a common bird in West Africa and much still remains to be discovered concerning its life history. It is occasionally to be seen standing in shallow muddy water by the bank of a river or maybe in a lake with a muddy bottom and reed-fringed border. Another favourite haunt is the flooded rice-fields, and it will sometimes frequent the tidal creeks bordered by mangroves. It may be seen sitting singly or in pairs in marshy and not too wooded places along creeks and rivulets.

Its manner of fishing is fascinating to watch. *Both* wings (not one, as I wrote in my larger work) are spread and arched so as to cast a shadow. This posture is maintained for considerable periods and has been observed on both bright and cloudy days. Sometimes a number of birds join company and fish together, and as many as forty have been seen thus engaged on the Keta Lagoon on the Gold Coast. Presently, without any apparent signal, all will rise and fly closely packed in a circle to pitch in another spot. The flight is swift for a heron and the wing-beats are rapid.

No one has ever described the nesting of this heron in West Africa, but it is recorded as building in East Africa in similar situations to the egrets and other small herons in ambatch bushes growing in water, the nests being within 6 ft. of the surface. Eggs are four in number and are rather darker uniform blue than is usual in herons' eggs. The measurements are 43–46 × 32–33 mm.

Distribution. Its range in Africa is rather peculiar. In East Africa it extends from the Upper Nile to the Zambesi, in West Africa from the Rio de Oro, north of Senegal, throughout the whole of Upper Guinea to Nigeria. It is not recorded from French Cameroon or Gaboon, but is found in Angola. It is thus absent from all the forested area of Lower Guinea and from most of the Belgian Congo except from Katanga to Mossamedes. Local but widely spread in West Africa, it frequents both coastal lagoons and inland lakes and has been met with in all our Colonies, preferring open shores and marshes to still backwaters and streams in jungle-clad areas.

THE YELLOW-BILLED EGRET

Mesophoyx intermedius brachyrhynchos (Brehm)

The adult male and female are entirely white in plumage; the bill is yellow; the feet and toes are black; the joints and bare part of the tarsus are yellow. In breeding dress plumes are assumed which extend beyond the tail. The bill is 71–75 mm., the wing 295–320 mm. (after Grant).

It is easily confused with the Buff-backed Heron in non-breeding dress, but may be distinguished chiefly by the coloration of the feet

and toes, length of bill and difference in size. The bill of *Babulcus ibis* measures 55–62 mm. and the wing 240–250 mm., i.e. smaller in all dimensions.

Distribution. Eastern and southern Africa, ranging on the west to Damaraland. The discovery of an example in the vicinity of Fort Lamy, Shari River, by Dr. R. Malbrant extends the range of the Yellow-billed Egret considerably to the west in Equatorial Africa and brings it within our limits for the first time.

LITTLE EGRET

Egretta garzetta garzetta (Linnæus)

THE small size, snow-white plumage, black bill and black legs but yellow toes distinguish the Little Egret from the Great White Heron or the Spoonbill. It is more easily confused with the Cattle Egret (*Bubulcus ibis*), but that bird always has a yellow bill. In size they are similar. The wing of the Little Egret measures 275–293 mm., the tarsus 100–115 mm. In appearance it is altogether more dainty, its beak is not so thick, it holds its head higher and picks its feet up daintily with all the mannerisms of the aristocrat. Dimorphism in West Africa is rare, but is exhibited in a grey specimen from Sierra Leone with an ebony-black bill. The status of the Little Egret in West Africa is still puzzling. Although to be met with locally all the year round, no one appears to have discovered a nesting colony in the whole of West Africa except on the Cape Verde Islands. The mainland birds have their numbers increased in winter, for the South European quota move south at that season and spread themselves over the countryside, avoiding, however, the forested areas. I have elsewhere quoted the case of a bird ringed in Yugoslavia, and recovered in Nigeria, to prove my point.

Fish seem to form but a small portion of the Little Egret's menu, and then only very small ones. It lives largely upon insects, dragonflies, spiders, grasshoppers, water-beetles and the like, and especially on shrimps when available. It hunts in characteristic manner, moving forward in short little darts, making lightning jabs with its bill, twisting and turning about with wonderful agility.

Its habitat is a varied one—pools, marshes, rivers, rice-fields, sometimes on the seashore and in the mouths of estuaries; again, it may join the Buff-backed Herons following the cattle, and especially is it fond of short grass by a lakeside. It is also regularly found in mangroves.

We need to learn much more regarding its migration and of its status in the summer. The fact that breeding places are known in Africa in such widely separated places as Egypt, Lake Victoria and the Berg River in South Africa, as also in the Cape Verde Islands,

lends hope to the discovery some day of a breeding colony in West Africa on the mainland.

The Little Egrets coming in to roost afford the most pleasing sight as they fly low in little parties in V-shaped or semicircular formation, their lovely white plumage showing up so strikingly in the evening light. In East Africa, on Lake Victoria, the Little Egret builds its nest in ambatch trees growing out of water, but in the Cape Verde Islands on ledges of the cliffs or on rocks offshore, making a nest of twigs and drift material. The full clutch consists of four eggs (fewer in the Cape Verdes), pale greenish blue and measuring 44–45·67 × 33·2–34 mm.

Distribution. Southern Europe and Asia and throughout tropical Africa. In West Africa from Senegal to British Cameroon and recorded from all our Colonies, but appears to be more numerous in Gambia and Casamance than further south. In our West African possessions it is more often encountered in the north of the Territories than in the south, their numbers being augmented considerably in winter. The only known breeding colony in our area is in the Cape Verde Islands, but they are suspected to nest in British Cameroon.

WEST AFRICAN REEF HERON

Demigretta gularis (Bosc)

The Reef Heron is about the same size as the Little Egret (wing 247–278 mm., tarsus 93–100 mm.) but has shorter legs. The white throat and sometimes white major wing-coverts, in addition to a dusky or brownish (not black) bill, distinguish this species at all seasons from the Black Heron. The rest of the plumage is slate-colour; the legs are greenish black; the feet and toes are gamboge yellow. The Reef Heron is dimorphic, having a light phase in which the upper parts are slate-grey and the under parts browner washed with grey, and also a dark phase in which the general plumage is blackish, including the under parts, only the mantle and elongated nape plumes being grey, the ornamental plumes on the back being bottle-green. The amount of white in the wing varies individually to a remarkable degree. I have dealt very fully with the colour phases in my *Birds of Tropical West Africa*, but since that work was published I have examined a nearly white bird from Rufisque, Senegal, which convinces me that this bird also has a pure white phase, when it can only be distinguished from the Little Egret by its dusky brown (*never* black) bill. In neither Reef Heron nor Little Egret is the bill ever yellow as it is in the Red Sea Reef Heron (*D. schistacea*). That may account for the constant reports received of dark and white birds being seen flying together.

The Reef Heron is a common species along the coast and on the islands lying off the mainland, where it may be seen frequenting the mouths of rivers and the low mangroves. It is incorrect to state that it does not occur inland. It has now been found in the Inundation Zone of the Niger. It prefers rocky coasts to the mud-flats, though it may be seen on both types of shore and has been observed to wade into the surf up to the belly. When alarmed in cover, as in mangrove swamps, it will attempt to elude detection by stretching up its neck in the manner of the bittern, remaining quite rigid.



It feeds on little fishes and other marine creatures and may be seen at times rushing about with outspread wings chasing fishes left in pools by the receding tide. Quite fearless of the sea, it will wade into boiling surf.

There is considerable local movement, for instance it is much more numerous in Gambia in the dry season than during the rains.

In April the birds largely disappear from the coast to their breeding grounds behind the mangrove belt, building their nests in trees, as do many other herons. Three or four eggs are laid, of a very pale blue colour. It is most important to discover whether white and slate birds pair and breed together.

Distribution. The coastal districts of West Africa from Senegal to French Congo, including the Los Islands, Annobon, Principe, São Thomé and Fernando Po. It has also ocurred inland in the Inundation Zone of the Niger at Lake Debo and at Mopti.

BUFF-BACKED HERON OR CATTLE EGRET

Bubulcus ibis (Linnæus)

The only birds with which the Cattle Egret can be confused are the Little Egret and with the very rare white phase of the Reef Heron, for all are white birds. A glance at the bill should prove the identity, for only the Cattle Egret has a yellow bill, a very distinctive feature compared with the black bill of the Little Egret and the brown bill of the Reef Heron. Moreover, in the Cattle Egret the bill is short (about 2¼ in.), while the bills of the other two are nearer 3½ in. in length and are much finer. In breeding dress, decomposed long plumes spring from the shoulders and another bunch adorns the crown, vinous pink in colour.

Its habit of following herds for the insects which the animals disturb is the origin of the name Cattle Egret. When perched, its head is sunk low between its shoulders. Its association with cattle leads to seasonal movements as the herds are moved from one pasture to another, but north of lat. 10° N. is a fly-free belt where the animals can remain the year round. On the coming of the rains the herds from the south are moved north, and with them come the egrets. The advent of dry weather witnesses birds and cattle moving southwards. From May to November whole provinces are deserted, the birds breeding during the rains in settled colonies. From November onwards the birds are found everywhere, even at the coast. Their fondness for following cattle leads them to the border of the desert, but they do not penetrate beyond, though the cattle may be present.

Of all the heron family this is certainly the tamest, allowing approach to within a few feet. Insects provide its principal food, and ticks which fall from the animals it accompanies are said to be devoured, though opinion is divided on this point. Although it will perch on the backs of cattle it does not peck at their hides in the manner of the Oxpecker, and there are no grounds for the assumption that it does so for the purpose of finding ticks. Probably it uses the animal's back purely as a convenient perch. As a destroyer of

"hoppers" it has few equals and deserves in consequence the rigid protection it obtains.

The Buff-backed Heron is to be found in flocks from a dozen or so up to several hundred birds, and as special trees are selected for a roosting place, little flocks may be encountered following one another in a steady stream to the selected rendezvous as sundown approaches. Most of the breeding colonies lie north of lat. 10° N. Breeding takes place in the rains, many pairs occupying the same tree, in which they build rude platforms of sticks and twigs and coarse herbaceous stems. Clutches of eggs, three to five in number and pale blue in colour, may be found from the end of May onwards. Eggs average 46 × 33·8 mm. in size.

Distribution. Southern Europe and western Asia; the whole of Africa and most of the larger islands round its coast. In our area the Cattle Egret is abundant—in the dry season spread over the whole countryside—but during the rains is concentrated more in the Northern Territories or beyond. A dry-season visitor to Cameroon and to forest clearings. A familiar object in all our Colonies, it is equally common elsewhere, but is a straggler only to the Cape Verde Islands and to two islands in the Gulf of Guinea.

SQUACCO HERON

Ardeola ralloides ralloides (Scopoli)

In size the Squacco resembles closely the Cattle Egret, having a wing of 198–231 mm. and tarsus 60–68 mm., but unlike the latter it has a dark back and may further be distinguished by the colour of the bill, which is basally green or bluish and terminally black. The back is vinous, including the ornamental plumes, while long narrow feathers, white, edged with black, fall from the nape. Legs and feet are purplish-flesh colour. When at rest there is no bird more difficult to detect, matching its surroundings to perfection and adopting a bittern-like pose. Only when it flies does it produce pure white wings, as if by magic, but once settled again with wings folded it completely disappears from sight at a hundred yards distance.

In West Africa its status is somewhat uncertain; numbers appear to be resident, but others again are migrants from southern Europe which arrive in the Inundation Zone of the Niger in August and depart in February. Examples ringed in Yugoslavia have been recovered in Nigeria, one the same year and one five years later.

The Squacco frequents swamps, lagoons and estuaries and may often be seen perched on trees by the borders of streams. It will stand silently for long periods by the water's edge or upon some

leafy fish-trap, when it is wonderfully camouflaged. Its food consists of insects, including dragonflies, butterflies, aquatic animals, crabs, molluscs and also very small fish to a lesser extent. Should it be heard to call, it utters three or four harsh croaks. Flocks of twenty or so may at times be encountered on the northern lakes, and on rare occasions a few birds will visit clearings deep in the forest before the swamps are drained.

The squacco breeds between April and June, and juveniles have been seen in August on the Upper Niger. Colonies in West Africa have not been reported, but single nests have been found in Northern



Nigeria in bushes overhanging a stream—bulky but compact structures of sticks, grass and reeds. Elsewhere in Africa nests have been built low down among patches of papyrus reeds and ambatch bushes among nests of Cattle Egrets and Purple Herons. Eggs number three or four and are smaller and more rounded than those of Buff-backed Herons and a shade darker greenish blue in tone. They measure 36–39 × 28–30 mm.

Distribution. Central and southern Europe, east to the Caspian, resident in Africa from the Sudan and Senegal to the Cape. European birds have been proved to winter in West Africa, south to Nigeria and probably to the Belgian Congo. Within our limits it is a resident species whose numbers are reinforced in winter. Recorded from all our Colonies. Widely spread from the Inundation Zone of the Niger, Niger River and Lake Chad, south in winter to the coastal lagoons, but only known to nest for certain north of lat. 10°, though reported on native evidence to breed in Ondo Province, Southern Nigeria. Much more uncommon than the Cattle Egret, but numbers fluctuate locally and seasonally.

AFRICAN GREEN-BACKED HERON

Butorides striatus atricapillus (Afzelius)

A SMALL resident heron about 16 in. long, with short legs, having dark green upper parts, greyish ornamental plumes on the back and a glossy bottle-green crest extending to a point; the neck and under parts are grey; a black streak passes below the eye, and the ear-coverts are white; the bill is mainly black, and the legs and feet are orange-yellow. The wing measures 162–182 mm. and the tarsus 46–55 mm.



The Green-backed Heron is a retiring bird which haunts the dense mangrove swamps or the high elephant grass bordering streams. It can run about the roots of the mangroves with curious crouching gait and climbs with facility. By day it hides in the reeds or dense jungle but is partly nocturnal. It may commonly be seen perched in the shadows of some leafy tree overlooking a backwater. When disturbed it utters a squawk like the note of a jackdaw, quickly disappearing into thick cover. Sometimes it may be seen on the exposed sand at the water's edge.

Its food consists of small crabs, insects, "jumping fish," mud-skippers and various shellfish.

It is a resident and very numerous species in our area, not confined to any particular district so long as ecological conditions suit its mode of life. It breeds from April to July in small colonies of eight to fifteen pairs and builds its nest about 6–8 ft. from the ground. The nest is composed of a few loose twigs without any lining, so that the eggs may be seen from below. Usually it chooses mangroves in which to breed, but nests have been found in mimosa in Gambia and elsewhere in fig-trees. The eggs number two to four and are of the

usual immaculate greenish blue favoured by the heron family. They measure 37–39 × 28–30 mm.

Distribution. Tropical Africa generally, from the Egyptian Sudan and Senegal south to Natal and the Congo. It is absent from the Red Sea coast, where another race takes its place. It is represented by subspecies in the islands off East Africa. Within West African limits it is widely distributed, especially in the mangrove belt, but it is found also inland, especially in the Inundation Zone. It is not common beyond the mangrove belt of the great rivers. It is not habitually found in dry districts, but at times may be seen at a rain pool far from swamps. It occurs at Timbuktu and is common in the Lake Chad area.

NIGHT HERON

Nycticorax nycticorax nycticorax (Linnæus)

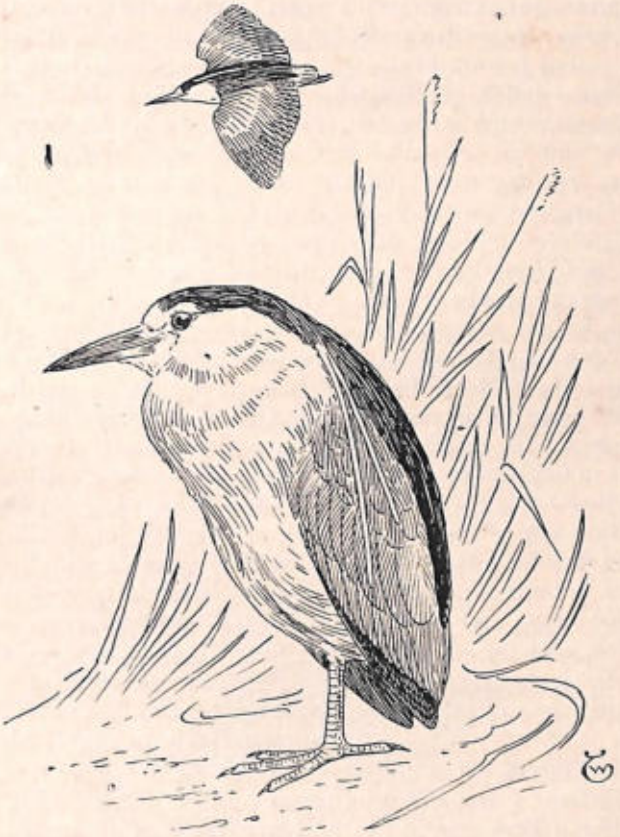
SHORT and squat in appearance, about 2 ft. in total length, the Night Heron appears very dark on the upper parts in contrast to the pale grey wings, but on close inspection the crown and the middle of the back are seen to be glossy bottle-green; a narrow white patch on the forehead extends over the crimson eye; long narrow white plumes extend from the nape. The under parts are white, the bill is greenish black, and the legs and feet are yellow, the wing being 280–295 mm. and tarsus 65–75 mm. Immature birds are brown above with buff or white shaft-stripes, the under parts being streaked brown, white and buff.

In flight the short but broad rounded wings are characteristic. As its name implies, it is generally a night feeder, living upon insects, small rodents, fish, frogs and molluscs. By day it spends its time sitting in some tree or bush by the water's edge or skulking in the sedge bordering streams. It flies laboriously, with its yellow legs trailing behind, and when disturbed it may utter a deep sharp squawk, but is usually a silent species.

In Africa it is resident all the year round, but its numbers are augmented in winter by arrivals from southern Europe and western Asia. Examples ringed in Hungary and near the Caspian Sea have been recovered, the former in Sokoto, the latter in the French Cameroon near Yaunde. Occasionally very large flocks are encountered. I have information of 100 being seen on the grassy banks of the Sokoto River and of lesser flocks in French Sudan.

The Night Heron roosts by day, and as many as a dozen may be found in the same thorn bush. It nests in colonies on low bushes or in dense reed-beds, constructing a nest of sticks or reed-stalks which

are usually difficult of access. The eggs vary from three to five in number and are rounded at both ends. In colour they vary in the shades of blue exhibited. Published measurements are 44–47 × 35·5–35·6 mm. of an African-taken clutch.



Distribution. Southern Europe and Asia and resident in Africa from Senegal, Guinea and the Sudan to Cape Province; also Madagascar. Within our limits it is a common species recorded from every political division. Local in the Inundation Zone, but generally distributed by streams, lakes and reed-beds, preferring to spend the daylight hours in thick-foliaged trees in the vicinity of water. European migrants arrive in winter, but to what extent it is impossible to say. The breeding birds are resident.

WHITE-BACKED NIGHT HERON

Nycticorax leuconotus (Wagler)

About the same size as the common Night Heron, the present species has a black crown terminating in a pointed crest on the nape, black cheeks, white chin and a bright chestnut neck which turns to a duskier rufous brown on the breast. The back is very dark brown, concealing a patch of silky white feathers. The wings are brown with slate-coloured primaries. The eye is dark and large, the bill is black, and the legs and feet are yellowish green. The wing measures 245–265 mm. and the tarsus 69–74 mm. In flight the white triangular patch is conspicuous. Immature birds have no white patch on the back and closely resemble the young of the last species, but soon show an indication of chestnut under parts, the brown upper parts being more uniform.

In its habits it resembles, so far as we know, its commoner relative and may be seen sitting on wooded islets or in bushes overhanging water. Near the coast it frequents the dense mangrove swamps. Either it is exceptionally shy or else very rare, for it is seldom procured, and little is known concerning it. It seems more at home in forested localities and may be observed sometimes flying up and down streams at dusk. It is a bird which feeds at night, and in the stomach of specimens killed, remains of small fish, winged ants and flies have been found. It seldom utters a sound.

Its nest is built of sticks and reed-stalks, sometimes lined with finer reeds and twigs, and is placed on a bough overhanging water or in a bush on some isolated rock in a river. It may be anything from 5 to 40 ft. above the surface. The eggs, of which four or five form the clutch, are ice-blue or whitish with a faint tinge of green. They measure 43·5–48 × 33–35·5 mm. A pair were found nesting at Ajakuta, Nigeria, on 30th October with two well-grown young.

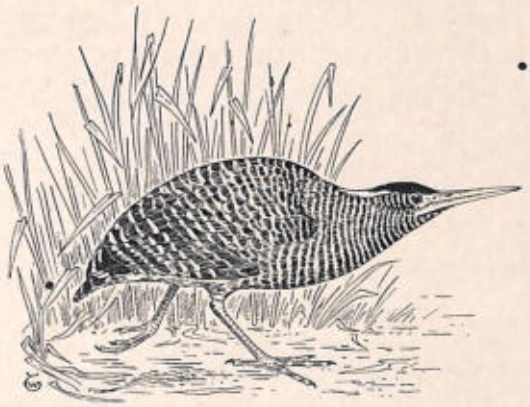
Distribution. Occurs from Senegal and the White Nile to the Zambesi and Benguela but is nowhere described as common unless it be on the Uelle River in the northern Belgian Congo. In West Africa it is distinctly rare, or rather, rarely seen. Within our limits it is recorded from Senegal, Portuguese Guinea, Liberia, Gold Coast (Volta River), Nigeria and French Cameroon, but it seems to be extremely local, though resident. It has recently been found breeding in the Kabba Province of Nigeria.

WHITE-CRESTED OR TIGER BITTERN

Tigriornis leucolopha (Jardine)

About the same size as the European Bittern, this African species can easily be identified by its black plumage banded with sandy buff, a streaked throat, and cinnamon under parts streaked with white. A white crest is partly concealed, the crown being black. The eye is yellow, the bill dark brown above and greenish yellow below; legs and feet are greenish brown; the wing measures 275–290 mm., the tarsus 80–86 mm.

It can stretch out its banded neck to a considerable length and no doubt seeks protection by assuming a rigid att itude, when it must be well-nigh invisible among the thick herbage. The Tiger Bittern is a true bird of the forest and is consequently restricted in its range to forested areas. It lives equally happily in dense mangrove swamps far up the tidal rivers, and though sometimes seen on forested river banks, it prefers the smaller streams which flow through thick forest country. It has been heard to boom not unlike a European Bittern but its systematic position is believed to be far removed from that bird. Captive birds have been known to utter a subdued puffing



noise and to hiss if approached closely. It lives on grasshoppers, crabs, lizards, frogs, and various beetles and insects. Fish have not been found in its stomach in West Africa, but birds shot in the Congo had been feeding on small fish. Nothing is known about its breeding habits.

Distribution. The forested area of western Africa, from Sierra Leone and Liberia to the Loango coast, extending its range eastward to the Ituri forest. Within our limits reported from Sierra Leone,

Liberia, Gold Coast, Togoland, southern Nigeria, Cameroon, Rio Muni, and Lower French Congo.

RED-NECKED LITTLE BITTERN

Ixobrychus minutus payesii (Hartlaub)

THIS minute bittern, which when standing erect with neck outstretched is little more than a foot in height, may be recognised by its diminutive size from all others of its family except the African Dwarf Bittern, which is uniform slate above and heavily streaked below. In the male Little Bittern the black crown, back and scapulars glossed with green contrast with the rufous neck and under parts, while the pale rufous and greyish-white wing-coverts make a large conspicuous patch in the otherwise black wings. The bill (some 50 mm. long) is greenish brown, as are the legs and feet; the eye is reddish brown. The female has, in place of the black mantle and back, a dark brown back with pale edges to the feathers and brown instead of black primaries. Wing is 125–147 mm., tarsus 43–46 mm.

Like its counterpart in Europe, the African Little Bittern is a secretive bird which prefers to remain hidden in the dense reed-beds or in thickets bordering streams. It climbs with facility through the densest reeds, clinging and hopping from one stem to another. If alarmed, it assumes the rigid attitude of its family rather than taking refuge in flight. When it flies it does so with slow wing-beats. Its note is a peculiar croak.

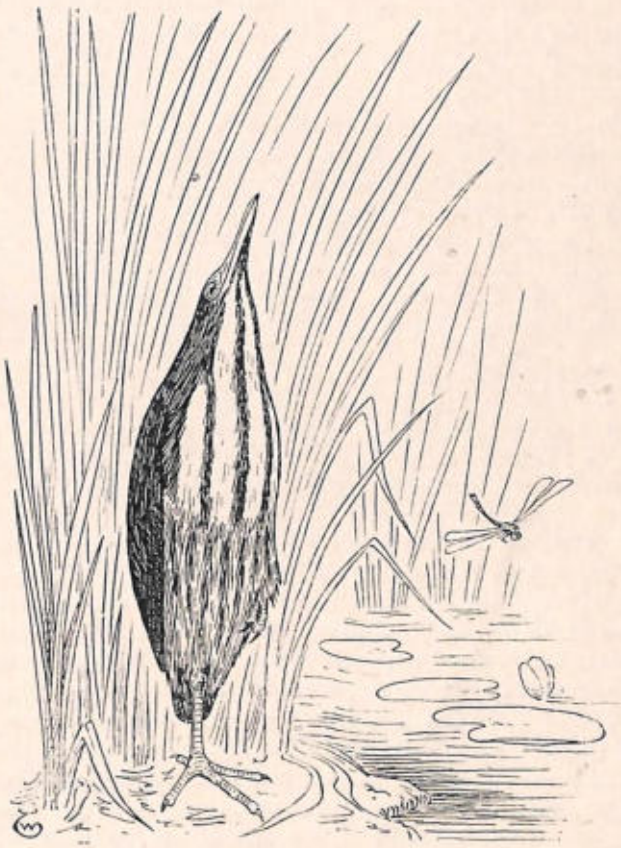
Wherever luxuriant aquatic vegetation fringes lake or stream, there will this bird be heard if not seen. Its food, which is obtained by both day and night, consists of fish, frogs, insects, molluscs and the like. Probably it roosts, a number together, in bushes in swampy places or even in trees by streams. Resident where it occurs, it is subject to local movements according to the forward or backward state of the reed-beds. It breeds in June, July and August in the marshes and reed-covered areas, making a nest of the previous season's reeds, which it places in grass or among growing reeds at or about 18 in. above water level, but occasionally a more substantial affair is constructed in a mangrove or other bush. Three to five eggs are laid, which are white and measure 36·8–40 × 25–27·9 mm.

Distribution. Widely distributed from Senegal and the White Nile south to Cape Province, also in southern Arabia. It is a very common bird within our limits, occurring in all suitable swamps and reed-beds, and is found in all our Colonies, being spread over the country from the Inundation Zone of the Niger and Lake Chad to the mangrove swamps of the coastal area.

It is possible that the European Little Bittern (*Ixobrychus minutus minutus* (Linn.)) occurs at times in winter as a migrant to our area, as it does in East Africa, but has not yet been detected. It resembles the African bird but has an ochraceous neck and frill, a slightly longer wing, and the first primary is longer than the fourth. The wing measures 141–159 mm.

AFRICAN DWARF BITTERN

Ardeirallus sturmii (Wagler)



ANOTHER very small resident bittern, easily recognised by its uniform slate-blue upper parts, neck, ruff and wings, and extremely short tail of the same colour, and a pale buff throat and breast heavily striped with black arranged in three parallel lines. The eye

Liberia, Gold Coast, Togoland, southern Nigeria, Cameroon, Rio Muni, and Lower French Congo.

RED-NECKED LITTLE BITTERN

Ixobrychus minutus payesii (Hartlaub)

This minute bittern, which when standing erect with neck outstretched is little more than a foot in height, may be recognised by its diminutive size from all others of its family except the African Dwarf Bittern, which is uniform slate above and heavily streaked below. In the male Little Bittern the black crown, back and scapulars glossed with green contrast with the rufous neck and under parts, while the pale rufous and greyish-white wing-coverts make a large conspicuous patch in the otherwise black wings. The bill (some 50 mm. long) is greenish brown, as are the legs and feet; the eye is reddish brown. The female has, in place of the black mantle and back, a dark brown back with pale edges to the feathers and brown instead of black primaries. Wing is 125–147 mm., tarsus 43–46 mm.

Like its counterpart in Europe, the African Little Bittern is a secretive bird which prefers to remain hidden in the dense reed-beds or in thickets bordering streams. It climbs with facility through the densest reeds, clinging and hopping from one stem to another. If alarmed, it assumes the rigid attitude of its family rather than taking refuge in flight. When it flies it does so with slow wing-beats. Its note is a peculiar croak.

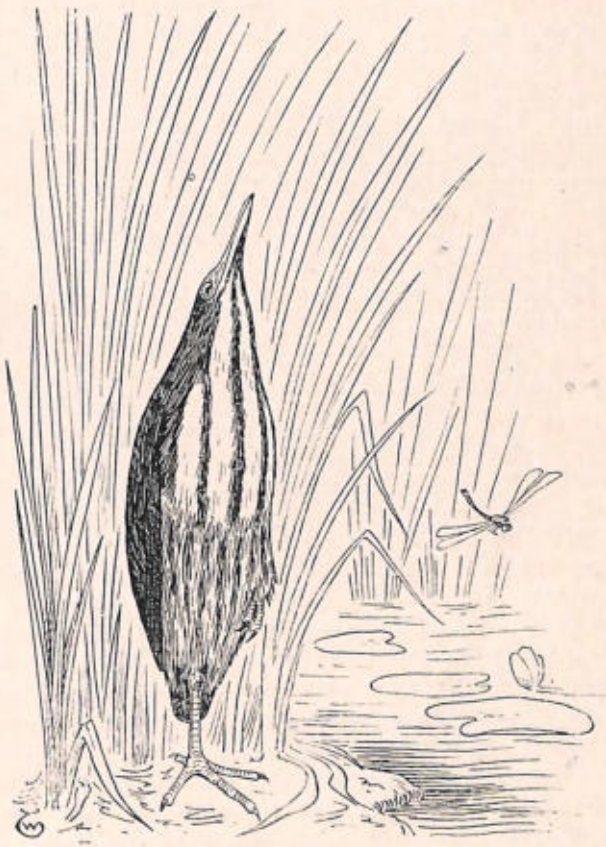
Wherever luxuriant aquatic vegetation fringes lake or stream, there will this bird be heard if not seen. Its food, which is obtained by both day and night, consists of fish, frogs, insects, molluscs and the like. Probably it roosts, a number together, in bushes in swampy places or even in trees by streams. Resident where it occurs, it is subject to local movements according to the forward or backward state of the reed-beds. It breeds in June, July and August in the marshes and reed-covered areas, making a nest of the previous season's reeds, which it places in grass or among growing reeds at or about 18 in. above water level, but occasionally a more substantial affair is constructed in a mangrove or other bush. Three to five eggs are laid, which are white and measure 36·8–40 × 25–27·9 mm.

Distribution. Widely distributed from Senegal and the White Nile south to Cape Province, also in southern Arabia. It is a very common bird within our limits, occurring in all suitable swamps and reed-beds, and is found in all our Colonies, being spread over the country from the Inundation Zone of the Niger and Lake Chad to the mangrove swamps of the coastal area.

It is possible that the European Little Bittern (*Ixobrychus minutus minutus* (Linn.)) occurs at times in winter as a migrant to our area, as it does in East Africa, but has not yet been detected. It resembles the African bird but has an ochraceous neck and frill, a slightly longer wing, and the first primary is longer than the fourth. The wing measures 141–159 mm.

AFRICAN DWARF BITTERN

Ardeirallus sturmii (Wagler)



ANOTHER very small resident bittern, easily recognised by its uniform slate-blue upper parts, neck, ruff and wings, and extremely short tail of the same colour, and a pale buff throat and breast heavily striped with black arranged in three parallel lines. The eye

is reddish brown, the bill greenish brown above, yellowish below, and the legs and feet are orange or ochreous brown tinged with green on the joints. In height, with bill pointing skywards, it stands about 12 in. The wing measures 160–168 mm., the tarsus 45–48 mm.

It is an inhabitant of the freshwater pools and streams in both forested and savanna country, where it frequents the thick herbage on the banks, and may sometimes be flushed from the low branches of a tree overhanging the water. It is on the whole less of a swamp-frequenting bird than the Little Bittern, though, like it, it frequents the mangroves. It may occasionally be seen along the big rivers but does not seek attention and is wonderfully protected by its colouring.

Its food is the same as that of the Little Bittern. On the whole it is less shy than that bird; when it flies it does so laboriously, with legs dangling. The only nest discovered in West Africa was composed of twigs and dead leaves and was placed on the horizontal branch of a tree growing in a bed of 10 ft. high grass. The nest was 7 ft. from the ground and contained four bluish-white eggs. Published measurements are 35–41 × 26–28 mm.

Distribution. Tropical Africa from Senegal and the Sudan south to Cape Province. From within our limits I have records from Gambia, Liberia, Sierra Leone, Gold Coast, northern and southern Nigeria and the Cameroons, but it is likely to occur everywhere where suitable conditions exist.

EUROPEAN BITTERN

Botaurus stellaris stellaris (Linnæus)

THE colouring of the European Bittern is tawny buff, mottled and barred with black, with a black crown and nape and the under parts broadly streaked with reddish brown. On each side of the gape is a brownish-black moustachial streak, and a ruff or shield of elongated feathers on the neck can be erected at will. The long pointed bill is yellowish green; the eye is yellow, and the legs and feet are pale green. The wing is 300–350 mm. and the tarsus 90–100 mm.

In face of danger the bittern assumes an erectile attitude with neck stretched vertically upwards and bill pointing to the sky. In flight it is heavy, with slow, owl-like motion of the wings. In Europe the Bittern is an inhabitant of swamps and dense reed-beds, from the shelter of which it seldom ventures except to pass from one isolated patch to another. To tropical Africa it is a rare migrant. It does not breed south of the Mediterranean basin and its nesting habits need not therefore be discussed. Only in the breeding season does it utter the well-known booming call.

Distribution. A resident species in most of Europe and western Asia and also in North Africa from Morocco to Tunisia; in winter it is a partial migrant to tropical Africa, India and Arabia. In eastern Africa it wanders as far as the Sudan and Abyssinia and is common at that season in Egypt. To West Africa it has rarely been



recorded, a bird having been obtained in a rice-field at Ilorin, Nigeria, on 22nd October, 1941, and a second (almost certainly a European Bittern) in Kano Province, Nigeria, in May 1946. It has once been obtained in the Belgian Congo (Niapu, November) but not in Kenya or Uganda. South of the Zambesi the Cape Bittern takes its place but does not reach the Equator in its wanderings.

is reddish brown, the bill greenish brown above, yellowish below, and the legs and feet are orange or ochreous brown tinged with green on the joints. In height, with bill pointing skywards, it stands about 12 in. The wing measures 160–168 mm., the tarsus 45–48 mm.

It is an inhabitant of the freshwater pools and streams in both forested and savanna country, where it frequents the thick herbage on the banks, and may sometimes be flushed from the low branches of a tree overhanging the water. It is on the whole less of a swamp-frequenting bird than the Little Bittern, though, like it, it frequents the mangroves. It may occasionally be seen along the big rivers but does not seek attention and is wonderfully protected by its colouring.

Its food is the same as that of the Little Bittern. On the whole it is less shy than that bird; when it flies it does so laboriously, with legs dangling. The only nest discovered in West Africa was composed of twigs and dead leaves and was placed on the horizontal branch of a tree growing in a bed of 10 ft. high grass. The nest was 7 ft. from the ground and contained four bluish-white eggs. Published measurements are 35–41 × 26–28 mm.

Distribution. Tropical Africa from Senegal and the Sudan south to Cape Province. From within our limits I have records from Gambia, Liberia, Sierra Leone, Gold Coast, northern and southern Nigeria and the Cameroons, but it is likely to occur everywhere where suitable conditions exist.

EUROPEAN BITTERN

Botaurus stellaris stellaris (Linnæus)

The colouring of the European Bittern is tawny buff, mottled and barred with black, with a black crown and nape and the under parts broadly streaked with reddish brown. On each side of the gape is a brownish-black moustachial streak, and a ruff or shield of elongated feathers on the neck can be erected at will. The long pointed bill is yellowish green; the eye is yellow, and the legs and feet are pale green. The wing is 300–350 mm. and the tarsus 90–100 mm.

In face of danger the bittern assumes an erectile attitude with neck stretched vertically upwards and bill pointing to the sky. In flight it is heavy, with slow, owl-like motion of the wings. In Europe the Bittern is an inhabitant of swamps and dense reed-beds, from the shelter of which it seldom ventures except to pass from one isolated patch to another. To tropical Africa it is a rare migrant. It does not breed south of the Mediterranean basin and its nesting habits need not therefore be discussed. Only in the breeding season does it utter the well-known booming call.

Distribution. A resident species in most of Europe and western Asia and also in North Africa from Morocco to Tunisia; in winter it is a partial migrant to tropical Africa, India and Arabia. In eastern Africa it wanders as far as the Sudan and Abyssinia and is common at that season in Egypt. To West Africa it has rarely been



recorded, a bird having been obtained in a rice-field at Ilorin, Nigeria, on 22nd October, 1941, and a second (almost certainly a European Bittern) in Kano Province, Nigeria, in May 1946. It has once been obtained in the Belgian Congo (Niapu, November) but not in Kenya or Uganda. South of the Zambesi the Cape Bittern takes its place but does not reach the Equator in its wanderings.

Key to the Hammerkops, Storks, Ibises and Spoonbills*

1. Bill ending in a sharp, abruptly curved hook; mandibles strongly compressed laterally, culmen forming a razor-like edge. Plumage uniform earth brown (Hammerkops) .. .. *Scopus*, p. **166**

   Bill not ending in a sharp, abruptly curved hook; plumage not uniform earth brown 2

2. Bill long, heavy and almost straight or slightly upturned without grooves at sides (Storks, *Ciconiidae*); see key p. **168**

   Bill long, narrow and curlew-like, both mandibles curved downwards throughout their length; longitudinal groove at each side .. .. (Ibises, *Plegadidae*), p. **181**

   Bill long and flattened, ending in a broad, flat spoon (Spoonbills, *Plataleidae*), p. **188**

FAMILY SCOPIDAE

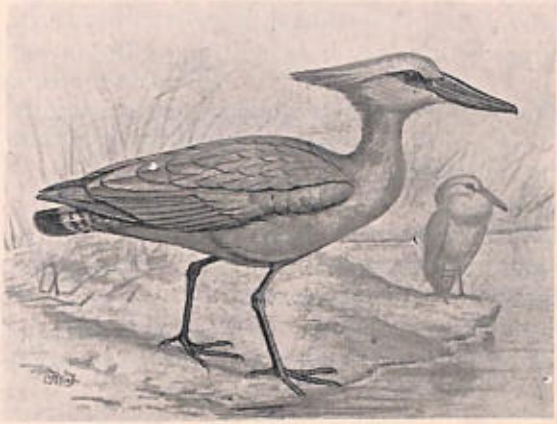
HAMMERKOP

Scopus umbretta Gmelin

This remarkable bird is quite unlike any other known species, as may be seen from the accompanying text figure. Its plumage is entirely earth-brown, eye dark brown; the bill, feet and legs are black. It does not stand high on its legs, which seem short for its body. The shape of its head, with laterally flattened bill hooked at the tip and pointed crest of feathers on the nape, has earned for it the name Anvil-head or Hammerkop. It varies a good deal in size: there is a dwarf race, and two larger races occur whose differences are in their dimensions. It is often to be seen in the trees overhanging streams or standing by the water's edge by river or creek, while pairs or single birds may be found on most swamps or rice-fields. It is especially fond of tidal creeks and mangrove swamps and occurs on the seashore, but it may be encountered by rain-pools in the Combretaceae country, on the Jos Plateau, in the Inundation Zone of the Niger and on the great rivers such as the Gambia, Volta or Benue, but it shows a strong preference for the smaller streams and pools. Though not known to be migratory, it has been taken 175 miles from land off Sierra Leone.

* The Whale-headed Stork or Shoebill has been omitted from this handbook, as it barely comes within our limits in the Upper Shari. The record from Stanley Pool is not now credited.

In its demeanour it is a tame creature and may even be met with in village "streets" or on frequented golf courses, as at Warri. Perhaps the most remarkable thing connected with the Hammerkop is its colossal nest, built of sticks and grass and other débris; lined with mud or dung, it measures about 3 × 4 ft. and may be placed 8–60 ft. above ground according to the situation of the tree. The entrance hole is at the side and a tunnel connects with the chamber, in which four to six eggs are laid. Nesting operations continue from December to April inclusive, but may extend longer. The eggs are white and slightly chalky and measure 45–48·4 × 31·8–35 mm.



Distribution. The hammerkop, as a species, ranges over the whole of Africa from the Sudan and Senegal to Cape Province, also to Arabia and Madagascar. It has been separated on size into three races, all three of which occur within our limits as follows:

Scopus umbreita umbretta Gmelin. Wing 279–296 mm. Range: Senegal, Gambia, Portuguese Guinea.

Scopus umbretta bannermani C. Grant. Wing 300–334 mm. Range: French Sudan, interior of Sierra Leone to northern Nigeria and the Cameroons, the Congo, Portuguese West Africa, the whole of southern, eastern and north-eastern Africa to Abyssinia, the Sudan, Arabia and Madagascar.

Scopus umbretta minor Bates. Wing 246–266 mm. Range: Coastal districts of West Africa from Sierra Leone to southern Nigeria.

FAMILY CICONIIDAE

Key to the Storks in the family Ciconiidae

1. Entire head and neck bare of feathers
Leptoptilos crumeniferus, p. 177
Forepart of head bare of feathers, neck feathered
Ibis ibis, p. 179
Head and neck completely feathered 2
2. Bill over 10 in. long, slightly curving upwards; shield on forehead .. .. *Ephippiorhynchus senegalensis*, p. 176
Bill under 10 in., lower mandible curved outwards, only meeting the upper at base and tip; no frontal shield
Anastomus l. lamelligerus, p. 174
Bill under 10 in., both mandibles straight or slightly curving downwards, meeting normally throughout their length; no frontal shield 3
3. Size large (wing over 20 in.) 4
Size smaller (wing under 20 in.) 5
4. Neck and upper parts mainly white *Ciconia c. ciconia*, p. 169
No white on neck or upper parts .. .. *Ciconia nigra*, p. 170
5. Neck white and back black *Dissoura episcopus microscelis*, p. 170
Neck black and back white *Sphenorynchus abdimii*, p. 172

Field key to the species of Storks occurring in West Africa
(To be used if bird cannot be handled)

1. Crown and face naked, red; size large,* mainly white and rosy, wings and tail black, bill yellow, legs pink
Wood Ibis, p. 179
Head, face and neck naked, size very large, slate above, white below .. .. Marabou, p. 177
Head, face and neck feathered, general colour black, white, or black and white 2
2. Size very large, black and white; bill red with black patch, shield yellow; legs, except tibio-tarsal joint,† black .. .. Saddle-bill, p. 176

* In this key:
"Very large" refers to birds which normally stand from 4 ft. to 4 ft. 2 in. in height.
"Large" refers to birds which normally stand from 2 ft. 7 in. to 3 ft. in height.
"Medium" refers to birds which normally stand from 1 ft. 10 in. to 2 ft. 3 in. in height.

† Often but erroneously termed the knee.

Size medium, black throughout; bill brown and always appears open; legs black .. .. Open-bill, p. 174
Size large, all white except black wings; bill and legs red White Stork, p. 169
Size large, all black except white breast; bill and legs red Black Stork, p. 170
Size medium, all black except white breast; bill and legs greenish .. .. Abdim's Stork, p. 172
Size medium, neck and belly white, remainder black; bill and legs black .. Woolly-necked Stork, p. 170

WHITE STORK

Ciconia ciconia ciconia (Linnæus)

THE entire plumage of this bird is white with the exception of the quills, primary coverts and scapulars, which are black. The tail is white. Bill, legs and feet are red. It stands about 2 ft. 10 in. in height and the legs are about 18 in. long, tarsus 191–216 mm. The long white neck is slender and during flight is carried fully outstretched, as are the legs behind. It is much more graceful on the wing than anyone could imagine and will soar in the heavens for long periods at a time. A patch of bare skin round the eye is dark red but can only be seen at close quarters. Care must be taken not to confuse it with the Wood Ibis, which has a black tail as well as black quills but no black on the scapulars.

Distribution. The White Stork is a migrant from Europe and northern Africa, where it breeds, but its main line of flight is down the east coast, where it reaches the Cape, some remaining in the tropics or South Africa all the year round. It is uncommon in British territory in our area but turns up on rare occasions in French Sudan, French Niger territory, the Northern Territories of the Gold Coast and Nigeria, French Chad and the Shari. Possibly Lake Chad may be on a regular flight line. In our British Colonies odd birds have been reported from Gambia and from such out-of-the-way spots as Warri and Kwale. It is more regular on the Bauchi Plateau and turns up occasionally in Plateau Province, one as late as 30th March. Very few ringed European storks have been recovered in our area. A Prussian bird was recovered at Lake Chad, another German bird was recovered in French Congo, and two Danish birds in French Congo and the Cameroons respectively.

It does not breed in West Africa. Reports of its having done so when verified have turned out to be colonies of the Wood Ibis.

BLACK STORK

Ciconia nigra (Linnæus)

THE Black Stork stands about 2 ft. 7 in. in height, and in size there is little to choose between it and the White Stork. The tarsus is 182–207 mm. The all blackish-brown upper parts, neck and tail distinguish it from the conspicuously black and white Saddle-bill and the smaller Woolly-necked Stork, which last has a white neck. Abdim's Stork, though rather similarly coloured, has a white back and rump and is only half the size of the Black Stork. From all these the Black Stork may be identified by its brilliant red bill and legs.

Like the White Stork, this is a migrant to tropical Africa but has occurred only very rarely in our area. It does not breed in Africa, and it may therefore be dismissed briefly. In its habits it resembles its better-known white relative, both of whom are birds of the plains, living on insects, especially locusts, caterpillars, water-beetles, frogs, snakes and small rodents. Should it turn up in our area it is almost certain to be during the winter months.

Distribution. Europe and Asia, wintering in India and Africa, south to Cape Colony but rarely in western Africa, from which it has been reported only from Gambia (Upper Niumi, November 1923), Portuguese Guinea (Bissão), Gold Coast (locality uncertain), Nigeria (Benue River) and French Chad. It has been stated to nest in South Africa, but it certainly does not do so within the limits of this book. In eastern Africa it is nothing like as numerous as the White Stork, the majority preferring apparently to winter on the plains of India.

AFRICAN WOOLLY-NECKED STORK

Dissoura episcopus microscelis (G. R. Gray)

THIS bird may be distinguished from all African storks by the white neck of wool-like feathers, contrasting with the blackish breast, back and wings. It stands about 2 ft. in height, being somewhat similar in size to Abdim's Stork and having a tarsus of 140–171 mm. In flight the white in the region of the tail is conspicuous. It has a black forked tail beyond which protrude the stiff white under tail-coverts. The eye is red, the bill black with red along the culmen; the legs and feet are black. Immature birds are browner than the adults, with scant gloss on the feathers.

The Bishop Stork, as it is sometimes named, frequents river beds, rice-fields, small streams and water-holes and may be seen on the sandbanks of the larger rivers; others have been noted by the coastal

creeks, and it is always attracted to grass fires on the plains, where it reaps a fruitful harvest of escaping insects, frogs, snakes, lizards and small rodents. Nuts are also devoured, but most of all it loves locusts. When scattered over the country it is usually met with singly or in couples, but at times considerable flocks may be seen.



The powers of flight exhibited by this stork are remarkable. It has been seen in May performing complicated evolutions, rolling and tumbling in the air and diving at a steep angle, when the wind passing through its quills makes a loud noise. It can accomplish long flights, but the migrations of this stork are not easily understood. They are almost certainly governed by the rains. With one exception, all records fall between December and May.

It is an African bird with a representative in the Indian region, but there is no migration outside the Continent. In the Upper Nile

it breeds in December and in Uganda in March. The nest is described as an insignificant structure of sticks lined with a pad of dry grass upon which three or four dull-white eggs are laid; measurements are 60–61 × 41–42 mm. In Sierra Leone, where it breeds in January and February, a nest at the top of a silk-cotton tree contained three well-grown young on 28th February at Dama.

Distribution. An African race which ranges from south of the Gambia River and the White Nile to Cape Province but is rare in the extreme south of its range. Throughout West Africa it is sparingly scattered over suitable open country, but does not favour forested areas, though it visits clearings in the forest. Although found in all our Colonies, it seems to have been seen in greater numbers in the Cameroons than further north, large flocks having been observed at the mouth of the Sannaga River and small parties frequently in British territory at the base of Cameroon Mountain, where it is said to be present all the year round. The typical subspecies inhabits the Indian region and differs but slightly from the African bird.

ABDIM'S, OR THE WHITE-BELLIED STORK

Sphenorynchus abdimii (Lichtenstein)

A SMALL stork with an exceptionally straight jade-green bill about 4½ in. long and having a red tip. The bird stands about 2 ft. 3 in. in height, on dull green legs with red "knees," its tarsus being 117–136 mm. Its colour pattern is distinctive, the general colour blackish, strongly glossed with metallic green and purple. Below the black breast the whole under surface is white, including the thighs and under tail-coverts. When at rest, this stork appears entirely black above, but when it spreads its wings the white rump is exposed to view. Young birds are browner with less purple or green gloss on the feathers but have the same colour pattern as the adults.

Abdim's Stork is a rainy season visitor to our area, and may be expected to arrive from the south in March and may be still arriving up to the end of April. Early migrants have been observed passing the Bamenda division of the British Cameroons in flocks 100 strong during the last week of February, and packs of 200 have been seen on the Benue. The migration of this species is remarkable, for the bird passes the non-breeding season in the southern half of Africa and comes north to rear its young, crossing in a non-stop flight the whole of the equatorial forest region. It not only breeds in Darfur and the White Nile country but over the whole of West Africa north of lat. 9°, a few as far south as lat. 8°, where they build their nests not only in baobabs and acacias and other trees in villages but also

on the peaks of native huts, which, in the Chad area, are built with canes crossed at the apex so as to provide a platform for the sticks.

The storks begin nesting operations within a few days of their arrival. Nesting is in full swing in June and July even as far north as Timbuktu. Anything from one to ten stick nests may be built in a tree when that site is selected, but usually four to six are found together. Three or four young are reared in a season, rarely five, and much care is lavished upon their upbringing. Parents have been observed shading with their outstretched wings the panting nestlings from the rays of the sun. The eggs are glossless chalky white with pale green lining and average 59·6 × 43·3 mm.



The return passage to destinations south of the Equator begins in September and continues until the middle of November in the region of the Congo forest, over which the birds pass at a great height. On their journey south the storks take a more easterly route than on the northern journey and do not then pass over the Cameroon Mountain area.

Distribution. A wet-season migrant to the semi-arid belt of East and West Africa, breeding from Kordofan and Sennar south to Gondokoro and westwards to the Ivory Coast and the Middle and Upper Niger, passing the dry season south of the Equator. It is

found between April and October in the hinterland of all West African Colonies and Protectorates from the northern Cameroons to Gambia, where it arrives in May and probably as far as lat. 15° N. On the Upper Niger it breeds to lat. 17° N. It has not been recorded as breeding in Gambia or Sierra Leone but does so commonly in the Gold Coast and Nigeria north of lat. 8° N.

AFRICAN OPEN-BILL

Anastomus lamelligerus lamelligerus Temminck

THE Open-bill is a small stork standing only about 1 ft. 10 in. in height, with tarsus of 133–165 mm. It may be recognised by its bill,



which always appears to be open, the lower mandible for about half its length being bow-shaped, resulting in a wide gap in the terminal portion, although the tips of the mandibles meet. In colour the plumage appears black with a lustre of purple or green; the bill is

brownish horn, and the legs and feet are black. Young birds have a speckled black and white neck and the under parts are brown, the lustre being only slightly developed on the feathers of the back and breast. In flight the tail appears broad and rounded and the feet extend some way beyond.

In West Africa this bird is never seen in the vast assemblages reported from the Nile but may sometimes be encountered singly or in couples, and occasionally in small parties, industriously searching the shallows of lakes or river beds for the aquatic life upon which it feeds. Large aquatic snails (*Pila*) are perhaps its principal food, the snail being secured after the shell has been crushed by the powerful mandibles. Mussels and other freshwater molluscs are also devoured. It never wanders far from fresh water, but occasionally a flock may be observed on the coastal mud-flats. There seems to be no doubt that the Open-bill is only a visitor from south of the Equator to the localities where it has been observed in our area. It arrives in November and departs again in April. It is never present in large numbers as it is in north-eastern Africa. Odd birds may remain behind, as it has been seen on the Benue in June and shot in Sierra Leone in July. To the north Belgian Congo and the Ubangi-Shari it is but a passing migrant.

The Open-bill breeds in colonies among dense reed-beds. Such colonies exist on the Zambesi marshes in the Barotse valley and on the Shiré swamps in southern Nyasaland, the only other known breeding locality being at Kisumu just north of Lake Victoria and almost on the Equator. In the latter locality, where a vast colony existed in 1903, the birds had built their nests in ambatch bushes together with spoonbills, herons and darters—in some trees as many as twenty nests of the Open-bill were found. The nests are of dry rushes and reeds, indistinguishable from those of the White Heron. The eggs number three or four, dull stone-grey in colour and unmarked save for staining. They measure 56–58 × 40–42 mm.

Distribution. Apparently a winter visitor north of the Equator, ranging to the Egyptian Sudan, where it arrives in vast numbers; to West Africa it is less numerous but is recorded from French Cameroon, Nigeria, Gold Coast, Ivory Coast, Sierra Leone (once in July—common in winter), French Sudan and formerly to Senegal. It is recorded from a number of localities in the southern half of Africa as far south as the Orange River and Lake Ngami, and not all these birds move north after the breeding season.

Breeding records from south of the Equator include Lake Victoria, Tanganyika Territory, southern Belgian Congo, Rhodesia and Nyasaland. It has been reported (by Mr. C. S. Jones of the Agricultural Department) to nest in Sierra Leone in trees, and if that is correct it is the first breeding record from West Africa. When I

wrote my larger work it was not known to breed nearer than Lake Victoria. Definite evidence that it does so within our limits, or even in the Sudan, will be of great interest.

JABIRU OR SADDLE-BILL

Ephippiorhynchus senegalensis (Shaw)

This is the most handsome member of the stork family and so is easily recognised, for it is also the tallest, standing 4 ft. 2 in. in height, with tarsus 311–365 mm. As the illustration shows, it is a study in black and white. The head, neck and most of the wing and



scapulars are black, the rest is white. The heavy red bill has a black band round the middle, and at the base of the upper mandible is a primrose-yellow shield. Two fleshy lappets, one vermilion and one yellow, or else both vermilion, hang from the base of the lower mandible. The long legs are black with red joints. In flight the white quills contrast with the black coverts. In the air it is a majestic sight, floating along slowly, the feet protruding far beyond the tail and the neck outstretched. Sometimes it will ascend to a

great height and circle round, indulging in this wind-riding for long periods at a stretch.

Much of its time is spent in the shallow swamps by the large rivers, hunting singly or in pairs, but flocks of twenty to thirty may be observed at times on the sandbanks. The Saddle-bill, when fishing, has been seen to execute some graceful dancing-steps, followed by swift perpendicular movements of head and neck before the prey is transfixed. When it walks it does so with stately step. Its food does not differ from that of the White or Black Storks, but it is said to be extremely partial to large water-beetles and has been known to swallow a 3 lb. lung-fish.

There is no evidence that the Saddle-bill is migratory, but it probably moves from the vicinity of the big rivers when they are in flood and the sandbanks covered. Although presumably resident in our area I have no information of its nesting, though it certainly must do so. On the Upper Nile it breeds in January and February, building its nest on acacias in the midst of swamps. The eggs are dull white and coarse in texture and measure 76–80·5 × 56–57·5 mm.

Distribution. Sparingly distributed within our area except in the forest region and found throughout tropical Africa from Senegal, the Sudan and Abyssinia to the Orange River but very rarely south of that. Wherever there are open plains intersected by rivers and swamps the Saddle-bill may be found, but it is nowhere abundant, and seldom more than a dozen are seen together, though I have one record of thirty seen on the Upper Niger. In West Africa it is perhaps most often encountered in the vicinity of Lake Chad, but it is recorded from all British territory except Sierra Leone to date. In the Gold Coast it has been seen in the Pong valley and near Navarongo; it is not uncommon on the Gambia and is more often seen in northern Nigeria on the large rivers and on tubkis. It appears to be resident.

MARABOU

Leptoptilos crumeniferus (Lesson)

THE almost dirty naked flesh-coloured head and neck of the Marabou, thinly covered with short woolly down and hairs, and the huge yellowish horn-coloured bill give this stork a most unprepossessing appearance, which the slate-coloured upper parts and wings, the latter with white margins to the inner secondaries, fail to dispel. One has the illusion of a very old disgruntled gentleman standing hunched up or balanced on legs bent from the tibia-tarsal joint, completely fed up with the world. The under parts are white; a tuft of dense white feathers is situated on either side of the base of the

neck, and a pinkish neck pouch flaps in the breeze. The long dark legs appear as if they have been dusted with ash powder. The tarsus measures 255–295 mm. Seen in flight, the Marabou presents a more agreeable picture and then seems to have black wings and a white body.



A somewhat repulsive bird to look at, its habits are equally unpleasant, for it will eat any filth which comes its way, offal and excrement included. It disdains nothing from a large rat to a water-beetle, while it devours termites and snakes with relish. With the vultures it will gather round a carcass to share the spoils. It is a bird which, for its scavenging alone, deserves strict protection. It may often be seen on the sandbanks of the large rivers and in the neighbouring swamps, large numbers congregating together. At sundown it seeks some favourite tree away from the river in which to pass the night. During the rains it goes further afield and may then be encountered by quite small water-holes during the heat of the day.

The Marabou is much less shy than most of its family and in captivity becomes very tame, but woe betide any other young bird which crosses its path. Resident throughout the year, the breeding season takes place in the dry weather preceding the rains and is a protracted affair, the birds building their bulky nests in baobabs and other large trees such as cottonwoods, often situated in the villages of the Northern Territories. Sometimes the trees are shared with Pink-backed Pelicans; I have records of young birds in Bornu in early November, in Sokoto in May, in Bauchi Province in March, in Kano Province in February and in Gambia in January, and young may still be found in the nests in April. The eggs are white and measure 77–84 × 54–60 mm. Although I have termed the Marabou a resident in our area it certainly is given to local movement and may quite disappear from a certain locality for a time. It is never found in forest country at any season. After breeding they scatter far and wide, but I do not think they cross the equatorial forest. It is essentially a bird of open country, where it can spy carrion from on high.

Distribution. The whole of Africa from Senegal on the west and the region of Khartoum on the east, south to the Orange River. It is recorded from all British Colonies except Sierra Leone, but is more numerous north of lat. 10° than south of it. It occurs on the Plateau of Cameroon when the rivers are low but generally keeps, when not breeding, to the neighbourhood of the big rivers and adjacent country north of the forest belt.

WOOD IBIS

Ibis ibis (Linnæus)

The Wood Ibis is a large bird standing about 3 ft. in height, with tarsus 197–229 mm., and may be recognised by its very long orange bill about 9 in. long, curving at the tip, also by the red forepart of the head, which is bare of feathers. The body plumage is mainly white, with black flight feathers and black tail. It has been mistaken, even by an experienced ornithologist, for a White Stork, but the naked red face, orange (not red) bill, and black (not white) tail should betray its identity. The legs and feet of the Wood Ibis are pink, whereas in the White Stork they are red.

Although named an ibis, its relationship is rather with the storks, which it resembles in outward appearance. It is not usually shy and may be met with in river beds, streams, small lakes and water-holes and is occasionally seen wading at the edge of sandbanks, sometimes large numbers together. It is perhaps less addicted to sandbanks than to the grass-covered flats which border parts of the big rivers.

Mainly fish are eaten, especially those which thrive in muddy water, and vegetable matter has also been found in the stomach of specimens. The Wood Ibis has a peculiar gait, lifting its feet high and pausing a moment before lowering. In flight its actions are laboured.

In October and November the Wood Ibises return to their nesting places, which extend in semi-arid territory from Gambia to northern Nigeria. The birds build in colonies of thirty or more, their nests occupying perhaps only three large trees, which sites may be shared with pelicans. As many as fifty nests have been located in a single tree, but there may be as few as two. The sites are usually within the walls of native towns, as in Sokoto City and Daboya, which latter can claim over fifty nests. Nests are simple structures made of sticks with a scanty internal lining of grasses. Although high baobabs and cotton-trees are often chosen, nests are sometimes placed in thorny desert date-trees at no great height from the ground. During March and April the numbers in the colony decrease, and by April or May at latest the birds have departed. To the Sokoto Colony they have been known to return in force and begin nesting operations during the second week of August, but that is an unnaturally early date, apparently. Two or three glossless white eggs are the normal complement, measuring 62·4–69 × 43·2–46·4 mm.



Distribution. Tropical Africa from the Gambia and Sudan to the Orange River, south of which it is rare; also in Madagascar. Within our area the Wood Ibis is generally distributed north of lat. 10°, nesting mainly in the dry season in large colonies in the townships of the Northern Territories. At the height of the rains they disappear from their usual haunts and probably go far afield. Its presence on the Cameroon coast in July and August has been noted. It is a rare visitor to the southern provinces of Nigeria, where the country is unsuited to it, but appears sometimes in the dry season on the Keta marshes of the Gold Coast. The Wood Ibis has been reported breeding in all our Colonies except Sierra Leone to date, but as it is

very common in the south-west of the Protectorate, where it may be seen in large flocks circling over lakes and rivers and feeding on their margins, it is sure to breed there also.

FAMILY PLEGADIDAE

Key to the Ibises in the family Plegadidae

1. Entire head and neck bare of feathers
Threskiornis aethiopicus aethiopicus (adult), p. 182
Head and neck feathered normally 2
2. Feathers of crown elongated to form crest 3
Feathers of crown not elongated 4
3. Upper parts olive, wing-coverts metallic, neck and under parts spotted *Lampribis rara* (adult and immature), p. 186
Upper parts olive, wing-coverts metallic, neck and under parts not spotted *Lampribis olivacea* and subsp., p. 187
4. Wing over 12½ in. in length 5
Wing under 12½ in. in length 6
5. Plumage mainly white, no metallic sheen on wing-coverts *Threskiornis aethiopicus aethiopicus* (immature), p. 182
Plumage olive and grey, wing-coverts glossed with metallic sheen .. *Hagedashia hagedash brevirostris*, p. 184
6. Under parts chestnut-maroon
Plegadis falcinellus falcinellus (adult, summer), p. 181
Under parts dull brown
Plegadis falcinellus falcinellus (immature and adult in winter), p. 181

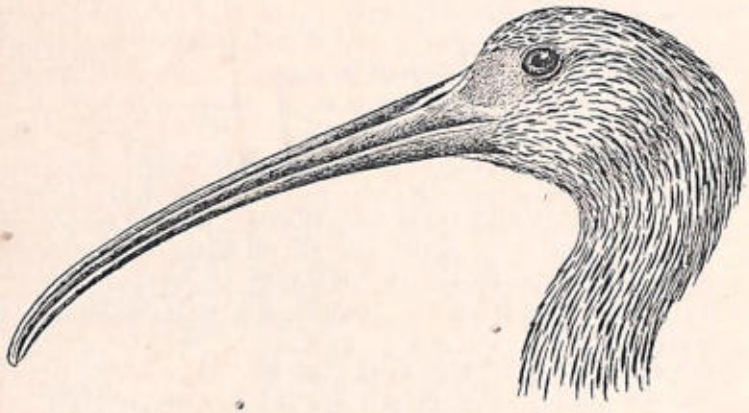
GLOSSY IBIS

Plegadis falcinellus falcinellus (Linnæus)

This bird is not unlike a slim curlew, in both size and appearance. It stands high on its slender black legs, with tarsus 80–100 mm., and the gently curved long bill is a feature to observe. In winter dress the dark brown head and neck are heavily streaked with white and the under parts dull brown; in summer the entire neck and under parts are bright chestnut-maroon and all streaking on the head is lost. At both seasons the upper parts are a mixture of metallic purple, bronze and green, the reflections being more pronounced in the summer. The wing is 255–298 mm.

Nearly all those which have been found in West Africa have been seen between 1st August and April, and in consequence are mainly in winter plumage, but traces of summer dress may still remain.

The Glossy Ibis is a migrant to West Africa from Europe, and a great many may be seen on the move in the Inundation Zone of the Niger between August and November. Their flight is fascinating to watch, the front of the line planing while the rest give measured wing-beats that pass forward like a ripple.



It is an inhabitant of the flooded alluvial flats bordering the great rivers and the shallow lakes and marshes stretching intermittently from Lake Chad to the Niger. Some birds certainly stay in Africa all the year round. It is much more common within a restricted area of West Africa than I supposed when writing my big work. It does not breed in our area, but there is an isolated nesting colony on Lake Victoria and another in Madagascar.

Distribution. A breeding bird in southern Europe south of the central Alpine ranges, also in Asia and North America. European birds winter in northern and tropical Africa, even reaching the Cape and Madagascar, in which island there is an isolated breeding colony, as there is (or was) also at Kisumu on Lake Victoria. Within our limits the Glossy Ibis is quite a numerous winter visitor, mainly passing the off-season in suitable localities north of lat. 10° in French Sudan, French Niger and the Northern Territories of our Colonies, extending north to Lake Chad and the border of the desert.

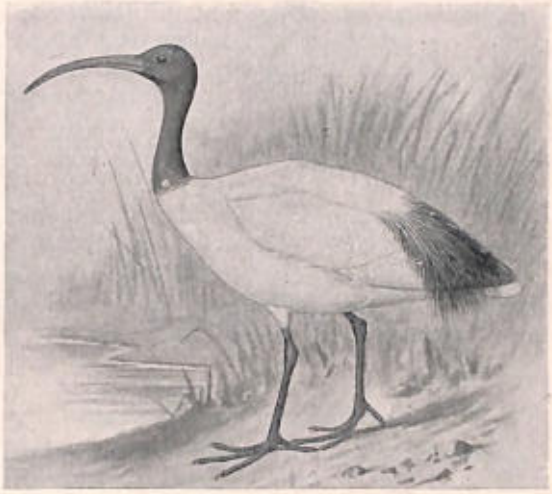
SACRED IBIS

Threskiornis aethiopicus aethiopicus (Latham)

THE Sacred Ibis may be recognised even when immature by its white body plumage, which in the adult is relieved by the black ornamental plumes forming a dark patch over the rump and tail.

The skin of the head and neck is black and entirely bare of feathers; legs and feet are dark red and the long curved bill blackish, measuring 135–183 mm. Its legs are rather short; tarsus is 100–116 mm. and wing 350–383 mm.

It is a bird which frequents the river banks, sandbanks and fadammas and will as likely be encountered at some small rain pool or artificial reservoir. It is absent from the reaches of the big rivers with rocky or sandy banks, preferring muddy to clear water. Less dependent on marshy ground than the Glossy Ibis, it wanders on to the bean-fields and other cultivated land.



Resident all the year round within our area, the birds scatter far and wide after the breeding season is over, and then it is not an uncommon visitor to the southern provinces of Nigeria and the Cameroons, where it may be found at the mouths of estuaries and on the muddy shores. It is, however, much more numerous in the northern half of its range and may even be encountered in the vicinity of Timbuktu. In the neighbourhood of Lake Chad it is common from December until May.

Sacred Ibises feed in compact bands and at the end of the day return to their roosting quarters in some villages, flying in a ragged line with alternate wing-beats and a glide, their formation and mode of flight distinguishing them from the more orderly flights of Lesser Egrets and Buff-backed Herons.

For the purposes of breeding the Sacred Ibises repair in May or June to native compounds, building their nests in the northern towns such as Kano and Sokoto in the small desert date-trees, the open

stick nests being securely protected by the vicious thorns that cover every branch. Buff-backed Herons breed in their company, and their nests are much smaller though much more numerous. The ibis's nest is lined with small twigs and grass stems and contains two or three ovate-shaped white eggs tinged with green, marked sparingly, peppered, spotted or even blotched with various shades of brown. They measure on an average 64·8 × 42·9 mm.

After the young have left the nests, family parties may be encountered together, especially in August and September, feeding on the open grass fields, the young birds being distinguishable by the head and back of the neck being feathered and heavily streaked with black, while in some the nestling down may still be adhering. Only the adults exhibit the black ornamental plumes on the rump. As the dry weather sets in the parties break up, and flocks may then be seen wending their way to their winter feeding grounds. They do not leave Africa, nor do they cross the equatorial forest.

Distribution. The whole of Africa from Egypt and Senegambia to the Cape; subspecies occur in Madagascar and Aldabra. Apart from Liberia and Sierra Leone, from which countries no records have been received, the Sacred Ibis is widespread from Senegal to the Congo except in the forested areas, breeding in the north as far as the desert's edge in the rains and wending its way south as far even as the coast during the dry season.

WEST AFRICAN HADADA

Hagedashia hagedash brevirostris (Reichenow)

A MEDIUM-SIZED ibis with olive-brown plumage, the wing-coverts glistening metallic green; a long bill, nearly 6 in. (130–154 mm.), mainly black with red at base and rather short blackish-brown legs, should proclaim its species. A white streak may be noticeable on the cheeks, and the eye is red. In flight the bird looks dumpy, the wings and tail being darker than the body. The best guide to the Hadada's identity lies in its loud note—*kah-a-a-a*—uttered frequently, both in flight and on the ground. The wing measures 330–365 mm. and the tarsus 65–78 mm.

During the day the Hadada is found scattered locally over the country in pairs or small parties frequenting streams, marshes, grass plains, rice-fields, pools screened by thickets, and the sort of places beloved of the hammerkop. A little party may often be seen flying from one marsh to another with necks outstretched and calling loudly as they fly. At sundown they gather to roost in trees, a dozen or more together. On moonlight nights they may be heard calling long after dusk.

The food of the Hadada consists almost entirely of insects. It seems to be a resident species whose numbers do not fluctuate, but it is decidedly local in its distribution, so much so that reference to my larger work must be made for an idea of its status in our colonies. It is a bird which may be encountered in pairs even when not breeding and may perhaps mate for life. It nests in trees, making a bulky nest of sticks and twigs which has a very shallow depression. It may be lined with fragments of bark and other debris and is loosely con-



structed and placed in the fork of some tree up to 30 ft. from the ground. Two or three eggs are laid with pale green ground handsomely marked with brown and red-brown, forming a zone at the broad end. Typical measurements are 60–64·1 × 38·5–40·5 mm.

Distribution. Four races of the Hadada occur in Africa; the West African bird is restricted to the area embraced by this book and is reported from many places between the Senegal and Congo Rivers. It is a common bird in certain localities, as in Gambia and the Karina district of Sierra Leone, but rare in some coastal provinces, particularly in Nigeria. It seems to be less generally distributed than I had once supposed and, on the whole, must be reckoned an uncommon species in West Africa except where conditions are very suitable, and is more often met with in the central Savanna country than on the big rivers or the area south of the forest.

SPOTTED-BREASTED IBIS

Lampribis rara Rothschild

In size this uncommon ibis resembles the better-known Glossy Ibis but may be recognised at all stages by its spotted neck and breast, the ground colour of which is pale cinnamon-brown, each feather being bordered with dark greenish brown. The upper parts are olive green with metallic steel green wing-coverts (wings measure 270–290 mm.). The result is striking. In addition the bird has a dull green crest of long feathers and a red curved bill nearly 5 in. (115–130 mm.) in length. The legs and feet are pinkish brown, the tarsus about 2½ in. (56–65 mm.). Young birds closely resemble the adults but are duller and have no metallic sheen on the wing-coverts, and the bill is very short.



The Spotted Ibis is an inhabitant of the forest and thick bush, where it frequents the small forest streams and wooded swamps. It avoids the larger river banks and equally the forest clearings. It is invariably to be seen in pairs. When disturbed it will fly into the nearest tree. It obtains its food by probing in the mud with its long bill for aquatic snails and also catches beetles, larvae, grubs and worms. It is evidently a shy bird and one about which we know very little. Neither its nest nor its eggs have ever been found. By day it feeds in pairs in forested swamps, and soon after sundown each pair flies from its feeding ground to some other swamp, where it roosts for the night in a large leafy tree, possibly in company with other pairs. As they fly, the birds utter harsh cries like *k-hah*, with the stress on the second syllable, which are repeated with almost every wing-beat. Early in the morning the birds leave their roosting place to return to the swamps. This ibis may be heard in the middle of the night

on moonlight nights, but never does it call when the sun is shining. The investigation of the life history of the Spotted Ibis would be a valuable work to undertake.

Distribution. The Spotted Ibis ranges from Liberia and the Gold Coast south to Angola and eastwards from the Cameroons and Gabon across the Belgian Congo to the Ituri River and south to the Kasai district. It is absent from the islands in the Gulf of Guinea. Within our Colonies we find it very locally distributed in the forest country of Ashanti. It has not been recorded from Sierra Leone or from southern Nigeria, but it may easily occur in the latter area. In the southern Cameroons and the Belgian Congo it is perhaps more often seen, but even there is restricted to its very specialised habitat.

OLIVE IBIS

Lampribis olivacea (Dubus)

THE long flowing crest feathers and the much shorter bill (under 100 mm. in all races) should distinguish this ibis from the crestless Hadada, which it closely resembles in size and in general coloration.



The back of the typical Olive Ibis is bronze, the rump, upper tail-coverts and rectrices being principally green. The crest has a purplish lustre and the under parts are brown, the latter saving it from confusion with the smaller Spotted Ibis. The bill of the typical subspecies from rear of nostril measures 95–96 mm., the wing 330–335 mm. and the tarsus 68–73 mm.

This bird seems, unlike the rarer Spotted Ibis, to be encountered in forest country in the vicinity of the larger rivers such as St. Paul's River in Liberia and the Camma River in Gabon. When disturbed it takes refuge in a thickly leaved tree. It is described as shy and

difficult to approach and is consequently seldom observed. It evidently has very regular habits, feeding in marshy swamps and backwaters and returning to a high tree, such as a silk-cotton, to spend the night. In Liberia it is said to go about in small parties of half a dozen or more. It is one of those forest birds about which we know next to nothing despite the fact that the species is widespread in Africa. It has, in fact, been split up into five races.

Distribution. The forms of the Olive Ibis which occur within our limits are four in number. *Lampribis olivacea olivacea* (Dubus) is so far restricted to Liberia and Sierra Leone (once): upper parts brownish olive; *L. o. cupreipennis* (Reichenow), the Cameroons, Gabon and Belgian Congo: upper parts oily dark olive, metallic gloss on wing-coverts, greener and less copper-coloured than in typical subspecies, wing 334 mm.; *L. o. rothschildi* Bannerman is restricted to Principe; *L. o. bocagei* Chapin is restricted to São Thomé, while beyond our limits there is *L. o. akeleyorum* Chapman, found on Mount Kenya and in the Aberdare Mountains. *L. o. bocagei* is so much smaller than the others in its dimensions (bill 72·8 mm., wing 247 mm.) that it might be given specific rank, but in my larger work I retained it as a subspecies of *L. olivacea*. The other forms are more closely related. The species has now been recorded definitely from Sierra Leone, where a fine female was shot near Bonthe on 7th August, 1948, by Mr. T. S. Jones of the Agricultural Department and presented to the British Museum. It has also been reported from the Central Province, Gold Coast, as almost certainly this species, but not obtained.

FAMILY PLATALEIDAE

AFRICAN SPOONBILL

Platalea alba Scopoli

Although the plumage of the spoonbill is white throughout, with a nuchal crest assumed in the breeding season, a view of the spoon-shaped terminally flattened bill is needed to make sure of the bird's identity. It stands about 2 ft. 6 in. in height, with tarsus in male 166 mm., in female under 140 mm., and at a distance might be mistaken for the Great White Heron. The front part of the face is covered with naked red skin, and the legs too are red. The bill is subject to much variation in colour, usually upper mandible pinkish red, lower mauve. In flight the spoonbill holds its neck fully outstretched, which none of the herons or egrets ever do.

This widely distributed species is usually to be seen congregating with herons and other marsh birds on the banks of rivers or wading

in coastal lagoons or at the mouths of estuaries. It occurs from the sea coast to far inland and has been observed on the shallow ponds near Timbuktu and commonly in the vicinity of Lake Chad. Travellers on the Niger and Benue must also be familiar with it. It is a shy bird and quickly takes alarm, when it will often ascend to a good height rather than fly directly over the marsh. Normally it can be seen wading slowly and sedately in the shallows, moving its spoon-shaped bill from side to side with a semicircular motion. The note is a harsh croak, and, like the storks, it has been heard to clatter the mandibles together.



There are occasions when several hundreds of these birds have been seen together, as in the Inundation Zone of the Niger in the month of October, but such a large gathering is unusual.

Reports of its nesting in West Africa are rare. It was formerly said to breed on a solitary rock about a mile from land off Sierra Leone in company with pelicans, and there is reputed to be a colony in the Inundation Zone of the Niger near Diaba on the Diaka which is tenanted before the rains set in, but no recent ornithologists have examined a colony. In Uganda the African Spoonbill breeds at Kisumu in June, building a nest of dry reeds and rushes on a platform foundation of sticks, the nests usually being placed on horizontal branches of ambatch trees from 7 to 25 ft. above water, but occasionally on creeper-covered ambatch stumps. The eggs vary from three to four, white, with faint bluish or yellowish wash, and measure 67–73 × 44–46 mm.

Distribution. Throughout Africa from the Gambia and the Sudan south to the Cape; rare south of the Zambesi. Very local everywhere. In West Africa it occurs in all political areas from Gambia to Nigeria and the Shari River south to Gabon, but is on the whole uncommon.

The possibility of the European Spoonbill *Platalea leucorodia* occurring as a winter migrant must not be overlooked. It resembles the African species but has black legs and black bill with yellow mottlings and no naked red forehead.

FAMILY PHOENICOPTERIDAE

GREATER FLAMINGO

Phoenicopterus ruber roseus Pallas

THE flamingo, with its long bare legs, tarsus 260–370 mm., and long swan-like neck, added to the rose-pink of its plumage, is an unmistakable bird which can only be confused with its smaller relative. In the Greater Flamingo the heavy pink bill, the terminal third of which is black, is diagnostic, as is the bare pink throat. Only when the wing is opened do the black pinions show up in striking contrast; when closed they practically disappear from view, but then the vermilion wing-coverts are likely to catch the eye. As the great birds get under way, with neck fully extended and feet thrust out far beyond the tail, they afford a picture which no other bird can emulate, particularly if the sun glints on their plumage. The wing measures 350–445 mm. The differences between this bird and the Lesser Flamingo will be given under the next heading.

The Greater Flamingo is a migrant in very small numbers to the west coast of Africa, probably from the Cape Verde Islands, and as such may be seen on mud-flats, river estuaries, coastal lagoons and brackish lakes. It feeds by day, wading in shallow water, with the long neck bent down and the bill then pointing backwards owing to its peculiar formation. Crustaceans, molluscs and grasses form its diet. It can swim with ease if occasion demands and may then easily be mistaken for a swan. Strongly gregarious by nature, it is seldom seen alone. As it does not breed on the mainland in West Africa, its peculiar nesting habits need not be discussed here. It used to breed, and may still do so, in the Cape Verde Islands, building its cup-shaped mud nest, upon which it sits with its legs doubled under the body, only on the island of Boa Vista. It lays two chalky-white eggs.

Distribution. Southern Europe, especially in the Camargue, eastwards through Asia to India, occurring also in Africa but only known to breed in the north-west, very rarely in Tunisia and on Boa Vista in the Cape Verdes. To what extent birds from colonies in southern Europe visit tropical Africa in winter is not precisely known. Its status in East Africa is uncertain and it is not definitely known to breed there. In western Africa it is reported to breed in Morocco. Those which have been reported from the Lower Senegal, from Sierra Leone and Liberia are almost certain to have come from the Cape Verde Islands if that colony is still in existence. Flamingos seen in the Gulf of Guinea are more likely to be the next species dealt with.

LESSER FLAMINGO

Phoeniconais minor (Geoffroy)

(see Plate 1, facing page 192)

THE number of times that the Lesser Flamingo has been mistaken in the field for its larger relative is sufficient to stress the care which is needed to identify *P. minor* with certainty. Size alone is not a good guide, except in the unlikely event of both species being viewed at once, when the much smaller dimensions of *P. minor* would be obvious. Points of distinction in the latter are the shape of the bill and absence of the bare throat; the tip only of both mandibles is black, the remainder carmine-red. Feet and toes are deep pink, brighter than in the Greater Flamingo; its total length is about 32 in. In the colour of the plumage there is not much to choose between the two birds, but if anything the Lesser Flamingo appears more crimson. The wing is 303–350 mm. When handled it will be noted that the greater wing-coverts are rosy, not black.

The habits of the Lesser Flamingo closely resemble those of the larger bird. Moreover it is a breeding bird in Kenya and Uganda and is particularly numerous on Lakes Hannington and Nakuru, from which the birds which visit western Africa between Calabar and the Cameroons are quite likely to originate. It is a species which prefers brackish to clear water but is dependent to a great extent on the rise and fall of the water. Lakes which are in course of drying up or which are extensively flooded no longer attract it, and its sudden appearance hundreds of miles away may perhaps be put down to such causes. Apart from local movements it is not known to be migratory in East Africa.

Its nest consists of a low platform of earth only 3–4 in. high and nearly flat above. A chalky-white egg measures 85·5 × 54·9 mm. (Chapin).

Distribution. Mainly eastern Africa, especially Kenya and Uganda, but ranges to Cape Province and Madagascar. It occurs in south-western Africa. Within our limits it had not been substantiated until February and March 1932, when a flock of 1,000 birds, from which two were obtained, appeared at a point east of the Calabar estuary in the vicinity of Abana. It has been reported also from the Cameroons and from Principe Island. It may wander much further west, and a sharp look-out should be kept for it and care taken to identify it properly, if possible by obtaining a specimen. Neither eggs nor young have ever been reported from West Africa.

FAMILY PHOENICOPTERIDAE

GREATER FLAMINGO

Phoenicopterus ruber roseus Pallas

THE flamingo, with its long bare legs, tarsus 260–370 mm., and long swan-like neck, added to the rose-pink of its plumage, is an unmistakable bird which can only be confused with its smaller relative. In the Greater Flamingo the heavy pink bill, the terminal third of which is black, is diagnostic, as is the bare pink throat. Only when the wing is opened do the black pinions show up in striking contrast; when closed they practically disappear from view, but then the vermilion wing-coverts are likely to catch the eye. As the great birds get under way, with neck fully extended and feet thrust out far beyond the tail, they afford a picture which no other bird can emulate, particularly if the sun glints on their plumage. The wing measures 350–445 mm. The differences between this bird and the Lesser Flamingo will be given under the next heading.

The Greater Flamingo is a migrant in very small numbers to the west coast of Africa, probably from the Cape Verde Islands, and as such may be seen on mud-flats, river estuaries, coastal lagoons and brackish lakes. It feeds by day, wading in shallow water, with the long neck bent down and the bill then pointing backwards owing to its peculiar formation. Crustaceans, molluscs and grasses form its diet. It can swim with ease if occasion demands and may then easily be mistaken for a swan. Strongly gregarious by nature, it is seldom seen alone. As it does not breed on the mainland in West Africa, its peculiar nesting habits need not be discussed here. It used to breed, and may still do so, in the Cape Verde Islands, building its cup-shaped mud nest, upon which it sits with its legs doubled under the body, only on the island of Boa Vista. It lays two chalky-white eggs.

Distribution. Southern Europe, especially in the Camargue, eastwards through Asia to India, occurring also in Africa but only known to breed in the north-west, very rarely in Tunisia and on Boa Vista in the Cape Verdes. To what extent birds from colonies in southern Europe visit tropical Africa in winter is not precisely known. Its status in East Africa is uncertain and it is not definitely known to breed there. In western Africa it is reported to breed in Morocco. Those which have been reported from the Lower Senegal, from Sierra Leone and Liberia are almost certain to have come from the Cape Verde Islands if that colony is still in existence. Flamingos seen in the Gulf of Guinea are more likely to be the next species dealt with.

LESSER FLAMINGO

Phoeniconais minor (Geoffroy)

(see Plate 1, facing page 192)

THE number of times that the Lesser Flamingo has been mistaken in the field for its larger relative is sufficient to stress the care which is needed to identify *P. minor* with certainty. Size alone is not a good guide, except in the unlikely event of both species being viewed at once, when the much smaller dimensions of *P. minor* would be obvious. Points of distinction in the latter are the shape of the bill and absence of the bare throat; the tip only of both mandibles is black, the remainder carmine-red. Feet and toes are deep pink, brighter than in the Greater Flamingo; its total length is about 32 in. In the colour of the plumage there is not much to choose between the two birds, but if anything the Lesser Flamingo appears more crimson. The wing is 303–350 mm. When handled it will be noted that the greater wing-coverts are rosy, not black.

The habits of the Lesser Flamingo closely resemble those of the larger bird. Moreover it is a breeding bird in Kenya and Uganda and is particularly numerous on Lakes Hannington and Nakuru, from which the birds which visit western Africa between Calabar and the Cameroons are quite likely to originate. It is a species which prefers brackish to clear water but is dependent to a great extent on the rise and fall of the water. Lakes which are in course of drying up or which are extensively flooded no longer attract it, and its sudden appearance hundreds of miles away may perhaps be put down to such causes. Apart from local movements it is not known to be migratory in East Africa.

Its nest consists of a low platform of earth only 3–4 in. high and nearly flat above. A chalky-white egg measures 85·5 × 54·9 mm. (Chapin).

Distribution. Mainly eastern Africa, especially Kenya and Uganda, but ranges to Cape Province and Madagascar. It occurs in south-western Africa. Within our limits it had not been substantiated until February and March 1932, when a flock of 1,000 birds, from which two were obtained, appeared at a point east of the Calabar estuary in the vicinity of Abana. It has been reported also from the Cameroons and from Principe Island. It may wander much further west, and a sharp look-out should be kept for it and care taken to identify it properly, if possible by obtaining a specimen. Neither eggs nor young have ever been reported from West Africa.

ORDER ANSERIFORMES

FAMILY ANATIDAE

Key to the adult males of the Ducks and Geese

(A separate key to the females follows.)

1. Size very small (wing under 6½ in.) 2
   Size larger (wing over 6½ in.) 3
2. Front half of face white, a pale green patch behind ear *Nettapus auritus*, p. 215
   Front half of face pale buff, no pale green patch behind ear .. .. *Anas punctata*, p. 206
3. Size very large (wing over 15 in.) 4
   Size intermediate (wing 6½–14 in.) 5
4. Head speckled black and white; comb on upper mandible *Sarkidiornis melanotos*, p. 216
   Head brown and white; chestnut patch round eye and on breast, no comb on bill .. .. *Alopochen aegyptiacus*, p. 218
   Head partly naked, neck black, throat white; spur on wing *Plectropterus g. gambensis*, p. 219
5. Without any speculum or bar on wing 6
   With speculum on wing, either metallic, white or grey, or a combination of colours 7
6. Head fawn and blackish; cheeks spotted black; upper parts chestnut and black; back white *Thalassornis l. leuconotus*, p. 196
   Head entirely black; body dark chestnut; wing-coverts blue .. .. *Pteronetta hartlaubii*, p. 212
   Head brown, sepia streak down nape; under parts fulvous, no trace of barring .. *Dendrocygna fulva*, p. 214
   Forepart of head white, hind part black; breast chestnut, sides of body barred .. .. *Dendrocygna viduata*, p. 213
   Head speckled grey and brown, dark streak through eye; back brown spotted with white .. *Anas angustirostris*, p. 210
7. Size rather large (wing over 9 in.) 8
   Size smaller (wing under 9 in.) 13
8. Head chestnut-rufous, forehead and broad streak down middle of crown creamy or golden buff *Anas penelope*, p. 202
   Head not as described above 9
9. Head metallic green 10
   Head not metallic green 11



LESSER FLAMINGO
Phoeniconais minor

10. White ring round neck, breast chestnut-brown, bill of equal breadth from tip to base .. *Anas platyrhynchus*, p. 200
No white ring round neck; breast white; bill much broader at tip than base .. *Spatula clypeata*, p. 199

11. General colour of plumage dark sooty brown throughout, scapulars and innermost secondaries with large white spots; white and metallic bar on wing .. *Anas sparsa*, p. 203
Plumage not as described above 12

12. White streak on either side of neck; wing-coverts grey; rump brown freckled with grey *Dafila acuta acuta*, p. 211
No white streak on either side of neck; wing-coverts chestnut; lower rump and upper tail-coverts black; legs and feet orange .. .. .. *Anas strepera*, p. 201

13. Speculum white or grey, not metallic 14
Speculum metallic 15

14. Head and neck chestnut, mantle and breast blackish *Nyroca ferina ferina*, p. 198
Head, mantle and breast blackish *Nyroca fuligula*, p. 198
Head, mantle and breast chestnut *Nyroca nyroca nyroca*, p. 197

15. Head chestnut with broad metallic green patch; mantle vermiculated black and white; breast spotted; speculum black .. .. .. *Anas crecca crecca*, p. 204
Head speckled; body spotted dark brown and white; under surface marbled; speculum with black *Anas capensis*, p. 209
Crown black; face brown, finely streaked; broad white line dividing crown from cheeks; speculum without black .. .. *Anas querquedula*, p. 207

Key to the adult females of the Ducks and Geese (Anatidae)

1. Size very small (wing under 6½ in.) 2
Size larger (wing over 6½ in.) 3

2. Crown brown, back washed with metallic green *Nettapus auritus*, p. 215
Crown brown, feathers of back dark brown with buff margins, not washed with metallic green *Anas punctata*, p. 206

3. Size very large (wing over 13 in.) 4
Size intermediate (wing 6½–13 in.) 5

Colours of the Soft Parts, Iris, Bill, Legs and Feet in the Ducks

	Eye	*Bill*	*Legs and Feet*
White-backed Duck ..	Brown to ginger-brown	Varies from slate-blue to black, sometimes with yellow spots	Dull greenish, webs black
Ferruginous Duck ..	Male white; female brown	Greenish black, lower mandible horn	Greenish black, marked with yellow, webs black
Common Pochard ..	Male ruby red; female brown	Black with broad band of blue across middle	Bluish grey
Tufted Duck	Golden yellow	Slate-grey, nail black	Slate-blue, webs black
Shoveller	Male orange; female yellow	Male black; female greenish brown	Orange-red
Mallard	Brown	Male greenish yellow, nail black; female olive, nail brown	Orange-red
African Black Duck ..	Dark brown	Pinkish with black patch in middle and nail black	Orange, webs blackish
Gadwall	Hazel	Lead-colour	Dull orange
Widgeon	Dark brown	Bluish-lead colour, nail black	Dark brown
Teal	Dark hazel	Dark slate-colour	Greenish grey
Hottentot Teal ..	Brown to blackish	Light prussian blue, culmen black	Bluish
Garganey	Brown	Black	Leaden grey
Cape Widgeon ..	Yellow or yellowish green	Crimson to purplish pink, with base black	Yellowish brown, webs blackish
Marbled Duck ..	Dark hazel	Black, greenish towards base	Dark brown in male; greyish green in female; webs black
Pintail	Male brown; female bluish horn	Plumbous blue, ridge of culmen and nail black	Male slate-colour, webs darker; female greenish grey
Hartlaub's Duck ..	Reddish brown	Black, with diagonal yellowish band towards tip, nail black	Dusky flesh colour, sometimes spotted with black
Whistling Teal ..	Hazel	Black	Lead-colour
Fulvous Duck ..	Brown	Leaden grey	Blue-grey

4. Head completely feathered, chestnut patch round eye and on centre of breast; no spur on wing
Alopochen aegyptiacus, p. **218**
Forepart of head bare of feathers; neck brown, throat white; spur on wing .. *Plectropterus g. gambensis*, p. **219**

5. Without any trace of metallic speculum or white wing-bar 6
With well-defined metallic speculum or broad white or grey bar on wing 7
With metallic speculum, often poorly defined or wanting; major coverts and secondaries outwardly with broad white border with subterminal blackish band to secondaries; axillaries exceptionally heavily marked with brown on white ground .. .. *Dafila acuta*, p. **211**

6. Head speckled black and white; no comb on bill; under parts white .. .. *Sarkidiornis melanotos*, p. **216**
Head blackish brown; cheeks fawn spotted with black, upper parts chestnut and black; back white
Thalassornis l. leuconotus, p. **196**
Head black; body deep chestnut; wing-coverts blue
Pteronetta hartlaubii, p. **212**
Head chestnut-brown; dark streak on nape; under parts fulvous .. .. *Dendrocygna fulva*, p. **214**
Forepart of head white, hind part black; breast chestnut
Dendrocygna viduata, p. **213**
Head speckled grey and brown, dark streak through eye; back brown spotted with white *Anas angustirostris*, p. **210**

7. Size medium (wing over 8½ in.) 8
Size smaller (wing under 8½ in.) 11

8. With white on breast 9
With no white on breast 10

9. Legs, feet and webs dark brown; rump feathers brown with pale margins .. .. .. *Anas penelope*, p. **202**
Legs, feet and webs dull orange; rump feathers inclining to black, narrowly edged buff .. *Anas strepera*, p. **201**

10. General colour brown, chestnut wash on breast, no white spots on scapulars; bill normal .. *Anas platyrhynchos*, p. **200**
General colour smoke-brown; large white spots on scapulars and innermost secondaries; bill normal
Anas sparsa, p. **203**
General colour above dark brown with buff concentric markings; bill much broader at tip than base
Spatula clypeata, p. **199**

11. Speculum white or grey, not metallic 12
Speculum metallic 13

12. Speculum grey, head brown, throat whitish
Nyroca ferina ferina, p. 198
Speculum white, sides of face and chest brownish black
Nyroca fuligula, p. 198
Speculum white, sides of face and chest reddish chestnut
Nyroca nyroca nyroca, p. 197

13. Crown brown and rufous buff; belly white with small indistinct spots; no grey on wing-coverts
Anas crecca crecca, p. 204
Crown and face white, streaked with black; mantle with large brown spots fringed with white *Anas capensis*, p. 209
Crown uniform dark brown; sides of face closely streaked with sepia; grey wash on wing-coverts
Anas querquedula, p. 207

WHITE-BACKED DUCK

Thalassornis leuconotus leuconotus (Eyton)

The sexes of this duck are alike. The crown and nape are blackish, continued in a line down the hind neck, intermingled on the crown with lighter brown and on the nape and neck with buff. The cheeks are fulvous with distinct black spots; the neck is similar but unspotted; a white spot appears at the base of both mandibles; the throat is black, also the mantle, the feathers of the latter being fringed and barred with buff. Primaries are brown, without any bar or speculum; the wing-coverts and scapulars are barred black and chestnut. The back is pure white; the upper tail-coverts are black, tipped with white; the tail is brown, edged with dirty white or fulvous. The under surface is dirty white, washed with fulvous and lightly barred with black, becoming uniformly dusky towards the tail. The eye is brown to ginger-brown; the bill varies from slate-blue to black (sometimes with yellow spots); the legs and feet are dull greenish with black webs. The wing measures 160–173 mm. Young birds are browner below.

This is a thickset duck which is rather sluggish in its movements, but it is an expert diver. When rising from the water it runs on the surface, pattering like a coot, but once launched in the air it flies strongly, though it keeps low. It is an inland species, frequenting lagoons and rivers and the neighbouring swamps, and puts in appearance on the perennial lakes of the arid region south of the desert.

Whether this duck breeds within our limits has not been certainly proved. It builds a floating nest of rushes and reeds on water 3–5 ft. deep, laying three to seven eggs of a warm brown colour throughout; they measure 64–68·6 × 48·3–50·8 mm. It ranks as a sporting duck in localities where it may be shot.

Distribution. An African duck with a subspecies in Madagascar, the typical form ranges from Abyssinia and Nigeria to the Cape. Within our limits it is fairly common on swamps between Kano and Lake Chad in February, March and April and on the perennial lakes of Sokoto in July and August, when a score or more have been seen together. It seems to be absent from the whole of the forested area, and there is a gap in its range between Nigeria and the Loango coast, but it appears again in Angola and Benguela. In Upper Guinea it may extend west of Sokoto Province, though not yet reported.

FERRUGINOUS DUCK OR WHITE-EYED POCHARD

Nyroca nyroca nyroca (Güldenstädt)

This is the only duck occurring within our limits which has a bright chestnut head and breast. At close quarters the white eye of the male is a sure guide. The rest of the upper parts are dark brown dusted with chestnut on the mantle, scapulars and coverts; the back is darker, with an oily green wash. The flight feathers are white-tipped and bordered with brown and the secondaries are crossed by a broad white speculum bordered with black. These white markings are conspicuous features in flight, as at some angles is the white belly. The sides of the body are chestnut-brown, duskier on either side of the white belly. At a distance the duck has a very dark appearance on the water and in some lights is almost black, for it swims low in the water and does not exhibit the white sides. As it dives the white under tail-coverts catch the eye. The wing measures 174–196 mm.

The Ferruginous Duck is a regular winter visitor to West Africa and descends in great numbers upon the shallow lakes which are such a paradise for waterfowl situated between Lake Chad and the Inundation Zone of the Niger and which in Nigeria lie north of lat. 12°. I have a record also from Sierra Leone, but south of lat. 10° it is probably very seldom met with.

Distribution. A European species, breeding as far east as Tibet and as far south as northern Africa, it winters in India and in Africa south to Uganda and Kenya, where it is rare, and to Nigeria, where it is very numerous.

COMMON POCHARD

Nyroca ferina ferina (Linnæus)

THE male Pochard may always be recognised by the bright chestnut head and neck and the black breast and mantle, coupled with the light grey back and scapulars finely vermiculated with black. The rump and upper tail-coverts are black and the wing-coverts brown dusted with grey. The wing has a broad grey speculum and measures 211–220 mm. The eye of the drake is ruby red, of the duck brown, while the black bill with a broad band of blue across the middle is distinctive. Legs and feet are bluish grey. The female is more easily confused, as it is mainly brown with some light markings on the face and throat. The absence of any white in the wing should save confusion with the female Tufted Duck or White-eyed Pochard.

This is another diving duck which frequents both coastal and inland waters and obtains its food of vegetable matter mainly below the surface. Like the White-eyed Pochard, it swims low in the water, with the neck drawn in and the feathers of the head puffed out, which make it appear to have a large head.

Although very common in winter in the Mediterranean countries and in northern Africa, this duck does not proceed further south in the Sudan than the latitude of Khartoum, and on the west coast has been taken in the Cape Verde Islands and once in Nigeria on the Benue River.

Distribution. Widely spread throughout Europe and Asia, breeding sparingly in Algeria but seldom wandering as far south as lat. 15° N. It may occur in the Inundation Zone of the Niger in winter but is evidently very rare south of that latitude.

TUFTED DUCK

Nyroca fuligula (Linnæus)

THE snow-white patches on either side of the drake Tufted Duck, together with the crested head (shared also by the female) and, at close quarters, the golden-yellow eye, should prevent any mistake in the identification of this small diving duck. The male has the entire head, neck and crest purplish black, the mantle, rump and tail are blackish brown and the back and scapulars brown peppered with buff. The wing (198–210 mm.) is brown, across which is a broad white bar bordered with black. A dark brown breast and snow-white belly complete the picture. In the female, which has also a crest, though shorter than in the male, the whole plumage is

browner throughout, and the head lacks the purple and green reflections of the drake.

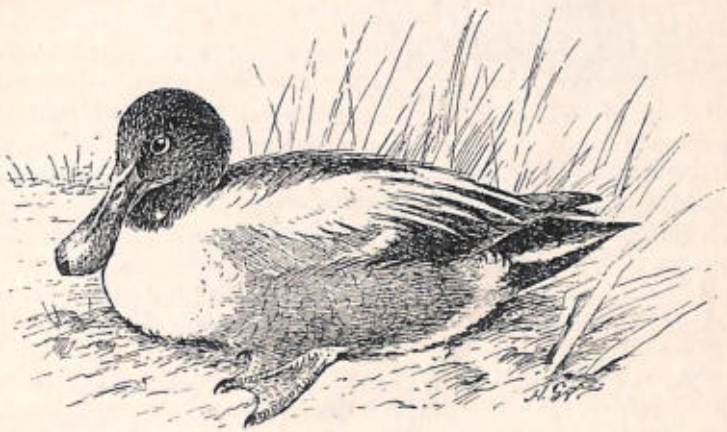
This is a winter visitor to Africa and is probably more numerous in West Africa than records would proclaim, especially to the shallow lakes north of Nigeria and to the Inundation Zone of the Niger. Owing to its habit of resting on the water well away from the shore line, it is less likely to be shot than duck which can be flushed from the margins of lakes and swamps. It has been obtained on the Sulima River in Sierra Leone and on the Gambia, as well as on the lakes north of lat. 12°, where it may be looked for between November and March. Formerly it was considered more of a saltwater species than many ducks, but it now seems to be equally at home on fresh water.

Distribution. Breeds through Europe and Asia but not south of the Mediterranean, wintering in southern Asia and Africa south to Nigeria and the Rift Valley.

SHOVELLER

Spatula clypeata (Linnæus)

THE drake Shoveller is unmistakable and need not be described at length. It is a much smaller duck than the mallard and may be distinguished from all other ducks in West Africa, apart from its



spatulate bill, by the amount of white on the shoulders and scapulars. The breast, too, is snow-white, the head and upper part of the neck being glossy green. The back is sepia, the rump glossed with metallic green. Special features are the pale blue wing-coverts and the blue edge to the longest scapulars. The eye is orange and

the bill black; the feet are orange-red. The wing measures 230–260 mm.

Only the pintail has a pure white breast like the shoveller, but in that duck the white is continued up the sides of the neck in two streaks, and the pintail has no white on the back. The female shoveller has the same spatulate bill as the male, but it is greenish brown in colour. She is not handsome like her consort. Her general colour is brown with a rufous tinge with pale buff concentric markings on the upper parts and no metallic colouring on the rump. The lesser wing-coverts are greyish, and a narrow green speculum is present.

The shoveller prefers shallow swamps and pools where there is plenty of cover to large sheets of water. It is unlikely to be found in tidal waters.

Distribution. A winter visitor to tropical Africa; great numbers migrate across the Sahara and down the east coast. Within our limits it has been recorded from many places but seems to be most plentiful in certain grass on the shallow lakes north of Sokoto and Kano. It is recorded from the Volta as far south as lat. 8°. In the Chad area it is said to be uncommon.

The shoveller has a wide distribution in Europe, Asia and North America and in winter extends its range to Japan, India and Africa, south in the last named to Nigeria and the Rift Valley.

MALLARD

Anas platyrhynchos platyrhynchos Linnæus

The large size of the wild duck, over 24 in. from bill to tail, with wing expanse of 37 in. and its reputation as a sporting bird, enables it to be recognised without difficulty by most people. The handsome colouring of the drake, with its shining green head, white collar and rich chestnut breast, prevents confusion with any other species in our area. The female is perhaps best recognised by its size, but the light brown colouring, together with the broad blue wing speculum with its black and white border, should easily identify it. The wing is 265–290 mm.

That the mallard must regularly visit the shallow lakes north of Sokoto and Kano during the winter months I feel pretty sure, although, judging by records from West Africa as a whole, it might be one of the rarest ducks. Only once has it been reported in any numbers from the area specified. As is well known, the mallard is largely a night feeder and moreover is a shy and wary species which appears seldom to have fallen to the gun in West Africa south of the Gambia.

Distribution. The mallard breeds throughout the greater part of the northern hemisphere, also apparently in northern Africa, ranging south in winter to India and reaching as far south as Abyssinia in the east and northern Nigeria in the west. Many are shot in Gambia, and though it is reported from northern Nigeria, it seems to be uncommonly met with so far south.

GADWALL

Anas strepera Linnæus

In size the Gadwall is rather smaller than the mallard and is distinctly slighter in build, being in total length about 20 in. In flight the gadwall's wings (240–280 mm.) appear more pointed and it flies with more rapid wing-beats, reminding one more of a widgeon. The male is a handsome bird, the general colour of which is warm brown. The points to observe in the drake are the white speculum, very prominent in flight but often concealed when at rest, the chestnut median wing-coverts and the velvet black greater coverts, the bold crescentic markings on the breast, the black upper and under tail-coverts contrasting with the grey-brown back and the colour of the soft parts; the lead-coloured bill, and the dull orange-yellow feet. The male is not easy to distinguish from the female mallard, but the dusky bill is a point to note and the white speculum, as in the male. From the female widgeon it may be distinguished by having the greater wing-coverts mostly black.



The gadwall is a somewhat irregular winter visitor to northern Africa and the Mediterranean region, many more putting in appearance in some seasons than in others; its regular migrations appear to lie more in an easterly direction, and in winter it swarms in India but is far from being abundant in tropical Africa, even on the eastern side, where it does not penetrate south of Abyssinia and Somaliland. It is fairly abundant in winter in Egypt on the larger sheets of water. Within the limits embraced in this handbook the gadwall is very rare, but that it does reach the latitude of northern Nigeria is exemplified by an example shot on a small sheet of water in northern

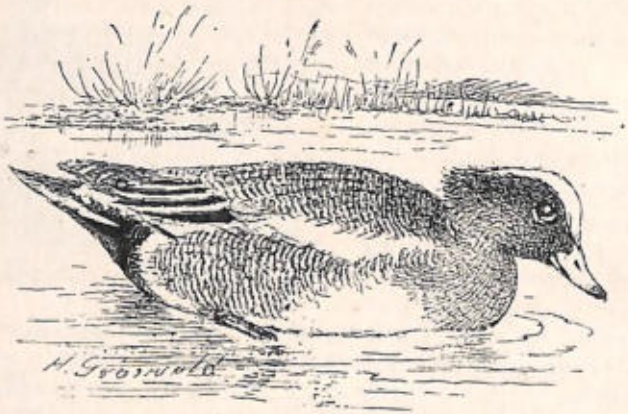
Bornu. It is one of the non-diving ducks but is nearly always found in fresh rather than salt water. The note is likened to a croak rather than a quack. It may easily pass unrecognised and may be more frequent than it appears.

Distribution. Apart from its range in Africa, which has been noted above, the gadwall has a huge breeding distribution, though somewhat local, in the western Palaearctic, throughout Europe, northern Asia and North America. Vast numbers reach India and China in winter, and comparatively few winter in Africa north of lat. 10°. It has never occurred south of the Equator.

WIDGEON

Anas penelope Linnæus

THE drake widgeon is recognisable at close quarters by its creamy buff or golden forehead and crown, which even at a distance stand out in contrast to the chestnut head and neck. For the rest the black and grey vermiculated back, conspicuous white shoulders in the



adult bird above the metallic-green speculum, the latter bordered with black, glistening white under parts, with the jet-black under tail-coverts and the long black pointed secondaries with white border should enable the drake widgeon to be identified without much difficulty. The duck is not so easy to spot—it is a more slenderly built bird than the other migratory ducks in our area, appearing brown above and white below, without the black under tail-coverts or the white shoulders of the male and lacking also the golden crown. The head and neck are brown and sepia and the upper parts rather reddish brown. In flight a double white wing-bar is noticeable, but at rest this character can only be seen at close quarters. The

call-note of the male widgeon is typical—a loud clear *whee-ou*, familiar to many who go "flighting" in Great Britain. The wing is 236–270 mm.

This is one of the ducks which had never been reported from West Africa at the time I was preparing the first volume of my larger work. It has now been recognised as appearing at intervals during the winter months in Nigeria but has not been taken further west than that country, though it has been shot as far south as Ibadan, and there is nothing to prevent such a grand flier penetrating to any point it desires. I shall be astonished if it does not regularly visit the lakes north of Kano and Sokoto, at any rate in small numbers. As it is probably the most abundant of the ducks which frequent our estuaries in Britain, it should be well known to British sportsmen, who, however, do not always take the trouble to identify the bag.

The Widgeon breeds in the far north along the fringes of the Arctic Circle, and the immense distances flown by these birds to their winter quarters is almost incredible. Widgeon are proverbially difficult to shoot, being among the most wary of sporting duck, but when caught flighting there is no finer shooting in the world. Though in Britain it is found chiefly on our coasts, it does not frequent the coastal belt of tropical countries and seems entirely to avoid the mangrove belt. It is one of the quickest birds off the water imaginable, and the swish of their wings as they pass overhead is music to one's ears.

Distribution. Found throughout the greater part of Europe, northern Asia and more rarely in North America, wintering in southern Asia and Africa north of the Equator but rarely in the west, though numerous on the Moroccan lakes in winter and recorded from the Canaries and Azores. A few reported from Nigeria are hardly likely to interpret its true status.

AFRICAN BLACK DUCK

Anas sparsa Eyton

(see Plate 2, facing page 209)

THE general colour of this duck is dark sooty brown, some of the feathers of the under parts with light fringes and the head finely streaked with grey. It has no crest. The large white spots on the wings, scapulars and tail distinguish it from all other ducks in Africa. The eye is dark brown, the bill pinkish, with a black patch in the middle and a black nail. The wing is 232–272 mm. The legs and feet are orange and the webs blackish. On the outer bend of the wing is a knob, as in Hartlaub's Duck.

The Black Duck has its haunts on the mountain lakes and tarns and is essentially a highland bird which never descends to the sea level and is absent from the estuaries, big rivers and lowland swamps which attract the majority of its family. There is little country to attract it in western Africa, but in East Africa it finds many mountain streams and high crater lakes situated between 6,000 and 8,000 ft., while on Mount Elgon it has been taken at 13,800 ft. above sea level. It has been found within our limits in the mountainous country of the middle and northern Cameroons and in the vicinity of Bamenda and recently at Mukonje. It may be expected to occur in Sierra Leone but has not yet been recorded from that country.

The Black Duck loves to frequent stagnant pools where there is an abundance of water plants and streams with well-covered banks under which it can hide. The only occasion that I have heard of it in an unusual situation is in the Ituri country on a small forest brook such as *Pteronetta hartlaubii* frequents; this specimen had been feeding on insects and small crabs.

The Black Duck breeds in various situations, its nest having been found on a collection of drift under the shelter of a bank or tree, in thick sedge by a lake, or in a depression in damp earth among rushes on the edge of a small islet. In Abyssinia it nests in February and March, in Uganda in January, and if the species breeds, as I suspect, in the Cameroon-Nigerian highlands, it probably does so about the same time. The eggs are cream colour or pale yellowish with glossy surface and are reported to measure about 57 × 42·5 mm. The clutch varies from five or six to 11 eggs.

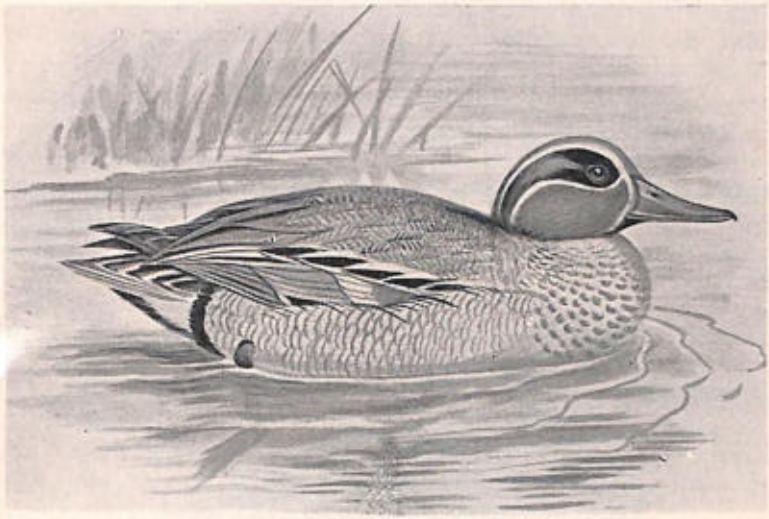
Distribution. Widely distributed in Africa, to which continent it is confined, occurring at suitable elevations from Abyssinia and the northern Cameroons to Cape Province. Within our limits it is only known from near the Cameroon-Nigerian border.

COMMON TEAL

Anas crecca crecca Linnæus

THE very small size of the teal and the familiarity of all sportsmen with this species should enable it to be identified with ease. No duck is quicker off the water, and its flight is so rapid that it is a favourite everywhere among shooting men. The drake is very handsome, with the rich chestnut crown, nape, cheeks and throat and the large patch of metallic green extending from the region of the eye down the sides of the head, bordered narrowly with white. When swimming, the Teal drake may always be known by the cinnamon-buff patch on each side of the rump and the light line along the sides of the body. The female is much less decorative, being mottled brown and white

above; the scapulars and mantle have white concentric markings; the crown is brown and buff; the under parts are white mottled with brown. As in the drake, the duck has the green and black speculum in the wing bordered with white. In total length the teal measures about 14 in., the wing being 175–193 mm. Only one duck is slightly smaller—the Hottentot Teal, which has a dark crown, pale buff cheeks and throat and cinnamon-buff under parts profusely spotted with dull black on the breast and sides of the neck.



The Common Teal is a winter visitor to tropical Africa from Europe which does not breed anywhere within our limits. It is fond of reedy brackish pools, quiet backwaters and open sheets of water. Its food, mainly obtained at night, consists largely of vegetable matter with small molluscs and larvae of various creatures. During the greater part of the day it remains hidden in the rushes and aquatic plants but becomes lively towards sundown. Its note, *crek-crek-crek*, is uttered on the wing. Extremely gregarious in winter, it is almost certainly to be seen in flocks, if not in large packs, and, as the Hottentot Teal is distinctly rare, any large numbers of small duck, unless they be Garganey, will most likely be of this species, which is probably much more numerous in inaccessible places than was formerly supposed, though actual records are scarce.

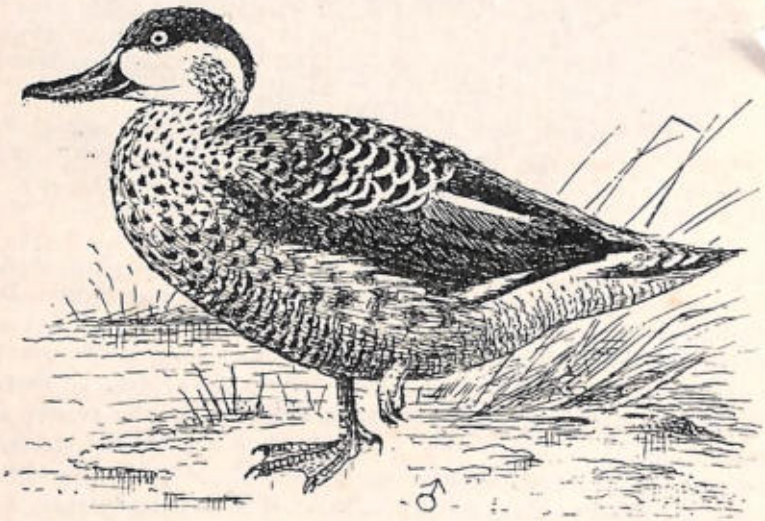
Distribution. The whole of the Palaearctic region, breeding mainly in the northern parts of Europe and Asia but wandering enormous distances in winter, reaching India, China and Japan. In Africa it does not occur as far south as the Equator, ranging from Egypt to

the White Nile, Abyssinia and Somaliland on the east and on the west from Morocco to northern Nigeria and on the Gold Coast. Within our limits it is to be seen in great numbers in certain winters on the shallow lakes north of Sokoto and more rarely in Kano. To the Bauchi plateau it is an occasional visitor, but to the Keta lagoon on the Gold Coast it is said to be a dry-season visitor in large numbers. Teal cross the Mediterranean in force in September and October and return north in February and March, migrating apparently on a wide front, for they have been secured in the central Sahara in the oasis of Bilma among other unlikely localities.

HOTTENTOT TEAL

Anas punctata Burchell

This is the smallest of all the duck family which visits our area, a drake in the flesh measuring about 13–14 in. in total length, approximately the same as the Common Teal, from which it may very easily



be distinguished by the dark blackish crown mixed on the forehead with buff, buff cheeks and throat and light cinnamon breast covered with obscure round black spots. The blackish-brown mantle and scapulars are broadly fringed with cinnamon-buff. The wings (144–157 mm.) are dark brown, the inner secondaries glossed with green and a metallic green speculum; the primaries are crossed by a broad white bar bordered anteriorly with black. The eye is dark

and the bill black with blue along the edges; the feet and webs are black. The female closely resembles the male, but the breast spotting is continued on to the belly. It has a speculum like the male. As the bird rises from the water the most conspicuous marks are the blackish rump—in the Common Teal the rump appears light-coloured—and the very long white bar across the flight feathers.

The Hottentot, as may be imagined from its name, is not a Palaearctic species but hails from south of the Equator. It is generally met with, in places where it is fairly common, in small parties among the reeds at the lakeside, preferring the cover of aquatic vegetation to open water. At times it may be met with on quite small pools, rain pools, papyrus swamps and such-like. It is said to be an unsociable species, but for all that will gather into large flocks, though these have not been seen anywhere within our area, to which it must be considered one of the rarer visitors which failed to find a place in my first volume. It breeds in its summer quarters among reeds in shallow water but wanders north.

Distribution. Restricted, so far as breeding is concerned, to the southern half of Africa from Cape Province to Nyasaland on the east and perhaps to Angola on the west, whence it visits Central Africa, Tanganyika, Uganda, Shoa and Nigeria. Within our limits there are not more than five records, all from Nigeria, Hadejia and Daura in Kano Province; Terke, Sokoto Province, and Kumbotso. The dates when these birds were shot include the months October, November, March and April. In all sixteen birds were seen, one flock consisting of seven birds.

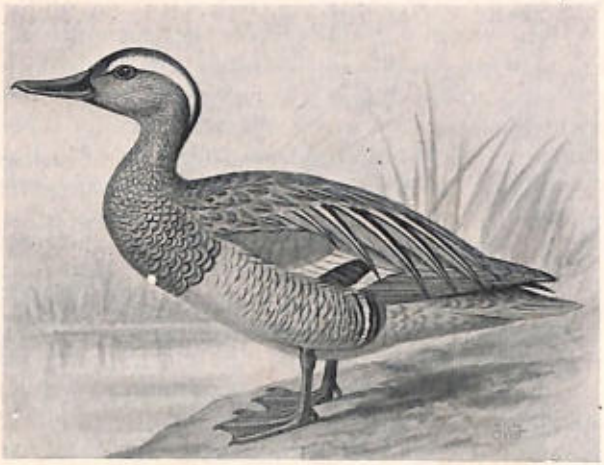
GARGANEY

Anas querquedula Linnæus

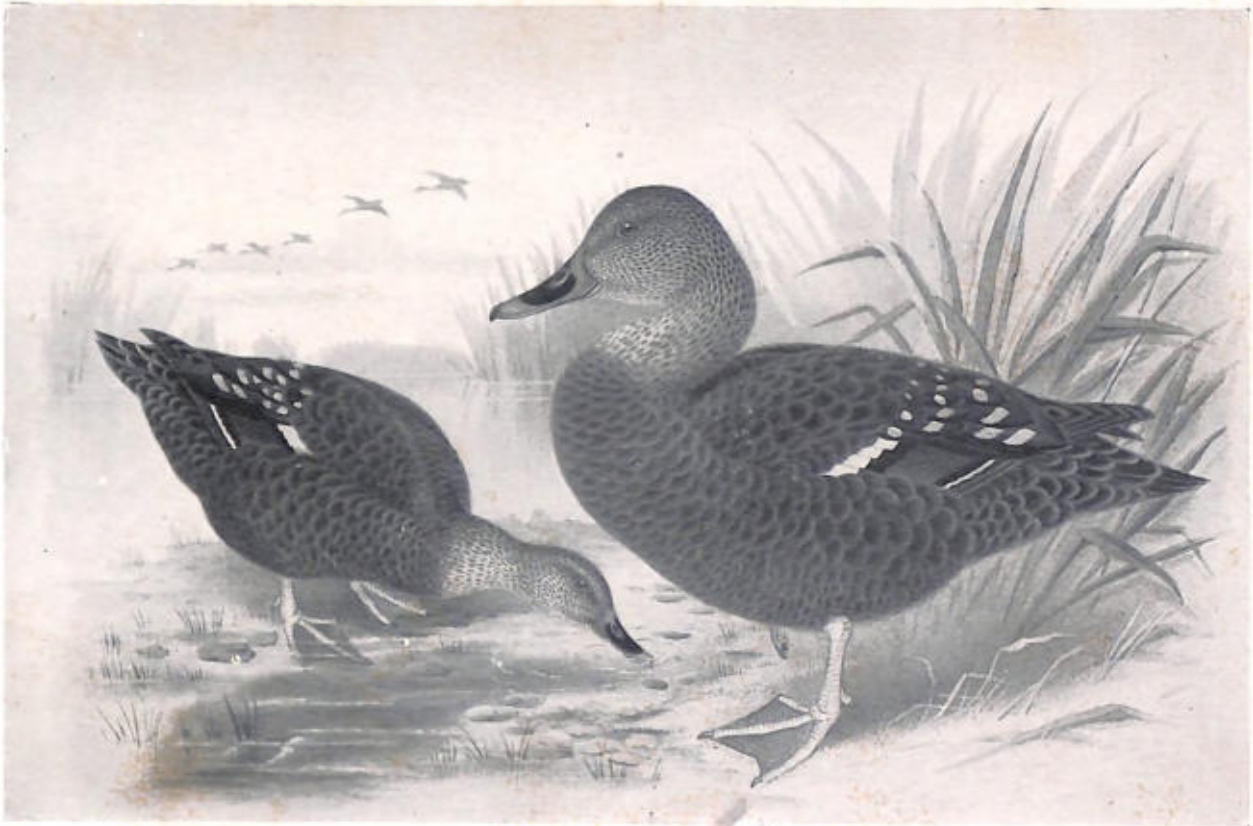
THERE is not much to choose in size between the Garganey and the two teals already discussed. The former when actually measured is about 2 in. longer, i.e. 16 in. in total length, with wing 185–202 mm. Like the Teal, the Garganey is an exceedingly fast flier and when on the wing is not easy to distinguish unless at fairly close quarters. In the last event the blue-grey coverts and inner scapulars with the double white wing bar bordering the green speculum are points to observe, while the head of the drake is distinctive—a broad white line bordering the black crown and meeting in a V at the back of the neck, a black chin and chocolate-coloured face and neck finely streaked with white. Only at very close quarters can the concentric black markings on the chestnut-brown breast be discerned. The belly is white and the sides of the body are barred with

narrow black lines. A black bill, lead-grey feet and webs and a dark brown eye complete the picture. The female is very different from the male, being dark brown above and mottled below, but it may be distinguished from the females of other duck by the dove-grey wing-coverts, double white wing bar and metallic green speculum, the grey coverts being unique.

I have described this bird in some detail, as it is likely to be encountered over a wide area in West Africa given the right conditions. It is, of course, a migratory duck which breeds within the Palaearctic



region generally, south of the Arctic. The first-comers make their appearance in the Inundation Zone of the Niger about the third week of September, and by the middle of October the flocks which have assembled can only be described as vast. Literally thousands gather on the rice-fields at night, and in the early morning the sky is alive with bands of Garganey following the Niger in both directions. No other species is present in such numbers, and the shallow lakes and ponds lying between the great bend of the Niger and Lake Chad are visited by thousands of these birds. The birds return north in March and April, the majority having left by 20th April, only stragglers remaining. The latest record I have is on 4th June at Mafindere. The Garganey prefers pools with adjacent marshes and ponds covered with lilies and luxuriant water-plants, but all the open shallow lakes are frequented. It is a rare visitor to the coastal area but is recorded from Ibadan, Lagos, Oyo and Afikpo in Nigeria and from the Keta Lagoon and Accra in the Gold Coast. A Garganey ringed on the Volga was recovered near Kano, which is some indication of the vast distances these duck travel to their winter quarters.



AFRICAN BLACK DUCK
Anas sparsa

Distribution. The greater part of Europe and Asia, wintering as far south as the Malay Archipelago and tropical Africa. On the East African coast it reaches Nyasaland. It is uncommon in the northern and eastern Congo, but many thousands are reported to reach certain of the East African lakes; its numbers fluctuate. In the west it reaches Gambia, the Gold Coast, Nigeria, the northern Cameroons, Chad, and the Shari River.

CAPE WIDGEON

Anas capensis Gmelin

This bird, about 16 in. from bill to tail (wing 193–202 mm.), is very light coloured in appearance and the upper parts appear spotted or mottled dark brown on a buff or whitish ground; the head is finely speckled brown and white. The two best guides to identification are the colour of the bill, which is bright red or purplish mauve to



purplish pink with the extreme base black, and the exceptional amount of white in the wing caused by the broad white tips to the greater coverts and the white anterior secondaries, the latter being most conspicuous in flight. The speculum is metallic green bordered with black. The sexes are practically alike. The eye is yellow or yellowish green; the legs are yellowish brown, with the webs blackish. The under parts of the body are almost white mottled with brown, and the under tail-coverts are white barred with brown.

This is a very rare duck in our area, but it has been shot on Lake Chad and may even nest in that area, for it is believed to be a summer visitor to Darfur and to have bred there. If the widgeon reaches Chad territory, there is nothing to prevent it turning up on

the other lakes between Chad and the Inundation Zone. The colour of its bill should enable it to be picked out in a normal bag. Its true home is in South Africa; it visits the Great Lakes of East Africa but is never common and is always shy, keeping far out in the open water during the day. They lay their seven to nine yellowish eggs in depressions encircled with down and placed under small bushes. The eggs measure 48–54 × 34–38 mm.

Distribution. A south African species, which has been recorded westwards to Loanda and on the east through Nyasaland and Tanganyika and has been shot on Lakes Elmenteita, Nakuru and Hannington. It has also been found in Central Darfur and on Lake Chad, but is everywhere rare.

MARBLED DUCK

Anas angustirostris Menetries

SHOULD the Marbled Duck occur within our limits it may be recognised by the marbled pattern of its plumage—pale spots on a darker ground—and the lack of any wing speculum or white wing-bars. It is a small-sized duck, in that respect resembling the last species described, from which its black bill, greenish towards the base, will at once distinguish it. The legs, too, are darker, and the whole plumage is nondescript. In flight it appears very light. The wing measures 191–211 mm.

There is a regular flight of these ducks to North Africa from southern Europe, but how far south they extend is very uncertain. I feel sure they must come within the northern boundaries of the countries I include in this work. The Marbled Duck found a place in my larger volumes, as it is reported to breed as far south as the Cape Verde Islands. During the winter great numbers congregate on the lakes in Morocco, and it will be surprising if some do not penetrate to tropical Africa at that season. The Marbled Ducks which are apparently resident on Boa Vista are surely proof of the fact, though no specimen has so far been recorded from Senegambian territory.

Distribution. A breeding bird in the south of Spain, whence many cross in winter to Morocco. South of the Mediterranean it nests from Morocco to Egypt, Cyprus, the Caspian area, Iran, Iraq and Baluchistan; in winter it is a vagrant to the Canary Islands, where I have shot it. It is said to breed on Boa Vista, Cape Verde Islands.

PINTAIL

Dafila acuta acuta (Linnæus)

THE male Pintail is a fairly large bird but of slender build in comparison with a mallard. It is distinctively marked. The narrow central tail-feathers are prolonged beyond the rest of the tail and stand up at a sharp angle when the bird is swimming. The white stripes on either side of the neck commence below the hind crown and do not border the crown, as in the Garganey. The white breast of the drake is also a feature to note. The wing measures 260–280 mm. The female is not unlike the mallard duck but is darker, the wing speculum being dull purplish bronze, not shining blue-green, and bordered with only one white band. The Pintail rides high on the water, and this characteristic, though apparent in both sexes, is chiefly notable in the drake. From the female gadwall and widgeon the female Pintail may be distinguished by its lack of the white inner border to the speculum.

From mid-October onwards the Pintail may be seen in tropical Africa and is now known to be quite a common migrant to the Inundation Zone of the Niger and to the lakes of northern Sokoto and Kano. It is also commonly seen in the vicinity of Lake Chad and in certain places reaches the coast, as in Gambia, Sierra Leone and the lagoons of the Gold Coast. What exactly governs the numbers which appear annually it is difficult to state, but the fact remains that in some seasons they are much more numerous on the northern lakes than others. After February they begin to disappear, and by 1st April all but a possible straggler or ailing bird have departed to their European breeding grounds. On one exceptional occasion, however, a dozen or more were observed on the Keta marshes as late as 20th June. The Pintail is a fine sporting bird and moreover is highly esteemed for the pot. Usually found in flocks, it keeps well away from the shore line and is not easy to approach by day. When flighting it has a habit of keeping very high.

Distribution. Breeds mainly in the northern parts of Europe and in Russia but locally, in Europe as far south as France and Spain. To Africa it is an autumn and winter visitor, extending in East Africa to the Great Lakes of Kenya and Uganda and reaching Tabora in Tanganyika Territory. Within our limits it is found as far south as the coastal lagoons of the Gold Coast but is mainly to be seen on the northern shallow lakes between Lake Chad and the great bend of the Niger. Beyond Africa it visits India, Burma and Ceylon in winter in numbers vastly in excess of those which congregate in Africa.

HARTLAUB'S DUCK

Pteronetta hartlaubii hartlaubii (Cassin)

THIS is a fine large duck about the same size as a mallard and equally heavy in appearance. Its plumage betrays its identity at a glance when at close quarters: a black head (brown in female), with usually a white patch of varying size at the base of the bill, bright chestnut body plumage and grey-blue wing-coverts, the last a most conspicuous feature in contrast to the chestnut-brown wing, the latter measuring 253–281 mm. Even the bill is distinctive, being black with a yellow terminal patch and a black nail. The eye is reddish brown; the legs and webs are flesh colour, with occasionally some black spots. At a distance of more than 100 yards the colours are not discernible and the whole duck appears to be black.

Hartlaub's Duck is an inhabitant of the streams, rivers and ponds of the forested area where the banks are lined with dense foliage, and is commonly found in the mangrove creeks. Living in pairs or in little family parties, it is resident wherever it occurs, spending an apparently sedentary life. It is not a bird which requires to move long distances to its feeding ground and does not readily take to flight, preferring to find shelter under the bank. When it does so, the wing is seen to be unusually rounded, and it flies slowly. On occasion parties of fifteen or twenty have been seen together, and in some areas these ducks will form quite a gathering, as has been noted on the Imo River. Though much preferring the shelter of a narrow creek, it may on rare occasions be seen on a sandbank of the main stream, but it avoids the big rivers and open spaces. Occasionally a bird may be observed standing on a post, and it will commonly alight in trees overhanging water, often spending the heat of the day within a leafy canopy.

Feeding takes place in the evening close to where the birds spend the night, and consequently there is no regular flighting. Various notes have been recorded: an oft-repeated *ka-ka-ka-ka* or *coo-coo-coo-caa* and sometimes a duck-like quack. Other sounds which it emits baffle description. Naturalists have been struck by its composure: it is not difficult to approach, and all its movements lack hurry or signs of nervousness. When once alarmed it will alight in a tall tree well out of gunshot. Hartlaub's Duck is presumably a surface feeder which has never been seen to dive or to "up-end"; small larvae, freshwater snails, shrimps, spiders, dragonfly pupae and other aquatic insects have been found in the stomach of birds examined. Despite its numbers in the forested parts of West Africa, its nest has never been discovered. It will, I believe, be found to nest in hollow trees, possibly at a considerable height from the ground. Very young



WHITE-FACED DUCK
Dendrocygna viduata

ducklings are able to climb with the aid of their sharp claws but soon lose the power to do so.

Distribution. The whole of the forest area of Upper and Lower Guinea from Sierra Leone and Liberia eastwards, south through the Cameroons and Gabon to the Congo and eastwards again through the great equatorial forest of the Belgian Congo. It is the only duck which is characteristic of the West African rain forests and the gallery forests. It is generally distributed and a great deal more common in all our West African Colonies except Gambia, where it does not occur, than I had supposed when I wrote the first volume of my larger work, but see the Addenda, vol. viii, for details of distribution within our limits. A subspecies, *P. h. albifrons* (Neumann), with more white on the crown, is recognised by some authorities from the Ituri and Aruwimi valleys.

WHITE-FACED DUCK OR WHISTLING TEAL

Dendrocygna viduata (Linnæus)

(see Plate 3, facing page 213)

THE colour pattern of the head and neck of this small duck is so distinctive—the front half white, the posterior half black—that there can be no mistaking it. The breast is chestnut, the sides are barred white and black, the mantle and scapulars are olive-brown, and the tail and belly are black. The bill is mainly black and the legs and feet are lead-colour. In size this duck is about one-third as large again as the Common Teal. The neck is rather long, noted especially when swimming, at which time the barred flanks are usually obvious, as this duck swims high in the water. As it rises, which it does with some commotion, it utters its well-known whistling cry. Its flight is notably slow and the wing (212–237 mm.) is rounded. Even when fully under way it is quickly overhauled by any of the migratory ducks.

The "wishi-wishi" is perhaps the best-known duck in West Africa, for though it is largely a night-feeding and night-flying species, spending most of the day quietly resting or sleeping, it becomes lively towards evening. Its numbers are very large and its distribution is universal. Dense flocks gather on the sandbanks of the Niger and love especially to feed on the partly submerged grassy banks. It is numerous on all the larger rivers and swamps, and almost every tubki holds a pair or more. It moves about freely, especially during time of drought, seeking fresh feeding grounds, being here today and gone tomorrow. It is almost as common on the coastal lagoons in the dry season as on the shallow lakes of the north in the rains, but it avoids the forested area except where there

are intersections by the big rivers, when the White-faced Ducks congregate in the estuaries. In the rains there is a strong movement northwards in some districts. In Gambia, for instance, their numbers are greatly increased after the end of the dry season, and by the month of June ducks may be found as far north as lat. 17° N., that is, on the latitude of Timbuktu.

It is astonishing how seldom the nest of this duck has been discovered by white men, considering the incredible numbers in our colonies. The "nest" is usually well concealed in rank herbage and consists of a shallow circular depression in the ground lined with wisps of dry grass but no down; sometimes it is placed on a mattress of thick grass in muddy areas completely exposed, though at times the bird breeds among reeds. I have records of nests from Sokoto between 5th August and 2nd September and from the Keta lagoon, Gold Coast, in late May. The clutch varies from ten to twelve; the shell is creamy-white, with, when fresh, a pinkish tinge, or white tinged with cream. Fifty eggs average 46·9 × 35·5 mm.

Distribution. Africa generally, from Senegal and the Sudan south to Natal and Benguella, also Madagascar and Central and South America from the West Indies to the Argentine. The White-faced Ducks from the Old and New Worlds cannot be separated even subspecifically. Within our restricted limits this common duck is found everywhere.

FULVOUS DUCK

Dendrocygna fulva (Gmelin)

This long-legged and long-necked duck is in colour various shades of brown; the mantle and scapulars are black with broad chestnut margins; the wings are black, and the lesser coverts are edged with chestnut. The crown is dark chestnut-brown, which is continued in a sepia streak down the hind part of the neck. The tail is black and the upper tail-coverts are cream. The wing is 215–233 mm.

In flight the light under tail-coverts readily distinguish this duck from *D. viduata* (the "wishi-wishi"), the tail then appearing fan-shaped, due to the feet being carried at each side of the coverts and protruding beyond the rectrices. Moreover it has a slower flight and a different silhouette against the sky. Finally, its call is distinctive—a clear but soft whistle: *tsoo-ee, tsoo-ee.*

The status of this duck in West Africa is somewhat uncertain in view of rather conflicting reports. Only once has it been reported in very large numbers, and then in the Inundation Zone of the Niger between Mopti and Timbuktu in May and June. Usually it has been observed in small numbers—seldom more than fifty at once, and

often in small parties of four or five. I believe it to be largely migratory in our area, never occurring in such numbers as it does on Lake Wamala in Uganda, where enormous flights can be seen moving along the shores of the lake, several thousands on the wing together. By June these ducks had disappeared from Uganda, presumably to breed.

Records from West Africa cover various dates between March and September, and on one occasion twenty were noted in early November in the vicinity of Lake Chad. The Fulvous Duck certainly breeds within our area, reports of its nesting having reached me from the Keta Lagoon (26th July) and Gadabawa, Sokoto (7th August).

The nest is built in reeds in water and is a loose accumulation of dry reeds fashioned into a shallow cup from 8 in. to 2 or 3 ft. above water level. Occasionally the living reeds around the nest will be pulled down to form an arch over the eggs. There is no down in the nest, but loose feathers from the brooding bird have been found in it. The nests described contained two fresh eggs, white, tinged with yellowish green and broader than the eggs of *D. viduata*. Measurements are 52–54·8 × 37·8–39·8 mm.

Distribution. This is another duck which also inhabits South America and embraces within its range India, Indo-China and Africa and Madagascar. It occurs from Senegal and the Sudan south to Natal and Lake N'gami. Within our limits it is to be found mainly from Lake Chad to the Inundation Zone in French Sudan but has been obtained in Senegal and the Gold Coast not far from the sea and on pools and swamps in the Northern Territories of Nigeria and along the Niger. It is absent from the whole Congo forest. The question arises, where do the numbers come from which have been noted in West Africa in summer?

PYGMY GOOSE

Nettapus auritus (Boddaert)

This beautiful little goose is so distinctively coloured that identification should be easy. The drake, which is barely 13 in. in total length —smaller even than a teal—has the forehead, cheeks and throat pure white, which is continued round the neck. The crown and nape are dark glossy green and the ear-coverts pale pea-green, bordered with a band of black. The breast and sides are bright cinnamon-brown; the mantle and back are glossy green. The belly is white. Add to this an orange bill with black nail and black legs and feet and you have a picture of the neatest member of the Anatidae which flies. At a distance it appears to be just chestnut and white.

The female is much duller than the male, lacking the distinctive

colour pattern on the head of the drake, but for all that it is impossible to confuse owing to its diminutive size and resemblance in many ways to the male bird. The wing is 151–167 mm.

The Dwarf Goose, as it is sometimes termed, lives in the swamps and on large sheets of open water, preferring those where the water is deep. On still water and backwaters covered with water-lilies it may often be flushed, but unless shot at constantly is not a shy bird and can easily be approached in a canoe. Owing to its small size, it appears more like a tiny duck than any ordinary goose. The Pygmy Goose springs straight off the water like a teal and on the wing flies fast and rather low but not very far. The white line down the wing is then most noticeable. In the water it is an expert diver and when wounded can often escape where another duck would be captured. It has often been observed to take refuge in trees, and trees are also made use of for roosting purposes. When disturbed this little goose will often fly quite a short distance to another pool, uttering the while a sweet whistle: *choo-choo*, *pee-wee*, as it has been described.

Nests have seldon been found in our area, but it is known to lay its eggs in large holes in trees 30–60 ft. from the ground, proving not easily accessible. It has also been found nesting in a hole in a cliff—probably an unusual site, though one pair are known to have tunnelled into the thatch of a native house for the purpose, proving that it can adapt itself to circumstances. As many as nine eggs are laid, pale cream in colour without markings. Published measurements are 41·5 × 31·5 mm.

Distribution. Locally distributed in Africa from Gambia and the Bahr el Ghazal to Cape Province, also in Madagascar. It shuns the forested areas but is found in savanna both north and south of the forest. Within our limits it occurs in all our British Colonies and has a very wide range from the borders of the desert, the Lake Chad area, the Upper Niger and the Inundation Zone of the French Sudan to the coastal lagoons and tidal creeks. It is looked upon as a thoroughly sporting little bird which may as likely be flushed from small lily-covered pools in the bush as from the large open sheets of water or the big rivers.

KNOB-BILLED OR COMB GOOSE

Sarkidiornis melanotos (Pennant)

(see Plate 4, facing page 220)

The male Knob-bill is a large, ponderous bird weighing as much as 5 lb., conforming to one's true conception of a goose, in striking contrast to the last species discussed. Its colouring enables it to be easily identified: the head is white, spotted heavily with black; the

under parts are pure white and the upper parts blackish; the wings are glossed with metallic green and bronze, the mantle and scapulars with blue and purple. The drake in the breeding season is remarkable for the huge black comb on the upper mandible. The female, though much resembling the male in plumage but duller coloured, is chiefly notable for its small size in comparison with the drake and if seen by itself would be taken for a black and white duck. The wing of the male is 344–397 mm. and of the female 277–299 mm. When handled it will be discovered that there is a knob of varying size on the carpal joint of the wing, present in both sexes but much larger in the male. The flight is direct, but the wings are beaten slowly.

This is a very common goose in West Africa, flocks or small parties frequenting the swamps in the Northern Territories and the smaller pools until they dry up, when the geese repair to the larger rivers and more open swamps further south. The lakes north of Sokoto and Kano are frequented by them in large numbers, but when the rains set in their numbers decrease. It has been stated that the Comb Goose is more a bird of pools and lakes than of river banks, and after a deluge of rain birds will appear in the most unlikely places on the edge of the desert. When frequenting the rivers in the dry season these geese resort to sandbanks and muddy shallows and are then most difficult to approach.

Large flocks of these birds may be observed in the vicinity of Lake Chad flying in one direction in the morning and back again in the evening. The Knob-bill is by no means restricted to the lakes and marshes north of lat. 10°, but is certainly more often encountered north of the forest than south of it. It is a great wanderer wherever it occurs, feeding in grain-fields and upon open marshes. Mystery still surrounds the breeding place of this goose in West Africa. Birds have been seen mating near Timbuktu in September and to have the sex organs enlarged at the end of June in French Niger, while juveniles have been reported as numerous in the Inundation Zone in November, where, incidentally, it has never been found nesting. Native information points to the bird laying in July in northern Bornu, eggs having been obtained (reputed to belong to this goose) from a hollow tree in a swamp. In other parts of Africa nests have been found in reeds in deep water and in long grass, but the species is known to nest in hollow trees in India. The eggs are elongated, yellowish white, and measure 57·1–61·5 × 43·2–46 mm. The clutch is said to vary from eleven to fifteen eggs. The juveniles are mottled light brown with only the wing-coverts glossy green. Old males are said to be polygamous, and drakes with three or four females attached are no uncommon sight. There is still much to be learned of its breeding biology.

Distribution. Africa from Gambia and the Sudan south to Cape Province, also Madagascar, India, Ceylon and Burma. Within our limits evenly distributed north of lat. 10°, occurring in all our Colonies and reaching the coastal estuaries in the north of its range.

EGYPTIAN GOOSE

Alopochen aegyptiacus (Linnæus)

This handsome goose is about the same size as the male Knob-billed Goose but is more heavily built. On the wing it appears very dark above and white below, with an enormous white patch in the wing, but on closer inspection the true colours become apparent. Most noticeable is the chestnut patch surrounding the eye and the darker chestnut patch in the centre of the breast; the sides are finely vermiculated; the ventral region is isabelline or saffron; the tail and rump are black, the mantle and scapulars brown, with a paler collar. The wing measures 358–420 mm. When spread, the wings are very beautiful, the primaries being black and the secondaries shining green, with the long inner ones chestnut. All the coverts are white, the greater coverts with a subterminal black bar across their whole length. One other point needs mention—the bill is pinkish-flesh colour, and so are the legs and feet. I have shot this goose from immediately below and noted how conspicuous then are the white under wing-coverts and axillaries. It utters a loud honk when disturbed, in addition to the less audible quack and gabble when perched on a tree.

This is one of the commonest geese to be seen on the big rivers, especially in the Inundation Zone of the Niger between Mopti and Timbuktu, but it moves about the river according to the state of the water and is particularly in evidence when the sandbanks are exposed at low water. It wanders over the adjoining country in little parties, feeding in the marshes and on flooded meadows, and on moonlight nights it travels far afield, visiting bean-fields and other feeding grounds, when good flighting can be obtained.

For all that, I do not consider the Egyptian Goose a sporting bird. Its flight is heavy and has rightly been described as flopping. In its actions generally it is much less alert than the geese with which we are familiar on the coast of Britain. Its food is almost entirely vegetable. In the vicinity of Lake Chad many birds arrive in March and remain in the area until the rains commence, when they scatter over the country and may be met with at places where they were never seen in the dry weather.

Few have found the nest of this goose in West Africa, but it

breeds on the low, flat, grass-covered islands of Lake Chad in considerable numbers and no doubt in the Inundation Zone of the Niger and in Gambia. On the Lake Chad islands the nest is placed on the ground in grass or rushes and is built of grass stems or floating dead plants. A nest found on 18th January in Kabba Province, Nigeria, was in a cranny on a rock in the Niger. Elsewhere in Africa it is known to nest in hollow trees and even in cliffs and to utilise the bulky nests of other birds in which to deposit their five to eight yellowish-white eggs. The latter measure 55–68·6 × 44–48·3 mm.

Distribution. The whole of Africa south of the Sahara and the Libyan Desert, but abundant on the Nile. Rare or absent in forested country. Resident in western Africa all the year north of lat. 10° but subject to considerable local movement according to the seasons. In Gambia it is not uncommon from June to December, breeding during the rains from July to September. The paucity of notes received from south of lat. 10° points to its rarity except on the larger rivers.

SPUR-WINGED GOOSE

Plectropterus gambensis gambensis (Linnæus)

(see Plate 4, facing page 220)

The Spur-wing is an enormous goose, almost twice the size of the Knob-bill or Egyptian, an old gander weighing anything up to 14 lb. The wing expanse is correspondingly large, and a formidable sharp spur, situated at the bend of the wing, is visible when the bird is flying. The male has the whole of the forepart of the crown and face bare of feathers and dull red in colour; the rest of the crown and nape are black, the neck is brown, the breast white in the middle; the sides are black, and cheeks and throat are white. The mantle, scapulars and wings are black, strongly glossed with metallic purple and green. The tail is black and the belly and under tail-coverts are white. A pink bill and mottled pinkish feet and legs complete the colour scheme. When flying overhead the great wings appear black and white, the pinions being black and the white area nearest the body. The wing is 530–550 mm. The female is very similarly coloured but smaller in size and weight.

As a purely sporting bird the Spur-wing holds a high place in Africa, but from a culinary point of view it is barely worth a cartridge. As it happens to be the commonest goose and is widely distributed, it comes under the notice of most people. Large flocks assemble on the sandbanks of all the large rivers from the Gambia to the Niger and may be commonly observed on the flooded meadows, swamps and lakes. Compact masses of these huge birds

may often be seen congregated on the sandy bed of a river, which is a favourite resort. This goose feeds during the evening and early morning, its food being mainly vegetable, but its flesh is for all that coarse and tough. The principal feeding grounds are probably the marshes, but birds scatter over the farmlands as well and on moonlight nights will fly long distances to feed on the grassy plains. At such times good flighting can be obtained if one knows the line the birds are in the habit of taking. It is less addicted to perching in trees than are some of its smaller relatives but is not unknown to do so.

Notes on its breeding habits in West Africa do not exist. In other parts of its range it builds a ground nest in swamps or long grass, laying eggs of a creamy whiteness from eight to twelve in a clutch. More information concerning its nesting within our limits could surely be obtained without much trouble.

Distribution. The typical species ranges in Africa from Gambia, Kordofan and the White Nile south to the Zambesi on the east and the Cunene river on the west, south of which its place is taken by a race with more black on the under parts. It is the most numerous goose in tropical Africa but does not occur in the forested country. Within our limits it is found in large numbers throughout the area from the Upper Niger and Lake Chad to the coastal districts and the mouths of the great rivers. The birds are resident in the area but move about locally, finding many pools and marshes in the Northern Territories to their liking when the rains are on, which are dry or semi-dry in the dry season. It is during the latter months that it is most commonly found on the big rivers and in the tidal estuaries.

ORDER FALCONIFORMES

Key to the Birds of Prey in the sub-order Accipitres

The members of this sub-order are divided into four distinct families: (1) the Secretary-bird; (2) the Old World Vultures; (3) the Falcons, Kites, Buzzards, Eagles, Hawks and Harriers and their allies; and (4) the Osprey.

The following key should enable one to decide to which of these families any of the Accipitres belong.

1. Legs very long (tarsus from tibio-tarsal joint to toes measuring at least 10 in.) .. *Sagittariidae*, p. 221
   Legs much shorter (tarsus not exceeding 7 in.) 2
2. Head and neck naked or with downy feathers *Aegypiidae*, p. 222
   Head completely feathered, neck never naked 3



KNOB-BILLED GOOSE
Sarkidiornis melanotos

SPUR-WINGED GOOSE
Plectropterus gambensis gambensis



3. Outer toe reversible; soles of feet spiny .. *Pandionidae*, p. **233**
Outer toe not reversible; soles of feet not spiny except in River Eagle (*Cuncuma*) .. .. .. *Falconidae*, p. **234**

FAMILY SAGITTARIIDAE

SECRETARY-BIRD

Sagittarius serpentarius gambiensis Ogilby

This is one of the most interesting species in West Africa. It is a large bird, standing about 3 ft. 2 in. in height, with a wing-span of 7 ft. The casual observer might think it was some kind of crane, for its body is ash-grey, the terminal half of the wing black and the tail grey, banded with black and tipped with white, the two central feathers protruding far beyond the others. The legs are pale umber tinged pink and the thighs black. The grey head resembles that of an eagle. Twenty long black quill-like feathers, narrow at the base and broad at the tip, spring from the occiput; around the eye is a bare patch of orange shading into red, and the powerful hooked bill is bluish brown and the cere bluish grey. For such a large bird the feet are very small and the toes short, as are the black claws. The wing measures 610–675 mm.



The Secretary-bird is an inhabitant of open country, where it may on occasions be seen—usually a pair together—stalking through the bush. It prefers the higher and drier parts of the country such as are found in Bornu and in the Chad territory and only enters the forest country to settle temporarily in a large clearing such as Kumasi has now become. Occasionally parties of four or five may be seen together, searching the plains for food, walking a few yards apart and keeping distance with great precision. At such times the observer will be struck by their proud carriage and their utter fearlessness. It is fortunately not persecuted and in fact should be rigorously protected, for it lives on snakes, scorpions, lizards, rats and other vermin, which it kills by stamping on them with its powerful legs, showing

the utmost animation during the process and no little agility. It consumes enormous quantities and destroys thousands of locusts in addition. In open park country it may at times be seen perched on top of a thorn bush. If alarmed, the Secretary-bird prefers to escape by running, literally skimming the ground, but should it take flight the huge wings are beaten several times before the bird launches itself in the air, and then it is more graceful than might be supposed, the head being carried well forward and the long legs tucked under the tail. Africans look upon it with favour and dislike its being shot.

The nest is a huge construction of sticks, twigs, grass and roots, lined with fibres and occasionally some wool, much flattened on top, placed on the top of, and usually in the heart of, isolated large spreading trees—generally thorn-trees—so that it is difficult to locate the nest from below. The nests are used for many seasons and may be added to yearly. Two eggs, white and unglossed, complete the clutch and measure 80–84 × 57–60 mm.

Distribution. The whole of Africa; the northern subspecies is locally distributed from Gambia, the French Sudan, French Niger, Chad territory, Kordofan, Darfur, Abyssinia, Eritrea and Somaliland, southwards to Nigeria, Ubangi Shari, Uganda and Kenya. In southern Africa the typical subspecies is becoming increasingly rare. Within our limits this bird is restricted almost entirely to the northern territories of French and British Colonial Possessions from Gambia and the region of the Upper Niger eastwards. It is not uncommon in parts of Bornu, Zaria and Plateau Provinces and in Chad territory. It is restricted in West Africa to open country north of lat. 10°.

FAMILY AEGYPIIDAE

VULTURES AND GRIFFONS

Technical key to the genera

1. Size large (wing over 22 in.), bill deep and heavy, nasal openings at right angles to line of bill 2
   Size smaller (wing under 22 in.), bill long and slender, nasal openings parallel with line of bill 4
2. Tail-feathers 14 in number .. .. .. *Gyps*, p. 224
   Tail-feathers 12 in number 3
3. Head and neck entirely naked, black bristles on throat; feathers on breast elongated and lanceolate in shape *Torgos*, p. 228

Head and neck with scanty down, no bristles on throat; feathers on breast normal, not lanceolate in shape *Pseudogyps*, p. **226**

Head with a thick cushion of down on crown and a short crest on occiput .. .. *Trigonoceps*, p. **229**

4. Throat patch bare of feathers; general colour of adult white .. .. *Neophron*, p. **232**

Throat patch covered with downy feathers; general colour of adult brown .. .. .. *Necrosyrtes*, p. **230**

Field key to the species of Aegypiidae (Vultures and Griffons) in West Africa (adults)

1. Very large vultures (as large as or larger than a Golden Eagle) 2

Much smaller vultures (about half the size of above) .. 4

2. Size enormous (wing expanse over 9 ft.), head and neck naked, the latter livid red; upper parts brown, under parts downy white, with elongated sepia-brown feathers .. .. Nubian Vulture, p. **228**

Size smaller (wing expanse 7–8 ft.), whitish down on neck, no conspicuous elongated feathers on breast 3

3. Large (wing expanse about 8 ft.), general colour blackish brown with pale edgings to feathers, back and rump dark brown, conspicuous white ruff of short feathers; bill whitish horn .. Rüppell's Griffon* (adult), p. **224**

Size as in last; colour uniform pale reddish fulvous throughout, including crop-patch and ruff of long, narrow feathers; no white marks on plumage Rüppell's Griffon (immature), p. **224**

Smaller wing expanse (about 7 ft.), general colour pale fawn, crop-patch dark, back and rump white, dirty white ruff of short feathers; bill black White-backed Vulture (adult), p. **226**

Similar to above but darker brown, under parts with pale streaks, rump brown or mottled, ruff lanceolate and brownish .. White-backed Vulture (immature), p. **226**

Size as last; general colour blackish brown; head, crop-patch and belly white; legs and bare skin of face pink; bill blood-red; considerable white in wing White-headed Vulture, p. **229**

* The European Griffon (*Gyps. f. fulvus*) is omitted from the key, as it has only once occurred in our area and without certain locality. It will not be dealt with in the text.

4. Expanse of wing about 5 ft., general colour of adult* white .. .. Egyptian Vulture, p. 232
Expanse of wing under 5 ft., general colour of adult brown .. .. Hooded Vulture, p. 230

Identification of Immature Vultures

When immature examples are required to be identified the task is less easy, for instance a young Rüppell's Griffon has no pale spots and is almost impossible to distinguish from a young White-backed Vulture until the birds begin to acquire signs of maturity, when the light spots begin to appear on the wing-coverts of the former species, or the white patches on the back of the latter, which are only apparent when the bird takes wing. Most vultures have a brown juvenile dress, and it may be of some help to remember that in the immature stage the Nubian Vulture has a bare red head and a distinctive breast, even in the young; the immature White-headed Vulture has a red bill and long pink legs, also a distinct pattern on the under side of the wing; the Hooded Vulture has a slender bill, a short rounded tail and greyish under side to the wings; while the Egyptian Vulture, which also has a slender bill, has narrow wings and a diamond-shaped pointed tail and often signs of white coming into the plumage.

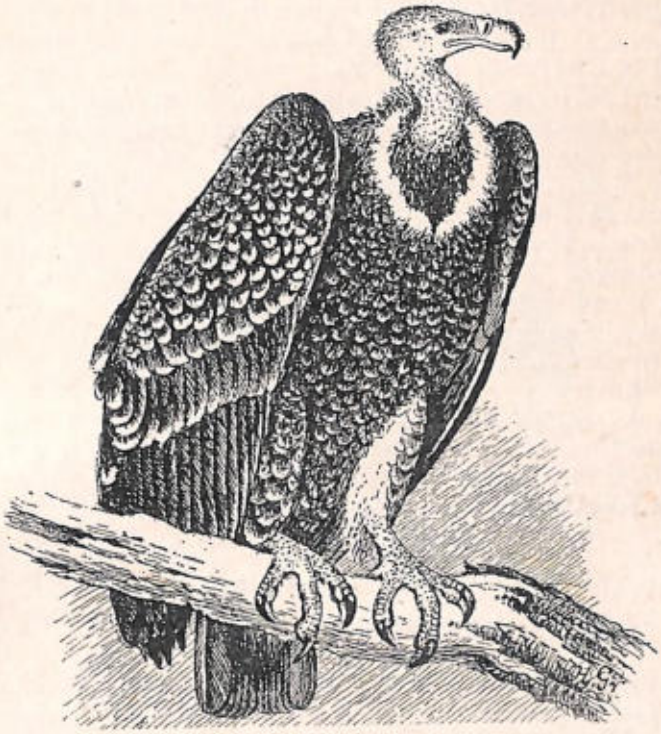
RÜPPELL'S GRIFFON

Gyps rüppellii rüppellii (A. Brehm)

This is the second largest vulture which commonly occurs in West Africa, with a span of 8 ft. and total length about 40 in., the wing being 620–645 mm. Its very dark brown plumage, when adult, with pale cream edges to the feathers, especially on the wing-coverts and scapulars, betrays its identity at a long distance and gives it a spotted appearance. It has a dark brown back—a feature to note—and a very pale whitish-horn bill—a character which distinguishes it from other vultures in our area. Head and neck are mostly naked, sparsely covered with white down. Immature birds are uniform pale tawny or fawn colour with white shafts to the feathers, with the head and neck covered with white down. The adult bird has a white ruff, the immature a fulvous one. In flight Rüppell's Griffon will be seen to have wide wings and a short rounded tail, the under side

* Immature specimens of *N. percnopterus* are brown (often with white feathers intermingling). Confusion should not arise between the immature *Neophron* and the *Necrosyrtes*, as the former is in our area, apart from a single record in the Gambia, and one or two near Lake Chad, restricted on the mainland to the area which lies north of lat. 15° N. in French Sudan and French Niger territory, while the latter occurs commonly south of that latitude.

of the flight feathers appearing dark with a white streak near the fore edge of the under wing-coverts. Its white-feathered tarsi are often visible in contrast to the dark belly.



Rüppell's Vulture is more a bird of the plains than of the habitations of man, shunning the towns and larger villages, but it will gather at a kill and can oust all but the Nubian Vulture should it wish to assert itself. This bird is resident in our area all the year round but only in a few localities, as for instance in northern Bornu, where it is more in evidence than the ubiquitous Hooded Vulture. Usually it is to be encountered in pairs, but in places where they are reputed to breed and roost, as on a rocky hill rising several hundred feet from the surrounding plain in Sokoto Province, it may gather in some numbers, over a hundred having been counted and the rocks and ledges being white with their excrement. At sunrise many go out hunting in pairs or singly, while others are to be seen flying with slow wing-beats or gliding effortlessly round the ledges, occasionally soaring high above the cliffs, but never descending to consort with the Hooded Vultures over the native village.

The breeding places of this vulture within our area have not been examined. It is reported by Africans to breed on the aforementioned hill in Sokoto near the village of Kotorkoshi in the month of February and doubtless in similar situations elsewhere within its range. Probably it roams great distances from its nesting places. Birds shot in Gambia in January have had enlarged sex organs. Information gained in East Africa at a breeding colony in high cliffs near Lake Naivasha proves that this griffon makes its nest on the ledges of high cliffs or in crannies in the rock, laying a single egg in a slight depression lined with a few feathers and sticks on a foundation of earth or animal dung. The egg is white with a rough and pitted shell and measures 84·3–88 × 66–67·7 mm. The breeding season (in Kenya) is prolonged, young being found in April, September and December.

Distribution. The typical subspecies occurs from the Nile to Gambia and within our limits has been found over a wide area extending from Senegal to the northern Cameroons. It is recorded from all our Colonies except Sierra Leone but may be found in the north of that country. It prefers localities where high cliffs exist in which it can roost and breed and shuns the forest area and large towns and villages. It has been found right across Africa. The paler Abyssinian race is the one reported to occur in Kenya and Uganda and in Somaliland.

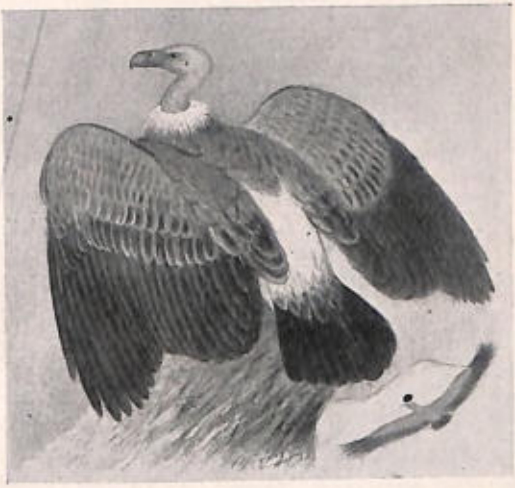
AFRICAN WHITE-BACKED VULTURE

Pseudogyps africanus (Salvadori)

The normal pale colour of the plumage of this vulture, without any white spots on the wing-coverts or elsewhere, distinguishes it from its larger relative, Rüppell's Griffon. In adult examples the white back of the vulture, which is visible as the bird takes off from the ground, is, of course, the surest guide to its identity, but immature birds have a brown rump and are darker than the adults and are then very easily confused with the tawny-coloured immature Rüppell's Griffon. When seen in flight from below, the body of an adult bird appears buff with a dark crop and tail, the flight feathers being dark and the under wing-coverts conspicuously white. Old birds have dirty white ruffs, black bills and dark brownish legs and feet. The wing of this bird measures 550–600 mm.

The White-backed Vulture is usually present where game or stock are encountered and is generally one of the commonest vultures at a feast round a carcass, upon which it will descend steeply, lowering the legs while still at some distance from the ground. In its mode of life it differs little from the rest of its family but is more often encountered in the vicinity of native villages, or even towns, than

Rüppell's Vulture, the only one with which it can be confused. Naturally it occurs on the northern plains in greater numbers than elsewhere but is never seen in the "crowds" in which the smaller Hooded Vulture assembles. It is, of course, a resident throughout our area but not in the forest country.



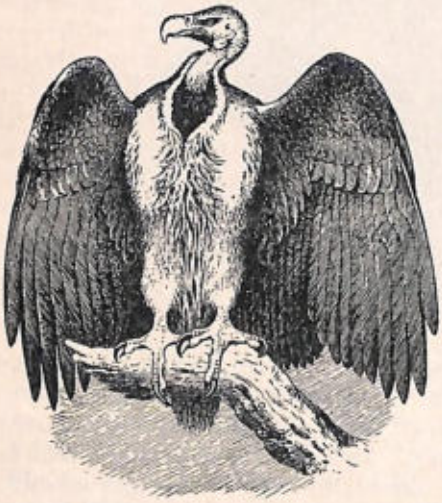
For a nesting site the White-backed Vulture prefers a large tree such as a baobab, depositing its egg in a cavity or depression where the huge branches spring from the trunk; in other cases a stick nest is built, but never a large edifice. Two or three nests may occur in the same tree. I have little doubt that suitable ledges of cliffs would be utilised for the same purpose if available. The egg is white, usually stained with leaf-mould or mud; the shell is sometimes heavily blotched or spotted with dirty reddish markings around the broad end, and others are plain. The measurements are 87–90 × 61–69 mm.

Distribution. The drier parts of Africa from Senegal and the Sudan to the Transvaal and Cunene River in Angola Within our restricted area it occurs in the Northern Territories of our Colonies but has not been reported from Sierra Leone. Without being plentiful, it is scattered throughout the area from the Senegal River and French Sudan to the Shari. It has been recorded once from Fernando Po.

NUBIAN VULTURE

Torgos tracheliotus nubicus (Smith)

This immense bird, over 40 in. in length, with a wing expanse of over 9 ft. and wing measuring 720–795 mm., is very much larger than any of its family in Africa. Its massive brownish beak and entirely naked pink or red head and neck, all-brown plumage, with long narrow feathers conspicuous on the white down of the under side, are characters which betray it. Seen from below, the under side of the wing is different from other vultures in that the flight feathers are sheeny grey with brown tips and the under wing-coverts are dark with a short white streak near the foredge. At such times the breast shows as a dark brown spear-head against the white downy flanks. Immature birds have brown, not white, flanks and so do not show this feature so distinctly. Despite the enormous difference in size, it must be borne in mind that the much smaller Hooded Vulture also has brown plumage and at a distance size alone is a misleading character upon which solely to rely.



Unless gathered round a carcass, when as many as a hundred birds have been seen in Somaliland, it is seldom that more than a pair will be found together. Though widespread in the Sudan, especially in Darfur, it seems to be very rare in the area with which this book deals. I do not know that it even breeds within our limits. In Somaliland, where it is very common, it chooses the very topmost branches of the table-topped mimosa or other thorn-tree upon which to build a broad platform of sticks, where a single egg is laid from November to the end of February. The commonest type of egg is white with scattered spots and blotches of dark red-brown. Average measurements of eight eggs were 93·4 × 68·4 mm.

Distribution. Restricted to the driest parts of Africa and more numerous in north-eastern Africa than in the west, occurring from Egypt and Nubia through the Sudan to Abyssinia, Somaliland and Kenya. It has been recorded several times from Senegal and therefore

is likely to occur in Gambia and the French Sudan and certainly in Chad territory. Prof. H. de Balsac has recently shown that this vulture occurs spasmodically from the Middle Atlas of Morocco southwards to the forest country of Guinea and that its range must embrace the whole of arid Africa from Somaliland to the Atlantic coast of West Africa. It has been taken at Bouiem on the Niger River. South of the Cunene and Zambesi Rivers the typical subspecies occurs, which is characterised by the well-developed earlappets—a fold of skin on the sides of the face and neck, which seems to be absent in specimens from north of the Equator.

WHITE-HEADED VULTURE

Trigonoceps occipitalis (Burchell)

Of all the vultures in West Africa this is the easiest to identify. In size it resembles the White-backed Vulture, with a wing expanse of 84 in. and wing measuring 620–660 mm. When at rest the pure white crown and head ending in a white tuft give it an angular



appearance and have gained for it the name Vautour huppé in French Possessions. A red bill and pink legs and feet are striking, as is the blood-red skin in the face. The wings are dark when closed, with white secondaries; the breast is dark and the thighs and belly are white, as are the under tail-coverts. In flight the pattern of the under side is striking. No vulture exhibits so much white as this species. Immature birds are sometimes brown all over but usually show a mixture of white. In any plumage it may be recognised at

close quarters by the angular-shaped head, the red bill and the pink legs, no other vulture old or young possessing these characteristics. I have seen photographs of a young White-headed Vulture with under parts, including the belly, entirely brown, but the inner secondaries pure white as in the adult—evidently the first sign of approaching adolescence.

The White-headed Vulture exhibits certain traits in its character which are not shared by the other members of its family. It is the only vulture which has been observed to capture alive and kill its prey (dik-dik, guinea-fowl, kids, etc.), but it eats carrion as well but not, so far as is known, human excrement. It is, in fact, the aristocrat of the West African Vultures. It is widely but sparingly distributed over the country which vultures frequent but is a shy species and prefers to seek its living far away in the bush to coming within the domains of man. A dead donkey or camel in the Northern Territories is sure to attract some of these grand birds. It is absent, as one would suppose, from forested country where a thick blanket of trees precludes its seeing the ground. Over savanna country it may be seen wind-riding

For its nesting it chooses trees, building its solitary nest in acacias or huge eriodendrons. The nest of dead branches is a very large construction. The single egg is sometimes creamy white covered with stains, or may be freckled with red-brown or, again, with faded ochraceous-brown splashes overlying blotches of lilac. Seven eggs average 83 × 64 mm. (not 83 × 84 mm., as printed by error in my *The Birds of Tropical West Africa*, vol. i).

Distribution. This bird has a wide range in Africa from Senegal, the Sudan and Abyssinia south to the Orange River and Natal. It is widespread in West Africa in open country from the Senegal River to the Cuanza in Angola but does not appear to be numerous anywhere. There is a record from the Cameroon Mountain district, but from the forest country it is absent. North of the forest in all our Colonies it may be met with in small numbers; perhaps it is more often seen in Bornu than anywhere. The only account of its nesting in our area comes from Casamance, but it no doubt does so more widely in suitable country.

COMMON OR HOODED VULTURE

Necrosyrtes monachus monachus (Temminck)

EVERYONE in West Africa knows this vulture, which far outnumbers all the other species. Indeed, in the coastal area as well as in the interior it is ubiquitous. Its small size (wing 455–490 mm.) and comparatively narrow bill, not massive as in the griffons and other

vultures, and blackish-brown colour should betray it, even though its plumage is entirely brown with a straggling ruff. Only the Egyptian Vulture can be compared in size, and in juvenile plumage the two are much alike, but the Egyptian has the bill and legs of a yellowish tinge in youth, while in the Hooded these parts are blackish. Even so their ranges barely overlap, and when the Egyptian shows signs of maturity it is unmistakable.

The Common Vulture is the bird which throngs the towns, especially the vicinity of the slaughterhouse, and every village holds its quota. A filthy feeder, it is the best scavenger, in company with pariah dogs, of the native villages and thus is never molested, becoming ridiculously tame. The sight of these vultures circling overhead is often one's first intimation that a village is at hand. In Senegal I found them as common on the seashore, sitting on the native canoes or quartering the foreshore, as they were inland. As evening approaches they gather at their favourite roosting place, usually large trees in or near the village, from far and wide. As it lives entirely on offal, human excrement and garbage of all kinds it is looked upon as a general benefactor, especially as it never attacks chickens or domestic creatures such as the kites delight to do. It will devour fresh meat, too, and also termites and the fruit of oil-palms.

It nests in the dry season, eggs being found from the end of November until February. All manner of trees are selected—acacias, silk-cotton, ficus and boabab. The favourite site for the nest is in a strong fork close to the bole, the height from the ground varying from 12 to 80 ft. (usually 30–40 ft.). The nests are huge bulky structures of sticks, lined with finer twigs, leaves, grass and rags. Only one nest is found in a tree, and of those trees mentioned baobabs are probably the favourite. One egg only is laid, and this varies much in size and markings. The ground is white, covered with smears, blotches or washes of various shades of brown; the bolder markings are sometimes confined to the large end, while some examples are practically unmarked and ashy shell markings are unusual. Sixty-four eggs average 72·2 × 54·7 mm.

Distribution. If we accept two races of this vulture in tropical Africa we must restrict the typical subspecies to West Africa, where it ranges everywhere from Senegal to the northern edge of the Congo forest, being replaced by the slightly larger *N. monachus pileatus* in eastern Africa from the eastern Sudan (Sennar) to Cape Province and Angola. Within the limits embraced in this handbook we find it everywhere (except in the forest), ranging from the coastal towns and villages to about lat. 15° N. There is not a province in which it does not occur and in the villages of the savanna belt it swarms, as it does in the semi-arid belt further north. Locally it occurs in the forest clearings but is absent from closed forest.

EGYPTIAN VULTURE

Neophron percnopterus percnopterus (Linnæus)

An adult Egyptian Vulture, by reason of its entirely white plumage with black primaries, is unmistakable. It is a small bird with wing 460–520 mm. and span about 5 ft., notable for a slender yellow bill, yellow legs and yellow naked skin on the face. In flight seen from below the wings appear narrow, the flight feathers dark; the tail is long, tapering to a point when closed, diamond-shaped when expanded. I have known the Palm-nut Vulture (*Gypohierax angolensis*) mistaken for an Egyptian Vulture by careless observers, but that bird has a lot of black on the tail and even more on the wing, with white flight feathers but all secondaries, coverts and scapulars black. Its range, too, is entirely different. It is the young Egyptian Vulture which presents a difficulty to the novice, for at first it is dark brown and later dirty grey and brown, becoming speckled black and white before assuming the adult white dress. In flight the narrow wings and diamond-shaped tail give the observer a clue, for the Hooded Vulture has broad wings and a short tail. At rest the yellowish bill, face and feet of the immature Egyptian should prove its identity at close quarters.

This is a bird of the Sahel and the borders of the desert, where it emulates the habits of the Hooded Vulture and is an equally repulsive feeder. Although in West Africa it shuns the villages and is never seen south of lat. 14° N., it is one of the commonest sights around the towns in the Canary Islands and in the Cape Verde Islands.

This bird nests on the ledges of cliffs, building an untidy structure of sticks, rags, animal hair, dried bones, etc., and lays usually two eggs, creamy white blotched, mottled and clouded with rich reddish brown. Sixteen eggs average 66 × 51 mm.

Distribution. Apart from its range in southern Europe, the Canary Islands and North Africa, the Egyptian Vulture extends over the greater part of East Africa as far as the Cape and Mossamedes. It is a very rare bird in West Africa, but occurs sparingly north of lat. 14° N. On the mainland it is recorded from French Sudan, French Niger and Chad territory and is the Vulture most frequently seen north of lat. 15° N. It wanders into the flooded Inundation Zone. Off the coast of Senegal it is resident in the Cape Verde Islands.

FAMILY PANDIONIDAE

OSPREY

Pandion haliaëtus haliaëtus Linnæus

This grand bird, which once bred in Britain and is a familiar object with travellers in Scandinavian countries, is one of the larger birds of prey, approximating in size (with wing 474–488 mm.) to the Common Buzzard of Europe. It may be recognised from afar by its white head and white breast, with dark patches on either cheek, the rest of the plumage, including the wings and tail, being dark brown. It is by its actions rather than its colouring that it will first be identified, for in its graceful flight and its manner of hanging in the air suspended with hovering wings, on the watch for its slippery prey in the water, it is unlike any other bird.

It is an inhabitant of rock-girt islands off the coast such as Gorée off Dakar, of coastal lagoons and of suitable reaches on the big rivers. It does not disdain to take up residence by a reservoir such as the one at Ibadan, where an osprey has been reported for three years. The mouth of the Gambia is a well-known haunt in the winter months.

In the manner of securing its prey it is fascinating to watch. Suddenly the bird will arrest its flight over water, hover for a moment with fast-beating wings, then plunge obliquely, feet extended, to disappear with a splash in a cloud of spray. The fish, once seized by the powerful claws, has little chance of being dropped, for the soles of the osprey's foot are furnished with prickly spines, making capture doubly sure. Sometimes an osprey may be observed sitting on a fish-trap at the mouth of one of the big rivers, or it will perch in a tree from which it can have an uninterrupted view, choosing a dead one without foliage or a dead limb above the others and always within easy distance of water.

To what extent the osprey is migratory in West Africa—migrants from Europe certainly visit the tropics in winter—and to what extent resident, is difficult to say. No nest has been found in West Africa, but it is reported to breed on Victoria Nyanza and certainly does so on the islands off the coast of Somaliland. I have no doubt that it nests in similar situations off the West African coast, as it does so regularly in the Cape Verde Archipelago. It breeds (in Somaliland) between October and February, but dates are unavailable for our area. Migrants from Europe arrive from October onwards and remain until early spring. Records from the Cameroons (26th March) and the Pennington River, Nigeria (July), may refer to resident birds.

The osprey makes a huge nest of sticks, preferably in trees, but will, in their absence, as on rocky islets, build on the ground. Such nests will stand as much as 4 ft. high and weigh 400 lb. and can be seen from a great distance. The material used is driftwood, plant stalks, fish bones, sea lavender and sticks. Three eggs are laid (in the tropics), white to buff, heavily mottled and blotched with burnt umber, purple and claret with underlying grey markings. Twelve eggs average 60·5 × 43·6 mm.

Distribution. Europe and Asia, north to the limit of birch growth (with races in all five continents), the typical subspecies visiting tropical Africa in winter. It also breeds sparingly in favoured localities. There are many records of birds seen in all our colonies, mostly between October and January.

FAMILY FALCONIDAE

Key to the diurnal Birds of Prey

Structural key to the genera of the Falconidae

(*Key, based on structural characters, to be used if the bird it is required to identify cannot be named specifically in Keys A* (*p.* 238), *B* (*p.* 253), *or C* (*p.* 289), *which keys are based mainly on colour of plumage.**)

1. Edge of upper mandible with one distinct tooth and corresponding notch in lower mandible; head not crested .. .. *Falco*, p. 239
   Edge of upper mandible with two distinct teeth but no notch in lower mandible; head slightly crested; flank feathers elongated .. .. .. *Aviceda*, p. 251
   Edge of upper mandible without distinct tooth and never with notch or indentation on edge of lower mandible 2
2. Tail forked; tarsus over 45 mm. (1·8 in.); no grey in plumage .. .. *Milvus*, p. 257
   Outer tail-feathers greatly elongated (swallow-tailed); tarsus under 35 mm. (1·4 in.); plumage grey and white *Chelictinia*, p. 255
   Tail not forked 3
3. With feathers actually growing on tarsus back and front to toes 4
   Feathers not actually growing on tarsus back and front to toes; tarsus for the most part bare or with feathers drooping from above 9

* Owing to the variety of plumages through which many of the *Falconidae* pass it is not possible to make a key by which all immature birds can be named satisfactorily. It is hoped that by giving alternative keys every difficulty will be overcome.

4. Size large (wing over 18 in.) 5
   Size smaller (wing under 18 in.) 6
5. Secondaries almost as long as the primaries *Stephanoaëtus*, p. 270
   Secondaries fall short of primaries by 3 in. or over *Polemaëtus*, p. 268
6. An occipital crest of long feathers 4 in. or more in length *Lophaëtus*, p. 271
   Occipital crest, if present at all, very short 7
7. No pattern on under parts, which are uniform in colour but not white in adults; distance between tips of primaries and tips of secondaries greater than length of tarsus .. .. *Aquila*, p. 263
   A pattern on the under parts, which are mostly white in adults; distance between tips of primaries and tips of secondaries less than length of tarsus (except in *Hieraaëtus ayresi*, white streaked with black and wing under 17 in.) 8
8. Wings comparatively short and rounded, longest secondary falling short of longest primary by less than 3 in. *Cassinaëtus*, p. 268
   Wings long and pointed, longest secondary falling short of longest primary by more than 3 in. *Hieraaëtus*, p. 265
9. Tip of wings extending beyond tip of tail *Terathopius*, p. 282
   Tip of wings not extending beyond tip of tail:
   (*a*) Lores and sides of face entirely bare without feathers or bristles, bare space extending completely around eye; soles of feet without horny excrescences .. .. *Gymnogenys*, p. 308
   (*b*) Lores and area around eye naked, soles of feet with horny excrescences very rough to the touch .. 10
   (*c*) Lores and area around eye feathered or closely covered with hair-like bristles 11
10. Nostrils oval, placed perpendicularly; cutting edge of mandible straight .. .. .. *Gypohierax*, p. 286
    Nostrils rounded ovals, placed obliquely; cutting edge of mandible not straight, but distinctly festooned *Cuncuma*, p. 284
11. Space in front of eye covered with very short and scale-like feathers .. .. *Pernis*, p. 262
    Space in front of eye covered normally with feathers or with hair-like bristles 12
12. Tibia much longer than tarsus, always exceeding it by length of hind claw 13
    Tibia and tarsus to all intents equal in length, difference between them not so much as length of hind claw .. 17

13. Bare portion of tarsus covered back and front with transverse scutes .. .. *Buteo*, p. 287
Bare portion of tarsus never with transverse scutes behind 14
14. Wing under 13 in. in length 15
Wing over 14 in. in length 16
15. Hind portion of tarsus entirely bare of feathers and covered with minute round scales; front of tarsus feathered almost to toes .. .. .. *Elanus*, p. 259
Tarsus bare from just below tibio-tarsal joint; front of tarsus covered with scutes, back with hexagonal scales *Butastur*, p. 281
16. Nostrils oval, almost perpendicular; heavy tarsus covered with polygonal scales throughout; toes very short in comparison with size of bird .. .. *Circaëtus*, p. 276
Nostrils oval in shape, almost perpendicular; tarsus weak, covered back and front with hexagonal scales *Dryotriorchis*, p. 275
Nostrils round with central bony tubercle tarsus with transverse scutes in front and scales behind *Kaupifalco*, p. 273
Nostrils slit-shaped, placed obliquely; lores closely feathered almost to nostrils; tarsus covered back and front with small scales .. .. *Machaerhamphus*, p. 260
17. Tail very long, considerably longer than short rounded wing .. .. *Urotriorchis*, p. 302
Tail shorter than wing, which is for the most part pointed 18
18. Wings very long and narrow, almost reaching to tip of tail; front of tarsus covered with scutes *Circus*, p. 304
Wings never reaching within 2 in. of tip of tail:
(*a*) Tarsus with distinct transverse scutes back and front; nostrils round with a bony tubercle .. 19
(*b*) Tarsus less distinctly scutellated, comparatively smooth, particularly in species where middle toe is considerably longer than next; nostrils more or less oval without any bony tubercle *Accipiter* (Astur), p. 291
19. Size large (wing over 11 in.), feet and tarsi heavy *Melierax*, p. 300
Size smaller (wing under 9 in.), feet and tarsi slender *Micronisus*, p. 301

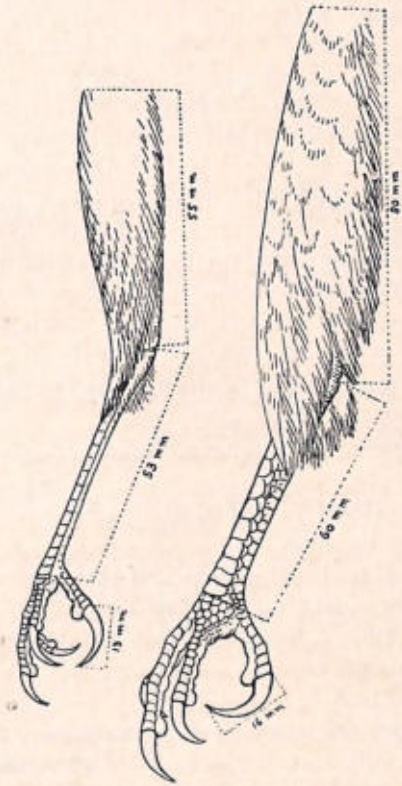
Explanation of Sectional Keys

In the Sectional Keys which follow (A, B and C) an attempt has been made to enable any species in the *Falconidae* to be named by means of its colour or measurements without taking into consideration characters such as we have used in the Structural Key to the Genera on page 234.

SECTION A contains the Falcons, Kestrels and Cuckoo-Falcons.
SECTION B contains the Kites, Buzzards and Eagles.
SECTION C contains the Sparrow-Hawks, Goshawks, Long-tailed Hawks, Harriers and Harrier-Hawks.

In order to determine in which of these sections the bird it is required to identify falls, the following key should be used.

1. Distinct sharp "tooth" (or in one genus two) present on terminal cutting edge of maxilla or upper mandible, and when only one tooth is present always a corresponding notch or indentation on lower mandible KEY A, p. 238
   Cutting edge of maxilla straight, curved, lobed or festooned, but without distinct "tooth." No notch or indentation on cutting edge of lower mandible .. 2



2. Tibia always much longer than tarsus, always exceeding it by more than length of hind claw .. KEY B, p. 253
   Tibia and tarsus more or less equal in length, difference between them not so much as length of hind claw KEY C, p. 289

KEY A

A key to the Falcons, Kestrels and Cuckoo-Falcons

(*For a guide to Keys A, B, and C see p.* 237.)

1. Three broad grey bars on black tail; wing over 10½ in. 2
   Tail uniform except for a single subterminal black band 3
   Without any dark bars on tail, plumage mainly grey above and below; wing under 10½ in. and over 6 in. .. 4
   Tail barred with black, brown or chestnut 5
   Tail covered with large white spots; wing under 5 in. *Polihierax semitorquatus castanotus** ♂ ♀

2. Under parts below chest heavily banded with chestnut *Aviceda c. cuculoides* ♂ ♀, p. 251
   Under parts below chest white, not banded with chestnut *Aviceda c. batesi* ♂, p. 251, footnote

3. Mantle and wing-coverts spotted with black; claws of feet black .. *Falco tinnunculus* ♂ (adult & subsp.), p. 246
   Mantle and wing-coverts unspotted; claws of feet pale *Falco n. naumanni* ♂, p. 247

4. Plumage entirely grey, tail with indistinct whitish notches on inner web .. .. .. *Falco ardosiaceus* ♂ ♀, p. 250
   Plumage grey except lower belly, thighs and under tail-coverts, which are chestnut .. *Falco v. vespertinus* ♂, p. 243

5. Upper parts entirely chestnut, streaked, spotted or barred with black 6
   Upper parts mostly grey or brown, sometimes with chestnut on head 7

6. Plumage chestnut throughout, longitudinally streaked with black .. .. .. *Falco alopex* ♂ ♀, p. 248
   Plumage pale chestnut, upper parts horizontally spotted or barred with black 8

7. Size medium†, middle toe (without claw) over 1½ in. in length; heavy black moustachial streak 9
   Size small‡, middle toe (without claw) under 1½ in. in length 10

8. Claws of feet black *Falco tinnunculus* ♀ (adult) & ♂ (immature) & subsp., p. 246
   Claws of feet pale .. .. .. *Falco n. naumanni* ♀, p. 247

* The Pygmy Falcon is included provisionally on the authority of Dr. Hopkinson, who has on several occasions noted a falcon "little bigger than a swallow" but has never shot it. I can think of nothing but this species to which it could belong. It is not mentioned further in the text.

† Size medium—that of a peregrine or larger bird.

‡ Size small—that of a hobby or smaller bird.

9. Nape and crown cinnamon-rufous, frontal band white
Falco biarmicus abyssinicus ♂ ♀ (adult), p. 240
Nape and crown uniform slate-grey or slate-brown; wing over 11½ in. *Falco peregrinus perconfusus* ♂ ♀ (adult), p. 239
Crown pale fawn, heavily streaked with black
Falco b. abyssinicus (immature), p. 240
Crown uniform blackish brown
Falco p. perconfusus (immature), p. 239

10. Upper parts horizontally barred, head chestnut.. .. 11
Upper parts not horizontally barred, head slate or blackish 12

11. Under parts below breast horizontally barred with black
Falco chicquera ruficollis ♂ ♀ (adult & immature), p. 244
Under parts uniform rufous *Falco v. vespertinus* ♀, p. 243

12. Thighs in sharp contrast to rest of under parts, throat always white, light breast with heavy black streaks; under wing-coverts whitish and barred
*Falco s. subbuteo** ♂ ♀ (adult), p. 243
Thighs not contrasting with rest of under parts, throat washed with chestnut, breast with narrow black streaks; under wing-coverts chestnut streaked with black .. .. .. *Falco cuvieri* ♂ ♀ (adult), p. 242

AFRICAN PEREGRINE

Falco peregrinus perconfusus Collin and Hartert

Formerly *Falco peregrinus minor* Schlegel†

This is a smaller edition of the European Peregrine with blue-grey upper parts, including the crown, and heavily barred under parts on a fulvous white ground, a white throat and chest, white cheek patch and heavy black moustachial patch. At rest the bright lemon-yellow legs may be noted; the bill is black and the cere yellow. In the air the peregrine has a distinctive silhouette, long, sharply pointed wings, almost cycle-shaped, and a wedge-shaped tail beyond which the feet just protrude. Confusion with the Lanner Falcon is very easy unless a view of the crown can be obtained, the lanner having a cinnamon-rufous head and some white at the base of the bill. The under parts of the lanner are more spotted than barred.

* Immature examples of *F. subbuteo* may be distinguished from *F. cuvieri* at all stages by the very broad black streaks on the under parts.

† A change of name was necessitated when it was discovered that Schlegel's name was preoccupied.

Most of the peregrines seen in West Africa will belong to this African race (now named *perconfusus*), which has a wing measurement in males of 267–318 mm. and of females 282–310 mm., but the European Peregrine has twice been taken in West Africa and can only be distinguished when handled by the fact that it is larger, the wing in males measuring 305–325 mm., in females 350–370 mm. Records of this, the typical form, are from the Escravos River mouth in southern Nigeria, and from the coastal district of the Cameroons.

The African Peregrine is evidently rather uncommon in West Africa, judging by the few times it has been reported from Gambia and the Gold Coast, but is resident in some areas. It occasionally visits forest clearings but is more likely to occur in open country or near the coast. Its nesting places in our area have never been discovered. Usually a high cliff is preferred for the purpose and the eggs are laid in a depression of a ledge without any nest material. The egg is creamy white heavily blotched and spotted with reddish brown.

Distribution. *F. p. perconfusus* is restricted to Africa, where it has a wide but very local distribution from the Gambia and Blue Nile to Cape Province, but not in the equatorial forest region. There are many rocky eminences in West Africa which may attract the African Peregrine and afford suitable nesting sites. The European Peregrine (*F. peregrinus peregrinus*), which is barely separable from the Indian Peregrine (*F. p. calidus*), visits Africa in winter. It or *F. p. calidus* has been recorded from Cameroon Mountain, the Gold Coast and Nigeria and migrates regularly to southern Africa from Asia and Europe. The North African Peregrine (*F. p. pelegrinoides*) has been obtained at Aïr in the central Sahara and may also wander to West Africa.

ABYSSINIAN LANNER

Falco biarmicus abyssinicus Neumann

THE Lanner is a magnificent bird which takes pride of place among the birds of prey in our area. In many respects it resembles the Peregrine Falcon, but, as noted under that species, it may be distinguished by the cinnamon-rufous crown and nape. A broad white frontal band borders the black forehead. The mantle and back are slate-coloured, becoming greyer on rump and upper tail-coverts. The grey and fawn tail is heavily banded with black. There is a noticeable black patch on the white cheeks, and the pinkish-cinnamon breast is streaked and the belly spotted with black arrowheads, as are also the flanks. The thighs are banded. In size the

lanner is larger than the African Peregrine, having a wing of 310–340 mm. in males and 320–380 mm. in females. In flight the lanner appears a longer bird than the stocky peregrine and when measured approximates to 16–18 in. from bill to tail according to sex, the female being noticeably larger.



There is no bolder robber than the lanner. It is a terror to all birds, large and small, and will steal a chicken from under the nose of the cook. Even birds the size of a bustard have met their death from its stoop. It has been known to gorge itself upon locusts, and little that is edible comes amiss to it. As may be imagined, its speed on the wing is terrific.

There are several races of the lanner in Africa, and especially in the north the birds are held in the highest esteem by the Arab falconers, as much as £60 apiece having been paid for them in the past by sheikhs of high degree. To what extent they are used within the limits of this handbook for that purpose I am unaware.

Although open plains where small game abounds may suit them best for the chase, lanners are very widespread in the savanna as well as in the semi-arid districts of West Africa, and I have no doubt that they are to some extent migratory, the resident stock having their numbers augmented from other parts of Africa during the colder months. Equally at home by a water-hole in the desolate wastes of the desert as in tree-dotted grasslands near the coast, the

lanner will even penetrate into the forest area to prey upon the birds in the clearings or to steal poultry from a village.

For its nest site it will choose a very high tree such as a giant silk-cotton and is much given to appropriating the large nests of other birds, vultures or Black Kites in particular, in which to deposit its eggs. Such nests are usually 60–80 ft. from the ground. Whether it ever builds its own nest in trees I am uncertain, but it probably does so if no ready-made nest is available; eggs have been found in stick nests which it was believed the birds had constructed. In arid country the lanner prefers to breed on ledges of cliffs, making a small nest in a cranny. The clutch usually consists of four eggs, which are laid in February and early March. The ground colour is pinkish or yellowish buff smeared and blotched with different shades of brown and brick-red. Eight eggs average 51 × 40 mm.

Distribution. The whole of our area and in East Africa from Abyssinia to Uganda. Other races take its place elsewhere in Africa. Commonly distributed from the coast to the desert except in heavily forested country.

AFRICAN HOBBY

Falco cuvieri Smith

The Hobby is a small hawk, very compact in build with proportionately long wings but rather short tail. In the flesh it measures about 12 in. from bill to tail and has a wing expanse of 26 in. At rest it should be recognised by its falcon-like head, the black moustachial streaks being conspicuous and the cheeks yellowish buff. The African Hobby is slate-coloured above and cinnamon-rufous below, with black streaks on the breast. The thighs are not streaked but are the same colour as the rest of the under parts. The legs and feet are yellow. The female resembles the male in plumage but is larger. Wing measurements are: male 208–243 mm.; female 230–254 mm.



This bird replaces our European Hobby as a breeding species in Africa, to which the European bird comes as a migrant, but in my view they are specifically distinct. The African representative is

much smaller in its dimensions. We unfortunately know very little about it. Like *F. subbuteo*, it is no doubt a terror to small birds, upon which it is known to prey as well as upon winged termites, cicadas and grasshoppers. When on the wing it will often utter a shrill cry of three or four notes. At its nesting place it is extremely pugnacious, attacking anything which comes within reach and showing particular resentment towards the Black Kite, whose nest it is fond of appropriating.

The habit of using other birds' nests seems to be general, even an eagle's nest having been utilised. The egg is deep cream in ground colour, which is almost obscured by heavy mottling of warm reddish brown, with a darker cap at the broad end. It measures about 40·9 × 33·2 mm.

Distribution. On the east of the continent this hobby ranges from Shoa and the Bahr el Ghazal as far as Cape Province and in the west from Gambia southwards, but it appears to shun the closed forest area of western and Equatorial Africa, though occurring on its borders and in the clearings. From within our limits we find it in all open country, especially plains and savanna. Examples have been obtained from such diverse environments as represented by Gambia; Ejura and Mampong in Ashanti; Ubiāja in Benin Province, Nigeria, and Victoria by Cameroon Mountain.

The European Hobby (*Falco subbuteo subbuteo*) winters in Africa but almost entirely in eastern Africa and has only once been recorded from within our limits: a bird was shot at Bitye, southern Cameroon, on 19th October, 1908. To date of writing it is unknown to have occurred in Upper Guinea, though it may well appear there occasionally. It is larger than the African Hobby (wing 244–275 mm. as against 208–243 mm. in *F. cuvieri*) and may be distinguished by having the thighs uniform rufous in strong contrast to the pale buff breast and sides streaked with black. I have given a detailed description of *F. s. subbuteo* in *The Birds of Tropical West Africa*, vol. i, p. 205.

WESTERN RED-LEGGED KESTREL

Falco vespertinus vespertinus Linnæus

In size, shape and flight there is not much to choose between this and the Common Kestrel. The dark grey upper parts and dove-grey breast and sides are in the adult male in contrast to the rufous-chestnut belly, thighs and under tail-coverts. The bare skin round the eye, cere, legs and feet are all bright orange, and the adult also has an orange bill with a blue-grey tip. In flight the under side of the wing is uniformly dark. The female is very different in appearance: the crown is chestnut, the mantle rufous barred with black,

merging into grey banded with black on the rest of the upper parts, tail and wing-coverts. The entire under surface from breast to under tail-coverts is rufous chestnut. The wing is 230–256 mm., the female being only slightly larger than the male.

Care must be taken not to confuse it with the Red-necked Kestrel, described next, which has clear grey upper parts narrowly banded with black, and the under parts conspicuously banded black and white, in contrast to the uniform chestnut of the Red-legged Kestrel.

Falco vespertinus is a winter migrant to Africa, mainly to the eastern side, but has been reported from our area (Adamawa) and, with reservations, from the Bauchi plateau at the beginning of the rains, where flights of several thousands, believed to be this falcon, have been reported following the thunderstorms to feed on the termites which emerge when the storm is over. The southerly migration takes place in the latter part of September to the east of Chad, the passage lasting two weeks. At this season it may be expected in the semi-arid belt in companies of 150 or more. I have seen these birds on passage in thousands through Morocco, and there is every likelihood of their passing through the French Sudan unobserved.

Distribution. The Western Red-legged Kestrel breeds in Hungary, Russia and western Siberia, migrating south in winter to Africa, where it extends to the Zambesi and Ovampoland, spreading westwards south of the equatorial forest to Damaraland and Great Namaqualand, sometimes in considerable numbers. It only touches the fringe of our area in western Africa on its passage, and that perhaps not regularly.

RED-NECKED KESTREL

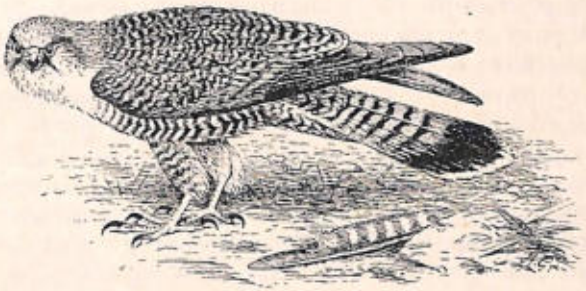
Falco chiquera ruficollis Swainson

This bird is about the size of a Lesser Kestrel but with a much shorter and more rounded wing. It has a chestnut head, dark grey upper parts barred narrowly with black, and dark brown primaries with white oblong spots on the inner web and a grey tail narrowly barred black, but with a very broad black subterminal band preceding the white tips to the feathers. The under side, below the pinkish-buff breast, is closely banded with black and white. The cere is bright yellow, as is also the bill, the terminal portion being bluish black; the legs and feet are gamboge yellow. The sexes are alike and the wing measures 192–200 mm. in the male and 212–236 mm. in the female.

The Red-necked Kestrel has a passion for palm-trees commonly known as fan or dom palms and wherever these palms occur, so do the kestrels. They prey largely on small birds, weavers in particular;

while not hesitating to chase the speckled Guinea Pigeons they live amicably with them in the same oil-palm. Insects and locusts are also readily devoured.

A native of Africa, the Red-necked Kestrel is resident in the area it inhabits all the year round. It is a prettily marked bird, and when a pair are quartering a plain together they afford a pleasing sight, the large amount of black in the tail with the pure white tips making a pretty pattern. When in search of its prey, which is taken usually on the wing, this kestrel can show a surprising turn of speed. It can easily kill a Vinaceous Dove and has been known to capture a swift in the air.



In West Africa it is primarily a woodland species, varying in numbers according to the presence or otherwise of the oil-palm, but is generally seen in pairs. There it is more frequently encountered in the country south of the Niger than north of it. It breeds in the early spring, nesting in the palm-trees. Its eggs have been found in an old kite's nest at the end of April on the White Nile, but dates from West Africa are not available. Whether it always appropriates other birds' nests is not known. The clutch appears to be four eggs, which in colour are plain white, though it is also reputed to lay yellowish-white eggs, spotted and blotched with rufous brown. One of the aforementioned white eggs from Fashoda measures 42·7 × 32·5 mm.

Distribution. Occurs over the greater part of Africa from Senegal and the White Nile to the Cape but not in the West African or equatorial forest region, nor is it reported from Somaliland. Within our limits it is confined largely to the Borassus palm belt, one or two pairs being usually present in every village where these palms are to be found in the Inundation Zone. It seems to be fairly common but local in the savanna country where the oil-palm is found. I have records of it from all our four Colonies and from British Cameroon north of the tropical forest.

KESTREL

Falco tinnunculus Linnæus

THREE races of *Falco tinnunculus* were dealt with in the first volume of my larger work, all of which came within our area. The typical European bird is too well known to need detailed description. It is a regular winter visitor to Africa, reaching Nigeria on the west and Tanganyika on the eastern side of the continent. It arrives early in October and soon spreads over the greater part of West Africa. The majority of records have reached me from Gambia, where it is very common, Sierra Leone, the Gold Coast and Nigeria. It may be distinguished from the resident kestrel by its pinkish-rufous upper parts and paler grey head and tail, also by the paler chestnut under parts; altogether a brighter-coloured bird than the African Mountain Kestrel (*F. tinnunculus rufuscens*). The European migrant *F. t. tinnunculus* remains in tropical Africa until March and has been shot in April as far south as Ubangi-Shari. It has been remarked that a large proportion of immature birds reach Africa in autumn.

Another form of kestrel (*F. tinnunculus neglectus* Schlegel) is resident in, and restricted to, the Cape Verde Islands. In depth of colour it is intermediate between the European Kestrel and the resident African species to be described next. The wing is 219–234 mm.

The African Mountain Kestrel (*F. t. rufuscens*) is a resident race which is confined chiefly to the high ground in tropical Africa but wanders to lower elevations and has been obtained in the non-breeding season in lower altitudes. It resembles our European Kestrel in appearance but is altogether a darker bird, both above and below. The adult male has the head, tail and upper tail-coverts dark slate-grey, the tail banded with black; the upper parts are deep rich chestnut (not pinkish rufous as in *F. t. tinnunculus*) and the spots heavier, more in the nature of bands. The under parts are shades darker chestnut, the black drop-shaped spots on the sides heavier and the black streaks on the breast more intense. The female has no grey on the head, is dark rufous chestnut throughout and more heavily banded above and streaked below than the European migrant. In both sexes the legs and feet are yellow and the claws black. Wing measurements are 223–237 mm. in the male and 233–258 mm. in the female.

The African Mountain Kestrel in West Africa is restricted to certain localities, and though perhaps its colloquial name is slightly misleading, for it is not confined to mountains, yet it is generally met with above the 300-metre contour. The race in question extends from Senegal to the Cameroons and the Belgian Congo and is found both north and south of the forest belt where suitable conditions

occur. It is far less common in winter than the European migrant, and though all breeding birds can safely be referred to *F. c. rufuscens* —a new name proposed for the West African bird formerly united (as in my first volume) with *F. t. carlo*—it is by no means easy to distinguish the two races in the field when both are present. It was found by naturalists when studying the breeding race that although it preferred the higher elevations for nesting and then ascended up to 6,000 ft. when opportunity offered, it would at times congregate on the plains where food was abundant, and this was noticeable in Sokoto and Kano Provinces during the months of February, March and April. In southern Nigeria it may be seen in the open country of rolling grassy hills, where its characteristic hovering may be noted. It has recently been reported as a migrant to Owerri Province.

Nesting takes place on the high cliffs of the Cameroon-Nigerian highlands, on rocky hills and kopjes around Zaria and in other similar situations in territory further west. When cliffs are not convenient this kestrel will nest in trees, building in the trunk of a boabab or on the top of a palm. When eggs have been found in such situations no material for nesting has been used. The eggs have a ground colour of dirty white and are thickly covered with reddish-brown speckles and blotches. They closely resemble the eggs of the European Kestrel in appearance. Four eggs average 38·75 × 31·08 mm.

WESTERN LESSER KESTREL

Falco naumanni naumanni Fleischer

This is a smaller bird than the common European Kestrel or its African representative; the male has the head and cheeks blue-grey, the mantle, back, scapulars and most of the coverts cinnamon-rufous, unspotted. Rump, upper tail-coverts and tail are blue-grey, the tail being tipped with white and broadly banded subterminally with black; the throat is buff and the rest of the under side pale cinnamon-rufous, the breast and flanks with round black spots. Legs and feet are deep chrome yellow, the nails whitish. The adult female resembles the adult female of the European Kestrel, but the ground colour is rather paler and the bars on the upper surface are narrower. It may be distinguished by (1) its whitish-horn claws, (2) the first primary considerably longer than the fourth instead of equal, (3) the smaller-size wing (224–248 mm. as against 245–263 mm. in the female European Kestrel).

The Lesser Kestrel does not breed in tropical Africa but comes south in winter in considerable numbers in the month of October, when it may be seen wandering about in flocks which often number

many hundreds of individuals. As in southern Europe, it is strongly gregarious and shows little fear. When hovering it flutters the wings rapidly and works systematically over a stretch of country in its search for insects, grasshoppers, centipedes and the like, upon which it feeds.

It is not by any means easy to distinguish the Lesser Kestrel from its larger representatives in the field unless a close view can be obtained of the mantle, when the lack of spots will be noted as well as the considerable amount of grey-blue in the wings (outermost coverts and inner secondaries). Only when perched are the white claws in evidence—a very good character, as in all the other kestrels the claws are black. On the wing the Lesser Kestrels may perhaps be recognised by their lighter under wing-coverts. When they first arrive in Africa it is believed that the young birds precede the adults, and though in eastern Africa the Lesser Kestrels far outnumber the European Kestrels, the reverse is the case in West Africa. Probably the majority of the eastern birds are migrants from Asia (*Falco naumanni pekinensis*).

Distribution. A very numerous breeding bird in the Mediterranean countries generally, especially in Spain and in the cities of northern Africa, where it is one of the commonest species, nesting in holes in buildings in old ruins and in high cliffs, as at Gibraltar. It is almost entirely migratory, not only from southern Europe but also from northern Africa, where it literally swarms in summer. In Spain it arrives back in the latter part of February, but flocks continue to pass until April. Within our limits the Lesser Kestrel arrives in October in the drier parts of the country, Gambia, Senegal, French Sudan, the Northern Territories of the Gold Coast and northern Nigeria. In the last-named country it is quite common on the Bauchi plateau from October to March in the dry season. The latest date when a specimen has been shot is 10th April at Dakar, which was late in departing north. In its winter migrations this kestrel reaches the Belgian Congo on the west, occurring in the clearings as well as in the savannas. On the east side it ranges much further south in company with the Asiatic race.

FOX KESTREL

Falco alopex alopex (Heuglin)

THIS is the largest and most striking of all the kestrels, whose long tail and long pointed wings should betray it from afar. In plumage it is entirely light rufous or fox-red. The head is narrowly, and the mantle and wing-coverts are more heavily, streaked with black. The tail is of the same fox-red colour, narrowly barred with black. The

under parts are paler fox-red than the upper parts, the whole under surface, except the throat, belly and thighs, being streaked narrowly with black. The legs and feet are yellow ochre and the claws black. The sexes are alike in plumage and show but slight variation in size. The Fox Kestrel measures about 16½ in. in length and can be distinguished (from the males of other kestrels in our area) by having no grey on the head or tail or, as in the Lesser Kestrel, on the wing. In flight the under side of the wing appears whitish. Its large size is probably the best guide to its identity. The wing measures 266–308 mm.



This is not by any means a common bird, the presence of rock piles and cliffs being necessary to it, in the crevices of which it no doubt breeds, though its eggs have not been taken in our area. In Sennar it was found nesting in clefts in the rocks of steep isolated volcanic mountains. The eggs are said to resemble those of the African Kestrel and to measure about 40 × 32·5 mm.

Probably one's first encounter with this species will take place at a grass fire, to which they seem always to be drawn, for these birds prey almost entirely upon insects and field mice and are said to live in harmony with Fire Finches and other small birds in their rocky home. Even more than the Mountain Kestrel is the Fox Kestrel a bird of great heights, and in the British Cameroon highlands it may be seen gliding over the inaccessible precipices perhaps 1,000 ft. above the valley, showing complete mastery over the air currents. It is a bird which seldom perches, except on the rocks of its stronghold, but will circle for hours over the surrounding country, catching insects such as winged termites in the air and often uttering shrill vibrant cries.

Distribution. Owing to the nature of the ground it inhabits, the Fox Kestrel can only be described as local in its distribution. Various strongholds have been reported to me as on the Upper Niger at the cliffs of Dallol Bosso and Kulikoro and the rocky country near Lake Faguibine in French Sudan. It has also occurred near Bamako. It has been seen attending grass fires in the Northern Territories of the Gold Coast and in Bornu, while it is said to be not uncommon on the Bauchi plateau and to nest there in holes in the granite cliffs. In the

mountain crags of British Cameroon overlooking the Bambuluwe valley there is a pair to every two miles of cliffs. No doubt it is universally but locally spread over West Africa where suitable conditions occur, as I have reports of it from other places in our Colonies, particularly in the Benue Province of Nigeria, but usually it is found north of lat. 9° N. Beyond our limits its range stretches across Africa through Chad, Darfur and the Anglo-Egyptian Sudan to Abyssinia and the Red Sea coast at lat. 16°, but apparently not to Somaliland.

GREY KESTREL

Falco ardosiaceus Bonnaterre and Vieillot

The entire plumage of this kestrel is slate-grey, and at close quarters the dark shaft stripes can be seen. The primaries are blackish brown, mottled on the inner web; the bill is blackish, the legs and feet are pale chrome and the claws black. In flight the dark tips to the wings are noticeable; its wings are rather long (205–250 mm.), but even so the bird has a rather stumpy appearance when compared with the European Kestrel. The flight is slow, and like that bird it hovers from anything above 15 to 50 ft. above ground; its light-marked tail is conspicuous when spread. The Grey Kestrel will spend long periods of inactivity perched quietly on some high vantage-point, seeming to spend more time in this way than in the air.

It is a familiar object in the savanna, ranging over farms and grass fields, hovering for a moment or two, then dropping a little until finally making its final dive, all very much in the manner of the Common Kestrel. Sometimes the bird emits a whistling scream, a sound which small birds evidently mistrust. It is not uncommonly mobbed in the manner of an owl, even by small birds such as white-eyes, sunbirds and warblers, which under the able leadership of the Black-and-White Flycatcher have been observed so engaged.

A favourite habitat of the Grey Kestrel is orchard bush alternating with grassy plains with here and there a granite kopje dominating the landscape. The nesting habits of this kestrel are interesting and show strong individual variation. In one case a pair were actually watched building their nest at the top of a young cotton-tree, 60 ft. from the ground; it was built of twigs, and though comparatively large was a light and thin structure. Another site from which eggs were taken was the bottom of a natural hole in a baobab tree 6 in. deep and about 35 ft. from the ground. No nesting material had been introduced. A third and most favoured situation is the appropriated nest of the hammerkop (*Scopus umbretta*) from which the owners have been evicted. Three such instances have come to my

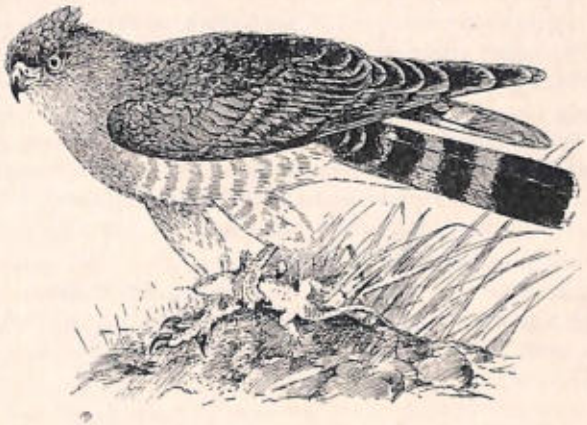
notice, one in Uganda and two in Nigeria. Fresh clutches have been taken in Nigeria and the Gold Coast on 7th January and on 1st and 3rd April. The complete clutch is four or five eggs, occasionally two only. The ground is white, almost completely obscured by smears and blotches of brick-red, orange-brown and buffish brown. In some the markings are more concentrated at the broad end. Pale lilac shell markings are sometimes visible. Ten eggs average 41 × 33·3 mm.

Distribution. Generally distributed throughout the savanna country and found from the coast almost to the limit of tree growth both north and south of the forest in western Africa and occasionally in large forest clearings. Its general range stretches right across Africa from Senegal and the Egyptian Sudan and Eritrea south to the Cunene River, southern Angola, and Uganda. It occurs both north and south of the Great Equatorial Forest but not in the closed forest of the Cameroons or of the Congo.

WEST AFRICAN CUCKOO-FALCON

Aviceda cuculoides cuculoides Swainson*

THIS long-tailed, long-winged bird, so unfalconlike in appearance and habits, measures about 15 in. in total length, of which the tail



accounts for about half. Structurally the bird is remarkable for the presence of two so-called "teeth" on the cutting edge of the upper mandible, with no corresponding notches in the lower. The male has brown upper parts washed with slate-grey; the female is browner

* Some authorities prefer to recognise a race *A. c. batesi* Swann inhabiting the heavy forest country, considered to be darker. The range includes the rain forests from Sierra Leone to Portuguese Congo, the Cameroons and the equatorial forest.

mountain crags of British Cameroon overlooking the Bambuluwe valley there is a pair to every two miles of cliffs. No doubt it is universally but locally spread over West Africa where suitable conditions occur, as I have reports of it from other places in our Colonies, particularly in the Benue Province of Nigeria, but usually it is found north of lat. 9° N. Beyond our limits its range stretches across Africa through Chad, Darfur and the Anglo-Egyptian Sudan to Abyssinia and the Red Sea coast at lat. 16°, but apparently not to Somaliland.

GREY KESTREL

Falco ardosiaceus Bonnaterre and Vieillot

THE entire plumage of this kestrel is slate-grey, and at close quarters the dark shaft stripes can be seen. The primaries are blackish brown, mottled on the inner web; the bill is blackish, the legs and feet are pale chrome and the claws black. In flight the dark tips to the wings are noticeable; its wings are rather long (205–250 mm.), but even so the bird has a rather stumpy appearance when compared with the European Kestrel. The flight is slow, and like that bird it hovers from anything above 15 to 50 ft. above ground; its light-marked tail is conspicuous when spread. The Grey Kestrel will spend long periods of inactivity perched quietly on some high vantage-point, seeming to spend more time in this way than in the air.

It is a familiar object in the savanna, ranging over farms and grass fields, hovering for a moment or two, then dropping a little until finally making its final dive, all very much in the manner of the Common Kestrel. Sometimes the bird emits a whistling scream, a sound which small birds evidently mistrust. It is not uncommonly mobbed in the manner of an owl, even by small birds such as white-eyes, sunbirds and warblers, which under the able leadership of the Black-and-White Flycatcher have been observed so engaged.

A favourite habitat of the Grey Kestrel is orchard bush alternating with grassy plains with here and there a granite kopje dominating the landscape. The nesting habits of this kestrel are interesting and show strong individual variation. In one case a pair were actually watched building their nest at the top of a young cotton-tree, 60 ft. from the ground; it was built of twigs, and though comparatively large was a light and thin structure. Another site from which eggs were taken was the bottom of a natural hole in a baobab tree 6 in. deep and about 35 ft. from the ground. No nesting material had been introduced. A third and most favoured situation is the appropriated nest of the hammerkop (*Scopus umbretta*) from which the owners have been evicted. Three such instances have come to my

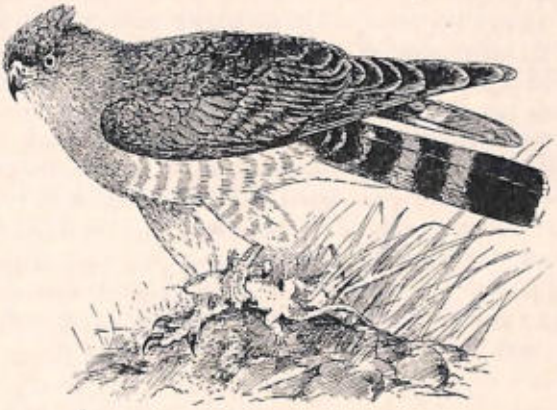
notice, one in Uganda and two in Nigeria. Fresh clutches have been taken in Nigeria and the Gold Coast on 7th January and on 1st and 3rd April. The complete clutch is four or five eggs, occasionally two only. The ground is white, almost completely obscured by smears and blotches of brick-red, orange-brown and buffish brown. In some the markings are more concentrated at the broad end. Pale lilac shell markings are sometimes visible. Ten eggs average 41 × 33·3 mm.

Distribution. Generally distributed throughout the savanna country and found from the coast almost to the limit of tree growth both north and south of the forest in western Africa and occasionally in large forest clearings. Its general range stretches right across Africa from Senegal and the Egyptian Sudan and Eritrea south to the Cunene River, southern Angola, and Uganda. It occurs both north and south of the Great Equatorial Forest but not in the closed forest of the Cameroons or of the Congo.

WEST AFRICAN CUCKOO-FALCON

Aviceda cuculoides cuculoides Swainson*

This long-tailed, long-winged bird, so unfalconlike in appearance and habits, measures about 15 in. in total length, of which the tail



accounts for about half. Structurally the bird is remarkable for the presence of two so-called "teeth" on the cutting edge of the upper mandible, with no corresponding notches in the lower. The male has brown upper parts washed with slate-grey; the female is browner

* Some authorities prefer to recognise a race *A. c. batesi* Swann inhabiting the heavy forest country, considered to be darker. The range includes the rain forests from Sierra Leone to Portuguese Congo, the Cameroons and the equatorial forest.

above. The breast is grey, and in the female is washed with fulvous. Both sexes have a white belly and under tail-coverts, but the rest of the white under parts are barred with chestnut, a dark shade in the male, lighter in the female. In some specimens the barring is continued on to the flanks. The tail is black, tipped with white and with three broad grey bands across both webs; the under wing-coverts are uniform chestnut; the eye, legs and feet are yellow. The wing measures 289–293 mm. In flight the cuckoo-falcon may be recognised by the profuse barring of the wings, both the major coverts and the inner webs of the primaries being barred with black. Young birds are dark brown above, the under parts with large irregular spots and some chestnut barring as the mature plumage begins to be assumed.

The cuckoo-falcon is one of the accipitrine birds concerning which we have much to learn. It occurs both in the dense bush and in the bushy savanna such as we find in Gambia and the Uele district and also in the rain forest. It is a shy and inconspicuous species which may be seen in trees along forest roads and in heavy timber along river banks, and this is the bird which has been named *A. c. batesi* after the late G. L. Bates. Its plumage distinctness is still doubtful to my mind, but it certainly lives in a very different environment from that of the typical subspecies.

The food of the cuckoo-falcon is almost entirely insectivorous, as might be inferred from the weak feet. Grasshoppers, caterpillars, locusts and mantises constitute its diet, with an occasional small frog or lizard. It never soars in the air like a falcon.

Of its nesting in our area we know nothing. In the equatorial forest young two-thirds grown have been taken in June and December. The South African race builds a nest in trees in open woodland about 25 ft. from the ground in the fork of branches, constructed of sticks, roots and coarse grass lined with leaves and small bits of stick. The egg is pale greenish white, sparingly but evenly spotted and scrawled with rich and dull red-browns. A single egg measures 41·1 × 34·8 mm. The number it lays is not known. On 24th September a pair were seen at Ilorin feeding a young bird not long out of the nest.

KEY B

A key to the Kites, Buzzards and Eagles
(For a guide to the Keys A, B and C see p. 237.)

1. Tail forked 2
   Tail not forked 3
2. Wing under 10½ in., crown and back grey, under parts white .. .. *Chelictinia riocourii*, p. **255**
   Wing over 17 in., crown whitish and streaked, contrasting with back .. .. .. *Milvus milvus fasciicauda*, p. **258**
   Wing under 17 in., crown dark brown, not contrasting with back .. .. .. *Milvus migrans tenebrosus*, p. **257**
3. Legs (tarsus) feathered* back and front to toes 4
   Legs (tarsus) not feathered to toes 11
4. Size large (wing over 18 in. in length) 5
   Size smaller (wing under 18 in. in length) 8
5. Under parts uniform earth-brown *Aquila rapax raptor*, p. **263**
   Under parts spotted or barred 6
   Under parts white 7
6. Under parts washed with chestnut with large black spots or bands from throat to under tail-coverts *Stephanoaëtus coronatus* (adult), p. **270**
   Upper breast uniform dark brown, remaining under parts white with small dark-brown spots *Polemaëtus bellicosus* (adult), p. **268**
7. Thighs white or pale fawn and always spotted; under parts sometimes washed with pale chestnut *Stephanoaëtus coronatus* (immature), p. **270**
   Thighs white, unspotted; sometimes a few brown feathers on neck and breast *Polemaëtus bellicosus* (immature), p. **268**
8. With white or/and chestnut on breast and belly 9
   No white or chestnut on breast and belly, which are brown or blackish 10
9. Under parts pure white with elongated black spots, no chestnut wash:
   (*a*) Wing over 16 in. but under 18 in. innermost, primaries unbarred and with white shafts *Hieraaëtus fasciatus spilogaster* (adult), p. **265**
   (*b*) Wing under 16 in., innermost primaries barred and with black shafts .. *Hieraaëtus ayresi* (adult), p. **267**

* The feathers are actually growing on the shanks to a point where the toes commence in the species here included; some species have feathers which by reason of their length reach the toes but which grow from the tibia or upper part of the tarsus. These last are not included here.

Under parts white, black patch on each side of flanks
Cassinaëtus africanus (adult), p. 268

Under parts white, washed with chestnut and spotted with black; no grey bars on tail-feathers
Cassinaëtus africanus (immature), p. 268

Under parts white, strongly washed with chestnut and with fine black shaft streaks:

(*a*) Wing over 16 in. but under 18 in., innermost primaries unbarred and with white shafts
Hieraaëtus fasciatus spilogaster (immature), p. 265

(*b*) Wing under 16 in., innermost primaries barred and with black shafts; grey bars on tail-feathers
Hieraaëtus ayresi (immature), p. 267

10. A long occipital crest of narrow plumes; feathers along bend of wing and inner lining of quills white
Lophaëtus occipitalis, p. 271

No occipital crest; no white along inner bend of wing or on inner lining of quills .. .. *Aquila wahlbergi*, p. 264

11. Wing 14¾ in. or over 12
Wing under 14¾ in. 16

12. Space in front of eye (lores) covered with minute scale-like feathers, no bristles present; tail very long, with three dark bands .. .. *Pernis apivorus apivorus*, p. 262

Space in front of eye (lores) naked 13

Space in front of eye (lores) feathered normally or with numerous stiff black hair-like bristles 14

13. Tail remarkably short, at least 2 in. shorter than wing-tips; under parts black .. *Terathopius ecaudatus*, p. 282

Tail extending beyond wing-tips; head and entire under parts white .. .. *Gypohierax angolensis*, p. 286

Tail extending beyond wing-tips, breast white, belly chestnut .. .. .. *Cuncuma vocifer clamans*, p. 284

14. Under surface of body below breast white with heavy brown bars over ¼ in. in breadth; under wing-coverts also barred .. .. .. *Circaëtus gallicus*, p. 276

Under surface of body below breast white with very narrow brown bars under ¼ in. in breadth:

(*a*) Wing about 20 in. in length; under wing-coverts uniform white .. .. *Circaëtus beaudouini*, p. 278

(*b*) Wing about 15 in. in length; under wing-coverts barred .. .. .. *Buteo b. bannermani*, p. 287

Under side of body mainly uniform, either brown throughout or with a few indistinct white bars on belly and thighs 15

15. Three narrow light bars on tail; wing over 18 in.
Circaëtus cinereus, p. 277
Two broad white bars on tail; wing under 18 in.
Circaëtus cinerascens, p. 280

16. Tail chestnut (with white shafts to the rectrices) and with some chestnut on the mantle .. *Buteo auguralis*, p. 287
Without any chestnut on tail 17

17. Under parts pure white, upper parts dove-grey, black patch on shoulders .. .. *Elanus c. caeruleus*, p. 259
Under parts uniform white or mostly white spotted with brown, sometimes washed with chestnut 18
Under parts not white and not spotted 19

18. Under parts heavily spotted or barred with black and sometimes washed with chestnut
Dryotriorchis spectabilis spectabilis (adult), p. 275
Dryotriorchis s. batesi (immature), p. 275
Under parts white, only flanks barred
Dryotriorchis s. batesi (adult), p. 275

19. General colour of plumage grey, lower breast and belly finely barred black and white
Kaupifalco m. monogrammicus, p. 273
General colour of plumage sooty brown, some white on throat and belly, white patch above and below eye
Machaerhemphus alcinus anderssoni, p. 260
Wing-feathers mainly bright chestnut *Butastur rufipennis*, p. 281

SWALLOW-TAILED KITE

Chelictinia riocourii (Vieillot and Oudart)

This is the most graceful of accipitrine birds in Africa and wherever encountered evokes admiration. It is almost tern-like in its trim appearance, delicate French-grey above, washed with sooty grey on the back, pure white below, with a black patch on the under side of the wing along the wing-coverts, which last feature is a conspicuous mark in flight. A little black patch behind the carmine eye and a blackish outer border to the scapulars are other points to note. Surest guide to its identity is the swallow-shaped grey tail, with the outer rectrices much elongated. The grey wings, with white-margined major coverts, are fine and long. The feet are straw-yellow. In plumage the sexes are alike, but the female is the larger. In size it measures 14–15 in. (wing 230–254 mm.), the outer long tail-feathers varying from 170 to 216 mm., the innermost 92–100 mm.

It is an inhabitant of semi-arid country, frequenting the more

open parts of the bush and the extensive grass prairies, where it quarters the ground in its search for insects, orthoptera and hymenoptera, upon which, with lizards and mice, it largely feeds. It may be seen to hover and then pounce down upon its victims but seldom remains stationary in mid-air in the manner of a kestrel. Unlike most birds of prey, it is highly gregarious, and though single birds may be encountered it is more usual to come across a dozen or so in company, even in the breeding season. That it moves about from place to place has been observed in the White Nile area, where parties of three or four were seen flying in a north-easterly direction, and a tree upon which some had halted to rest contained 150 of them, all massed together. Sometimes parties of Swallow-tailed Kites will congregate around the nests of larger birds of prey, and instances of half a dozen birds sitting on the rim of an occupied Snake Eagle's nest, and forty others perched on the huge nest of a White-headed Vulture containing a young one, are on record.



When I wrote my first volume of *The Birds of Tropical West Africa* the eggs of this kite had never been discovered. Since then its nest has twice been found, the first at San (French Sudan) in June, the second near Tazza Wells (French Niger) within the desert on 18th June. Both nests were in thorny acacias 12 and 15 ft. from the ground but very difficult to reach. The first contained three young, the second four eggs. The ground colour of the eggs is whitish sand-colour closely and finely speckled and sprinkled all over with umber-brown. They measured 37 × 30 mm., 37 × 30·5 mm., 38 × 31 mm. and 38·5 × 31 mm. In shape they are almost equally broad at each end. The above is the first and only clutch ever to have been taken.

Distribution. Restricted to the semi-arid or "Sudanese Arid Belt" of Africa, extending from Senegal and Nigeria through the Central Sudan to Abyssinia and the extreme western border of Somaliland. Within our limits its range embraces the country between lat. 9° and

16° N., but in East Africa it occurs further south but not beyond lat. 4° N. Of its local distribution in West Africa I have written at length in vols. i and viii of *The Birds of Tropical West Africa*. It has been seen as far south as the Bauchi Plateau and in the Gold Coast at Wenchi, Ashanti, but it is in the Northern Territories north of lat. 12° N. that it is usually to be found, though nowhere very commonly.

WEST AFRICAN BLACK KITE

Milvus migrans tenebrosus Grant and Praed

The Black Kite is too familiar a bird to require much description. It is a large, dark brown bird with a rufous-chestnut wash on the head and under parts, about 20 in. in length with long pointed wings and tail, the latter appearing forked when the bird is at rest, but when expanded the fork is mostly lost. It has nothing like such a forked tail as the Red Kite. Its wonderfully easy and graceful flight will attract attention, accompanied often with shrill mewing cries which the Black Kite utters. In adults the bill and feet are yellow, but in young birds the bill is black. The wing measures 370–418 mm.

Wherever one's travels take one in West Africa the Black Kite is sure to be seen before long except in the rain forest, for it is mainly a bird of the wide open spaces and naturally shuns the canopy of the forest. In winter it may be seen as commonly frequenting the harbours, such as Dakar and Freetown, as the native villages of the interior, in fact anywhere that it can gain a living it will surely be encountered.

As a scavenger it must take a high place with the vultures, for little comes amiss to it. As a robber it has rightly earned an unenviable reputation and is greatly disliked for its attacks upon young poultry. Against that it must destroy countless rats, mice, lizards, frogs and land snails, and locusts and smaller insects by the billion. A bush fire will attract the kites in numbers to take toll of the creatures fleeing or rising from the flames. Insects are captured in the air by the feet and transferred to the bill.

The nesting season is a long one. It begins towards the end of the dry season and extends into the early rains. Building will sometimes begin in December and eggs have been found (at Zaria) on 30th January, but normally from the second week of March until mid-May the breeding season is at its height, though quite a number of February clutches are on record. The nest is built by the kites themselves of sticks, which they carry in claws or bill. It is usually in a large tree, often close to a colony of weavers, acacias or silk-cotton trees being much favoured, at heights varying from 20 to

80 ft. The nest is often on the topmost branches away from the bole. In the lining of the nest rags, skin, dung, leaves and other debris have been found. The clutch usually numbers two eggs, which vary much in colour; white or greenish white spotted, mottled, clouded, or lined with all shades of brown from tawny orange to chocolate. Over fifty eggs average 52·1 × 41·5 mm.

Distribution. A resident in the whole of tropical Africa from Senegal, the Sudan and Abyssinia south on the east to the Upper Zambesi and on the west to Angola; another race, *M. m. parasitus*, with which I formerly allied West African examples, takes its place in South Africa.

The Black Kite is subject to considerable seasonal movement, of which I have given some details in vols. i and viii of my larger work. In winter the birds are generally distributed, and their numbers are then far in excess of any other bird of prey. Their seasonal movements are rather confusing, but in general the birds arrive in the south of their range and in the coastal districts from the third week of September to the first week of November, the date varying according to the latitude and to some extent to local conditions. There they remain until the spring. South of lat. 10° the kites seem to disappear—at any rate the majority—after April, but they are still commonly found in Senegal and Gambia in June and, oddly enough, in the dry coastal belt around Accra, where some are present until July. Normally all the birds have left the coastal area long before July sets in. Their local movements are worthy of careful study. From June to September the kites go north, and it is only in the summer months that they are found north of lat. 16° in any numbers. The birds with their newly reared families then penetrate into the desert and sahel, scattering over the vast territories of Chad, Niger and French Sudan, roaming far and wide. We hear of them to the east of Chad, travelling in hundreds in a northerly direction between 22nd June and 6th July, and returning in the same numbers from 4th to 10th August. At that season long journeys must be undertaken with their young in search of pastures new.

The European Black Kite (*Milvus migrans migrans*) winters in tropical Africa in large numbers, and as it has a black bill always, it is apt to be confused with the young of *M. migrans tenebrosus*, which has a black bill when young but yellow when adult. The European migrant reaches the Transvaal on the east and south-western Africa on the west coast. Hundreds of Black Kites pass up the Moroccan seaboard and cross the Straits of Gibraltar in late March, as my companion and I witnessed in 1951.

In the Cape Verde Islands there is a resident race of the European Red Kite (*Milvus milvus fasciicauda* Hartert). It is a much larger bird than the Black Kite, with a dark horn-coloured bill and forked tail,

the head and throat being cream-coloured with dark shaft-streaks, the upper surface umber-brown washed with rufous, breast brown streaked with sepia, becoming rufous on the belly with narrower stripes. It is a common bird in many of the islands and may be seen from the deck of a steamer frequenting the main harbours on the look-out for scraps.

BLACK-SHOULDERED KITE

Elanus caeruleus caeruleus (Desfontaines)

This kite is a small bird, its body being about the size of a Rock Pigeon, with rather long wings (260–287 mm.), and a fairly short square tail (110–135 mm. in length). It should be easily distinguished by its colouring, being dove-grey above and white below, with a large black patch on each shoulder edged with white along the bend of the wing. The bill is black and the feet and legs are yellow, the legs being feathered. In flight the under side of the wing is dusky with white shafts, and the under wing-coverts and axillaries are also white. Young birds have the breast and sides of the neck strongly washed with chestnut. The flight of this kite is wonderfully buoyant and graceful, and the bird should not be confounded with any other species, but care is necessary not to mistake it for a Pale Harrier by anyone unacquainted with their different flight.



It is not at home in thick forest country but may be observed hovering over old farmlands on the look-out for mice and can then remain stationary in the manner of a kestrel for some moments. Over the plains it will hawk regularly, quartering the same patch at the same hour daily for the small rodents and winged insects upon which it preys. At other times it sits silently in a thick-leaved tree, from which it will dart out with incredible speed to seize some luckless small chicken or other victim and rapidly carry it away. Unlike the Black Kite, it is not a scavenger, nor is it to be seen soaring over villages or sitting in the open as that species. It has been observed when resting to raise its tail until it is vertical with its back—a very

un-kite-like performance. It is a sedentary species, not subject to the seasonal movements of the Black Kite.

The nest is said to resemble that of the British Sparrow-Hawk and is described as a shallow structure of sticks and twigs, usually placed in the branches of a tree 25–40 ft. from the ground. Occasionally it seems that eggs are laid in the nests of other birds which have been appropriated by the Black Kites. The eggs are of two types: (1) ground colour white to buff, heavily blotched, spotted and smeared with reddish brown of varying shades, often forming a cap; (2) the entire shell more or less evenly smeared and speckled with brown on a buffish ground. Average size of eleven eggs is 37·9 × 30·5 mm. A clutch of three taken in March at Abeokuta is larger, measuring 40·5 × 31 mm., 40·2 × 31·3 mm., and 38·4 × 30·6 mm.

Distribution. Not uncommon in the tree-savanna belt and on open plains and abandoned farmland, but not in forest country. It occurs all over Africa and within our restricted area is recorded from all political areas from Senegal to the Loango coast, including all British Colonies. It is more commonly seen in the southern and central provinces than in the north, but has occurred as far north as Lake Chad.

BAT-HAWK

Machaerhamphus alcinus anderssoni (Gurney)

The Bat-eating Falcon ("buzzard" is a misnomer) is another name for this interesting species, which is unfortunately not easily identified owing to its crepuscular habits. It looks like a huge nightjar, as it



has a very wide gape, but has quite a different flight, rapid and very powerful. To make its identification more difficult, it has two distinct phases of plumage. In the light phase the whole upper side is dark brown, including the wings, which have white spots on the inner web. The cheeks are whitish and there is a white streak over

the eye. The throat and belly are pure white, the feathers of the breast with brown tips. The brown tail is indistinctly barred. The other phase is that in which the entire plumage is sooty black except for a white patch of very short feathers above and beneath the eye. In some examples there is a varying amount of white on the throat, flanks and belly.

The eye of the Bat-Hawk is large and bright lemon-yellow; the bill bluish-lead colour, black at the tip; the legs and feet are bluish white. The wing measures 336–360 mm. Seen in flight from below it has quite exceptionally pointed wings and a square black tail, a white patch on the belly and throat often being present in the dark-phased examples.

Although widely distributed it is a rare bird everywhere, or so it appears from the number of records received. It probably spends the daylight hours hidden among the foliage of some leafy tree. It may, on rare occasions, be seen sitting motionless on some dead bough in the darker recesses of the wood and then has an almost owl-like appearance, with its head sunk between its shoulders and its feathers ruffled. It can, when it desires, turn its head right round in the opposite direction to that which it is facing.

As dusk approaches the Bat-Hawk begins to take more interest in its surroundings, but even in the daytime it evinces an interest in smaller birds and has been observed harrying the weavers, which are evidently devoured at times, as their remains, with those of cockchafers and similar large insects, have been found inside the birds. The wide gape of the Bat-Hawk may perhaps assist the bird in its quest, but it is more likely to capture all its prey with its feet. Its method of catching cockchafers has not been observed. As the bats emerge from their retreats in the roofs of houses they are attacked by the Bat-Hawk, which swoops upon them with incredible speed, the bats taking a zigzag course in their attempt to reach safety. Bats are certainly captured by the talons in the air and there transferred to the mouth, being then swallowed on the wing. One hawk contained three entire bats in its stomach on being opened. These birds display great power, agility and grace when in flight. At rest the position of the body is rather horizontal, with head erect.

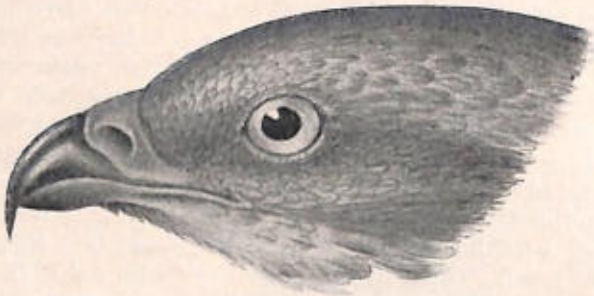
A single pair inhabit a particular district. In the Lado Enclave one of these hawks was seen to follow a bat in daylight into the mouth of a cave and to crumple it up in its feet. Of its breeding in West Africa no information has reached me. A nest found in Nyasaland was about 30–40 ft. from the ground in the largest tree in a small wood, constructed of large sticks and lined with smaller ones, decorated on the exterior with green leaves. Two eggs were of a pale bluish-green colour, unspotted—a most unusual type for a bird of prey. Their measurements were not recorded.

Distribution. Recorded from various localities, with huge gaps in its distribution, from the Anglo-Egyptian Sudan and Somaliland to the Zambesi and from Liberia to Damaraland. Within our limits specimens have been seen or obtained in Liberia, the Gold Coast (Mampong, Tamale, Achimota), Nigeria (Lagos and Sapoba Estate, Benin Province and the Niger Delta), Cameroon Mountain and the Loango coast.

HONEY BUZZARD

Pernis apivorus apivorus (Linnæus)

This is a migrant from Europe which visits tropical Africa in the winter months. Like the last species, it is rarely met with and equally difficult to recognise, having three phases of plumage. In all phases the upper parts are dark brown throughout, with the forehead, lores and cheeks strongly washed with grey, which, in old males, extends over the crown. The tail is light brown broadly margined with sepia, with two other bars of the same purplish sepia nearer the base. The chin is white streaked with brown, the rest of



the under parts being heavily spotted or barred with brown or blackish on a white ground. The under wing-coverts are dark brown, but the inner lining of the wings and tail is whitish with dark bars or blotches. The wing measures 395–425 mm.

A *white phase* resembles the above on the upper parts, but the under parts are either entirely white with a few brown bars on the sides or with a few sepia streaks on the breast; sometimes the entire head is white.

A *dark phase* also is not uncommon, in which the entire plumage is brown, varying from rich umber to dark sepia; but always the white inner lining of the primaries is present.

In size the Honey Buzzard resembles our Common Buzzard in Britain, but its tail is markedly longer (255–275 mm.). The bill is black; eye, legs and feet are all yellow. When in the hand the

remarkable scale-like feathers of the lores will betray its identity. These feathers are quite unlike those of any other bird of prey and are believed to be a protection against the stings of the bees and wasps upon which, and upon the grubs of which, the Honey Buzzard largely feeds.

It is a forest-frequenting bird, but in Africa is just as likely to be found in savanna as in forest clearings and has been observed on the borders of the Sahara, over which the migrants must pass. One example shot in Cameroon had been ringed in Sweden, showing the enormous distances which they cover. It is said to be easily approached and reluctant to fly and will sit lazily in a tree making an occasional pounce to secure a grasshopper or mantis. Best of all it loves to rifle a beehive or wasps' nest. One shot in Ashanti had its crop crammed with mason wasps.

Distribution. The Honey Buzzard breeds in most of Europe and Asia, visiting Africa in autumn and returning in the spring. It is widely distributed in Africa during the winter months, reaching Natal in the east and Angola in the west. Specimens have been taken in West Africa between 29th September and March and one even in June, and is recorded from Liberia, the Gold Coast, French Sudan (Taberréshat Well), southern Nigeria (Owerri), the Cameroon Mountain district and from the interior of French Cameroon. It is recorded from several places in tropical East Africa between October and April.

ABYSSINIAN TAWNY EAGLE

Aquila rapax raptor A. E. Brehm

THIS is a small resident eagle, about 30 in. from bill to tail, with the whole plumage dull brown (not tawny). The feathers are much affected by abrasion, when the nape, mantle and upper tail-coverts appear bleached a dirty white. The rump is paler in tone than the back. In some specimens the under side is reddish brown, but birds with pale clay-coloured under parts are known and every intermediate. The primaries are black and the secondaries dark brown. Bill and claws are black and the feet yellow. The measurements of the wing are 480–533 mm.

In the field it appears lighter coloured than its contemporaries, but its dress is so variable with age and wear that it is impossible to give a general description. As it sits croaking on the tops of thorn bushes its tail is seen to be long and rounded. When not nesting the Tawny Eagle allows fairly close approach, and when it flies it does so with powerful wing-beats and occasional long glides. Sometimes a pair may be seen together soaring high over their nests.

A bird of the dry hinterland and orchard bush, it may be seen quartering plains and hills, but it avoids the forest. It sometimes kills its own game and is not averse to sharing in a kill or acting as a camp scavenger. In Somaliland it is reported to be 90% a carrion-eater.

The Tawny Eagle builds a huge nest (about 36 in. across at the top), which it places in large trees such as baobabs or silk-cotton trees, being inaccessible except to an experienced climber. They may be as much as 100 ft. from the ground and are sometimes situated well out on a branch. Built entirely of sticks, they have a fair-sized cup lined with twigs and leaves. In Gambia, where nests have been located in that dry country, they usually choose baobabs, but in the Gold Coast and Nigeria nests may be found in orchard bush, but always in the largest trees. In Gambia the breeding season is said to extend from January to April. In Nigeria and the Gold Coast eggs have been found from 25th December to 27th January, but it is likely to range from October to February. Four nests located in Nigeria each held a single egg or nestling, but in Gambia a nest with two eggs has been found. The egg is stout-shelled, rounded ovate in shape with white glossless ground, irregularly washed with palest grey or smeared and sparingly marked with yellowish brown. Measurements of West African examples are 72 × 55 mm. and 63·5 × 53·6 mm. Thirteen from Somaliland average 66·3 × 54·2 mm.

Distribution. Extends from Syria, Egypt and southern Arabia, Nubia, Kordofan and Darfur south to Abyssinia, Eritrea and Somaliland and across the continent to include the whole of West Africa, ranging from Senegal to Nigeria. It is reported from all our four Colonies except Sierra Leone, reaching the coast in Gambia and the Gold Coast (Accra). It is particularly reported from Zaria Province and Bornu in Nigeria, but is doubtless widely spread over the area except in the forest region.

WAHLBERG'S EAGLE

Aquila wahlbergi Sundevall

Compared with the last species, Wahlberg's Eagle is smaller and darker in colour (wing 400–445 mm.). The total length does not exceed 23 in., and the wing expanse is about 55 in. The small slender bill, in contrast to the heavy bill of the Tawny Eagle, is black and the nostrils are round, whereas in the Tawny Eagle they are oval and perpendicularly placed. In flight the yellow cere and yellow legs may be noticeable, and both wings and long square tail, when seen from below, look silvery grey. The upper side in flight is uniformly brown.

When quartering the ground searching for prey its flight has been likened to that of the large harriers, but from all of those its feathered legs distinguish it. This eagle appears, from the little we know of its ways, to be more predatory in its habits than the Abyssinian Tawny Eagle. It has a reputation for killing snakes, and the remains of birds, lizards, locusts and termites have been found in its crop.

The nests of this eagle have not been reported from West Africa, but in East Africa it chooses both medium-sized trees in light savanna and tall trees 40 ft. or more from the ground. A nest near the top of a ficus was 24 in. in diameter with a cup of 12 in. and was made of branches and twigs up to 30 in. in length, some of which were fresh with leaves and fruit. This nest was surrounded by the nests of yellow weaver birds, all occupied. Eggs have a chalky-white ground and are variably marked, some sparsely, others heavily, with various shades of brown, rust red, umber, purple and even yellowish, mostly in the form of freckling, evenly spaced; others again are clouded and others spotted and blotched. Average of eleven eggs was 62·0 × 49·9 mm.

Distribution. Originally described from South Africa, this eagle has a wide range on the east coast, extending to Eritrea and Lado and on the west to the Congo mouth. It is absent from Cameroon and the forest country of the Congo but is found west of the Cameroon-Nigerian forests in various countries within our limits as far west as Gambia and Portuguese Guinea. It is reported from all our Colonies and appears to be more often seen in northern Nigeria than elsewhere, but I have records from the Keta marshes, the Gold Coast, and from Tasso Island, Sierra Leone, so that its range is not restricted to dry country. It is believed to be subject to periodic migrations, at any rate in the north of its range.

AFRICAN HAWK-EAGLE

Hieraaëtus fasciatus spilogaster (Bonaparte)

In adult dress the hawk-eagle is not difficult to recognise; the upper parts appear black, sometimes with white blotches, the under side being pure white with a varying number of bold black arrow-shaped spots. The wings are long and pointed, sepia-brown with the shafts white; the tail is ash-grey, broadly tipped with black and narrowly banded with brown. The eye is gamboge, bill bluish horn with black tip; cere and feet are pale yellow. The wing measures 416–465 mm. and the tail 255–290 mm.

In flight the inner lining of the wing will be seen to be pure white with the under wing-coverts white barred with sepia, though seen from below they appear dark. The tail is noticeably long (seen from

below it appears white with a black tip), and this character and its larger size are the only means of distinguishing it from Ayres' Hawk-Eagle, to be described next (see that species for details). Young examples of the African Hawk-Eagle have the upper parts light brown, the head and whole of the under parts pale chestnut, the crown and sides of neck and breast with black shaft-streaks. As the bird advances in age, the brown feathers of the back are replaced by black and white, which give examples in intermediate dress a curiously spotted appearance. The chestnut breast is gradually replaced by white feathers with black shaft-streaks.



The flight of this eagle is described as heavy and powerful, but when intent on prey it can be very quick on the wing and is a terror to poultry and small game. Snakes, squirrels, rodents and small birds are also killed. At times it will soar to a great height on motionless wings. The cry is a double note described as shrill but weak, and at times a low whining call is uttered.

No nest of this bird has been taken yet in our area, but its discovery can only be a matter of time. In the Belgian Congo it was found breeding* from late June to early August, the nest, averaging about 4 ft. in diameter, being constructed of large sticks, with the deep cup lined with green leaves. It builds in soft woodland in large trees against or close to the trunk at from 40 to 60 ft. above ground. The eggs, one or two in number, are chalky white, blotched and freckled with light and dark umber brown, with ashy and lilac shell markings. Seven eggs average 63·9 × 51·4 mm. The hen slips so silently from the nest that only a glimpse of her is ever obtained.

Distribution. From northern Abyssinia and Somaliland, through Kenya, Tanganyika and Nyasaland to Cape Province, Damaraland and Angola. In the northern half of its range it spreads across the Sudan and Darfur to the Northern Territories of West African countries and has been taken in our area in Gambia, Senegal, Gold Coast (Gambaga) and Nigeria (Loko). Everywhere it seems to be a rare bird.

* *Cf. Ibis*, 1945, p. 209.

AYRES' HAWK-EAGLE

Hieraaëtus ayresi (Gurney)

In all stages of plumage this hawk-eagle closely resembles the African Hawk-Eagle, and for long the two were not recognised as distinct. Ayres' Eagle is a smaller bird and has a noticeably shorter tail; the wing measures 339–420 mm. and the tail 175–223 mm. When seen in flight the light patches so conspicuous in the wing and tail of *H. f. spilogaster* are lacking in *H. ayresi*. The following points distinguish these species in either adult or immature dress:

(*a*) Shafts of feathers of wing and tail are blackish in *ayresi*, whitish in *spilogaster*.

(*b*) In all plumages outer web of third to sixth primary in wing is in *ayresi* black, in *spilogaster* ash-grey.

(*c*) Innermost primaries and quill lining are barred in *ayresi*, unbarred in *spilogaster*.

(*d*) Nape crest in *ayresi* much longer, even in the young, reaching 53 mm. in length.

(*e*) Bill short and hawk-like in *ayresi*, much more powerful in *spilogaster*.

In habits this hawk-eagle is not likely to differ from the last, but the fact that it has been taken in the Cameroon forest country suggests that it is more of a forest bird than the African Hawk Eagle, which is commonly found in open woodland in savanna. It is probable that Ayres' Eagle also prefers thinly wooded regions to the rain forest belt, but that it frequents the borders of the latter is shown by specimens from Efulen (Cameroon) and Niapu (Congo forest).

A nest of this bird found in southern Somaliland on 1st July was placed in a high tree on the wooded banks of a river; both birds were at the nest, but eggs had not been laid.

Distribution. The range is a wide one, but the bird is rare and consequently large gaps appear in its known distribution. Originally described from Natal, it occurs in Mozambique, Cape Province (Port Elizabeth) and westwards to the Kasai district in southern Belgian Congo, the Lower Congo, Landana and the Cunene River. It has been found in Nyasaland, Kenya and Uganda and in West Africa in Cameroon (Efulen and Bangwa) and in Togoland (Misahöhe). Although not yet reported from Nigeria, it must certainly be found there, as the Zoological Society of London recently received a young live eagle from the Gold Coast obtained at Ntubia, 100 miles north-west of Dunkwa, which I identified as *Hieraaëtus ayresi*.

CASSIN'S HAWK-EAGLE

Cassinaëtus africanus (Cassin)

CASSIN's Hawk-Eagle was placed in my larger work following the last species described, but it is more closely allied to *Hieraaëtus*, in which some authorities place it, and is here removed to follow the other hawk-eagles. It is a species which is seldom seen and is not easily recognised. It has a short rounded wing (330–381 mm.) and a very long tail (211–262 mm.). The body plumage is blackish brown above and entirely white below, with a blackish patch on each side of the breast. The under wing-coverts are black and white, the axillaries are black, and the inner lining of the wing is mainly white. The long brown tail has three black bars and a black subterminal band. The legs are white with heavy black markings down the outside of the thighs, the dark marks being absent in young birds. Young birds have a certain amount of rufous buff on the breast and some heavy black spotting, in which plumage it is not easily distinguished from a young Serpent-Eagle, but in that genus (*Dryotriorchis*) the tarsus is unfeathered, whereas in Cassin's Hawk-Eagle the legs are feathered to the toes.

Cassin's Eagle is a rare bird of the forests, keeping mainly to the tree-tops, where it preys upon the squirrels and birds that live in the canopy. It is very seldom seen by naturalists, but occasionally a large buzzard-like bird with grey and white coloration has been seen flying over the forests which is believed to have been Cassin's Hawk-Eagle. The nest is unknown.

Distribution. Known only from the forest country of West Africa, the Congo and Gaboon, its range extending across the equatorial forest from southern Cameroon to the southern Uelle district, the eastern edge of the Ituri and the north-east side of Lake Tanganyika. Within our restricted area it has been obtained only in the forests of Togoland and is likely to occur in those of the Gold Coast and Nigeria, though not yet recorded until we reach Victoria. It is found more commonly in middle and southern Cameroon and is recorded from the Camma River in Gaboon.

MARTIAL EAGLE

Polemaëtus bellicosus (Daudin)

(see Plate 5, facing page 272)

THE immense size of this eagle is the best guide to identification, only one other species, the Crowned Hawk-Eagle, being comparable with it. An adult female Martial Eagle will measure 33 in. from bill

to tail and has a wing-span of over 7 ft. The tail (273–320 mm.) is comparatively short (about 1 ft. from the base), but the wings are very long (560–655 mm.). In colour old birds may be recognised by the sepia-brown back, throat and upper breast and the white breast and belly spotted with brown. The legs are feathered, white narrowly barred with sepia, extending to the toes; the feet are bluish white with huge black claws. The bill is black, cere grey and eye yellow. A fully grown first-year bird has the whole under side, including the thighs, white without spots or bars, the crown streaked brown and white and the upper parts light brown.

This is one of the most powerful birds of prey in the African continent, and it can tackle much larger game than the smaller eagles we have hitherto discussed—small antelopes, young goats, lambs and hyraxes are swooped upon with amazing velocity, and it has even been known to attack a monitor in the Gambia River. The Martial Eagle is a bird of the plains and open savanna and is not found in the forest but may be encountered up to any altitude in the type of country it frequents. In Uganda and Kenya this grand bird has a reputation of being an inveterate chicken thief and may sometimes be seen passing high over forested country, into which it does not enter. It never touches carrion. Usually it hunts in pairs and is fond of frequenting dry watercourses in broken country. When perched on the top of a tree it can be recognised at a great distance but is very wary and difficult to approach.

Though fairly widely spread in our area, its nest has not been reported to me. In British Somaliland, where it breeds in September, October and November, it constructs a nest of sticks which has a bedding of green twigs. It is usually placed high up in the fork of an acacia, 30 ft. or more from the ground. A massive nest built in the top of a baobab in Darfur contained a nestling on 27th January. Only one egg is laid, chalky white, freckled and blotched about the broad end with light sienna; it almost resembles the egg of the Bateleur. Eggs vary from 77·5 × 61 mm. to 82 × 62·5 mm. (Somaliland), 83·8 × 64·7 mm. (South Africa).

Distribution. Extends over the whole of the African savanna region south of the Sahara from Abyssinia and Gambia south to Cape Province and Damaraland, but not in the heavy forests of West Africa or the Congo, but is found along the Congo-Sudan border. It occurs on the Kivu volcanoes up to 12,000 ft. I have records of it in our area from Gambia (several), Sierra Leone (twice), Gold Coast, Northern Territories (several) and Nigeria (Sokoto, Kano, Bauchi Plateau, Zaria, Niger and Kabba Provinces).

CROWNED HAWK-EAGLE

Stephanoaëtus coronatus (Linnæus)

THIS is the only eagle in West Africa which can be compared in size with the Martial Eagle. An adult female will measure 32½ in. in length and has a wing expanse of 64–70 in., the shorter, more rounded wings (465–525 mm.) accounting for the smaller wing-spread. It has a long tail (300–355 mm., about 13 in.). On the sepia crown is a pronounced crest of light feathers with broad blackish tips, the cheeks, nape and sides of the neck being umber brown and the rest of the upper parts blue-black. A black tail is crossed with



two or three broad ash-brown bars. The throat is brown and the breast and belly are boldly barred with black and rufous buff with white bases. The thighs are white, barred and spotted with black. The talons are immensely powerful; the legs are feathered, white with black spots, to the yellow toes. A yellow eye and black bill, the latter extremely powerful, give this grand bird a fierce countenance.

The Crowned Hawk-Eagle is a forest-frequenting species, which, though widespread in the West African forests, is very seldom seen. The same applies to the great Congo forest, in which it is known to be not uncommon and yet is so seldom observed. It has an almost owl-like flight, so noiselessly does it fly, and this must assist it in its quest for food. Monkeys play the largest part in its menu, though buck, pigs, goats and various antelopes are reported to have fallen prey to its talons in South Africa. From its love of monkeys it is often referred to as the Monkey-eating Eagle, not to be confused with the true Monkey-eating Eagle of the Philippines. It is said to drop on its prey with a terrific swoop, and it will wait patiently for hours for the chance to occur. Sometimes it may be observed soaring

over the forest, when the striking bands on the under surface of the wings and tail should betray its identity. It has been seen making upward flights, then suddenly dropping into steep swoops, accompanied by a shrill call, *kee-a-ree*.

In Liberia and the Congo it figures extensively in native tales, and the forest tribes of the Congo look upon it as a royal bird whose feathers may be worn only by the nobility. From all accounts it is extremely shy of human beings, carefully avoiding clearings in which there are native villages. It has a remarkable ability for keeping out of sight.

The nest is colossal, being anything from 5 to 6 ft. across, and is built of sticks and lined with fresh leaves and usually in a high tree standing a little way from its fellows in the forest. It may be as much as 100 ft. from the ground. Weavers (*Malimbus erythrogaster*, *Melanopteryx tricolor* and *Malimbus rubricollis*) will build their nests in close proximity to this eagle's nest. A nest found on 26th December in northern Oyo Province, Nigeria, was in a large silk-cotton tree growing on the side of a large granite outcrop. The nest was in a fork about 70 ft. from the ground decorated with green branches. It contained one chick clad in white down. Nests of this eagle are used year after year, and one in South Africa is stated to be seventy-five years old. The eggs are two in number, white or white with small dark markings. Measurements are 65·9–72·4 × 53·2–57·9 mm.

Distribution. The whole forest area of Africa from Casamance to Angola in the west and from Uganda to Cape Province in the east, also in the equatorial forest of the Congo. In our area it is widespread and is recorded from all political divisions except Gambia and Senegal (where it is unlikely to occur) and, curiously enough, Nigeria, where it will surely be found sooner or later. Since the publication of my first volume, *The Birds of Tropical West Africa* (1930), this eagle has been obtained in the Karene district of Sierra Leone and in the Gold Coast in Ashanti.

LONG-CRESTED HAWK-EAGLE

Lophoaëtus occipitalis (Daudin)

As its name implies, the main feature of this hawk-eagle is its long crest of narrow plumes which wave in the breeze as the bird sits on some dead branch of a tree watching intently for the small mammals and rodents upon which it preys. Often the crest feathers are raised until they seem to droop over forwards. When perched, the body is held erect. In colour the bird is a study in black, with pure white quill-lining, white under wing-coverts marked with black, the under surface of the tail banded black and white and (in old birds) white-

feathered legs. Immature birds are much browner than the adults, with brown legs or white legs marked with brown.

It is in flight that this hawk-eagle is such a fine sight and is then easily recognised by the white patch on the wings. Seen from below,



the whole lining of the wing is white, with black tips and subterminal bar to the flight feathers. In size it is rather small, from 20 to 23 in. from bill to tail and a wing expanse of about 50 in. The wing measures 350–395 mm.

It has a wider range than any of the other hawk-eagles in our area, being found in the forest clearings as well as in the bush and tree savanna. In forested country it prefers to choose a tree at the edge of a clearing and does not appear to be at home in thick forest. It may be seen soaring high in the air or gliding lazily over a clearing,



MARTIAL EAGLE
Polemaëtus bellicosus

sometimes uttering a mewing cry. Its best-known note is a clear-toned scream; at other times it will utter a piercing shriek. Desolate dry country it seems to shun. It is believed to live mainly on rodents, snakes, lizards, frogs and such-like and is not known to destroy other birds. It is occasionally attracted by a forest fire, and then several may be seen together, but normally it hunts alone or in pairs. From all accounts it is not particularly shy.

The nest is a large stick structure lined with green leaves; one discovered at Zaria on 5th March was placed in the topmost branches of a small tree about 70 ft. above ground and contained two eggs with a dull white ground, one almost plain-coloured, the other sparingly marked with smears and blotches of dry-blood colour, with underlying markings of lilac. Two eggs form the normal clutch. Measurements of the Zaria pair were 60·0 × 49·0 mm. and 59·0 × 46·5 mm.

Distribution. Practically the whole Ethiopian region from Senegal, the Sudan and Abyssinia south to Cape Province, not excepting the forest clearings but avoiding the arid desert. In our area not observed north of lat. 13° N., except in Senegal. In British Cameroon it occurs from sea level to 3,000 ft. but is most often encountered throughout bush country and open woodland. In Gambia it frequents the swamps, attracted no doubt by the swamp life. It is found in all our Colonies, and for a bird of prey is fairly common.

LIZARD BUZZARD

Kaupifalco monogrammicus monogrammicus (Temminck)

A STUMPY-LOOKING hawk with rather rounded wings, grey upper parts and a black rump and tail, the latter with white tip and having a broad white band across the terminal half and a narrow white bar across the wing caused by the white tips to the grey secondaries. The flight feathers are black. The under parts are more conspicuously marked; the sides of the face and the breast are grey, the throat is white with a broad black stripe down the centre. The rest of the under parts, including the thighs, are white, most conspicuously barred with black, the under tail-coverts being plain white. The legs are bare of feathers and orange in colour, the eye is reddish brown and the cere reddish orange. In size this bird resembles a female sparrow-hawk, i.e. about 15 in. in total length; it has not the appearance of a buzzard. The wing measurement is 204–240 mm.

This widespread species is common enough in woodland and cultivated clearings but is not found in the forest or in the desert and is not general in open grasslands where trees are absent. It is a noisy species, more often heard than seen. When it calls it perches

in erect attitude, throwing up the head and giving a ringing *wehee-wheo-wheo-wheo*, uttered in descending scale, when it awaits a neighbouring bird's reply. At times it may be observed circling round, mounting higher and higher with its wings spread stiffly, presenting a characteristic silhouette. It has a strong preference for kurimis round villages.



Its mode of hunting is unusual, for instead of quartering the ground in the manner of most birds of prey it flies from tree to tree, from each perch carefully scrutinising the ground in the vicinity until some object attracts its attention, when it swoops upon it, then passes to another tree, and so on. Insects of every kind, especially locusts, are preyed upon, probably more so than lizards, but it also eats rodents, frogs, skinks, small snakes and, to some extent, small birds. When flying between perches it flies low and invariably swoops steeply to its perch, displaying the black and white tail-bars. It seems to be sedentary over most of its range except in British Cameroon, where it becomes conspicuous from the end of August onwards. This hawk merits protection, for it does 90% good.

The nest of the Lizard Buzzard is a fairly slight structure of sticks and twigs with a few leaves for lining and is usually placed in the fork of a locust bean or other tree—often an isolated one—at a height of 50 ft. or so. The breeding season is from December, when building begins, until May, by the middle of which month the young are fully fledged. Eggs are pale bluish white with dull surface and the clutch is three, possibly sometimes four. Five eggs measure 42·5–43·9 × 35·5–36·6 mm.

Distribution. Lizard Buzzards range over the greater part of Africa from south of the Sahara to the Transvaal and Angola but are divided into two races; the northern form is the one which occurs throughout the whole of our area except in the forest and desert. There is not a political division where it is absent, and it may be seen from the coast as far as the limit of tree growth. It is found in all our Colonies.

GOLD COAST SERPENT EAGLE

Dryotriorchis spectabilis spectabilis (Schlegel)

THE Serpent Eagle is divided into two races within our area, the typical form occurring in Upper Guinea and *D. s. batesi* in Lower Guinea from the base of Cameroon Mountain southwards to the Congo. In the flesh an adult example measures 510 mm. in length and has a wing expanse of 960 mm. The general colour of the upper parts is dark chocolate-brown, the sides of the neck and a broad collar are ferruginous, the crown and mantle are blackish brown, the white bases to the feathers on the nape and occiput showing conspicuously. Wing-coverts are blackish, the lesser tipped with white—a feature to note. The primaries are light brown on the inner web, barred with black; the outer web and tip are black. A light brown tail is crossed with six broad blackish bars. Cheeks are light brown, the throat is ferruginous with black moustachial streak and a black streak down the throat. The under parts are white, the breast is washed with ferruginous, the whole area except the middle of the belly in the typical subspecies being covered with large round blackish spots. The thighs are closely barred sepia and white, the under tail- and wing-coverts white, but the white axillaries are barred. The legs and feet are yellow and bare of feathers. The wing measurement is 295–315 mm. and the tail 245–268 mm.

The Congo Serpent Eagle (*D. s. batesi*) has the under parts white from chin to under tail-coverts, with only the flanks barred and no black spots on the under parts. A black streak extends down the middle of the throat, as in the typical race.

Young birds with whitish crown and mantle and spotted under parts with ferruginous and blackish round spots and white tips to scapulars may easily be confused with Cassin's Eagle, but the latter has feathered tarsus to the toes.

The chief points to note in this serpent eagle are the extremely short wings and very long tail (about 11 in.), the long bare yellow legs and the blue-black bill with orange-yellow cere. The black streak down the light throat is another feature to observe.

Of its habits we know almost nothing except that it is rather

harrier-like, pouncing upon snakes, as its name implies. It seems to be entirely a bird of the forest country and as such is not easy to observe. Snakes, chameleons, toads, lizards and insects form its prey. In neither race have the nest and eggs been discovered.

This bird may be seen within the heavy forest, perching on the great trees but avoiding the clearings and open watercourses. It is relatively solitary in its habits and would be seldom observed but for its loud and mournful cries, all in one key, which may be expressed as *cow*—a nasal sound which is slowly repeated after an interval of a second or more. This cry is believed to be uttered in the breeding season, which, just north of the Equator, appears to last from June to October.

Distribution and Races. The forests of Upper Guinea are the home of the Gold Coast Serpent Eagle, which has been found in Liberia, the Gold Coast, Togoland, southern Nigeria and northern Cameroon (Ossidinge, Barombi, on the northern slopes of the mountain), where it apparently meets the range of *D. s. batesi*, which has been found at Victoria and whose range extends south to the southern Gaboon coast and eastwards to the Semliki valley and the Kasai. The distinguishing characters of this race have been mentioned already.

SHORT-TOED EAGLE

Circaëtus gallicus (Gmelin)

UNLIKE the last species discussed, the Short-toed Eagle is not resident in Africa—it is the "serpent eagle" of the southern Palaearctic which spends the winter months in tropical Africa. It is a large bird (wing 537–560 mm.) and measures 30 in. from bill to tail, with a wing expanse exceeding 75 in. In all stages there is a considerable amount of white on the under parts, sometimes barred, sometimes spotted or, again, entirely white. In general colour the upper parts are brown, adult birds having the forehead, lores and region around the eye white. The flight feathers are black, becoming white on the basal portion of the inner web, crossed with three bars of brown. The tail (297–300 mm.) is barred alternately grey-brown and dark brown; cheeks, throat and breast are earth-brown. The rest of the under parts are white barred with brown in equal proportions, and the middle of the belly is white. Very conspicuous is the large chrome-yellow eye. The unfeathered legs are greyish white and the feet noticeably small for a bird of such dimensions, the middle toe being only 1½ in. long.

The cry of this eagle is a loud scream, and if it were not for the variety of plumages passed through before fully adult dress is assumed it would not be difficult to identify. It may be seen sitting

motionless on the very top of small trees, its big head and eyes reminding one of an owl and its under parts looking very white. It seems to have a preference for country where there are exceptional patches of trees within the desert rather than in the denser bush further south, and thus it may be met with along the southern borders of the Sahara. It has been observed in the French Sudan and French Niger as early as 12th September, but is more likely to be encountered from October onwards. It has been recorded in Nigeria from as far south as Zaria but is nothing like so common in West Africa as it is in the Egyptian Sudan. To Darfur it is apparently a common visitor, arriving regularly in October and leaving in March, eking out a precarious existence meanwhile on snakes and frogs. Immature birds will sometimes remain very late in the tropics, as one shot on 13th July at Timbuktu indicates.

The Short-toed Eagle does not breed south of the countries bordering the Mediterranean but may frequently be seen in North Africa from Tangier to Tunis, frequenting open plains and rocky broken country. Its flight is slow and heavy, reminding one more of that of a buzzard than an eagle. At times it will soar to a considerable height but will spend many hours perched on a telegraph pole and shows very little fear. It is an early nester and should be in its northern breeding quarters by early April at the latest.

Distribution. The southern Palaearctic region from Spain to Turkey, ranging eastwards to India and China. European birds winter in Africa, reaching the Red Sea Province, Abyssinia and Darfur, when they extend westwards to, and along, the borders of the Sahara. Within our limits the bird is mainly found in the arid or semi-arid belt, recorded from Senegal, French Sudan, French Niger and the Northern Territories of the Gold Coast, Togoland and Nigeria, generally between lat. 15° and 18° N.

BROWN HARRIER EAGLE

Circaëtus cinereus Vieillot

THE adult is entirely dark earth-brown, sometimes with a little white showing on the tail and without any crest. It is a large bird (wing 490–560 mm.) about the size of Wahlberg's Eagle, i.e. about 27 in. in length and spanning 70 in. from wing-tip to wing-tip. At rest the bare legs, which are dirty white in colour, proclaim that it is a harrier eagle and not a true eagle, which has the legs feathered. With outstretched wings the under wing-coverts may be exposed to view, and these are brown round the edge of the wing and not white, as in the Smaller Banded Harrier Eagle. There is not a trace of white on the body except in immature dress, when a varying amount

of white is present on the lower breast and belly. The tail of the adult bird is dark brown with three narrow whitish bands and a white tip. The inner lining of the wings is greyish white to white, with white shafts to the quills. The eye is brilliant gamboge-yellow, the bill black, cere frosted grey; the legs and feet are greenish white. Wing of the male measures 508–533 mm., of the female 490–560 mm.; tail of the male 245–273 mm., of the female 270–295 mm.

The difficulty of recognising the harrier eagles in the field has no doubt hampered observations on their habits. All unite in having characteristic flight, which, once known, enables the birds to be distinguished from the eagles with feathered tarsi. At rest the huge owl-like eyes are also some guide to identification of the group. The present species is a bird of the plains and desolate prairies, preying like the rest of its kind on snakes, lizards and small rodents. One bird had its crop crammed with chameleons. The legs and feet are very rough, covered with scales and with prickly pads on the under surface of the toes, enabling the birds to seize and hold their more slippery prey. The foot of *Circaëtus cinerascens* is typical of this group.

Its nest has not been found in our area, but is said to be a huge mass of sticks placed in a fork of one of the larger trees. The eggs, plain white and coarse-grained, measure 76–81 × 62–64 mm. It probably breeds in winter in the area with which we are concerned.

Distribution. Senegal across the whole Sudan to Abyssinia and south through eastern Africa to Cape Province. In West Africa it extends through the Northern Territories from Sierra Leone to northern Nigeria, is absent in the forest region of Equatorial Africa but occurs south of the forest in Angola and the cataracts area of the Congo. Within our limits it is recorded from Senegal (an old record), the Rokell River in Sierra Leone, Misahöhe and Yendi in Togoland, Gambaga in the Gold Coast, Zaria and Gadau in northern Nigeria, and Leinde in northern Cameroon. In East Africa it is reported to have a special predilection for high trees in the vicinity of flooded lakes and rivers, about the mouths of which rivers it likes to congregate. It has not been observed at the mouths of West African rivers other than the Rokell River in Sierra Leone.

BEAUDOUIN'S HARRIER EAGLE

Circaëtus beaudouini Verreaux and Des Murs

THE largest of the resident harrier eagles, almost equalling in size the migratory Short-toed Harrier Eagle or Snake Eagle. From bill to tail an adult Beaudouin's measures 32 in. Its grey-brown back and breast and the white area below, crossed with about sixteen

narrow brown bars, grey-brown tail tipped with white and crossed with four sepia bands, and yellow legs and bill, the latter tipped blackish, should proclaim its identity. The only adult skin I have seen (with sex not ascertained) had a wing measurement of 500 mm. and tail 266 mm. Immature specimens of this harrier eagle must be impossible to distinguish in the field, as they appear to pass



through so many intermediate stages of plumage between that of the juvenile with white on the crown and under parts and mostly white above, with a dirty brown wash. After the first moult immature birds are bright brown above, the feathers of the crown white with dark shaft-streaks and no grey wash on the plumage of the upper parts, which is so noticeable in the only adult I have handled.

All the harrier eagles appear to have the same general habits, though, in point of fact, we know so little about the African species within our area. Very few have been discovered at their nest, but

Beaudouin's Eagle has been found breeding around Zaria and members of the genus *Circaëtus* have been frequently encountered in the thicker orchard bush and gallery forests in that Province. A young Beaudouin's Eagle was found in a nest on 20th January at the top of a mahogany-tree built in the slender branches at a height of 80 ft. from the ground. The nest was very slight and very shallow, made entirely of sticks and unlined. An undigested snake 2 ft. long was found in the stomach of the young bird. The egg has never been found, so far as I know.

Distribution. Few examples of this bird have been obtained. It is known from Senegal, Portuguese Guinea (Bissão), Nubia, McCarthy Island in Gambia, Bauchi and Zaria in Nigeria, Dikoa in Adamawa, and Bosum in the Shari area (formerly eastern Cameroon). The Norwich Museum in Norfolk is exceptionally well supplied with specimens, having no fewer than seven mounted in the Gurney collection.

SMALLER BANDED HARRIER EAGLE

Circaëtus cinerascens Von Müller

This is the smallest of the harrier eagles in our area, about 550 mm. in total length and having wings measuring 367–408 mm. and a tail 220–231 mm. Its size in life may be compared roughly with the Long-crested Hawk Eagle, which is fairly well known. The plumage of the Banded Harrier Eagle is not distinctive, apart from the tail. In fresh moult it is mainly ash-grey on the crown, mantle, scapulars and wing-coverts, with each feather tipped with brown, the rump brown and the upper tail-coverts tipped with white. The tail is the feature to note, as it is different from all the other harrier eagles, being white with two broad black transverse bands and the extreme tip white. The under side is cinereous brown with a little mottling of white spots or bars on the abdomen and thighs, the under tail-coverts being mainly white. The eye is pale straw-yellow, the bill horn-blue with black tip, and the legs and cere are yellow. Seen from below, with wings expanded, it has white under wing-coverts and a white quill lining. There is some variation even in the adult bird's colouring, as there are specimens which are more brown than grey in general appearance. It may be noted that the feathers on the nape are unusually long, but there is no decided crest.

This is nowhere a common bird. In fact, if we go by recorded specimens, it must be distinctly local throughout its range. It seems to be fond of wooded country and to frequent swamps by rivers, where it no doubt finds its prey. In its choice of food it does not appear to differ from the other harrier eagles and snakes play

a large part in its menu. It is reported to eat tree-snakes, mice, rats and lizards. Fish, which it is unlikely to capture itself, have also been recorded.

Its flight is said to be high, and sometimes it may be seen making great circles in the air; at other times, having fed well, it will sit on some high exposed bough, preferably a dead one, near some river, from which it can survey the landscape. Usually it has been seen singly. The voice is loud—a series of mournful monotonous notes.

Though it must be resident in West Africa, its nest has not been found.

Distribution. From the Egyptian Sudan and Blue Nile this bird extends south to the Zambesi and in the west across the Sudan to Portuguese Guinea, Gold Coast and the Togoland hinterland and parts of Nigeria. South of the equatorial forest it has been found in Angola. Just north of the forest it is found in the savanna country from the Uelle and Kibali Rivers northwards. The Gold Coast record came from Yegi, those from Nigeria from Zaria and the Kaduna River and, surprisingly, from the Anambara creek in the Niger estuary.

GRASSHOPPER BUZZARD

Butastur rufipennis (Sundevall)

THE colloquial name of this bird used in my first volume tends to be misleading, for there is nothing eagle-like about its appearance. In size this bird is rather larger than the Fox Kestrel but has equally long pointed wings. In the flesh it measures 17 in. from bill to tail and has an expanse of 40 in. The colour of the plumage is distinctive; the upper parts are cinereous brown, darker on the head, with the mantle and coverts narrowly fringed with rufous. The primaries and secondaries are rufous, the former with blackish tips; chin and throat are white or buff with a black median streak and one on each side of the throat. The under parts are rufous with narrow black shaft streaks. The under wing-coverts and the inner lining of the wing are white; the tail is cinereous, with faint brown bars and a subterminal band. The eye is gamboge-yellow; the cere, bill and legs are straw-colour, the bill with black tip. Males have wings 290–311 mm., females 305–330 mm., and tail 160–182 mm.

The bush and the open plains, either arid or grassy, are the hunting ground of this widely distributed bird, whose striking appearance on the wing—the rufous primaries being conspicuous from afar—attracts attention. It delights to attend bush fires and then may be seen snatching the ascending grasshoppers in its talons and eating them on the wing as it sails above the smoke and fire.

When quartering the ground for its prey it does so with buoyant flight, seizing for the most part grasshoppers, crickets, mantises, termites and spiders, more rarely killing a small bird. It is not shy and in the dry savanna may constantly be seen perched on the summit of a small tree, where it sits absolutely mute.

A regular migration of the Grasshopper Buzzard appears to take place in a southward direction in September from the Mauretanian Sahel and the French zone bordering the desert, where the summer months are spent, to more southern latitudes, for in the dry season it is to be found as far south as the northern edge of the West African forest region. In Central Africa the movement is even more pronounced. From the end of November to the end of March it is abundant in the Uelle district of the Belgian Congo, but it does not nest there. Similarly in East Africa the birds which breed in the Sudan and Abyssinia visit the arid regions of Kenya and Uganda between November and February, when the return journey northward is begun.

This buzzard probably breeds in our restricted area between March and June, but actual records are few. A nest was found at Nasarawa, Nigeria, on 17th March, containing three eggs. The nest is a slight structure of dead sticks and twigs and very shallow, lined with dead leaves and a few green fronds. The eggs are white, tinged green, and have a few irregular lines and small blotches and spots of brown and chocolate with lilac shell markings. They measure 43–50 × 36–38·2 mm.

Distribution. In the northern summer the Grasshopper Buzzard ranges much further north in Africa than it does in winter and may be found ranging from Mauretania on the west across the Sudanese arid belt to the vicinity of Khartoum on the Nile. In West Africa it occurs over the whole of French territory south of the desert, Senegal, Gambia and French Sudan, penetrating to the Northern Territories of the Ivory Coast, Gold Coast and Nigeria, breeding as far as lat. 8½° N. East of the Congo forest, which is the barrier in the west, birds migrate much further south to pass the months of November to March in dry areas as far south as Tanganyika, but they do not remain in the south to breed.

BATELEUR

Terathopius ecaudatus (Daudin)

The Bateleur has every right to be considered a true eagle, and is fortunately one whose identity in the field leaves little doubt. Usually seen high in the heavens, it may be recognised at a great distance by its unusual silhouette; the little stumpy tail, with feet

protruding 3 in. beyond the tip, and the long wings with flight feathers widely separated should proclaim it from afar. It has a characteristically tilted flight and only flaps its wings when the air is quite still and it cannot make use of the air currents. When soaring or wind-riding, it rocks gently from side to side on motionless wings. On closer inspection the head appears to be abnormally large, caused by the very thick and full feathering on the nape. The head is that of an eagle, the front of the face bare of feathers; the bill is very powerful, the terminal half blue-black, the basal half orange; the cere is coral red with orange patches. Feet and legs are orange-vermilion and very strong. There are two distinct plumage phases. In fact, the Bateleur is, I consider, dimorphic, as the following description shows.



A. Adult male with dark back. Entire head, including crest, scapulars, greater wing-coverts, primaries, secondaries, and entire under parts (except under tail-coverts) black. Front of face bare of feathers, with only a few black hairs and eyelids. Mantle, back and tail dark chestnut, upper tail-coverts often rather paler. Median and lesser wing-coverts brown with narrow whitish tips.

B. Adult male with light back. Occasionally birds are met with which exactly resemble the above, but instead of the mantle, back, rump and tail being dark chestnut these parts are pale cream or light buff in colour with only a slight chestnut or cinnamon wash. The tail is light chestnut, very occasionally as pale as the back.

C. Adult female with dark back. Resembles the adult male (described under *A*) except that the whole of the wing-coverts are brown and the secondaries are mainly grey, becoming white on the inner web and washed with brown on the outer web, each feather broadly tipped with black.

D. Adult female with light back. Resembles the male (described under *B*), but instead of the secondaries being black they are strongly washed with slate-grey. It is very remarkable that they are not grey, as in *C* described above.

The Bateleur passes through many stages of plumage before

acquiring that of an adult, taking at least six years to acquire the final dress (*A*, *B*, *C* or *D*). It is remarkable for the number of secondaries possessed (25 or 26 in number), with their influence on the power of flight. When the bird is seen from below, the wings appear black and white. A full-grown bird spans nearly 70 in. and from head to tail measures only 22 in. The wing varies from 485 to 548 mm. and the tail from 98 to 126 mm.

There is no finer sight than that of a pair of Bateleur Eagles gliding at a terrific speed across the sky with motionless outspread wings. In great sweeps they will scour forest and plain, at times indulging in aerial acrobatics betwixt heaven and earth. When its victim has been chosen, the eagle will close its wings and descend like a thunderbolt, at times completely ripping open the object of its assault. Not only are small game, animals and goats attacked in this way, but such small fry as locusts and reptiles are preyed upon also. Although almost invariably seen in flight, the bird will on rare occasions alight on the ground, and it has been disturbed feeding on termites as they emerged from their nest. It has been found sometimes sitting on a tree stump, assuming an owl-like pose with half-closed wings. Normally it hunts singly over bush and savanna and only occurs in forest country where extensive clearing has taken place.

The Bateleur breeds in the cold weather—September to December in our latitude—preferring a large spreading acacia tree in which to build its stick nest, lined sometimes with green sprigs, usually at the main fork of one of the big boughs from 25 to 30 ft. from the ground. The single egg is large and round—78–82 × 62·5–63·5 mm.

Distribution. The savanna country of the Ethiopian region from Senegal, Abyssinia and the Egyptian Sudan to Cape Province, occurring in the forest area only where large clearings exist, but has been seen sailing over the forest in West Africa. Within our limits the Bateleur is recorded from most political divisions except Sierra Leone and Liberia. Its range towards the desert extends to lat. 16° N. In the Gold Coast it may frequently be seen in the Northern Territories and has been observed, too, in Ashanti (Goaso and Mampong). In Nigeria it is widely distributed north of lat. 9° and has been recorded from lat. 7° 15′ N. in Benue Province.

RIVER EAGLE

Cuncuma vocifer clamans (C. L. Brehm)

(see Plate 6, facing page 289)

This handsome eagle is known to many, as it is easily identified and strikingly coloured. It is a large bird, 26 in. from bill to tail, and has an expanse of 65 in., the wing being 470–550 mm. As the head,

mantle, upper part of the back, breast and tail are pure white, it is a bird not easily mistaken. The wings are black with chestnut shoulder patches (lesser wing-coverts), the belly and thighs bright chestnut. When the wings are expanded, the chestnut under wing-coverts are visible and seen from below the white and chestnut under tail-coverts. The scapulars, greater wing-coverts, lower back and rump are black. The cere, bare skin of face, legs and feet are all yellow.

The beautiful picture of this bird by Mr. George Lodge is reproduced from *The Birds of Kenya Colony and the Uganda Protectorate*, by the late Sir Frederick Jackson, by kind permission of Lady Jackson, and gives an idea of its majesty. It is easily distinguished in life from the Palm-nut Vulture (formerly misleadingly named the Vulturine Fish Eagle) by its pure white tail and almost entirely black wings. Young birds are brown and streaky in appearance, but there is nearly always a white area on the chest, and the tail is ash grey.

The River Eagle is known to all who use the great waterways of Africa. From Gambia to the Congo it is a conspicuous object, perched on some commanding tree overhanging or near the water, or sometimes standing in the bed of streams on the look-out for frogs or stranded fish. Forests do not attract it, and in countries where the forest extends close to the shore line the River Eagle may be seen frequenting the mangroves in the estuaries. Otherwise it is not a coastal species, and the old name of Sea Eagle is highly misleading.

Fish are its principal food, and these are captured when swimming near the surface, the eagle making a long gradual swoop down from some height, throwing forward the feet and talons at the last moment, when the glide upwards follows without the slightest pause, the prey dangling from the feet, so cleverly adapted for the purpose. The River Eagle does not plunge like the osprey, feet foremost, under the surface. The cry is loud and high-pitched—a short, clear scream which carries some distance.

The nest is a huge mass of sticks as much as 5 ft. across, built in the fork of a tree, to which the same pair will return year after year. A few leaves, probably green at first, line the nest. One, or more often two, eggs are laid; white with slightly glossy surface, measuring approximately 70–76 × 53–57 mm. The breeding season is in the dry weather, when the rivers are low and the fish more easily captured.

Distribution. The whole of Africa south of the Sahara. There are two races; that which comes within our limits extends from Senegal and Gambia across Africa to the Atbara in the Sudan, ranging south to the equatorial forest, occurring in the Congo only along the large rivers. In West Africa it is universally distributed but only in coastal districts in Liberia, Sierra Leone and the Cameroons,

though it may follow the rivers to their estuaries. Otherwise it is decidedly rare in the coastal area. It is found on all the large rivers and some lagoons in our British territory and on the Niger to its source. The typical subspecies is that which occurs in Kenya and Uganda and ranges over the rest of southern Africa to Cape Province.

PALM-NUT VULTURE
(formerly named the Vulturine Fish Eagle)

Gypohierax angolensis (Gmelin)

About the size of an Egyptian Vulture, some 23 in. in length, with expanse of 56 in. The white head and body, black and white wings and a white tail crossed by a broad black band enable this vulture to be recognised easily. When open, the wing is strikingly marked, the primaries being white with black tips, the secondaries and scapulars black and the shoulder patch (lesser and median wing-coverts) white. The whole of the under side of the wing is white except the tips to the primaries. The eye is golden, the bill whitish horn, the cere greenish grey and the bare skin of the face orange. The tarsi are bare of feathers and, like the feet, are pinkish yellow. The wing measures 397–445 mm. and the tail 188–210 mm.

This very peculiar bird has in the past been named somewhat misleadingly a Fish Eagle, but there seems little doubt that it never captures fish which have not been stranded. It may feed on a dead fish, as it is not averse to carrion. Its favourite food is the kernel of the oil-palm (*Elaeis guineensis*) when in season, and the presence of the palm largely governs the distribution of the bird. The palm kernels are stripped off the tree and devoured greedily. Another source of food obtained in the rivers and forest streams is fresh-water crabs and crayfish. Probably it is after crabs when found in the mangrove swamps. At times it may be seen soaring high over the forest and is nearly always alone or with its mate. When two are working in unison a harsh *kwa-kwa-kwa* is uttered from time to time. On the coast it will attend on the fishing canoes for scraps, and this may have led to its original name, but that fish do form part of its prey is undoubted (*cf. The Birds of the Belgian Congo*, 1, p. 521). The bird is a scavenger but on the whole a clean one, and its flesh is esteemed by some Africans.

The nest of the Palm-nut Eagle is a bulky affair of sticks about a yard across with a shallow saucer and is usually situated 50–150 ft. up in the canopies of ironwood or silk-cotton trees. It is lined with leaves, grass and tendrils. Nesting takes place in the middle of the dry season, before which birds may be seen indulging in display antics, diving from a great height and making their quills rattle

with the force of the air passing through them. Both birds take an interest in the nest-building; a strong fork is usually selected for the nest site. Only one egg is laid. This varies somewhat—white in ground colour largely obscured by smears and blotches of brown and tawny, or smeared and blotched at the large end with chocolate-brown, while the rest of the shell is clouded with stone-colour. Eggs measure 67·7–78·3 × 53·6–55·6 mm. An exceptionally small egg in the British Museum measures 62 × 48·5 mm.

Distribution. Locally found throughout West Africa from Gambia to the Congo, along the coastline and estuaries, by the lagoons and mangroves, up the large rivers and throughout the savanna belt wherever the oil-palm flourishes. On the whole it is a very common bird. Its northern limit appears to be around lat. 11° N. It may constantly be seen flying down the course of a river intently watching below, or sitting on a rock in the bed of a stream. It is constantly found far from water and perches freely in trees, at times selecting a branch over a small forest stream. Over the rest of tropical Africa its range is most irregular, but it has occurred in Tanganyika, Lake Nyasa and in Angola. In the Congo its abundance lessens as one travels from west to east. It is extremely numerous at the Congo mouth.

BANNERMAN'S BUZZARD

Buteo buteo bannermani Swann

This bird resembles the European Common Buzzard: umber-brown above, with a grey-brown tail closely barred with dark brown, a whitish throat and belly and brown breast mixed with white and buff. The bill is blackish; cere, legs and feet are yellow. The wing measures 372–385 mm. and the tail 204–210 mm. In total length it measures about 20 in. and in appearance on the wing resembles the buzzard of the British Isles.

Its habits are those of the buzzard in the Canary Islands, preying upon mice, lizards, rats and locusts when these appear.

Distribution. Restricted to the Cape Verde Islands and resident on São Vicente, Boa Vista and São Thiago.

RED-TAILED BUZZARD

Buteo auguralis Salvadori

About the same size as the European Buzzard, 19 in. in length, with expanse of 45 in., this bird is best distinguished by its bright rufous tail with a black band near the tip. The crown is reddish

brown; cheeks, collar and mantle are rufous chestnut, the latter with dark middles to the feathers; the rest of the upper parts and wings are dark brown. The upper tail-coverts are mixed rufous and brown. The breast is dark brown; the rest of the under parts are white, heavily spotted (in most examples) with dark brown, as shown in the illustration. The inner lining of the wing is white, spotted on the coverts with chestnut brown. The bill is black; cere, legs and feet are yellow. The wing measures 345–370 mm., tail 178–205 mm. and tarsus 78–82 mm.*



This is the Common Buzzard of our West African Colonies and is to be found in the forests and in open savanna where there are plenty of trees. During the rains it seems to leave the coastal areas about May to return again in October or November, but where the birds spend the rainy season is not very clear. In the winter months, especially when the breeding season is about to begin, the Red-tailed Buzzard attracts attention by its wild screams and aerial acrobatics, when birds may be seen making a long steep dive with folded wings, followed by a vertical motion. At other times it may be seen soaring or speeding from one point to another with rapid wing-beats. A mewing call is reminiscent of the British Buzzard. Its fox-red tail and brown upper parts, with a distinct pale patch at the base of the primaries, give it a most striking appearance when soaring.

Nesting seems to begin in November, but building operations occupy many weeks, and seldom before February or March will eggs be found. The nest is built of sticks and lined with leaves and is sometimes situated in a tree or, again, on a rock ledge. It has also been known to appropriate the nest of a Black Sparrow-Hawk. The

* Another buzzard—the Long-legged Buzzard (*Buteo rufinus rufinus* Cretz.)—has twice been recorded from our area. The tarsus of this bird measures 83–86 mm., and it has a wing of 425–500 mm. and tail of 230–270 mm. The build is more that of an eagle, but its legs are bare of feathers. The under parts are tawny rufous, more or less streaked, the upper parts darker, with tawny margins, and the head and tail incline to white, but as it has a variety of plumages no general description is much use. There is a conspicuous white patch on the under side of the wing when the bird is in flight. It breeds in south-eastern Europe from Greece eastwards and visits tropical East Africa in winter, ranging south to Abyssinia and Somaliland. Its occurrence in West Africa rests on two records, one from Dakar (doubtful), the other, on reliable authority, from Zinder.



RIVER EAGLE
Cuncuma vocifer

eggs, of which not more than three have been found in a clutch, are blunt ovate, bluish white, sparingly marked with spots and streaks at the large end or sometimes smeared with yellowish brown and a few spots of the same colour. One egg measures 54·5 × 44·1 mm.

Distribution. The Egyptian Sudan, Darfur, southern Abyssinia and the Bahr el Ghazal across the continent to the whole of western Africa from Sierra Leone to the Uelle and northern Cameroon. It seems to be absent from the forested area of Cameroon and the Belgian Congo but occurs south of the forest from Gaboon and the Lower Congo to Angola. Within our restricted limits it is widespread in the winter months but during the summer appears to migrate north; but to what part of the French Sudan it repairs has yet to be discovered. It is a common inhabitant of woodlands and a bird of forest clearings in all our British Colonial Possessions except, apparently, Gambia.

KEY C

A key to the Sparrow-Hawks, Goshawks, Long-tailed Hawks and Harrier-Hawks

(*For a guide to the Keys A, B and C see p.* 237.)

1. Nostrils in form of a slit; lores and sides of face completely naked 2
   Nostrils round or oval; sides of face not naked 3
2. Entire upper parts and breast grey, belly barred, single broad speckled whitish band across black tail
   Gymnogenys typicus pectoralis (adult), p. 308
   Upper parts and breast mainly brown, belly barred buff and black, tail with several dark bars
   Gymnogenys typicus pectoralis (immature), p. 308
3. Tail considerably longer than wing 4
   Tail shorter than wing 5
4. Upper parts grey, under parts rich maroon, tail with white spots or bar-like markings
   Urotriorchis macrourus (adult), p. 302
   Upper parts mainly dark brown, under parts white spotted black, tail barred black and brown
   Urotriorchis macrourus (immature), p. 302
5. Size large (wing over 10 in.):
   (*a*) Crown of head contrasting with mantle and back
   Circus aeruginosus (adult), p. 306
   (*b*) Crown of head not contrasting with mantle and back 6
   Size smaller (wing under 10 in.) 8

6. Upper parts pale grey, under parts plain white
Circus macrourus (adult ♂), p. 304
Upper parts slate-grey, under parts streaked with rufous
Circus pygargus (adult ♂), p. 305
Upper parts dark grey, belly finely barred black and white .. .. .. *Melierax metabates* (adult), p. 300
Upper parts not grey but either blackish, brown, or brown and rufous 7

7. Upper parts blackish, under parts white and black, thighs black .. *Accipiter melanoleucus temminckii* (adult), p. 294
Upper parts brown, belly and thighs barred
Melierax metabates (immature), p. 300
Upper parts blackish brown and bright rufous, no collar round neck, under parts with black shaft streaks; upper tail-coverts not white
Accipiter melanoleucus temminckii (immature), p. 294
Upper parts earth-brown, light collar round neck, under parts cream or fawn with brown streaks; upper tail-coverts white, sometimes spotted
*Circus macrourus** (adult ♀), p. 304

8. Under parts uniform slate or black like back 9
Under parts not coloured like back:
(*a*) Barred or uniform without spots or streaks on breast 10
(*b*) Spotted or streaked on breast, sometimes barred on sides 15

9. Entire plumage black except wings and tail, which are barred .. *Micronisus gabar* (melanistic phase), p. 301
Entire plumage slate or grey-brown except wings and tail, which are barred
Accipiter ovampensis (melanistic phase), p. 293

10. Crown and sides of face dark slate or blackish, sharply defined from pure white of throat:
(*a*) Under parts uniform or with faint barring, with some grey on thighs washed with vinous
Accipiter minullus and subsp. (adult), p. 291
(*b*) Under parts with distinct bars, no grey on thighs
Accipiter minullus and subsp. (immature), p. 291
Crown and sides of face grey, gradually merging into the white or paler grey of throat, the latter sometimes faintly barred 11

* In some plumages the female Montagu's Harrier (*Circus pygargus*) exactly resembles *C. macrourus*. For differences in wing formula by which these two harriers may be distinguished see under *C. macrourus* (p. 304).

11. Middle pair of tail-feathers with two or more distinct white spots 12
Middle pair of tail-feathers unspotted 14
12. Under parts finely barred grey-brown and white, no rufous or vinous wash; dorsal shafts of each tail-feather alternately white and brown
Accipiter ovampensis (adult), p. 293
Under parts with rufous, usually barred, or plain breasted with vinous wash; shafts of tail-feathers entirely black or brown 13
13. Wing in male over 7 in., in female over 8 in., toes yellow, both upper side and under side
Accipiter macroscelides (adult), p. 296
Accipiter toussenelii toussenelii (adult), p. 298
Accipiter toussenelii lopezi (adult), p. 298
Wing in male under 7 in., in female under 8 in., upper side of toes dusky, under side of toes yellow
Accipiter castanilius (adult), p. 298
14. Middle pair of tail-feathers indistinctly barred, upper tail-coverts grey, under parts finely barred rufous and white .. .. *Accipiter badius sphenurus* (adult), p. 295
Middle pair of tail-feathers with wide pronounced bars, upper tail-coverts white; below breast finely barred brown and white.. .. *Micronisus gabar* (adult), p. 301
15. Breast streaked light brown, belly finely barred, upper tail-coverts white.. *Micronisus gabar* (immature), p. 301
Breast streaked light brown, belly not barred, upper tail-coverts dark like back
Accipiter badius sphenurus (immature), p. 295
Breast heavily spotted with black.. 16
16. Upper side of toes dusky, contrasting with yellow of under side .. .. *Accipiter castanilius* (immature), p. 298
Upper side as well as under side of toes yellow
Accipiter macroscelides (immature), p. 296
Accipiter toussenelii toussenelii (immature), p. 298
Accipiter toussenelii lopezi (immature), p. 298

WEST AFRICAN LITTLE SPARROW-HAWK

Accipiter minullus erythropus (Hartlaub)

This diminutive hawk measures only 9½–12 in. from bill to tail, with a wing expanse of 17½ in. The upper parts are black relieved by a band of white at the base of the tail; the throat is pure white in strong contrast to the blackish cheeks; the breast is generally

uniform grey but sometimes imperceptibly barred. Only young birds have pronounced bars on the breast. Under tail-coverts are pure white; the belly is grey and the sides are washed with vinous, as are the thighs. The tail is blackish, all but the middle pair of feathers with three large white notches on the inner webs. The inner lining of the wing is white barred with grey-brown. An orange eye, yellow cere and orange-yellow legs and feet and a black bill should proclaim its identity. The wing measures 145–169 mm. and the tail 108–118 mm.

The above description refers to the Upper Guinea race of this sparrow-hawk, which has a representative *A. m. zenkeri* Reichenow in Lower Guinea. This latter race may be distinguished by having the breast and thighs rust-red without any trace of barring and with one or two white spots in the middle of the web of the central tail-feathers. Moreover, the young are more heavily banded than in the Upper Guinea race. Their respective ranges will be given hereafter.

The Little Sparrow-Hawk may frequently be seen darting across bush paths and roads of the forest, disappearing like lightning into the thick undergrowth. In its general habits it is a true sparrow-hawk, striking fear into the little birds—especially weavers and waxbills, upon which it delights to feed. They may be seen more often in the second growth bordering roads and clearings than in the virgin forest. Insects as well as small birds have been found in their stomachs. They are said to be specially active in the early morning and late afternoon.

Although not particularly rare in Upper Guinea, though less often seen south of Cameroon, very little is known about its nesting, and so far as I know no one has succeeded in finding its eggs. In Sierra Leone a pair were observed beginning to build on 5th May in a large cottonwood on the outskirts of Bo, and the eggs would soon have been laid. The hen in this instance was not fully adult. When found, the eggs will probably be white, more or less spotted and blotched, with dark brown and greyer shell markings.

Distribution. A. m. erythropus extends in Upper Guinea from Gambia to Nigeria and is fairly generally distributed in the forest area and adjoining savanna as far east as the Benin Province of Nigeria. Examples from the Owerri Province show signs of being intermediate, but still I include Owerri in the range of the Upper Guinea race.

A. m. zenkeri takes its place from the lowlands of Cameroon Mountain south to Gaboon (and once from Benguella), extending eastwards along the Aruwimi and Lindi Rivers to the Ituri.

OVAMPO SPARROW-HAWK

Accipiter ovampensis Gurney

This is a small hawk, about the size of a kestrel, with a longer tail. In colour it is ash-grey above with a brown tail crossed with four darker brown bands, tipped with white and with four white triangular-shaped marks down the middle of each feather, one above the other, the shafts of each feather being alternately white and black. Chin and throat are grey sprinkled with white. The under parts are narrowly banded with grey-brown (or dark grey) and white, including the thighs, and the belly is white. The under wing-coverts and lining of the wing are white and dark grey. The bill is orange at base, black at tip; the cere, legs and feet are orange; wing of male is 210–220 mm., female 248–252 mm.; tail of male is 145–150 mm., female 165–173 mm. A melanistic phase of this hawk is known to occur but is rarely encountered.

It is not easy to recognise the Ovampo Sparrow-Hawk from the Eritrean Shikra (*A. badius*), but the former has a much longer middle toe, which measures 35 mm. in the male and 45 mm. in the female, a square tail and clearer grey barring below. Another very similarly coloured hawk is the Gabar Goshawk (*Micronisus gabar*), but in the sparrow-hawk the bars are continued over the breast, which in the goshawk is plain grey, and the white spots on the tail-feathers of the sparrow-hawk are not present in the goshawk, which has instead a white patch at the base of the tail caused by the white upper tail-coverts. All these little hawks are far from easy to distinguish unless one is very familiar with their habits and peculiarities.

Very little has been recorded about the life of the Ovampo Sparrow-Hawk. It has been encountered in Nigeria, perched high up in a tree near the edge of a clearing, and may easily be passed unnoticed. It is a bird which feeds mainly upon insects and does not apparently attack chickens even when opportunity occurs. In South Africa it is found in the dry acacia veld along streams and rivers, where it is reported to be shy and elusive and very conservative in its habits. It is believed to disappear from its southern haunts for some months in midsummer and may then wander as far north as our area and Abyssinia. Whether it nests north of the Equator or is merely a migrant from the south is uncertain. In South Africa it nests in trees, laying two or three eggs, light to dark brown in shade, clouded by slate but showing much variation. They vary in measurement: 36·5–43 × 29·6–32·8 mm.

Distribution. Originally described from Ovampoland, this hawk occurs in South Africa from the Kromati River in the Transvaal to the Zambesi and westwards to Upper Guinea and Abyssinia. Within

our limits it has been recorded from the Gold Coast (Gambaga), Togoland, Nigeria (Niger Province) and eastern Cameroon (Buar). It seems to be strictly a bird of the savanna and to shun forested country.

WEST AFRICAN BLACK SPARROW-HAWK

Accipiter melanoleucus temminckii (Hartlaub)

This is a large hawk almost the size of a European Goshawk, to which the plumage of the young, as well as the eggs, have a close resemblance. In adult dress, apart from the bare yellow legs of the sparrow-hawk, it is not unlike Cassin's Hawk-Eagle. The latter has, of course, much heavier legs, which are white and feathered to the toes. It should not be difficult to recognise the Black Sparrow-Hawk in the field. Its upper parts are entirely black, the primaries and secondaries chocolate-brown, with black bars and tips and white patches on the basal half of the inner web. The tail is also chocolate-coloured, narrowly tipped with white and crossed with five blackish bars and a broad subterminal band. The cheeks are black and the chin, throat and under parts white, with a varying amount of black on the breast. The sides and flanks are black barred with white; the thighs are black and the under tail-coverts white. A black bill and deep red eye add to its fierce aspect. There is a great difference in the size of the sexes: the male has a wing of 251–273 mm., the female 290–310 mm.; the tail of the male is 190–203 mm. and of the female 230–240 mm. In flight the long tail and comparatively short wing are noticeable features, and the yellow legs are then prominent.

The reputation which this fine hawk has made for itself as a chicken thief is not enviable, but the cunning which it displays when planning a raid and the boldness with which it acts often enable it to escape the penalty which awaits it should it be caught. It will attempt to carry off full-grown fowls whose weight is too much for it, but though dropped the unlucky fowl seldom survives. The Black Sparrow-Hawk is met with in wooded country and is a resident though not very common species. It elects to perch on very high trees but is more often seen in flight, when its superficial resemblance to a peregrine has been noticed.

It builds its nest of sticks, lined with dried leaves and grass, forming a structure of considerable size, in high trees at a height of some 60 ft. from the ground. Eggs are bluish white in colour, rather blunt ovate in shape, without gloss and sparingly marked with faint brown specks and streaks which are quite inconspicuous. Three or four eggs form the clutch. Measurements of a clutch taken in Nigeria are 52·4 × 40·8 mm., 51·7 × 39·8 mm., and 51·2 × 40 mm.

Distribution. Two races of the Black Sparrow-Hawk occur in Africa, but only one comes within our limits and is found from the Gold Coast to Gaboon. A straggler has been recorded from off Cape Verde north of its usual range. It has not been reported from Gambia, but in the Gold Coast it is known from Cape Coast, Akuapim and Rio Boutry. It has been found in Togoland and in Nigeria near Lagos, Lokoja (nesting), the Owerri Province and from the Calabar River. From British Cameroon it is also reported as not uncommonly seen. The typical race of this sparrow-hawk ranges over East Africa from Shoa to Cape Province.

ERITREAN SHIKRA

Accipiter badius sphenurus Rüppell

This small hawk puts one in mind of a merlin in its size, which is not more than 11–13 in. from bill to tail. The entire upper parts and wing-coverts are dove-grey, the primaries black and the secondaries grey on the outer web, mainly white barred with grey on the inner. The two middle tail-feathers are grey like the back, the remainder paler and crossed, on the inner web only, with six black bars. The pale grey cheeks gradually tone into the white throat. The breast is pale vinous or pinkish rufous, finely barred with white, the barring being almost imperceptible on the breast of some examples. The belly, thighs and under tail-coverts are all white. The colour of the eye varies in this little hawk from orange-red to scarlet; the cere, legs and feet are yellow, and the bill is black. The wing of a male measures 171–187 mm. and of a female 188–200 mm., the tail being 130–145 mm. in males and 146–154 mm. in females. The yellow shanks are feathered half-way down the tarsus.

In order not to confuse the Shikra with the West African Goshawk attention must be paid first to the tail, which in the Shikra has no large white patches across the central feathers, and secondly to the thighs, which are white in the shikra and bright rufous in the goshawk.

The shikra is probably the most universally distributed and best known of all the smaller birds of prey, for its diminutive appearance is made up for by the boldness of its character. It is a notable slayer of small birds, and though normally secretive and elusive, it will think nothing of swooping into the veranda of a bungalow and carrying off a cage bird should the chance present itself. As an instance of its agility, the tale may be repeated of a shikra which dashed into a room with a little swift firmly grasped in each foot. Both swifts were unharmed and when liberated flew away. Owing to its habit of sitting concealed in some leafy tree it often evades detection until

suddenly it darts out upon some luckless victim. Insects form a large part of its prey, varied with mice, lizards and the aforementioned small birds. The call is not unlike that of the little owl, a shrill *ki-ek—ki-ek—kiek—ki-ki-ki.*

The breeding season is in the winter months, continuing well into spring. Nests with eggs have been found in all months from January to May, usually in orchard bush country. It is built of sticks, small twigs and leaves and lined with grass, and is usually placed in the projecting bough of a tree such as a locust bean, some 30–40 ft. from the ground, but sometimes in baobabs, isoberlinias, silk-cottons or sheanuts. The normal clutch is two or three, occasionally only one. The eggs are elliptical without gloss, sometimes with pure white ground covered with speckles of reddish brown at the broad end; others are handsomely marked with dark red-brown blotches and irregular scrawls, while others are more delicate, with blotches of pale lilac and some underlying brown markings. Forty eggs average 36·47 × 29·41 mm.

Distribution. Rare in the dry country where trees are scarce but very common in orchard bush and in the denser bush nearer the coastal belt. It occurs from the coastal area to the borders of the desert and is equally found in the dry season in forest clearings, it being partly migratory. It is found in high forest and in open country throughout the whole area and is reported to be common in all our Colonies and mandated territories, then across Africa to Kenya. Another race, *polyzonoides*, takes its place in the southern half of Africa.

WEST AFRICAN GOSHAWK

Accipiter macroscelides (Hartlaub)

The goshawk is very similar in general appearance to the shikra, being a very little larger in size but much darker grey above, more slate-coloured than dove-grey. It may be distinguished from that bird by having the rufous ground colour of the barred breast very much deeper in shade, by the rufous thighs (which are white in the Shikra), and especially by the three large white patches on the tail. The eye is orange, the cere greenish yellow; the legs and feet are yellow. The wing of the goshawk measures 184–200 mm. in the male and 210–213 mm. in the female.

The goshawk described above inhabits the whole of Upper Guinea. It is a forest species and is therefore not so frequently observed, as it prefers to conceal itself in some thickly leaved tree, from which it darts upon its victim. Like many forest-frequenting birds, where noiseless flight is essential to the capture of their prey,

this goshawk is no exception. It is extraordinarily adroit in its movements and, owing to its small size, can quickly escape into the forest after venturing upon a poultry raid. It has been seen to stoop at a baby monkey and is quick enough to pounce upon a kingfisher on the wing.

Whether merely a coincidence or not, this bird has usually been encountered near water. It may be observed sometimes sitting on the extreme summit of a tree, uttering a harsh *pik*, which it delivers every two seconds. This is a well-known bird in the forest reserves of Sierra Leone, where it may be seen in the undergrowth of the high forest. It feeds largely on large grasshoppers, frogs, ground squirrels, and other small creatures of the forest floor. Its technique in catching a squirrel is to hide behind a tree trunk and then suddenly dart upon it. The Paradise Flycatchers will sometimes unite to mob this hawk, and in the ensuing battle feathers have been knocked out of the goshawk. On one occasion an entire bird army set about the hawk, driving it from tree to tree. Although it breeds in Sierra Leone and no doubt in all the other forests of the West African region, its nest and eggs have never been discovered.



Distribution. The greater part of the forest region from Casamance eastwards to southern Nigeria. Originally described from the first-named place, it becomes fairly common in the forest reserves of Sierra Leone, and from there extends through all the Upper Guinea forests, being recorded from Liberia, the Ivory Coast, Gold Coast (Ashanti), and Nigeria (Lagos and Ibadan). Although not recorded further east, I have no doubt it occurs as far as the Calabar River. East of Cameroon Mountain its place is taken by the next species, which resembles it very closely.

In my larger work, *The Birds of Tropical West Africa*, vol. i, I included this goshawk as a subspecies of the South African *Accipiter tachiro*, but am convinced I made a mistake in doing so. It is much more closely allied to *A. toussenelii*, but here I retain it as a full species.

VINOUS-CHESTED GOSHAWK

Accipiter toussenelii toussenelii Verreaux and Des Murs

THE description of the adult male and female which appeared in my larger work is as follows. Head and nape are dove-grey, gradually merging on the mantle into the slate-grey of the rest of the upper parts. The tail is black, tipped with white, with two or three large white patches; the throat is whitish, shading into the pale grey of the cheeks and sides of the neck; the breast is clear vinous, washed with grey, sometimes with rather indistinct white barring; belly and thighs are grey or whitish, the thighs externally, with a vinous wash; the eye is orange; the bill is black, grey at base; cere and skin round the eye are orange-yellow; the legs and feet are yellow. Wing (male) measures 186–201 mm., (female) 209–230 mm.; and tail (male) 151–159 mm., (female) 182–196 mm. This goshawk is subject to considerable variation in its plumage, particularly on the under parts, the tendency being to lose the barring on the under surface.

In habits this goshawk resembles *A. macroscelides*. The Vinous-chested Goshawk can only be distinguished from the Chestnut-flanked Goshawk (*A. castanilius*) by its larger size and by small technical points which will be given under *A. castanilius*.

Distribution. *A. toussenelii toussenelii* inhabits the forests of southern Cameroon, Gaboon and the Lower Congo and has a subspecies *A. toussenelii lopezi*, restricted to the island of Fernando Po. The latter is still smaller in size than the mainland bird, has a whiter throat, with the under parts and thighs dark rufous with indistinct white bars on the breast and no grey on the belly or thighs. The wing is (male) 188 mm., (female) 215 mm. and tail (male) 150 mm., (female) 190 mm.

CHESTNUT-FLANKED GOSHAWK

Accipiter castanilius Bonaparte

THIS goshawk is so easily confused with others that nothing short of a full description will avail for its identification. The adult male has the head and mantle slate, becoming darker on the coverts and back. The primaries are brown banded with black, becoming white on the basal half of the inner web, and the tail is brown banded with black. There are three large white spots on the inner web of all the rectrices. Cheeks are grey, chin and throat white with faint ash-grey bars; sides are bright rufous, breast and middle of belly cross-barred rufous brown and white, the brown bars washed with rufous. The ventral region and inside of thighs are white; remainder of thighs is

chestnut like the sides; under wing-coverts are white; inner lining of wing is silver-grey barred with black. The eye is dark red, the bill black, cere yellow; the feet are yellow, the upper part of the toes being dusky. The wing of the male measures 152–157 mm., of the female 174–183 mm., and tail of the male is 130–136 mm., of the female 152–165 mm. The adult female has the under parts more heavily banded with sepia than the male and the sides darker rufous.

Compared with the Vinous-chested Goshawk (*A. toussenelii toussenelii*) the above species has a relatively longer middle toe and more slender tarsus. It is distinctly smaller in size and never appears to assume a uniform unbarred plumage as does the Vinous-chested Goshawk. Moreover, the upper side of the toes in *castanilius* is dusky in comparison with the bright yellow toes of *toussenelii*.

The Chestnut-flanked Goshawk may be briefly described as slate-coloured above, banded sepia and white or rufous and white below, with bright rufous sides and thighs and three large white spots on each tail-feather. Young birds are white below, with large black drop-shaped spots on the breast. In size it is very small, not much bigger than a kestrel in appearance. This is the only one of the two goshawks we have been comparing which comes within British territory, ranging as it does in the region inhabited by the much larger West African Goshawk (*A. macroscelides*). In whatever stage of plumage it may happen to be, a bird in the hand may always be recognised as a Chestnut-flanked Goshawk by the dusky upper side of the toes, which in both the Vinous-chested and the West African Goshawks are bright yellow. The middle toe is long and slender in *A. castanilius*, as already noted.

In the forests of Cameroon this is a fairly common species, preying mainly on small birds, mice, grasshoppers, frogs, lizards and small snakes. It is bold and fearless and will pursue small chickens into a house. It is difficult to assess its status, owing to its cleverness in hiding in thick-foliaged trees. In the heavy lowland forest of the Congo it is to be expected anywhere but is seldom seen, living as it does among the dense vegetation, sometimes in second growth. Its nest and eggs have never been described.

Distribution. The forests from Upper and Lower Guinea, perhaps as far west as Ashanti, from which an immature bird believed to be of this species was secured at Mampong. An adult was obtained in the Benin forests and another immature on Cameroon Mountain. It is distributed over the forests of southern Cameroon to the Portuguese Congo, ranging eastwards across the equatorial forest to the Semliki valley.

CHANTING GOSHAWK

Melierax metabates metabates Heuglin

This is a fairly large hawk, 21 in. in length, with a wing-spread of 40 in. The whole of the upper parts are smoke-grey, paler on the greater coverts and secondaries, which are finely vermiculated and freckled with white, the primaries being black. The upper tail-coverts are narrowly banded black and white, the middle pair of tail-feathers black (no spots of white), the outer ones more white than black, and all broadly tipped with white. Throat and breast are dove-grey; the rest of the under side and thighs are finely banded black and white, the under wing-coverts being white with wavy brown barring. The eye is red or brown, the bill orange with a black tip; the feet and legs are orange-red. Wing (male) measures 296–310 mm., (female) 310–330 mm.; tail (male) 206–213 mm., (female) 220–232 mm.



In the field certain points in the above description stand out above the rest. These are the white patch (actually barred) on the rump; the white border to the tail-feathers; the long orange legs and the bright orange cere at the base of the black bill. At close quarters the fine barring of the under parts below the grey breast is an obvious feature, but at a distance it simply looks whitish.

Young examples of all these goshawks are wellnigh impossible to distinguish in life from one another. That of the Chanting Goshawk is brown above and on the breast, the lower half of the body being barred with brown and white, including the thighs. The upper tail-coverts give some clue to its identity even at this stage, for they are white, barred with dark brown.

This is a bird of the open country which is met with in all the territories—British and French—immediately south of the desert. Forest it shuns; in fact, its range does not bring it within range of the forest belt, and the coastal area is unsuited to its requirements. During the heat of the day it seeks what shade it can get and may then be seen perched in a tree, or more likely on the top of some euphorbia, where it is a conspicuous object, sitting with

characteristic upright posture. It lives largely on lizards, beetles, etc. In the middle of the dry season its numbers appear to be augmented in the Northern Territories of the Gold Coast and Nigeria.

The breeding season in this area takes place in March and April, the nest being built in a medium-size tree, usually in a fork at a height of 20–35 ft. from the ground. Trees such as acacia, mahogany and locust bean are often selected. The nest is made of sticks and twigs, varying from a compact to a rather loose structure, lined with rags, dung, goatskin, earth and other debris. The eggs, which usually number two but sometimes only one, are normally dead white, without gloss, occasionally showing a bluish tinge and more rarely inclining to palest blue-green. Fourteen eggs average 53 × 41 mm.

Distribution. Two races of the Chanting Goshawk have been described from within our limits; that which encroaches upon the desert has been named *Melierax metabates neumanni*, and certainly the majority of specimens from the Dongola Province of the Sudan, the Red Sea Province, Kordofan, Darfur, Aïr, Lake Chad and northern Adamawa west to Timbuktu have the wings very heavily vermiculated with white, while those from Gambia to northern Cameroon, which occur in Nigeria as far south as the Benue Province, are darker, having less white on the wings, and must be assigned to the typical subspecies if we recognise both. The actual geographical area which they inhabit is not so clearly definable.

THE GABAR GOSHAWK

Micronisus gabar (Daudin)

THIS is a little hawk, exactly 12 in. long, that is, smaller than a kestrel. The upper parts are brownish grey and it is grey on the throat and breast, the remaining under parts being finely barred grey-brown and white. The upper tail-coverts are white, and that is the feature which betrays its identity. The tail is alternately barred with dark brown and grey-brown and is tipped with white: the under tail-coverts are white and unmarked. The eye is dark red and the bill black; the cere and base of the lower mandible are orange, and the feet are red. Wing of male measures 184–204 mm., of the female 186–215 mm.; tail of male is 157–165 mm., of the female 175–185 mm.

The Gabar Goshawk has, unfortunately, a very common melanistic (black) plumage, both wings and tail being barred as in the normal phase, the tail having four light bars. These melanistic examples have orange rather than red legs. The normally coloured kind may easily be confused with the Ovampo Sparrow-Hawk, from which it

may be distinguished by the white patch at the base of the tail and the red (not orange) legs and feet. The black variety is, of course, conspicuous and easily recognised; the four light bars on the tail can be seen, and in flight the white under side of the wing is visible at times. There is no white patch on the rump, the whole body plumage being black and the legs and feet orange.

The Red-footed Falcon, as this little hawk is sometimes named (not to be confused with the Red-legged Kestrel), is a bird of the dry bush country which may constantly be seen in the vicinity of villages in the bush and ranges as far north as the towns of Timbuktu and Zinder. We find it all along the borders of the desert and it is a familiar species in the Northern Territories, where it may be seen sitting in little trees close to native dwellings. At other times it may be encountered in a thicket-clad wadi or dashing through the bush at low elevation in hot pursuit of some small bird. It is a fearless species and shows little alarm if approached, but in comparison with the shikra can only be described as sluggish on the wing. Lizards, beetles and birds form its normal prey, with no doubt many other "dishes" to vary the monotony.

It has been found nesting in Sokoto in mid-April and early May, building a small circular platform of sticks almost flat on top, with a central depression lined with leaves and rags. The nests were in the forks of trees in planted forest, 30–80 ft. from the ground. In the latter case the nest was up in the slender branches. Eggs are white, stained with yellow, and clutches may number one to three eggs, which measure 38·4–40·4 × 31·8–33 mm.

Distribution. This widely spread species inhabits the whole of Africa south of the waterless desert wherever conditions are suitable, but is, of course, absent from forest. In our area it is recorded from Senegal, Gambia, French Sudan and French Niger, Chad, the Inundation Zone and the northern provinces of Nigeria and the Cameroons; thence from Damergu eastwards to Darfur, Eritrea and Arabia. I have never been able to recognise more than one race of this bird.

LONG-TAILED HAWK

Urotriorchis macrourus (Hartlaub)

Of all the hawk family in Africa this species is the most easily recognised, for its long black graduated tail, with the white spots and tips, is unique. In colour this hawk is slate-grey on the upper parts with a conspicuous white patch at the base of the tail, and is chestnut on the under parts and on the thighs. The tail measures about 13 in. and the body resembles that of a buzzard in size. The

wings are extremely short and rounded, in colour brown, barred with black, with white notches on the basal portion of the inner web of the primaries. Young birds are dark brown above and have white under parts with a variable number of large black spots on the breast and sides. They, too, may be recognised by the length of the tail, which, instead of being black with four median white patches as in the adult, are alternately banded with chocolate and black. Adult birds have black bills which are bluish at the base; the cere and legs are pale yellow. The wing is 272–300 mm. and the tail 305–350 mm.



The Long-tailed Hawk spends the whole of its life in the depths of the forest and is not often seen, even by forestry officers. Its habitat is the canopy of the forest, from which it descends to forage in the dense undergrowth. On rare occasions it will make a raid upon fowls and come about native habitations. It is known to prey upon scale-tailed squirrels, rodents which never descend to the ground, and also to eat vegetable matter. It will be long before we can write the life-history of this bird, which is evidently one of the most difficult to observe. It is not surprising that no one has yet described its nest or eggs. It probably breeds in July and August.

Distribution. Only known from the heavy forests of central and West Africa, the Long-tailed Hawk has been separated into two races. One, the typical subspecies, has been found only in the Gold Coast (Denkera, Mampong and Ejura) but is likely to occur in the forests of southern Nigeria. The other has been named *Urotriorchis macrourus batesi* Swann, and differs only in its slightly larger dimensions, having wing 266–310 mm. and tail 305–370 mm. I am doubtful if this race will be recognised when we have larger material for comparison. It inhabits the Cameroon forests from Cameroon Mountain, southern Cameroon, French Congo, the Aruwimi River and Portuguese Congo east to the Ituri River and Semliki valley in the Belgian Congo.

PALE OR PALLID HARRIER

Circus macrourus (Gmelin)

THE harriers are apt to be very confusing to anyone who is not familiar with them, and as three species occur in West Africa and a fourth has been reported, I am reproducing the full description of each kind as given in my large volumes. That of the Pale Harrier is as follows.

Adult Male. Forehead and line over eye white; crown and remainder of upper parts, including all wing-coverts, palest gull-grey, more smoky on mantle. Primaries black terminally, white basally; outer web grey towards base, browner towards tip. Secondaries pale grey on outer web and on either side of shaft, inner web mainly white and tips white. Upper tail-coverts barred grey and white. Middle pair of tail-feathers like back, remainder white irregularly barred with grey. Lores, cheeks, throat, entire under parts, axillaries and inner lining of wing white.

Adult Female. Forehead and line over eye white; crown and mantle dark brown, feathers white at base and margined with rufous buff. Rest of upper parts dark brown; upper tail-coverts white barred or spotted with brown; quills mainly brown, barred with darker brown, basal half of inner web cream. Innermost rectrices brown, outermost rufous buff with three or four broad brown bars. Under parts, including thighs, creamy white or buff streaked with rufous chestnut.

Eye yellow, brown in young; bill black; cere greenish yellow; legs and feet dark yellow. Bill from cere (male) 16–17 mm., (female) 17–20 mm.; wing (male) 335–350 mm., (female) 345–376 mm.; tail (male) 200–220 mm., (female) 235–255 mm.; tarsus (male) 68–72 mm., (female) 70–75 mm. (African skins alone measured, 10 males, 7 females.)

Younger birds have a white patch over and beneath the eye and a blackish patch on the cheeks. Dark brown feathers of upper surface margined with rufous, particularly on lesser wing-coverts; distinct collar or ruff of rufous or buff. Under parts rich rufous buff, either uniform or more or less streaked with dark chestnut or rufous brown. Upper tail-coverts white unstreaked.

The Pale Harrier may be distinguished in all plumages from Montagu's Harrier by the wing formula. In the former the emarginations of the primaries on both the outer and the inner webs are higher, i.e. nearer the bases of the feathers; that on the outer web of the second primary is almost hidden by the major coverts.

The easy sailing flight as it skims along close over the ground, appearing as if it intends to alight at any moment, is a fair guide to its identification as one of the harriers. A white patch at the base

of the tail, whether in the bluish adult dress or in the brown immature plumage, distinguishes the Pale Harrier from the other harriers in all plumages. It is caused by the white or grey and white upper tail-coverts. In size the Pale Harrier is rather small, particularly when compared with the Marsh Harrier.

To West Africa it is (as are all the other harriers) a winter visitor from Europe. It may be expected in October, when it appears in some numbers in the French Sudan, spreading southwards all over the vast area of grassy plains from the borders of the desert to the coast, where it remains until the end of March and sometimes into April. The birds hunt singly, quartering the marshes, grass savanna, farmlands and orchard bush in their ceaseless search for food. A plague of rodents attracts the harriers from far and wide, and they are on constant attendance at grass fires. Large movements of these harriers have been reported from the vicinity of the Niger near Niamey in mid-October. The birds will travel great distances and have been noted in every political area, reaching the coastal plains at many points. They are equally well known in the Province of Zaria from mid-October to April as they are in Gambia, the Accra plains or the grass prairies of Owerri Province. Even the larger forest clearings are visited by these wide-roving birds.

Distribution. A breeding bird in eastern Europe and Asia, ranging far afield in winter, when it visits India, Burma and the whole of Africa. It may be encountered throughout the whole of the West African grasslands and orchard bush, reaching the savanna of the Congo basin every year in October and November and not returning north again before March. Unlike the Marsh Harrier, this bird will be found hunting over the drier parts of the savanna of the West African region, but it does not enter the forest.

MONTAGU'S HARRIER

Circus pygargus (Linnæus)

MONTAGU'S Harrier is about the same size as the Pale Harrier but is more slender in build, and the male is distinguished from that bird by having a grey throat and striped belly, which in the male Pale Harrier are pure white. In flight Montagu's Harrier will be seen to have a black bar across the wing. The technical description of Montagu's Harrier in my larger work reads as follows.

Adult Male. Upper parts slate-grey, darkest on mantle, palest on crown and wing-coverts. Primaries black with pale tips; secondaries grey crossed with a black bar, white on basal part of inner web. Upper tail-coverts white with broad subterminal grey bands, tips white; middle pair of tail-feathers uniform grey, remainder grey on

outer web, white on inner, barred with dark grey. Breast grey; belly and thighs white, streaked with rufous chestnut; axillaries rufous chestnut with white margins and spots towards base. Eye yellow; bill black, greenish at base of lower mandible; cere, legs and feet yellow. Bill (from cere) 15–16 mm.; wing (male) 345–370 mm., (female) 350–380 mm.; tail 210–225 mm.; tarsus 56–60 mm.

The female is similar to the female of *C. macrourus* in most plumages but may be distinguished by the wing formula (see under previous species).

Montagu's Harrier is not as rare in West Africa as I once believed. Like the Pale Harrier, it is a winter visitor from temperate Europe, western Asia and northern Africa, and though it has not often been collected it has been recognised on a number of occasions. That it makes a very long journey from its breeding grounds is proved by a bird ringed in Sweden which was recovered in the Yola district of Nigeria. It probably arrives in small numbers about the same time as the Pale Harrier and may be found in the same type of country, where its graceful buoyant flight may attract attention. The prey is picked up from the ground by rapid swoops and consists of rodents, reptiles, amphibians, worms, beetles, small birds and insects of various kinds.

Distribution. A winter visitor to the whole of Africa, where it wanders as far south as Cape Province. Within our limits it has been reported from Lake Chad, the Yola district of Nigeria, Jos, the Bauchi plateau, and Kano and Branca in the Cape Verde archipelago. It is to be found in savanna country which the Pale Harrier frequents, but it is much more uncommon than that bird. In East Africa it is more numerous and reaches Cape Province.

The presence of the Hen Harrier (*Circus cyaneous* (Linn.)) has been reported from the vicinity of Zinder on the authority of a Danish ornithologist, but as no specimen was secured the record cannot be accepted, particularly as there is every possibility of confusing it with Montagu's Harrier. *C. cyaneus* does not winter in Africa. The male Hen Harrier has a much broader white rump and lacks the black marks on the secondaries and the streaks on the flanks which distinguish Montagu's Harrier.

MARSH HARRIER

Circus aeruginosus aeruginosus (Linnæus)

This is the largest of the harriers which visit West Africa in winter. Compared with the Pale Harrier (*Circus macrourus*) it strikes one as being a heavier bird and more ponderous in flight, although exhibiting the buoyancy of all the harriers, gliding with slightly upturned

wings. In its coloration it is likewise distinctive. The adult male has the head and throat creamy white, the former streaked with black; mantle and scapulars are dark brown, with some of the feathers edged with rufous; back and rump are dark brown; upper tail-coverts are grey, sometimes washed with chestnut. Primaries are black; the rest of the wings and tail are hoary grey, the rectrices being powdered with ashy and the inner web of the secondaries widely margined with white. Lesser coverts are dark brown with rufous tips. The breast is creamy buff streaked with reddish brown; belly is rufous or chestnut, marked longitudinally with dark brown; the elongated feathers of the thighs are like the belly, with white bases. The eye is yellowish brown, the bill black; cere, feet and legs are yellow. Bill is 21–23 mm.; wing (male) 370–400 mm., (female) 395–415 mm.; tail (male) 215–225 mm., (female) 220–242 mm.; tarsus is 85–90 mm. The adult female resembles the male in having a cream-coloured head and throat, but the under parts are mostly dark brown, sometimes with a lighter patch on the breast; the wings and tail are brown, not grey. Birds in immature dress show a great variety of plumage. In some the head is almost entirely black. The amount of grey on the wings and in the tail of the male is also subject to much variation.

The Marsh Harrier when in adult dress should be recognised by the creamy-white head contrasting with the dark brown and chestnut plumage, the black primaries and (in the male) grey tail and secondaries. The wings are very long, as in all harriers, and the flight is rather slow as it quarters the ground with great care. Its habitat is more restricted than that of the Pale Harrier, for the Marsh Harrier, true to its name, keeps to the waterlogged rank herbage bordering streams and rivers and to the adjoining marshlands. Harriers are never seen to alight on trees—when they do alight they do so on the ground, but when hunting they continue for hours on end, always looking as if they are going to alight but seldom doing so.

The Marsh Harrier crosses over the Straits of Gibraltar from Europe in September and October and has been observed returning in February and March, though it has been seen in Sokoto until 1st April and in Darfur until 19th April.

It is destructive to small birds, especially to nestlings of marsh-breeding species, and devours them whenever occasion offers, in addition to its diet of small snakes, frogs, lizards, and insects of all kinds. The low-lying grassy islands of Lake Chad prove an attraction to this harrier, and there it has been observed flying low over the reed tops, capturing the locusts as they rose. During flight the long yellow legs are sometimes lowered and a low whistling cry is occasionally uttered.

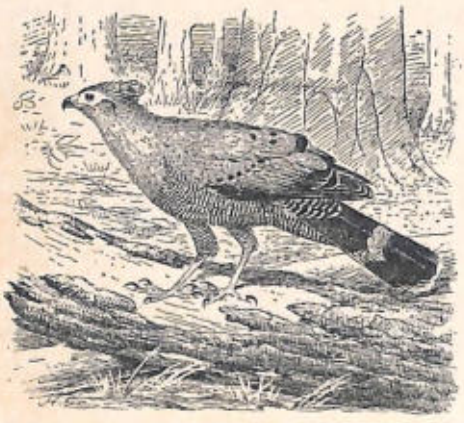
Distribution. Breeds in Europe, including Britain, from southern Sweden and Russia to the Mediterranean and in western Asia in suitable marshy localities, migrating in winter to India and Africa. We find it in tropical Africa south of the Sahara, reaching Tanganyika and the Transvaal on the east and southern Angola on the west. It has even been found in marshy clearings in the Ituri forest. Within our limits it has been reported from Lake Chad, Sokoto, Bauchi, Zaria, Zinder, Kano and the French Sudan between Lake Debo and Mopti. It has also been reported from Awgu in Owerri Province of southern Nigeria. It is probably more numerous than records indicate and may be looked for anywhere in suitable marshy areas. It does not breed in tropical Africa.

A breeding North African race, *C. a. harterti* Zedlitz, has not been taken in tropical Africa and must be sedentary.

WEST AFRICAN HARRIER-HAWK

Gymnogenys typicus pectoralis (Sharpe)

THE harrier-hawk is a large grey bird with a naked face, barred black and white under parts below the grey breast, barred thighs and very powerful yellow legs. The primaries are black, the secondaries grey, broadly tipped with black; the rest of the upper parts are dark grey with a black spot at the tip of each of the scapulars. The upper tail-coverts are barred black and white and the long tail is black crossed by a broad subterminal band of greyish white freckled with brown. The naked area round the eye which extends to the cere is yellow and gives the bird's face a peculiarly menacing appearance. The black bill is large and sharply hooked and is used for tearing open the nests of the weaver birds to prey upon the young. The wing measures 377–434 mm. and the tail 257–294 mm.



The line drawing of this hawk depicts the features I have described. Both crest and frill can be erected at will. Its flight is hesitant, the legs often dangling, and it settles clumsily, giving an appearance of untidiness. It is tireless in its search for birds' nests,



RING-NECKED FRANCOLIN
Francolinus streptophorus

climbing trees, hanging upside down from eaves of houses, or penetrating thick bushes in its murderous quest. It is attacked by many birds; Palm Swifts follow it in a cloud, kingfishers attack it at sight, and many small birds, especially sunbirds, weavers and manikins, must dread its coming, but show no fear of it outside the nesting season. No bird is more ferocious in its onslaught than the drongo, and even kites delight in mobbing it. Observed in flight from below it has a remarkable pattern, the under wing-coverts being banded like the belly and light in colour, contrasting with the black primaries, a white band separating the pale and dark areas. A white bar also crosses the black tail. The wings are broad and vulture-like.

Its diet is varied, ranging from maggots and termites to snakes, lizards and rodents as well as bats and tarantula spiders. At times it may be seen with wings outspread, clinging to the bark of a vertical tree, or hanging downwards as it rifles the nests of the weavers, especially those of the Yellow-mantled Weaver.

It is to be found both in bush and in secondary forest and haunts the tree-dotted borders of swamps. In cleared land it is very partial to palm nuts, but is to be found also in open parkland, forest clearings and farmland—everywhere, in fact, except the denser forest and the arid treeless wastes.

As the breeding season approaches the harrier-hawk indulges in striking nuptial flights, and then its shrill mating cry may be heard as with quick-beating wings it flies round in circles, or with half-beats rises slowly in the air to end its display in a steep dive.

There seems to be doubt whether the harrier-hawk builds its own nest. Nests have been found on the horizontal limb of a high tree, 100 ft. or more from the ground, built of sticks and lined with green leaves, but whether it was built by the bird itself was not proved. In some cases it unquestionably appropriates the nest of the Black Kite, in which it deposits two eggs. The ground colour of the eggs is usually cream-coloured, occasionally reddish brown, and the shell is smudged heavily with dark red or shades of deep brown. Eggs measure 53–62·5 × 40·4–46·4 mm. The breeding season lasts from February until August.

Distribution. Common throughout the whole forest region in clearings but mainly in the bush and savanna, occurring from Gambia to French Congo, but rather unevenly distributed. It is found locally in all British territories. A larger race, *G. typicus typicus*, takes its place in the Sudan and Abyssinia and ranges to the Cape.

ORDER GALLIFORMES

FAMILY PHASIANIDAE

Key to the genera of the Francolins, Stone-Partridges, Quail and Guinea-Fowl

1. Head and neck feathered 2
   Head and neck mostly naked, former sometimes crested or sometimes with bony helmet 6
2. Throat bare of feathers .. .. .. *Pternistis*, p. 325
   Throat feathered normally 3
3. Size very small (total length under 8 in.), wing not exceeding 115 mm. 4
   Size larger (total length over 8 in.), wing exceeding 115 mm. 5
4. Tail with 10–12 feathers, wing over 85 mm. ($3\frac{3}{8}$ in.) in length .. .. *Coturnix*, p. 328
   Tail with 8 feathers, wing under 85 mm. in length *Excalfactoria*, p. 331
5. Tail comparatively long, at least two-thirds length of wing and protruding appreciably beyond outstretched toes. Uniform buff or cream patch on breast contrasting with remainder of plumage .. .. *Ptilopachus*,* p. 326
   Tail comparatively short, only slightly longer than half length of wing, not protruding appreciably, if at all, beyond outstretched toes. No uniform cream or buff breast patch contrasting with remainder of plumage *Francolinus* (see separate Key to the species), p. 310
6. Plumage covered with round bluish or white spots .. 7
   Plumage without any bluish or white spots 8
7. Top of head naked, with bony helmet .. *Numida*, p. 334
   Top of head with black feathered crest .. *Guttera*, p. 335
8. Head entirely naked .. .. .. *Agelastes*, p. 339
   Head with line of short downy feathers down middle of crown .. .. *Phasidus*, p. 338

Key to the species of Francolins or "Bush Fowl"†

1. Throat naked .. .. .. *Pternistis c. cranchii*, p. 325
   Throat not naked but feathered normally 2

* *Ptilopachus* is the only genus which combines a wing measurement of under $5\frac{1}{2}$ in. with the region in front of and behind the eye bare of feathers.

† The Stone-Partridge (*Ptilopachus*), which is not included in this key, might be mistaken for a small Francolin by the casual observer. It resembles a bantam in appearance, is dark brown, with the plumage obscurely spotted and vermiculated, and may be distinguished from the francolins by the longer tail and the patch of uniform buff or cream on the breast.

2. Ground colour of under parts grey
Francolinus camerunensis ♂ (adult), p. **324**
Ground colour of under parts not grey 3
3. Under parts boldly spotted with white on black or brown ground .. .. *Francolinus l. lathami*, p. **312**
Under parts with dark drop-, crescent-, or racket-shaped spots on white or buff ground 4
Under parts either uniform, barred, streaked or squamated but without spots, except occasionally a few bordering throat 6
4. Inner webs of primaries for the greater part pale uniform buff .. .. *Francolinus clappertoni clappertoni*, p. **321**
Inner webs of primaries dark brown, barred or vermiculated with rufous buff 5
5. Under parts with chestnut
Francolinus bicalcaratus and subsp., p. **317**
Under parts without chestnut *Francolinus icterorhynchus*, p. **320**
6. Mantle with white shaft-streaks* or with white shafts to feathers 7
Mantle without white shaft-streaks or white shafts to feathers 11
7. Barred black and white feathers of breast continued round neck in form of collar 8
No collar of barred black and white feathers round neck 9
8. Bars of breast very heavy and continued down sides of body .. .. *Francolinus coqui spinetorum*† ♂, p. **315**
Bars of breast not continued down sides of body, long feathers of which are boldly margined with black except at tip .. .. *Francolinus streptophorus*, p. **313**
9. Under parts uniform rufous buff streaked with chestnut on sides; spur usually present in male, absent in female
Francolinus albogularis and subsp. ♂, p. **316**
Under parts barred, or with faintest indication of barring on breast 10
10. Ground colour of breast white (not buff), breast and belly heavily and uniformly barred with black
Francolinus schlegelii ♂ ♀, p. **314**
Ground colour of breast buff or cream, not white; under parts with irregular barring, breast usually washed with bright chestnut
Francolinus albogularis and subsp. ♀ and immature, p. **316**

* Care must be taken not to confuse white shaft-streaks (which run down the middle of the feather) with white borders to feathers.

† The type (a male) from the Haute-Volta is the only known specimen of this francolin. The female when discovered will probably be found to have the white throat surrounded by a continuous heavy girdle of black feathers, the breast unbarred, but in colour contrasting with the rest of the under surface.

11. Feathers of under parts bordered with white 12
Feathers of under parts not bordered with white
Francolinus s. squamatus, p. 322

12. Ground colour of under parts black
Francolinus camerunensis ♀ (adult), p. 324
Ground colour of under parts light brown
Francolinus ahantensis, p. 323

LATHAM'S FRANCOLIN

Francolinus lathami lathami Hartlaub

(see Plate 8, facing page 317)

Of all the francolins in West Africa this is the most easily recognised, the ground colour of the under parts, which is black in the male and olive-brown in the female, being covered with large heart-shaped white spots. These white spots are present in the male on the dark greyish-olive mantle, but not in the female. The under tail-coverts are barred black and white. The rest of the colouring of this conspicuous bird can be seen from the coloured plate.

In size Latham's Francolin is rather small (wing 133–140 mm.), not more than one-third of the size of the Common Bush-fowl. It is a bird of the high forest, over the floor of which it wanders either singly or in small companies. It is not easy to flush, for if disturbed it takes refuge by running swiftly. Normally it moves along in leisurely fashion in company with several others, scratching here and there among the leaves like a fowl, uttering a low clucking sound as it progresses. It lies very close and can almost be trodden upon before getting up. A bird has been observed to try to escape detection by squatting on the forest floor among the leaves, when, despite its spotted breast, it became practically invisible. The best way to observe this francolin is to take up a position in primitive forest where it is known to live and to remain absolutely quiet. The birds never leave the shelter of the forest but are often snared by natives, who bait traps with termites in the undergrowth. Latham's Francolin seems to live very largely upon insects, the stomachs of those examined containing insect remains and nothing else.

In southern Cameroon nesting takes place at all times of the year, but whether it is more conservative in the forests of Upper Guinea is not yet known. The eggs are of a uniform dark buff or light brown colour, somewhat pointed in shape, and measure 38–39 × 27–28 mm. The number of eggs forming the clutch is under dispute. Natives affirm that only two eggs are laid, but three or four are much more likely to be the full complement, and that is a very small clutch for a francolin.

Distribution. The primitive forests of Upper and Lower Guinea from Sierra Leone to southern Nigeria and from Cameroon (Ekundu) through southern Cameroon and Gaboon to the Lower Congo. Another race, *F. l. schubotzi*, takes its place on the Uelle River and extends eastwards to Uganda through the Congo forest. The typical subspecies is not uncommon in Sierra Leone from York Pass to the Kambui hills and is found in all the high forest reserves. Common in Liberia, we find it reported only from Fanti in the Gold Coast, while in Nigeria it is known from near Lagos, Oban and the Qjanje forest reserve on the Ogun River and also from Niaji. It is likely to be found universally wherever remains of the primitive forest still occur.

RING-NECKED FRANCOLIN

Francolinus streptophorus Ogilvie-Grant

(see Plate 7, facing page 308)

This francolin must be described in more detail than the last, as it is seldom met with and has few distinctive marks. The crown of the adult male is brown; a white eyebrow-streak over the eye meets its fellow on the nape. The lores are rufous chestnut; the cheeks and collar are cream, and each feather is tipped broadly with rufous; the nape and upper part of the breast are barred black and white to form a collar. The rest of the upper parts and wings are grey-brown, the feathers of the mantle and scapulars with white shafts and dark chestnut markings; the back is similar but has no white shaft-streaks. Under parts below the barred breast are buff or pale brown, finely vermiculated and with black edges to the feathers of the sides and flanks. The males have no spurs. The bill is yellow at the base, the remainder is black; legs and feet are pale yellow; the wing is 145–162 mm. The females differ from the males in having the back, rump and upper tail-coverts heavily marked with black and cross-barred with buff, as are also the wing-coverts. The secondaries are mostly barred with buff and the innermost primaries have speckled buff outer margins. In size this is one of the smaller francolins, about that of our European Partridge. The black and white barred collar and breast, the rufous and white face and the white line above the eye are the principal characters.

The Ring-necked Francolin is found in open bush but is a great skulker and very difficult to obtain. It runs incredibly fast, despite having very short legs. Its presence may be announced by its very characteristic call, commencing with two low but distinct notes, ending in a long-drawn soft piping trill. Although orchard bush is the type of country in which it may be found, it has also a preference

for stony hillsides covered with low grass and scrub. It is generally found singly or in pairs and only in coveys after the breeding season. Very quick on the wing, it gets away without any warning cry. In the early morning these francolins will mount on an ant-heap and utter their very distinctive call.

The discovery that this francolin ranges across Africa from its better-known habitat in Kenya and Uganda was one of the surprises of recent years, when a bird was shot on wild grassy hills in the grass woodland belt at 3,500–4,000 ft., close to the borders of British Cameroon. That could be no chance vagrant, and we may expect to hear of it again, perhaps next time in Nigeria near the Cameroon boundary, in similar environment.

Distribution. Kenya and Uganda south to the Kasulu district of Tanganyika Territory and also in the Cameroon highlands in the vicinity of Fumban but almost on the British boundary. Whether its range is continuous from Uganda to Cameroon is as yet unknown, probably not.

SCHLEGEL'S BANDED FRANCOLIN

Francolinus schlegelii Heuglin

The crown of this francolin is brown, the mantle and scapulars are rufous chestnut, barred with black and with broad white shaft-streaks to the feathers. Back, rump and upper tail-coverts are finely vermiculated and barred rufous, black and grey; primaries are brown, the secondaries rufous; the tail is rufous also. The chin is white, the throat buff, and the rest of the under parts are white or buffish covered with wavy black bars, some of the side feathers with rufous streaks. The bill is black terminally, basally yellow; legs and feet are yellow. The wing measures 132 mm. The female closely resembles the male.

Schlegel's Francolin was discovered many years ago in the Bahr el Ghazal, and for many more years little was known about it. It turned up next in the Ubangi-Shari at Bosum, and additional specimens have now come to hand from the vicinity of Mboro, south-west of Wau in the Bahr el Ghazal, where it is evidently quite common near the Bussere River in the wooded ironstone country of that region. The birds are shy and live far from human habitations, but may be heard uttering their cry, *korr-korr-korrr*, at dusk. They are said to lay ten or more eggs in a hollow of the ground and to cover them with leaves.

Distribution. The Bahr el Ghazal and Ubangi-Shari in the localities indicated above.

UPPER VOLTA COQUI

Francolinus coqui spinetorum Bates

A VERY small francolin about the same size as the better-known White-throated Francolin. Its wings are short and rounded (about 138 mm.) and its plumage is light-coloured. The crown is chestnut, the cheeks are deep buff; a collar of barred black and white feathers surrounds the neck, the rest of the upper parts being pale rufous



closely barred with greyish brown, the secondaries of the same colour, the primaries mostly rufous. Chin and throat are buffish white, below which the breast is heavily banded with black and white, the bars continuing down the sides on to the flanks. The rest of the under side is plain buffish white, becoming deeper-coloured on the belly and under tail-coverts. Legs and feet are yellow; the bill is yellow tipped with black. From all other francolins in our area it may be distinguished by the heavily banded breast (not in wavy

bars continued on to the belly, as in Schlegel's Banded Francolin) and the plain-coloured lower breast. In life the bright buff of the nape and the sides of the head is most conspicuous.

Originally discovered in the Haute Volta at Say, this francolin has now been found in the Gadau and Azare districts of the Bauchi Province and again near the boundary of the Bauchi and Kano Provinces. It is apparently not rare in that restricted area which it inhabits, and it is curious that it has not been reported from elsewhere. A nest was found at Gadau in July containing two coffee-coloured unmarked eggs measuring 34 × 27 mm. and 34 × 28 mm.

Distribution. Known only from the localities mentioned above in northern Nigeria and the Upper Volta.

WHITE-THROATED FRANCOLIN

Francolinus albogularis Hartlaub

THREE races of this small francolin occur in our area; the typical *F. a. albogularis* Hartlaub is only about 9 in. in total length and its markings are not unlike that of the Common Quail. The wings are short and rounded, but despite that disadvantage it can fly very fast and is a good sporting bird. The general colour of the mantle, back and wing-coverts is rufous chestnut with broad white shaft-streaks and some irregular black markings on the back. The primaries and outer secondaries are grey-brown, chestnut on the outer web and along the margin of the inner web; the inner secondaries are brown barred with grey, black and chestnut. There are also chestnut feathers in the tail, the middle ones matching the back. The black bill has a yellow base, and the legs and feet are reddish orange. Wing of the male measures 133–143 mm., of the female 128–133 mm.

The adult female may be distinguished from the male by the barring on the under parts, which exhibits considerable individual variation, and by narrower white shaft-streaks on the upper parts. It has no spur, whereas the spur of the male is sharp and prominent. Immature birds also have a certain amount of barring on the breast.

When this francolin is flushed (the chestnut on the wings is very noticeable) it goes away fast with rapid wing-beats and without skimming, as does the Common Bush-fowl. Usually it lies very close, but one has to be on to it quickly to bring it down. In the typical subspecies the white eyebrow and very white throat are conspicuous features, but in the Gold Coast race the eyebrow is rufous buff instead of white and does not therefore catch the eye in the same way.

The races of the White-throated Francolin are found in fairly dense bush. One finds them on the edges of cultivation, but they never venture far from cover. Usually seen in pairs, they are never



SCALY FRANCOLIN *Francolinus squamatus squamatus*

LATHAM'S FRANCOLIN *Francolinus lathami lathami*



found in coveys, but small family parties may be seen after the breeding season. This is the most partridge-like of the francolins, rising with a typical whirr.

Nesting takes place in June. A nest found at Kafanchan, northern Nigeria, on the 6th of that month was merely a slight depression in the ground lined with a few wisps of dry grass and two or three green leaves arranged around the depression. The four plain, slightly glossy, buff-coloured eggs measured 31·9–32·8 × 26·3–26·4 mm. Typical country in which to find a nest is open woodland in hilly country where there are rocks among the trees and grass. On the whole this francolin is extremely local throughout its range.

Distribution and Races

Francolinus albogularis albogularis Hartlaub is found in Senegal, Casamance and Gambia and probably also in Portuguese Guinea and the country lying to the north. How far to the east of Gambia this race occurs is not known.

The bird turns up again in the Northern Territories of the Gold Coast but in a slightly different form (with white instead of buff band over the eye), which has been named *F. albogularis gambagae* Mackworth-Praed. It has been obtained at Gambaga, Sang, Tamale and Bole. In the adjoining territory of Nigeria it is recorded from Ilorin, Wurno, 40 miles west of Bauchi and at Kafanchan, and is common in Zaria Province about 40 miles from Kaduna on the Jos road. It is evidently very local, but no doubt widespread, north of lat. 9° N. Across the Nigerian border a bird has been obtained 40 miles south of Garua in northern French Cameroon.

The third race, *F. albogularis buckleyi* Ogilvie-Grant, is also found in the Gold Coast south of the forest and has been obtained also at Ejura in Ashanti. It may be the form found in southern Nigeria, reported from Owerri Province. It is a very distinct race, differing from *F. a. gambagae*, and is known chiefly from the Accra plains. Its plumage in the male is darker and greyer on the whole upper parts, and the chestnut on the sides of the neck is of a darker shade.

The females of these two races show little difference, but the males can be picked out without difficulty.

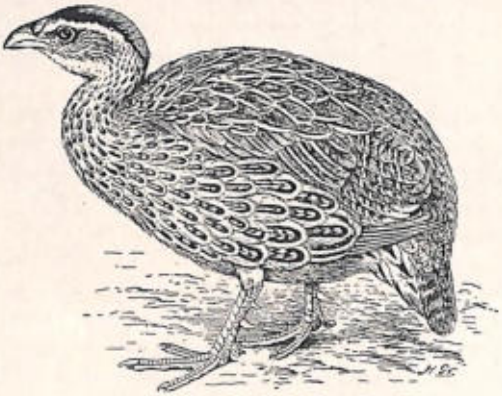
DOUBLE-SPURRED FRANCOLIN

Francolinus bicalcaratus Linnæus

The bush-fowl which come within our limits between Senegal and French Cameroon have been separated into four races, whose characters and distribution will be given later. The bird is too well known to need detailed description. Its general markings can be seen from the illustration, which is reproduced from the coloured

plate in *The Birds of Tropical West Africa*, depicting the two best-known races in our area.

In size the bush-fowl may be likened more to a grouse than a partridge and measures about 13½ in. in total length with a wing-span of 22 in. Its wings are short and rounded; the bill is olive, shading into lemon-yellow; the legs are very powerful and fairly long, olive-green shading into greenish yellow in colour. The general plumage above is dark brown mixed with black, rufous and cream;



the neck is rufous and the under parts are cream, marked with black and rich chestnut. The crown is rufous brown and is bordered with a black band passing from the forehead towards the nape; below that is a white line extending from the base of the upper mandible over and beyond the eye. Old males have very powerful spurs, usually two on each leg. Wing (male) measures 170–185 mm., (female) 161–178 mm.

The male has a loud call—*quair-quair* or *koak-koak*—which is oft repeated, especially at dawn and sundown. Bush-fowl are very strong on the wing and are usually found in coveys and give excellent sport. The birds lie close and are strong runners. When flushed they get up with a loud whirr. They are to be found in nearly every type of country except very thick bush or heavy forest. Their favourite haunts are old farms, where they feed upon bush "bitter-ball," cassada roots, ants, berries, etc. Occasionally coveys may be found in swamps overgrown with dwarf palm-trees. The hottest hours of the day are spent in the shade of a thicket or kurimi, and shortly before sunset the birds make their way to a river or pool for a drink. In the rainy season at any rate the birds will roost in trees, but usually an old stump is preferred to any other perch off the ground, and from this the male will utter a cry which sounds like *kokoye*. When the crops are ripe the birds feed on corn, rice and

other cereals, varying their diet with insects, of which they are especially fond.

The nesting season is a long one in Gambia, lasting from August to November. In Nigeria eggs are not found much before October. The nest is a natural hollow or scraping in the ground, sometimes under the shelter of a tuft of grass or bush, scantily lined with a few bits of grass, twigs or feathers. The clutch is about five or six eggs, which are buff-coloured. The shell is very strong and pitted, the pits containing a white chalky substance. Eggs show considerable variation in size—39–45 × 32–35·5 mm.

Distribution and Races. The whole of Upper Guinea and northern Cameroons, in which area four races occur whose ranges are roughly as follows.

1. *F. bicalcaratus bicalcaratus* (Linnæus)

This is the typical subspecies which has already been briefly described. It ranges from Senegal, Portuguese Guinea, through the hinterland of Togoland, the Gold Coast and Nigeria, where it meets the next race. The area it inhabits is south of the desert and north of the forest.

2. *F. bicalcaratus adamauae* Neumann

Differs from the typical subspecies by having a darker earth-brown crown and a duller rufous nape; the general tone of the upper parts is darker than in *F. b. bicalcaratus* but not approaching the blackness of *F. b. thornei*. This race occurs in the Upper Benue district of Nigeria, the Plateau Province and Bauchi plateau, Adamaua (Yola and Garua) and French Cameroon. The area is not very definite, but specimens from the places mentioned show the characters of the race.

3. *F. bicalcaratus ogilvie-granti* Bannerman

Differs from *F. b. bicalcaratus* in having the upper parts, especially the crown, very much darker, but of a brown rather than blackish shade, as in *F. b. thornei*. The crown is even darker than in the Sierra Leone bird. The under parts show marked differences from the other races, for instead of having cream-coloured or white margins they are deep isabelline buff, as are also the streaks and drops within the black breast markings. This mountain race was discovered at 5,000 ft. near Jang in the Cameroons, but it ranges probably from the Manenguba Mountain to the Banso mountains in British and French Cameroons and occurs also on the Ngaundere plateau.

4. *F. bicalcaratus thornei* Ogilvie-Grant

Differs from *F. b. bicalcaratus* in being darker throughout, with the ground colour of the breast more buff than cream, the blackish markings being heavier and in many examples less rufous. The crown is darker brown and the rufous feathers on the neck are deeper in shade. Wing (male) measures 168–190 mm., (female) 160–172 mm. From the races *F. b. adamauae* and *F. b. ogilvie-granti* this

Sierra Leone race is very much blacker except on the crown, which is darkest in *F. b. ogilvie-granti*. It is widely spread in Sierra Leone and Liberia and extends over the boundaries into French Guinea and the Ivory Coast.

HEUGLIN'S YELLOW-BILLED FRANCOLIN

Francolinus icterorhynchus icterorhynchus Heuglin

This francolin is very little smaller than the Common Bush-fowl, from which it may be distinguished by its bright yellow bill, paler and spotted under side and lack of chestnut or rufous on the neck or under parts. Three races have been described, but only the typical form found a place in my larger work on West Africa. The sexes are alike, with a black forehead merging into a dark brown crown, black lores and a white streak passing over and beyond the eye. Cheeks and neck are cream or pale buff with narrow black shaft-streaks; mantle feathers are black, broadly margined with white and with light brown shaft-streaks. The rest of the upper parts and tail are brown irregularly vermiculated and speckled with grey and buff; wing-coverts and scapulars are like the back but barred irregularly with buff. Primaries and secondaries are dark brown barred with rufous. Chin and throat are white, the rest of the under parts buff streaked with dark brown on the neck and breast and below that with small black spots. The long flank-feathers are white with irregular black streaks. Males have two powerful spurs on each leg. Bill, legs and feet are yellow. Wing (male) measures 163–173 mm., (female) 156–169 mm.

Heuglin's Francolin frequents open grass country and short scrub with a fine sprinkling of trees and ant-hills. It is especially fond of cultivated land and, like the bush-fowl, frequents old abandoned farms. It is much more given to seeking safety by running than by taking to flight. This francolin seems more addicted to perching on trees than many of its kind, and a cock bird may often be observed uttering its call from the bough of a tree or from the top of an ant-hill. It goes about in small coveys, but single birds and pairs may be encountered. The harsh call is heard morning and evening and invariably after a shower of rain. It is impossible to describe on paper but is said to be loud and grating and is uttered particularly in the breeding season. When the grass is burnt this francolin becomes very timid. At times it will be found in forest country but prefers the partly bush-covered steppes.

The nesting habits of this francolin in our area have not been described. In Uganda the bird lays in May and June six to eight eggs of a uniform greyish-buff colour.



GREY-BREASTED HELMET GUINEA-FOWL
Numida meleagris galeata

Distribution. The typical race ranges from the Bongo River to the Shari and very probably westwards to the area of the Bangui River, as it seems impossible to recognise *F. i. dybowskii*, reputed to be darker. From the country west of Lake Albert and in Uganda a race *F. i. emini* has been described on account of its slightly larger size. Neither of these races is very satisfactory. The Yellow-billed Francolin has not been found in British West Africa. Its range is to some extent complementary to *Francolinus bicalcaratus*.

CLAPPERTON'S FRANCOLIN

Francolinus clappertoni clappertoni Children

THIS is the "whitish" francolin, discovered by the traveller after whom the bird is named, which is found on the sandy and dusty plains south of Lake Chad. It is an easy bird to recognise, as it has the area to itself so far as other members of its genus are concerned. It is about the size of the Common Bush-fowl, with wing (male 188–200 mm., (female) 167–183 mm., and may be distinguished by its creamy-white under parts covered with club-shaped black spots. At close quarters it will be seen to have a black forehead and brown crown, the area around and in front of the eye being naked and bright red. Above and below the naked area is a white streak, the upper one extending to the hind crown. On the white cheeks is a black patch; the neck is white spotted with black. The whole upper parts are pale brown, the feathers of the mantle and coverts with broad white subterminal margins. This gives Clapperton's Francolin a much paler appearance than other francolins usually exhibit.



In the area which it inhabits it is an abundant species, separated as it is into various races, only one of which comes into the West African region. At sunrise the cocks fly up to some commanding position on the branch of a tree or rock and crow at intervals for half an hour or more before feeding. When this performance is in full swing, some estimate of the numbers in the district may be formed. Normally Clapperton's Francolin lives in small coveys and never "packs" like grouse at home or sandgrouse in desert wastes.

In the Lake Chad area in January these francolins are invariably to be seen singly or in pairs, and at sunset one may frequently take up a position on the top of a termite hill and give vent to its call, which is not unlike that of the Double-spurred Francolin. In the last week of March coveys including partly grown birds may be encountered in the area. The favourite feeding grounds were old farmland and the patches of *Chloris gayana*. It is always difficult to estimate the numbers of a bird like a francolin, but in the Lake Chad area a count in April varied between twenty-five and fifty individuals. Clapperton's Francolin seems to take the place of the Common Bush-fowl entirely in the Province of Bornu.

No account of the nesting of Clapperton's Francolin is available. It is believed to lay in September.

Distribution. The typical subspecies with which we are concerned was discovered in Bornu, Nigeria, and there it may be encountered in almost every village between Maidugari and Lake Chad. Its range extends to the northern area of British Cameroon. Westwards it does not extend beyond long. 55°, and the Damergu country is probably as far west as it occurs. It has been shot near Sokoto, but is absent from the Tawa district. It is reported to be common between Kano and Lake Chad, especially at Katagum and Gorgoram. It does not occur as far south as lat. 12° N. In one form or another Clapperton's Francolin extends right across Africa to the Nile, the best-known race being *F. c. gedgei*, which occupies northern Uganda, the Upper Nile Valley and the Bahr el Ghazal.

SCALY FRANCOLIN

Francolinus squamatus squamatus Cassin

(see Plate 8, facing page 317)

THE plumage of the Scaly Francolin, which is anything but distinctive, being a combination of browns and black, enables the bird to remain invisible on the ground until flushed, when the striking orange colour of the legs catches the eye. The bill, too, is orange below, but the culmen is black. About the size of the Common Bush-fowl, the wing measures 165–195 mm.

It is on the whole a most secretive bird, running rapidly to take cover at the least alarm. It is found about cultivated land and second-growth forest, remaining well hidden in the latter during most of the day but seeking its food on the farms early in the morning and late in the evening. Where it is plentiful, its crowing call is a feature of the dawn, i.e. between 4.30 and 5.30 a.m. It is described as a blend between a whistle and a grating cry, a far-carrying

hu-hu-hu-hurrrr or *kue-kk-krr*, heard mainly in the dry season. The same cry may be heard at dusk from some tangled undergrowth.

In the Great Equatorial Forest region of Cameroon, Gaboon and the Congo it is not a true forest-dwelling bird but is confined to spots in which the vegetation is relatively low, as about native villages. Difficult as it is to see unless accidentally flushed, its presence is proclaimed by its loud cackling call, as noted above.

Its food consists of vegetable matter such as cultivated sweet potatoes, rice, and the seeds and fruit of wild trees. Snails and insects are also devoured. Should it be unable to escape by running, which it much prefers to do, it will rise noisily, but does not perch in trees, as do some other francolins, unless driven to take refuge from a dog.

The breeding season extends in Cameroon from December to March, and doubtless the bird nests in southern Nigeria at much about the same time, in the dry weather. The nest site is a natural depression in the ground, or perhaps is scratched out by the bird itself, into which a few dry leaves are assembled. The eggs are uniform buff in colour, faintly pitted all over and exhibiting little gloss. Measurements vary—41·5–49 × 33–35 mm. A fair average is 46·7 × 34·3 mm.

Distribution. The Lower Guinea forest area in second growth, not primitive forest, east to the Upper Ituri and south to the Lower Congo, extending westwards into southern Nigeria. Within our British territory the typical subspecies has been found on Cameroon Mountain from its base to Buea and Kumba, and in southern Nigeria it is reported from the Provinces of Calabar, Owerri, Onitsha, Ogoja and Benin. Subspecies have been described from Kenya and Uganda, Tanganyika and northern Angola.

AHANTA FRANCOLIN

Francolinus ahantensis Temminck

Two races of the Ahanta Francolin are now recognised from Upper Guinea whose respective ranges will be given under Distribution. In size there is nothing to choose between this species and the Common Bush-fowl. When flushed the Ahanta appears the darker bird of the two, and then its red legs are obvious. The markings on the plumage are not very distinct. The crown is brown, the rest of the upper parts are rufous brown, speckled and vermiculated with black and various shades of buff and brown. Chin and throat are white, the entire under parts pale brown, each feather with a white marginal band to both webs. The bill is orange, the tip horn; legs and feet are chrome-orange; wing of the male measures 173–192 mm., of the female 167–172 mm. The white margins to the feathers of

the under parts are conspicuous enough when the bird is lying dead, but in life, as the bird dashes away, they are impossible to pick out.

The Ahanta Francolin is an inhabitant of dense bush and is absent alike from high forest and open orchard bush. In the forest area it is restricted to the tangled edges of fringing forest, while in bush country it is to be found in the dense vegetation of abandoned farms. In the Gold Coast forest area it is restricted largely to the clearings and, as in Sierra Leone, to the fringes of the high forest. Like the Scaly Francolin, the ahanta is a skulking bird but is much more given to perching in trees than that elusive species. In fact, the ahanta regularly roosts off the ground, either in small trees, young oil-palms, etc., or in thick bushes such as mangoes. As they take up their quarters for the night the birds make a considerable noise, calling to one another. The call is a raucous *ka-ka-karara* repeated several times, varied by *ka-ka-ka-ka-karara*. The females have a different cry, and when they join in the din is tremendous. The birds will call at any time during the day, but especially at night and in the early dawn before day has broken. On moonlight nights parties of them will venture into the clearings to feed on yams.

In the Gold Coast breeding begins in late December, the nest being merely a slight hollow scratched in the ground among herbage. The eggs number four or five and have little gloss but are finely pitted, uniform rich pinkish buff. They measure 41–43 × 32–34 mm.

Distribution

1. *F. ahantensis ahantensis* Temminck ranges from Sierra Leone to southern Nigeria and is less common in Sierra Leone than in the Gold Coast, where it can fairly be described as common in the forest clearings of Ashanti. In southern Nigeria it occurs near Ibadan, Oyo Province, and at Ifon, Ondo Province, and in forest reserves of the Benin Province, but specimens are not known from east of the Niger delta.

2. *F. ahantensis hopkinsoni* Bannerman is several shades paler in plumage than the typical subspecies, equally marked on the crown, back and wings as on the belly and breast. This race is found in the dense bush of Gambia and Portuguese Guinea, and I have little doubt that it occurs also in similar country in Senegal, from which specimens have not yet been collected.

CAMEROON MOUNTAIN FRANCOLIN

Francolinus camerunensis Alexander

I GAVE a coloured plate of this francolin in the first volume of my larger work (Pl. 8). The adult male is very grey in appearance, the feathers of the neck and upper mantle being grey with black middles



CRESTED GUINEA-FOWL
Guttera edouardi verreauxi
(formerly *G. e. pallasi*)

and the rest umber-brown fringed with grey; the back and rump are rich umber. The chin and centre of throat are whitish; the breast is grey, with black shaft-streaks. The flanks and thighs are umber-brown, with grey outer webs to the outermost feathers. The bill and legs are orange-vermilion as well as the bare skin round the eye.

The female is apparently much less grey than the male, the general colour of the upper parts being brown, heavily blotched and barred with black and with cross-bars of buff or rufous, almost grouse-like in its markings. The soft parts are coloured as in the male. Wing (male) measures 181 mm., (female) 168–175 mm. We have only three adult specimens of this francolin in the British Museum, and all are described in detail in my larger work.

We know no more today about this francolin than on the day it was discovered in 1909 at an altitude of 7,000 ft. on Cameroon Mountain. It seems to be confined to the forest growth above Mussacka and does not descend as low as Buea, where its place is taken by the Scaly Francolin. Its loud cry is apparently different from that species.

Distribution. The higher altitudes of Cameroon Mountain up to the limit of forest growth.

RED-THROATED FRANCOLIN

Pternistis cranchii cranchii (Leach)

This francolin is a member of a genus which has, in the adult bird, the throat completely bare of feathers, a character which will at once betray it. In the only species which comes within our limits the bare throat is red as well as the wide area of bare skin which surrounds the eye. The bill and legs are also red. In plumage it is all brown, dusted with white on the neck and under parts and streaked with chestnut below. In size this francolin is larger than any of the bush-fowl in West Africa, the male being 14 in. from bill to tail with wing in the male 168–202 mm. and in the female 165–180 mm.

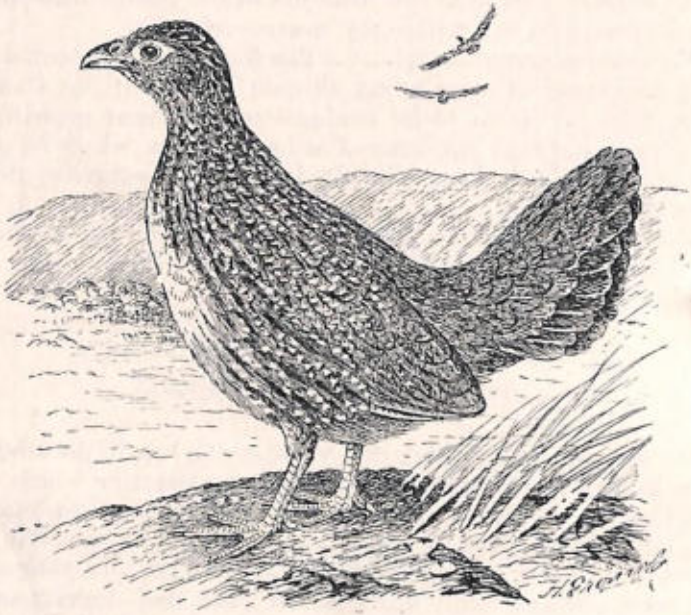
Distribution. Restricted to Lower Guinea, its range does not touch any British territory in West Africa. It extends from the Loango coast and the Lower Congo valley eastwards along the southern edge of the Congo forest to Lake Tanganyika and Katanga. Other races are known from Angola and from Kenya and Uganda. I do not unite this bird with *Pternistis afer*.

STONE-PARTRIDGE OR STONE-BANTAM

Ptilopachus petrosus (Gmelin)

THE races of this bird which come within our limits will be given in the last paragraph.

The Stone-Partridge is about the size of a farmyard bantam (wing 118–127 mm.), which it much resembles in appearance and carriage, for it is a distinctly perky bird. It carries its broad tail at a jaunty angle and has a remarkably engaging call, variously described as



weet-weet-weet-weet or *w-we-ve-been-weetin-weetin-weetin*, with many variations. It is a really pretty sound, and no one will believe it is uttered by a game bird until the fact is proved to them.

It is an inhabitant of stony broken ground wherever sufficient cover exists and is a regular feature of the rocky hills and outcrops which are such a characteristic feature of the West African bush. It is fond of frequenting the dry beds of watercourses overhung by shady trees but may also be flushed in cover bordering khors and wadis in flat sandy plains remote from any stones or rocks. In an entirely different setting it may be seen scaling a precipice such as the steep cliffs at Fiko in the French Sudan, uttering its loud piping cry to keep in touch with its companions, for it is a sociable little bird and prefers to go about in company.

Its brown plumage, vermiculated above with white and buff, streaked neck and throat and light buff breast contrasting with the rich brown belly, all blend closely with the ground, and its dark brown tail blends equally with the holes and cracks in the boulders over which it runs so nimbly, making it very difficult to "pick up." At close quarters the mantle and wing-coverts will be seen to be brown with black and chestnut shaft-streaks and white spots on the margins, so clearly indicated in the picture. The only colour distinction between the sexes is that the male has the feathers on the middle of the breast of a deeper buff colour than the female.

As a sporting bird the Stone-Partridge is rather tiresome owing to its reluctance to take wing, preferring to lie until almost trodden upon in its stony strongholds. It is more easily secured on the farm-lands or in the open bush, for it feeds in coveys during the months when it is not breeding. It is said to be able to exist where water is very scarce. Prior to the breeding season it has been seen going through a series of antics in a cleared space in the bush, reminiscent of the display of the blackcock.

The breeding season seems to be most irregular—in Darfur in late winter and early spring, and in Gambia from the end of May onwards; in Nigeria fresh clutches have been taken in early August and late January. The nest may be placed in a tuft of long grass or merely consist of a few dry leaves scraped together on recently burnt grassland. The usual clutch is four eggs which vary slightly, some being creamy buff with small brownish spots superimposed or again uniform creamy buff without any markings. They are slightly pointed at the narrow end and measure 31·8–35 × 24–25·5 mm.

Distribution and Races

1. *Ptilopachus petrosus petrosus* (Gmelin) extends uninterruptedly from Senegal to the Shari River. It occurs locally in the thorn-scrub savanna belt south of the desert from west to east and is found in the Northern Territories of all British Colonies except in Sierra Leone, from which it has never been reported. It may be found anywhere north of the forest region but never anywhere within the desert.

2. *Ptilopachus petrosus butleri* Sclater and Praed has the chestnut shaft-streaks of the upper parts more pronounced and the general colour more rufous. This race meets the typical subspecies in the vicinity of Lake Chad, and it ranges into Sokoto. Eastwards it extends to the Bahr el Ghazal.

3. *Ptilopachus petrosus saturatior* Bannerman differs only from the typical species in its unusually dark coloration and in wanting the normal rufous markings. The amount of rufous on the belly seems to be a variable character upon which little reliance can be placed. This dark race was described from the Ngaundere plateau of

Cameroon, and similar birds may be found in other high ground in Nigeria and along the British Cameroon border.

No fewer than six races of this Stone-Bantam have been described from East and West Africa. In northern Kenya Colony the race is *P. p. florentiae* Ogilvie-Grant, the Uganda race *P. p. emini* Neumann.

Key to the Quails

(Not including the Button Quails, *Turnix*, for which see p. 485.)

1. Black or brown patch or anchor-shaped mark on throat 2
   No black or brown patch or anchor-shaped mark on throat 3
2. General colour slate-blue, wings chestnut, triangular-shaped black throat, upper breast white
   Excalfactoria adansoni ♂, p. **331**
   Upper parts and wings dark brown, barred and streaked with whitish, anchor-shaped black markings on white throat, breast black
   Coturnix delegorguei and subsp. ♂, p. **330**
   Upper parts mainly light brown streaked with cream, anchor-shaped mark on white throat, under parts uniform buff, flanks streaked with white
   Coturnix coturnix and subsp. (adult ♂), p. **328**
3. Under parts buff barred with black
   Excalfactoria adansoni ♀, p. **331**
   Under parts uniform pale cinnamon-chestnut, or sometimes with white shaft-streaks
   Coturnix delegorguei and subsp. ♀, p. **330**
   Under parts white washed with rufous buff, flanks streaked:
   (*a*) Breast with numerous blackish spots
   Coturnix c. coturnix and subsp. (adult ♀), p. **328**
   (*b*) Breast uniform or with very few spots
   Coturnix c. coturnix and subsp., immature or winter, p. **328**

COMMON OR MIGRATORY QUAIL

Coturnix coturnix coturnix (Linnæus)

THE quail is known to most sportsmen in Europe but may not be so easily recognised in its winter quarters. Its habit of rising with a quick whirr, dropping quickly again into cover after only a short flight, is a well-known characteristic of the species. As it rises, often

from one's feet, it utters a sharp *twit-twit-twit* and skims away with rapid swerving flight just above the top of the grass. It is well-nigh impossible to flush it a second time, no matter how closely marked.

The plumage needs rather careful description. The crown is black with buff tips to the feathers, divided in the centre by a pale buff stripe. Cheeks and a streak over the eye are white. The back and wings are sandy brown irregularly marked with black and barred transversely with cream and buff. All the feathers of the mantle, scapulars and back have spear-shaped cream-coloured shaft-streaks. The centre of the chin and throat is black, below which is a white U-shaped patch bordered with rufous chestnut. The breast is cinnamon-buff and the belly white; the long brown flank feathers are mottled with black and have white shaft-streaks. Legs and feet are light brown; the bill is dark brown. Wing measures 105–119 mm. Total length is about 6 in. The female resembles the male on the upper parts but differs on the under side by having the throat entirely white and the breast with round or oblong black spots.

As a winter visitor the Migratory Quail may be expected to arrive in November—the earliest record I have is 7th October, from the French Sudan—but it is not before mid-November that it is usually shot. Throughout the whole of West Africa it must be considered rather uncommon, judging by the few reports I have received. The great flocks which pass through Egypt and across the eastern end of the Mediterranean are never encountered in the west, but a certain number do come into our area every autumn via Morocco, Algeria and Mauretania and may be found in pairs in the grasslands and in the farms and swamps. Especially are they fond of the groundnut and corn-growing area, and sometimes they may be flushed in forest clearings. In the vicinity of Lake Chad they are reported to be more plentiful in March and April than at any other time of the year.

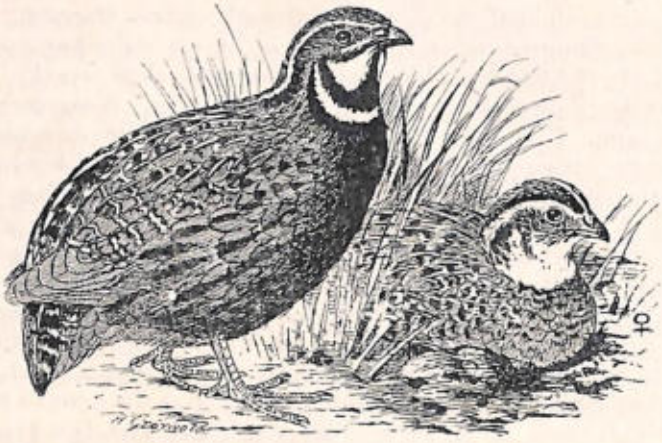
Distribution. The European Quail (*Coturnix coturnix coturnix*) visits West Africa in small numbers between October and April but does not remain to breed. It is not restricted to any particular area, having been reported from the Inundation Zone and Lake Chad, the Accra plains and the savanna and grasslands of Sierra Leone, Casamance, the Gold Coast (including the Kumasi clearing), northern and southern Nigeria, and the plains of Sokoto. It does not cross the equatorial forest.

A resident subspecies, *Coturnix coturnix inopinata* Hartert, is restricted to and breeds in the Cape Verde Islands and is exceedingly common in many of the islands. It is smaller in size than the Migratory Quail (wing 99–106 mm.). The colouring is brighter; the male has more rufous on the breast and the female has the breast more heavily spotted than in the typical subspecies.

HARLEQUIN QUAIL

Coturnix delegorguei delegorguei Delegorgue

This is a much darker bird than the Common Quail, which it resembles in size, i.e. about 6–7 in. in total length. The cock bird when flushed appears altogether blacker, but this is not so apparent on the upper surface, which is usually the only part seen when the bird is suddenly flushed. The hens are practically indistinguishable



in the field from Common Quail. The male has the upper parts dark brown instead of sandy brown, and all the feathers of the mantle, back and scapulars are marked with black, thus the cream shaft-streaks are more conspicuous against the dark background. The three cream stripes, one down the centre, the others bordering the crown, are more noticeable in the Harlequin than the Common Quail. It is on the under side that the Harlequin is so distinct. The cheeks are white; the anchor-shaped patch on the throat is jet black, below which is a white U-shaped mark separating the black throat from the black breast. The remainder of the under side is chestnut, the middle of the feathers black. The bill is black; legs and feet are dull pink. In flight the white under wing-coverts are usually apparent. The wing is 91–100 mm.

The adult female closely resembles the female Common Quail, but the markings are blacker and there is no barring on the wings. A ring of black dots borders the throat; the under side is pale chestnut.

The Harlequin, though a resident in Africa, is subject to periodic migratory movements which are as yet little understood but are

believed to be governed by the rainfall. Such movements have been noted in the Anglo-Egyptian Sudan and in the French Sudan in June and July, coinciding with the arrival of the rains.

Whether it breeds in our area is uncertain. It is very rarely encountered, unfortunately. In the Uelle district they are found only in the latter part of the dry season; in north-east Africa (Kordofan) they disappear from the region in March, when they probably go off to breed—but where?—returning with half-grown brood in October. In Darfur birds were becoming sexually active in July.

The movements of the bird north of the Equator have no relation to those of the species south of it. In Uganda and Kenya it is numerous and subject to erratic movements. It has turned up in the vicinity of Lake Chad on 13th May and was common by the end of June. In East Africa eggs have been found in January and February and May to July. They have a buff or cream ground with purplish-brown spots and blotches and measure 27–30 × 21·5–25 mm.

Distribution. I have given the range of this bird as the greater part of Africa, but not the forest region. It occurs from Arabia (a distinct pale race), Abyssinia and Kordofan west to the Ivory Coast, Lake Chad and probably the Bauchi plateau of Nigeria. Southwards it does not enter the equatorial forest but occurs commonly in East Africa, ranging to the Cape Province and from Landana to Damaraland. It is less given to seasonal migration near the Equator.

A resident subspecies, *Coturnix delegorguei histrionica* Hartlaub, is restricted to the island of São Thomé in the Gulf of Guinea. It is distinctly darker than the mainland form on the upper parts in both sexes and on the under side in the females only. The wing is 91–100 mm. It is said to breed in February.

AFRICAN BLUE QUAIL

Excalfactoria adansoni (Verreaux)

This diminutive bird is the smallest of all the quail family and measures only 5½ in. in total length. It is fortunately conspicuously coloured, the entire upper parts of the male being blackish brown strongly washed with slate-blue from the mantle to the rump, with the middle of the back blotched with black. Primaries and secondaries are brown; wing-coverts, scapulars and upper tail-coverts are bright chestnut with a slate-blue shaft-stripe down each feather, and the tail is blackish slate. The throat is white-edged below with black, the upper breast entirely white, conspicuously bordered with black. The rest of the under parts, except the chestnut sides and flanks, are dark slate. The wing is 75–83 mm.

In flight the rufous-chestnut wing and tail-coverts contrast strongly with the dark slate back, and the triangular black throat surmounting the white "breastplate" are features which no other quail possesses. The brown female, barred below and partridge-like on the upper parts, is not so easily distinguished unless flushed with her brightly coloured mate. She lacks the chestnut marks on the wing and tail and from the breast downwards is closely barred with black on a light brown ground colour.



Whether or not the Blue Quail is migratory or resident in West Africa is still a matter of speculation. I had very few records of its occurrence even when I wrote vol. viii of *The Birds of Tropical West Africa*. It flies but a very short way when flushed and lies very close, so that it is seldom seen. When the dew is on the grass it is so reluctant to take wing that it may almost be caught by hand. Its note, which is not unlike that of the Migratory Quail, may lead one to suspect its presence. It rises with a faint whirr of wings, flies swiftly and strongly, and drops to the ground again within fifty yards or so. It lives almost entirely on seeds but will eat small snails and insects.

This quail has been found in roadside grass, in marshy hollows (but not in swamps) where the grass is rank, in fadammas on the Bauchi plateau where the grass is short, and in long grass by a stream. Always found in pairs, they are not otherwise sociable. Single birds are occasionally flushed. Its eggs have not been found in West Africa in British territory, but in Cameroon a nest was found in November in a hollow lined with dry grass and concealed under a tuft. Six to eight eggs are laid, yellowish-clay colour without gloss and blunt at both ends. They measure 21–22 × 17–18 mm.



PLUMED GUINEA-FOWL
Guttera plumifera plumifera

Distribution. Widely distributed in Africa from lat. 9° N. in Abyssinia south to eastern Cape Province and in the country north and south of the equatorial forest and the forest country of West Africa, but not in the forest itself. Within our limits it has been found in Sierra Leone near Waterloo, the Gold Coast (Pong, Accra, Sekondi), Nigeria from Bida and Baratsu in Niger Province, the Bauchi plateau, Ayaba and Kafanchan, and from the Cameroons and Gaboon. I have little doubt that it is much more widespread than we realise and will eventually be found breeding.

*Key to the Guinea-fowls**

1. General colour of plumage black with round white spots; head with naked bony helmet 2
   General colour of plumage black with round bluish spots; head crowned with tuft of feathers 3
   Plumage without any round white or bluish spots .. 4
2. Tuft of horny bristles generally present at base of bill; upper breast usually barred to throat
   Numida meleagris strasseni,† p. **335**
   No tuft of horny bristles at base of bill; upper breast grey-brown or purplish, unspotted and unbarred
   Numida meleagris galeata, p. **334**, and *N. m. marchei*, p. **335**
3. Crest of thick curly feathers; breast black, unspotted
   Guttera edouardi verreauxi, p. **335**
   G. e. sclateri, p. **336**
   G. e. schoutedeni, p. **336**
   Crest of disintegrated straight feathers, breast covered with spots .. .. .. *Guttera plumifera*, p. **336**
4. Plumage entirely black, line of black downy feathers down middle of crown .. .. .. *Phasidus niger*, p. **338**
   Plumage mostly black, vermiculated with grey, entire breast and mantle white *Agelastes meleagrides*, p. **339**

* Under "Pintade de Vulturine" M. F. de Coutouly states in an article he published in *Bull. Com. Etude Hist. Sci. A.O.F.*, 1926, p. 125, that he has *seen* several specimens of the Vulturine Guinea-fowl (*Acryllium volturinum* Heudin) along the Cavally River, on the frontier of the Ivory Coast and Liberia. It would be difficult to mistake this wonderfully plumaged bird for any other, but as its known habitat is in East Africa from Somaliland to the Pangani River the record needs verification with specimens obtained before it can be accepted. Needless to say, its appearance in West Africa is extremely unlikely.

† This form is intermediate between the group which has bristles at the base of the bill and a barred upper breast and that which has no bristles and a uniform unspotted breast. Examples occur having the characters of both groups, or some with the characters of one group, some with the characters of the other, most developed. It is difficult to fit either into a key. Special care must therefore be taken in naming birds from the frequented area, i.e. the Ubangi-Shari region.

GREY-BREASTED HELMET GUINEA-FOWL

Numida meleagris galeata Pallas

(see Plate 9, facing page 320)

THE illustration of this bird will serve in place of detailed description. The head and neck are almost devoid of feathering but not of bright colours. The bare skin of the chin, throat and neck is brownish black with markings of palest blue across the ears and in front of and below the eye. The forehead is slate-black, the helmet burnt umber; the nostrils are dark red, the wattle and a streak between it and the nostril scarlet-vermilion; the bill is horn-colour. A wide collar of vinous grey covers the upper mantle and upper breast; the rest of the upper parts and wing-coverts are black vermiculated with buff and covered with small white spots; the under parts from breast to under tail-coverts are black, closely covered with round white spots. The legs and feet are blackish brown; the wing is 238–265 mm. The male has no spur and the female resembles her consort in plumage.

Once heard, there is no mistaking the call of the guinea-fowl—a loud cackling cry which carries far. The birds are very regular in their habits, feeding early in the morning and in the late afternoon; the flock moves to the feeding grounds, farmlands and dry fadammas, open spaces in the forest and such-like, from their roosting place, and though straggling a lot, all move in the same direction until the heat of the sun forces them to find shade and shelter in some thicket or belt of fringing forest by a watercourse. The birds drink chiefly in the evening before sunset and repair afterwards to their roosting places. These are preferably rocky hills or occasionally an isolated large tree. Most of the rocky hills are the established home of one or more flocks. The food is very varied, palm-kernels, seeds of plants and grass, grains of rice, beetles, cassada grasshoppers and ants forming the large proportion.

The breeding season is an extended one; the birds pair in April and breed during the rains. Well-incubated eggs have been found as late as 19th October at Lokoja, but young are usually on the wing long before that in August and September.

The nest is little more than a scraping in a depression, lined with fine grass. Up to twelve eggs may be laid which have very strong shells and are rather glossy, uniform pinkish buff in colour. Nine eggs average 47·18 × 38·45 mm.

Distribution and Races. The common Helmet Guinea-fowl ranges over the whole of West Africa from Senegal and the Cape Verde Islands to Cameroon (Sanaga River). It occurs both north and south of the forest and is a most abundant species. It ranges right up to the borders of the desert—its range along the desert fringe

probably closely follows that of *Francolinus*. It is more common in the hinterland of Sierra Leone and other British Colonies, preferring high plateaux and avoiding moist localities. It is subject to some local movement before the rains set in. Flocks up to 100 or more individuals are not uncommon. The birds, though universally distributed, are much less in evidence when the grass is high.

Closely related to the Helmet Guinea-fowl is the Bristle-nosed Guinea-fowl (*Numida meleagris meleagris*), but the typical subspecies does not come within our limits. An intermediate form, *N. m. strasseni* Reichenow, has been described from the Lower Ubangi River; another intermediate—in my view probably a hybrid—has been named *N. m. blancoui* Grote, from the East Logone River, having blue wattles with red tips and bristles at the base of the culmen. Still another, but without bristles, has been named *N. m. marchei* Oustalet, from Gaboon. These intermediate forms, produced probably by sporadic hybridisation, are discussed fully in vols. i and viii of my larger work, but as they come within our limits in West Africa they must find brief mention here.

CRESTED GUINEA-FOWL

Guttera edouardi verreauxi (Elliot)

(formerly *Guttera edouardi pallasi* Stone)

(see Plate 10, facing page 324)

About the size of the last species, with a wing of 252–262 mm., the Crested Guinea-fowl may at once be distinguished from the common Helmet Guinea-fowl by the bunch of curly black feathers on the crown. It differs also in having a broad black collar and the upper part of the breast also black instead of vinous grey, and finally in having the black body plumage closely covered with very small spots, each spot white in the centre, surrounded with Cambridge blue, which is the colour of the fringe of each feather. The general impression is that the bird is covered with small light blue spots instead of rather larger white ones, as in the Helmet Guinea-fowl. There is also a difference in the call: the crested bird has three distinct cries, a harsh grating note of alarm, a short double note, *yusuf*, as the bird moves quietly through the forest, and a soft musical trill, repeated while the bird stands bolt-upright with neck stretched to its full extent.

This is primarily a bird of forest or very thick bush and is never to be found on open plains like its commoner relative. On the other hand, it is not found in the densest forest such as the Plumed Guinea-fowl inhabit in Equatorial Africa. The localities where it has been secured (to be given later) will be the best indication of the type of

forest which this guinea-fowl prefers. It chooses restricted areas and forest reserves and is found in gallery forests. There is little forest left in West Africa to compare with the haunts of *Guttera plumifera*.

When feeding, the Crested Guinea-fowl travels in parties over the forest floor, picking up the seeds, berries, insects, snails, grass and fruits upon which it lives. Although gregarious, it is very seldom seen unless hunted with dogs, when the birds will fly up into trees, and it can best be approached as it goes to roost at night.

The breeding season is in January and February in the Gold Coast and eggs have been taken in that colony at Ejura on 17th February. The number laid has not been reported—probably eight or nine would be laid. The eggs are reported to be light brown, speckled with small dark brown spots, rounded at one end and pointed at the other, measuring about 50·5 × 41·5 mm.

Distribution. The race of Crested Guinea-fowl which inhabits British West Africa ranges from the Upper Cogon River in Portuguese Guinea to Nigeria, being confined to very thick bush and the forest area. It is reported from Futa Jalon in French Guinea; Sierra Leone (Sewa falls, Kenema district, and Fairo, near Sulima, both breeding); Liberia; Gold Coast (Ashanti, Goaso, Ejura, breeding); Togoland; Nigeria (Sabon Gidda, Benin Province; Arandun, south-eastern Ilorin; Olokemeji, thirty miles from Ibadan; and from the Aboh and Ughelle divisions of Warri Province).

Two other races were included in my larger work as coming within the geographical limits of the book.

1. *Guttera edouardi sclateri* Reichenow, which is distinguished by the long and slender (not bushy) crest, inhabits the region east of the Niger River and is found in western Cameroon, Sakbayeme, Edea, etc., ranging west to the Owerri and Onitsha Provinces of southern Nigeria.

2. *Guttera edouardi schoutedeni* Chapin, which has a crest as in *G. e. verreauxi* but spots on body smaller, whiter and more sharply outlined, described from Kwamouth, Belgian Congo, ranging to the eastern Kasai and possibly extending into French Congo.

The Uganda race of this guinea-fowl is *G. e. seth-smethi* Neumann, that of Kenya Colony *G. e. pucherani* Hartlaub.

PLUMED GUINEA-FOWL

Guttera plumifera plumifera (Cassin)

(see Plate 11, facing page 333)

The Plumed Guinea-fowl is similar in size to the crested species (wing 215–242 mm.), which it closely resembles in appearance but for the different crest and the black plumage closely covered with



WHITE-BREASTED GUINEA-FOWL
Agelastes meleagrides

small white spots. The plumes on the head are straight and stiff, not curly, and are carried erect. The naked parts of the head and neck are slate-coloured, the wattles yellow in the typical subspecies, which is the only one in the West African region. A conspicuous white margin to some of the wing-feathers is noticeable when the bird is on the ground and must be much more obvious during flight. There is no trace of a collar of plain colours, either vinous grey or simply plain black, as in the Helmet and the Crested Guinea-fowls respectively, that area in the Plumed Guinea-fowl being black covered with very fine white spots.

The Plumed Guinea-fowl lives in the depths of the primitive forests and in the ancient clearings. Whether its range has ever extended to the forests of Upper Guinea (in which the Crested Guinea-fowl holds sway) is doubtful. Certainly it does not do so now so far as we know. It was discovered first in the forests of French Gaboon about fifty miles east of Sangatanga, where it is reported to be exceedingly shy but may occasionally be encountered marching in large flocks through the forest. It is strong on the wing and sleeps by night in the high forest trees, a whole flock keeping together on the same tree if possible.

As they fly or wander through the forest the birds utter a confused chorus of discordant sounds like *ka-ka-ka-ka-ka*, continuing for several seconds, not shrill or very loud and quite unlike the notes heard from the Helmet or the Crested Guinea-fowls. They can be called up by natives, but if disturbed while going through the forest they will scatter and fly up into the trees with whirring wings, whence they depart silently, two or three at a time. When in the trees they are impossible to locate.

The food of this guinea-fowl has been found to consist largely of vegetable matter, seeds, fruits and leaves constituting the main proportion, but many insects are devoured—ants, termites, beetles, grasshoppers, spiders, etc.—and both snails and slugs, especially the former.

The eggs are laid in a depression of the forest floor on dried leaves and number about nine, which measure 47·5–49 × 37–38·5 mm., in colour whitish but much stained, with pitted shell, pointed at one end and very blunt at the other. On the Ja River chicks have been found in November and a sitting hen in August.

Distribution. The typical subspecies is an inhabitant of the western extremity of the equatorial forest, occurring from the coast of Cameroon, Gaboon and Portuguese Congo eastwards as far at any rate as the Ja River. Its northern limits as known at present appear to be in the neighbourhood of Yaunde. Its southern limits are ill-defined, but it has occurred at Landana.

From the neighbourhood of Bangui on the Ubangi River and the

region of the Sanga River its place is taken by another race, *G. p. schubotzi* Reichenow, which extends eastwards to the Semliki valley and is distinguished from the typical subspecies by having large roughened orange patches of naked skin on the cheeks and hind neck.

BLACK GUINEA-FOWL

Phasidus niger Cassin

This is a rather small guinea-fowl not unlike a native fowl; if anything, it is smaller than the Crested Guinea-fowl. Its plumage is entirely black. The head is naked except for a short band of soft velvety feathers extending from the base of the bill towards the occiput. This bare skin on the head is light red*; the bill is horn-colour and the legs are brown. The black body plumage is obscurely vermiculated with brown but the wings and tail are unmarked; the middle of the belly inclines to brownish. Chin and throat are almost bare of feathers, the skin being pinkish grey. The male is furnished with one or two spurs, short and blunt and laterally compressed on the tarsus; the female has no spur. Curiously enough, the immature birds are not entirely black but have rufous vermiculations on the breast and innermost secondaries, and the belly is white. Wing measurements of adults are 203–218 mm.

This very rare guinea-fowl is confined to the absolutely virgin forest of Lower Guinea, from which it never strays. It is practically impossible to watch unless it can be called up by imitating its un-guinea-fowl-like cry, described as rapidly repeated "peeping" notes, sometimes run together so as to sound like a trill. Again, it is said to be like a short, soft whistle, low in tone and repeated over and over.

Several adults, with double their number of chicks, have been encountered together, pointing to the parents joining up with others after the young are hatched, the two or three parties wandering through the forest together. Their food consists of green leaves, ants, drivers, millipedes, insects, fungi and an occasional small frog.

Data are not sufficient to state when they breed. Chicks able to fly have been found at the end of July, but nests have never been described. The flesh is said to be dry eating and to have a peculiar flavour of its own which is disagreeable. Eggs are described as pale reddish brown, clouded with brownish yellow, with a thick pitted shell. They measure 42 × 34 mm.

* The naked skin has been described as "Naples-yellow," shading on the throat to orange-yellow (*Cat. Bds.*, Brit. Mus.), but a recently collected specimen in the Congo had, according to Dr. Chapin, the head and throat as described above. There may be variation in the colour of the naked parts, younger birds being more yellow than red.

Distribution. Virgin forests from the neighbourhood of the Cameroon River southwards to Landana and French Congo, then eastwards across the great Congo forest to the eastern Ituri forest.

WHITE-BREASTED GUINEA-FOWL

Agelastes meleagrides Bonaparte

(see Plate 12, facing page 337)

THERE can be no mistaking this, the rarest of all the guinea-fowls in western Africa. It is about 18 in. in length, slightly smaller than the Crested Guinea-fowl, and may be recognised by the rose-red naked skin of the head, which on the neck fades to milk-white, the feathers on the lower part of the neck, the upper part of the mantle and the whole of the breast being white. The rest of the body plumage is black, finely vermiculated with white; the primaries are dark brown, margined outwardly with grey; the secondaries are sepia, with fine white vermiculations on the outer web. The bill is greenish brown, the legs and feet are greyish olive, and the wing varies from 120 to 150 mm.

Even in the dark primitive forest the red head shows up well, and when the birds crane their necks the white breast and lower neck are very noticeable, even in the dense undergrowth.

We know very little about this bird, which is seldom seen by Europeans but seems to be known to the natives of Liberia, who trap them in the forest. It is said to go about in pairs, small companies or family parties, no doubt in the manner recounted under the Black Guinea-fowl. Its call has not been described.

Four or five adult birds have been seen together in thick forest of the Gold Coast which when disturbed ran away in the characteristic manner of their kind. The nest has never been described, but the eggs are said to be pale reddish isabelline in colour with white pores and to measure about 45 × 35 mm.

Distribution. Recorded only from Liberia and the Gold Coast but no doubt resident in the intervening forests where these are equally thick and primitive. It must be extremely local in the Gold Coast, at any rate. Specimens in the British Museum bear localities Dabocrom, Denkera and Elmina, but whether still found in the vicinity of those places seems doubtful, as it is over seventy years since one has been collected. I had news of five or six in a party seen in 1930 in thick forest two miles west of the Tano River near Bopa in the Sefine district of the Colony, but none were secured. In Liberia it may be more common, but from that country we have little recent information.

ORDER RALLIFORMES

FAMILY RALLIDAE

Key to the Rails

1. Size very small, wing under 3½ in., males* with head rufous, tail-feathers disintegrated .. *Sarothrura*,† p. 350
   Size larger, wing 3½–10½ in. 2
2. Horny frontal shield extending from base of bill to forehead or crown 3
   No horny frontal shield on forehead, which is feathered normally 6
3. General appearance of upper parts streaked, feathers of back and coverts dark brown margined with buff or green, crown brown *Porphyrula alleni* (immature), p. 360
   General appearance of upper parts unstreaked, without pale margins to feathers 4
4. With bright purple on under parts:
   (*a*) Size large, wing over 8 in., wing-coverts purple *Porphyrio madagascariensis* (♂ ♀ adult et immature), p. 359
   (*b*) Size smaller, wing under 7 in., wing-coverts green *Porphyrula alleni* (♂ ♀ adult), p. 360
   Under parts not purple 5
5. Wing normally over 146 mm. (5¾ in.) and bill (from base of shield) over 38 mm. (1½ in.); lower mandible red at base; legs greenish in adults with red garter *Gallinula chloropus brachytera*, p. 361
   Wing normally under 146 mm. (5¾ in.) and bill (from base of shield) under 32 mm. (1½ in.); no red at base of lower mandible; legs yellowish in adults; no red garter present .. .. .. *Gallinula angulata*, p. 362
6. Large white spots on quills, breast bright rufous *Canirallus oculeus* and subsp., p. 343
   No white spots on quills; no rufous on breast 7
7. Belly and flanks barred 8
   Belly and flanks without bars 9
8. Upper parts uniform, belly black with narrow white bars; bill long (over 40 mm. (1½ in.) from base) *Rallus caerulescens*, p. 344
   Upper parts not uniform (feathers with black centres and olive-brown margins); lower breast and belly with equal black and white bars; bill short (under 30 mm. (1¼ in.) from base) .. .. *Crecopsis egregia*, p. 346

* In most of the species the female has not a rufous head, but in one species (*pulchra*) both sexes have rufous heads.

† A separate key to the species of Pygmy Rails is given on p. 350.

Upper parts not uniform (black centres and buff margins); flanks barred rufous and white, upper and under wing-coverts bright chestnut; bill short, under 30 mm. (1½ in.) from base .. .. .. *Crex crex*, p. **345**

9. Size large, wing over 190 mm. (7½ in.) *Himantornis haematopus*, p. **341**

Size much smaller, wing under 127 mm. (5 in.) 10

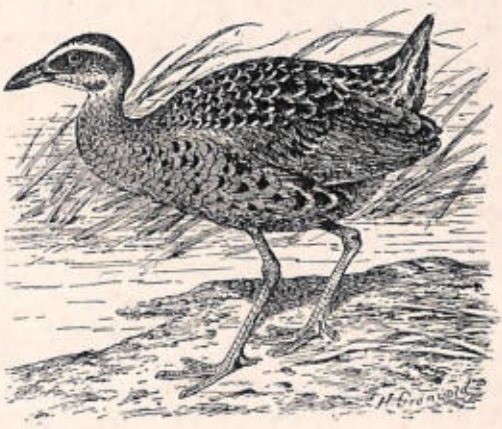
10. Entire plumage uniform slaty black, no white on outer web of outermost primary; legs and feet red *Limnocorax flavirostra*, p. **347**

Plumage not slaty black, outer web of outermost primary white; legs and feet olive-green .. *Porzana marginalis*, p. **349**

NKULENGU RAIL

Himantornis haematopus haematopus Hartlaub

This large rail, about 17 in. from bill to tail, has long, rather stout legs (tarsus 78–87 mm.) and comparatively short toes adapted to walking on fairly hard ground. In colour it is dull brown or reddish brown, the feathers of the dorsal region being blackish subterminal



blotches and broadly margined with buff, grey or whitish. The crown and back of the neck are brown, and above the eye is a distinct pale eyebrow streak; chin and throat are buffish white. The under parts of this rail are pale brown with very pale, almost white margins; the feathers of the flanks are long and loose with a purplish wash. The belly is ginger brown, the wing 205–233 mm. The most conspicuous feature about this bird is the red legs; the bill is black and powerful, about 1½ in. in length and slightly arched. The eye is also red.

The bird described was obtained in the Gold Coast. It lives in the deep forests and along the rivers which flow through them, getting its living by searching the decaying leaves for insects, beetles, ants, millipedes and snails. Where it occurs it is evidently not rare, for its peculiar note betrays its presence. It will sometimes call from a perch in the evening. Its note is described as a low gruff call of several syllables, repeated over and over again without a pause and audible for several hundred yards. In the Belgian Congo the natives associate the Nkulengu Rail with several amusing tales. One of these relates to its cry, which they put into words which, being interpreted, mean "My feet became red; I married a chicken!" The story runs that the rail came out of the forest and mated with a chicken of the village; the sun turned his feet red and the chicken cast him off. Back again in the forest, his feet remained red—hence his repeated complaint!

No European has ever found the nest, but native evidence points to its being built in a tree. The eggs are creamy white in colour with scattered spots, specks and fair-sized blotches of red-brown, with underlying grey shell markings. They measure 49–50·5 × 38·1–38·9 mm. Three eggs have been obtained in one nest, but this is probably an incomplete clutch.

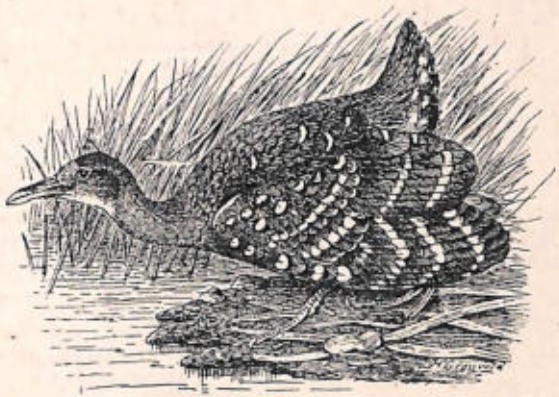
Distribution. If more than one race is recognised, the typical subspecies is known to range from Liberia to the northern Belgian Congo, the localities from which it has been recorded being given in my larger work. In British territory it has been found in the Gold Coast, Togoland and southern Nigeria and may eventually be discovered in the forests of Sierra Leone. It is more commonly reported from Liberia and southern Cameroon than from other countries within its range.

Throughout the Congo forests from the vicinity of Lukolela, eastwards to the Semliki valley, this rail is widely distributed, but here it bears another name, *H. haematopus whitesidei* Sharpe, as it shows certain plumage distinctions from the Gold Coast birds. Still another name, *H. h. petiti* Oustalet, has been given to those rails of this species which inhabit the forested regions from southern Gaboon to the Lower Congo, but opinion is divided as to whether it should not be united with those of the Middle Congo.

GREY-THROATED RAIL

Canirallus oculeus oculeus (Hartlaub)

THIS is more brightly coloured than most members of the family. Its general coloration is olive-brown with a few large round white spots on the edge of the wing, with a grey face and rich chestnut neck, breast and tail. In size it measures about 12 in. in length, which is about that of the African Waterhen. When the wings are spread they are seen to be prettily patterned, the black primaries



having large white oblong spots on each web; the secondaries are similarly patterned, but the outer web and tip of each feather are olive. Below the tail the coverts are marked with rufous buff and dull black bars, and there are large ovate spots of white on the black inner lining of the wing. The Grey-throated Rail has a red eye, a black and green bill and brown legs and feet. The wing of Upper Guinea specimens measures 175–180 mm.

A strictly forest-frequenting species, this rail seems to be restricted to the banks of those streams which are overhung by trees and bordered by rank forest undergrowth. It never ventures into the open, nor will it be encountered by streams which flow through open country. The only way to obtain specimens is to set traps for it along the small watercourses and swamps in the forest. It lives on larvae, caterpillars, slugs, snails, millipedes, small crabs and insects.

A nest was discovered by a little stream in a dark ravine containing two glossy eggs of a long oval shape, 44 × 31·5 and 43·5 × 30·5 mm., in colour buffish cream, spotted with lavender with some overlying mauve-brown spots.

Distribution. Two races of this rail have been described.

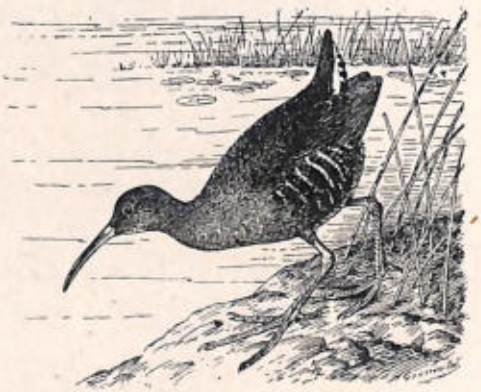
1. The typical subspecies, *C. oculeus oculeus*, ranges from Liberia to southern Nigeria, Benin Province, and has been found in the Gold Coast at Denkera, Akuapim, Cape Coast and Boutry River.

2. Another slightly distinct race, *C. o. batesi*, takes its place from Cameroon Mountain south to the Gaboon coast, then across the Congo forest to the Ituri and Semliki valley; recently it has been found for the first time in Uganda, between Ruwenzori and Lake Albert in the Bwamba. This latter race is a little darker and brighter olive-brown above and generally darker chestnut on throat and breast, although this last character is not always constant.

KAFFIR RAIL

Rallus caerulescens Gmelin

ABOUT 10 in. from bill to tail, this rail may be likened in size to our British Water-Rail. Its plumage above is chocolate, with a grey face and breast and very conspicuous black flanks barred with white. As it walks it flirts its tail, exposing the white under tail-coverts.



The bill is black with a red tip and red nostrils and measures about 2 in.; in shape it is fine and slightly decurved. The legs are blood-red and the toes very long, as becomes a bird which requires to move over floating vegetation. It is a most difficult bird to observe, being as shy as its counterpart in England, which it resembles in both gait and flight.

It is a true water-rail, skulking among the reeds and thickets bordering the streams and swamps, running with great agility over the thick herbage and seldom taking wing. Its flight is feeble, and

it soon drops down into cover. It is said to be able to swim with ease and lives on the same kind of food as others of its family.

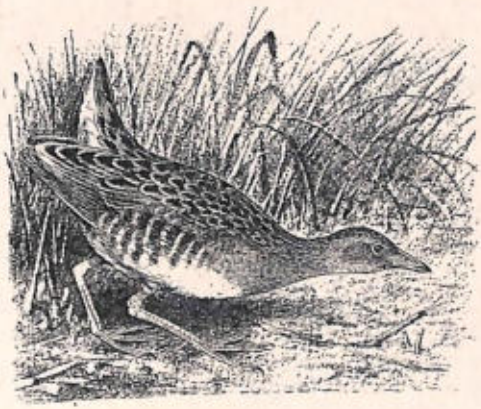
Unlike the last species, the Kaffir Rail—its name is derived from the place from which it was first described, the Cape of Good Hope—is not restricted to the marshes and streams of the forest area, but may be found widely wherever suitable habitats exist, nesting on the ground in very wet places and laying creamy-white eggs profusely spotted with red-brown, purple and grey. Eggs measure about 33·5–34 × 27·9 mm.

Distribution. This is a South African Rail which ranges north to Angola and São Thomé on the west and to Kenya on the eastern side of Africa, also to Katanga. It will be surprising if it is not some day found on the mainland of the Gulf of Guinea coast.

EUROPEAN LAND RAIL OR CORN-CRAKE

Crex crex (Linnæus)

The text figure of this bird, which is a visitor from Europe, should enable it to be recognised. The ground colour is fulvous brown with black middles to the feathers of the upper parts and a streaky rump.



The chin is white, throat buff, breast isabelline, belly white; the sides and flanks are barred chestnut-brown and white. The under tail-coverts are white, barred with rufous and brown. The bright chestnut on the wings identifies the Corn-Crake from all other members of the family, the primary coverts being chestnut-brown and the lesser coverts bright chestnut. In size the bird is rather smaller than the Kaffir rail but with a longer wing (130–150 mm.) and short bill (18–23 mm.).

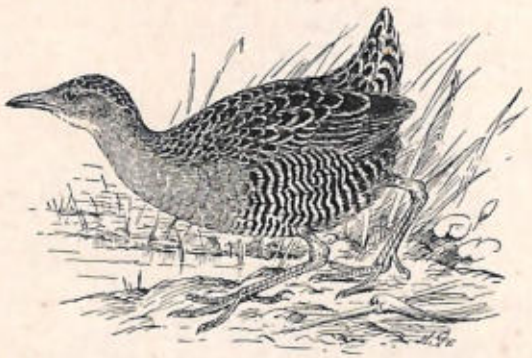
If disturbed, it flies in a sluggish, flopping manner with legs dangling, to drop down again quickly into marsh or reeds. It is remarkable that it can make such long sustained flights from Europe to winter in Africa. A bird ringed in Denmark has been recovered in the Congo. It is found in Africa between September and April.

Distribution. Widely spread over Europe and western Asia, visiting Africa, Arabia and more rarely India in winter. In Africa it reaches the Cape and Madagascar. Of thirty examples examined, the majority have been secured in East Africa between Somaliland and Cape Province. Two only have been reported from West Africa, a bird shot on 5th April, 1929, at Oyo Province, Nigeria, and another obtained at Lolodorf, Cameroon, on 19th December, 1927.

AFRICAN CRAKE

Crecopsis egregia (Peters)

RATHER a small bird, resembling a corn-crake in size but very different in appearance. The upper parts are olive-brown blotched with black, a dark crown and uniform grey cheeks and breast; the throat is white. The lower part of the chest, belly, flanks, thighs and



under tail-coverts are barred black and white. Wings are dark brown and the tail is black with rufous-brown margins. Legs and feet are pale brown and the eye is red. The wing measures 118–131 mm.

The African Crake is wariness itself and very seldom takes wing, threading its way daintily and noiselessly through the densest herbage. Should it be flushed, it flies clumsily with legs dangling and soon seeks cover. It is not fond of swamps and marshes, preferring drier areas covered with low bush and patchy grass. An abundant species and very widely spread, it is comparatively seldom

seen, but its call may frequently be heard—a succession of eight or nine whistling notes in monotone, repeated two or three times at short intervals.

It seems to be resident in the areas where it occurs, such areas extending from the coast far into the Northern Territories. It may be found deep in the evergreen forest, in the Kumasi clearing, and in similar places throughout "the Coast." Often it may be encountered far from water. Its food consists of small snails, insects, worms and probably grain, as it is fond of frequenting fields of rice and maize.

For its nest the African Crake makes a circular scrape which is lined with grasses and sometimes with a few decaying leaves. Some nests are more heavily lined than others and may be situated in patches of grass or in rank herbage close to inundated marshy ground or equally away from water in open ground in a clump of grass or under a bush. The eggs, which are usually well concealed, number seven or eight in the clutch and are ovate in shape and slightly glossy. The ground is white or white tinged with pink, the shell handsomely marked with chestnut brown blotches or spots, forming a cap at the broad end and having purplish ash-coloured underlying markings. A few eggs show irregular lines and pencillings. Eggs measure 32·0–37 × 22·5–26·3 mm. The breeding season is principally July and August in Nigeria and the Gold Coast.

Distribution. The greater part of Africa from the Red Sea to Gambia, south to Natal and Damaraland. It is found throughout the whole of West Africa and, excepting the Black Crake, is probably the commonest crake in every one of our British Colonies. Owing to its secretive habits its numbers are difficult to assess, but it is believed to be generally distributed.

BLACK CRAKE

Limnocorax flavirostra (Swainson)

The entire plumage of the Black Crake is black, as its name implies, the feathers of the mantle, wing-coverts and sides of the breast are washed with blue-grey and the back and secondaries with deep olive-brown. The primaries are blackish, the tail-feathers black. To relieve this dull colouring the eye is bright red, the bill bright yellow shaded with green, and the legs and feet are brick-red. The wing measures 97–110 mm., the tarsus 40–46 mm. Young birds are more olive-brown above than their parents and have buff tips to the breast-feathers; the soft parts are all duller, the legs being brownish red and the bill blackish.

Marshlands are the natural haunts of the Black Crake, and there it is sure to be found by reed-fringed pools or streams, sedge-grown

strips in the forest or little patches of swamp in open country. It is quite immaterial whether the surrounding country is open or forested, but pools or swampy land it must have. As a rule it feeds among the reeds or just outside their fringe and will hesitate to cross short grass. In frequented localities it gets used to human beings and is then not so shy as when encountered in unfrequented places. A pair may sometimes be seen among the vegetation by the water, and where there are water-lilies the Black Crakes will come into the open like jaçanás, running nimbly over the leaves and using their wings to maintain their balance. Short flights across water are also taken. Normally it can only be considered a very shy bird, like the majority of its family, but its presence may be detected by its burbling and chattering when still concealed from view.



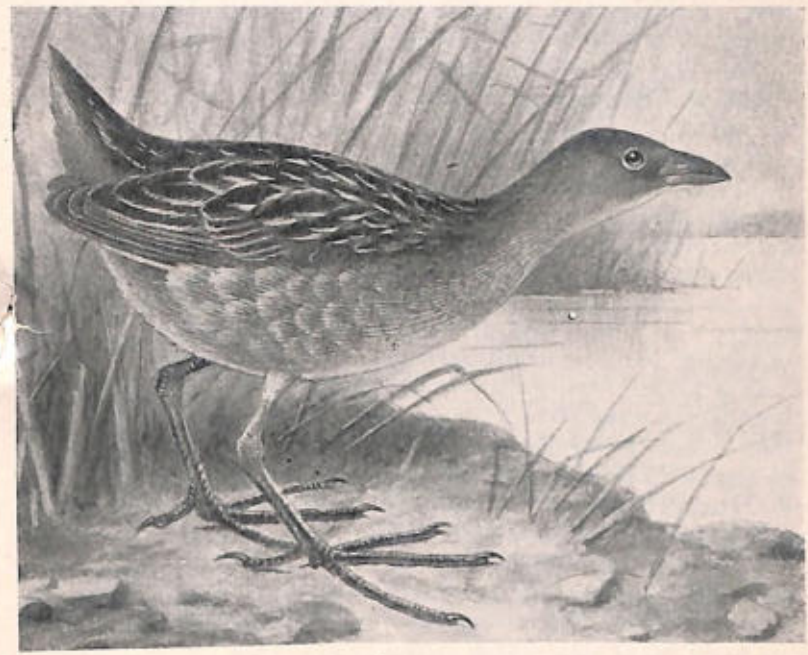
It prefers to make its nest in grass-beds rather than in reed-beds but has been found breeding among sedges as well as making its nest on fern-stalks raised above the mud. It is adaptable to its surroundings and in islands on the Uganda lakes will commonly build in bushes, even though suitable grass tufts may be at hand. Whether these elevated sites are chosen to escape the attention of the large water-lizards or as a protection against sudden flooding can only be surmised. In such cases the nest is a fairly large and loose structure composed of dry leaves and stems of aquatic plants and lined with fresh green leaves. Three to five eggs appear to be laid—an unusually small number. In ground they are stone-colour, thickly marked, with undershell purple and surface raw or burnt umber. Others may be finely speckled all over with blue-grey and rufous on a creamy-white ground. Twenty-seven eggs average 31·4 × 23·2 mm.

Distribution. The whole of Africa from the Sudan and Senegal to Cape Province, widely but somewhat locally distributed in West Africa. It is not as numerous in the Inundation Zone of the Niger as might be expected. It is seldom seen by the large rivers, but frequents pools and swamps wherever situated in our area and is recorded from all British Colonies and territories where it is resident and is nowhere very uncommon.

STRIPED CRAKE

Porzana marginalis Hartlaub

A DETAILED description of the Striped Crake is given here, as it is not easily identified from a brief account of its characters. It is a very small bird (under 7 in. in total length) with streaky olive-brown mantle and wings and a black rump, grey under parts and



dark bill and legs, the toes being exceptionally long. The following is taken from my larger work: Head and neck grey, the crown and ear-coverts washed with olive-brown. Mantle and wing-coverts dark olive-brown, with white or whitish margins to the feathers except at the tips. Primaries dark brown with a silver-grey wash, the outermost with the outer web white. Innermost secondaries with olive-brown middles and pale edges. Back and tail black, the rump and upper tail-coverts and some of the rectrices with pale rufous margins. Throat white, sides of the neck, breast and rest of under surface bluish grey, the feathers with whitish margins. Under tail-coverts rufous. Eye orange-brown or hazel; bill, culmen black, remainder greenish-horn colour; legs and feet dark olive-green or greyish olive. Bill (male) 19 mm., (female) 17·5 mm.; wing (male)

106 mm., (female) 102 mm.; tail (male) 51 mm., (female) 43 mm; tarsus (male) 35 mm., (female) 31 mm. (Two measured: (male) Aldabra, (female) Bornu.)

The status of this crake in Africa had remained a problem for many years, owing to its turning up singly in widely separated localities in Africa, though its eggs were reported to have been taken in Damaraland. When I wrote the first volume of my larger work naturalists were still sceptical that it bred anywhere in Africa, believing it to be a rare migrant from some unknown locality in Asia. The discovery has since been made (fully described in my eighth volume) that it is indeed an African breeding bird, very possibly over a wide area. All doubt was set at rest when a Striped Crake was trapped on its nest containing five eggs at Kwarre, Sokoto, on 5th August, 1939.

The nest was on a dry bank, about 2 ft. wide, separating two flooded fields of rice, and was concealed by coarse herbage. It was a small, shallow, circular depression in the ground lined with dry grasses and screened by overhanging grass. The eggs have smooth shells, slightly glossy, thickly blotched, spotted and speckled with rich red-brown on an almost obscured buff ground, the markings confluent to form a cap. Underlying shell markings are pale ashy in colour. Measurements: 28·7–29·9 × 21·3–21·9 mm.

Distribution. Now definitely established as a breeding bird in Nigeria and reported on high authority to nest also in Damaraland, but evidence is inconclusive. It is believed to occur on the Bauchi plateau of Nigeria, where an unidentified crake resembling this bird has been seen on several occasions but as yet not obtained. The only other specimens of this rail have been secured in Bornu 15 miles south of Maidugari; Bipinde, Cameroon; Gaboon; Damaraland; East London; north-eastern Rhodesia; Kenya Colony; the island of Aldabra and in Algeria—single examples in every case. It has never been taken outside Africa or its islands.

Genus *Sarothrura*

THE discovery within our limits of the Chestnut-headed Pygmy Rail (*S. lugens*) has necessitated the preparation of a new key to the members of the genus which occur in West and Central Africa.

Key to the species of Pygmy Rails

1. Head and neck rufous (not brown) 2
   Without rufous on head and neck 7
2. Back and wings transversely barred chestnut and black
   Sarothrura pulchra ♀, p. **352**
   Back and wings not as described 3

3. Upper parts streaked 4
Upper parts spotted 6

4. Middle toe with claw short (22–25 mm.) *Sarothrura böhmi* ♂, p. 359
Middle toe with claw long (27–37 mm.) 5

5. Chestnut of head and neck overspreading breast *Sarothrura rufa bonapartii* ♂, p. 351
Chestnut of head not extending on to breast *Sarothrura lugens* ♂, p. 355

6. Upper parts spotted with white; tail uniform chestnut *Sarothrura pulchra* ♂, p. 352
Upper parts spotted with buff; tail barred black and chestnut .. .. *Sarothrura elegans reichenovi* ♂, p. 357

7. Crown of head and cheeks more or less uniform brown, contrasting with mantle and back *Sarothrura lugens* ♀, p. 355
Crown of head and cheeks more streaky and uniform in tone with mantle and back 8

8. Ground colour of upper surface blackish, middle toe with claw 22–25 mm. .. .. *Sarothrura böhmi* ♀, p. 359
Ground colour of upper surface brown; middle toe with claw 27 mm. or over 9

9. Middle of breast and belly barred black and white when fully adult; tail chestnut marked with black *Sarothrura elegans reichenovi* ♀, p. 357
Middle of breast and belly not barred black and white but buffish and speckled; tail blackish, faintly speckled *Sarothrura rufa bonapartii* ♀, p. 351

RED-CHESTED PYGMY RAIL

Sarothrura rufa bonapartii (Bonaparte)

DIMINUTIVE in size, little more than 5 in. long, the male with bright rufous head, mantle and breast, rather paler on the throat, the ebony black back longitudinally streaked with white, the lower part of the breast and belly blackish, each feather broadly edged with white. The wings and tail are black, the latter of disintegrated feathers with some white spots or dots. Legs and feet are slate-colour; the eye is dark brown and the bill blackish, fading to grey underneath. The wing is 68–70 mm. The female differs considerably—blackish brown above, each feather margined with rufous buff, the under parts buffish brown, the feathers of the sides with dark middles and rufous-buff margins.

This little rail, indeed the members of the entire genus, are marsh-frequenting birds which are much more likely to be heard than seen. If flushed it very soon drops again into cover, from which it can seldom be put up twice, electing rather to be caught by the hand hiding in a tussock. Its note is peculiar and must be learned by experience—a feeble *t-wi, t-wi, t-wi*, lasting but a few seconds and often accompanied by a low grunting sound. It loves to frequent stagnant pools thickly fringed and studded with aquatic vegetation, among which it searches for its food, seldom leaving cover, gliding through the mazes of rank herbage with astonishing ease and swiftness. Insects and small seeds and probably worms and small snails constitute its food supply.



The nest has not been found in West Africa, but it is likely to be built on the dry ground at no great distance from water, such as will be described under the Buff-spotted Pygmy Rail.

Distribution. The typical subspecies of this pygmy rail is an inhabitant of South Africa, ranging north to the Kasai and Kivu district, and the species has been separated into two or three races. That which occurs in our area is slightly smaller than those from the Cape and was first described from Gaboon, whence it occurs more or less locally through Cameroon as far west in Upper Guinea as Sierra Leone. Its place is taken in Uganda and Kenya by *S. r. elizabethae* van Someren.

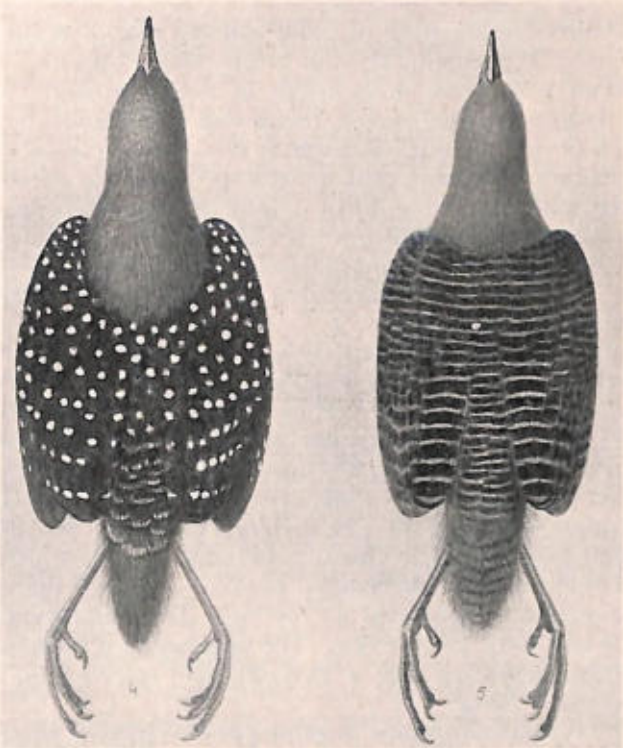
WHITE-SPOTTED PYGMY RAIL

Sarothrura pulchra pulchra (J. E. Gray)

No fewer than five races of this species come within the area with which we are concerned, between the Senegal River and the Congo. Characters and their respective ranges will be discussed under Distribution. For the purpose of identification the description of the typical subspecies will suffice. All the males are much alike; the

plumage differences between the subspecies can be seen satisfactorily only in the females.

The White-spotted Pygmy Rail is well named, though the male bird alone exhibits the spots. It is a small rail about 6½ in. from bill to tail. The forepart of the head and body is bright rufous and the tail is the same colour, seldom even faintly barred; the rest of the body, back, wing-coverts, lower chest and sides are black



covered with round white spots. The female is very different, the head, breast and mantle being rufous as in the male; the tail is rufous barred with black and the rest of the upper parts are black, barred closely with rufous; the rufous bars (in this race) are rather less broad than the intermediate black ones. The under parts are barred black and rufous-buff in equal proportions. The wing is 79–89 mm. The bill is black, and the legs and feet are dark grey.

This is probably the best known of all the pygmy rails in Africa, not only because it is so widely distributed but owing to the fact

that it has a most remarkable call, which those who hear it can hardly credit as being emitted by a rail. The notes are variously interpreted by naturalists—the notes have something faintly bell-like in quality and a slight break comes after every three or four syllables—*goong-goong-goong-goong, goong-goong-goong-goong*, as one famous field naturalist interprets it, while another writes of the flute-like notes of the male being answered by the laughing cry of the female. The Hausa name for the bird, *Huduhudu*, is onomatopoeic.

This rail is characteristic of small marshes and of swampy spots in the forest. It occurs by streams in the thicker kurimis where the sun seldom penetrates, in clearings in the forest and in gallery forests. It lives on small frogs, worms and small snails, but chiefly on insects of many kinds. Though as secretive as rails always are, it can be observed at very close quarters provided the watcher keeps absolutely still. By sitting down quietly in some likely spot a pair may be seen to steal out of cover, perhaps to bathe in some ditch or to walk along the bank or jump from stone to stone in the bed of a stream. Most naturalists agree that the area which it inhabits is astonishingly small.

It is difficult to believe that these pygmy rails voluntarily make long flights, but there is some evidence that another species is to some extent migratory, and it is not safe to assert that the White-spotted Pygmy Rail is as sedentary as I had always supposed.

The nest, described for the first time in *The Birds of the Belgian Congo*, vol. 2, p. 25, is amazingly difficult to find, for the bird builds a small oval mound not quite 4 in. high and 9 in. long, which it covers with dead leaves, exactly like those around it, and which can be entered only through a horizontal slit kept closed by the weight of the roof until actually raised by the bird. Dry plant stems as well as dry leaves form the interior. The eggs are two in number and pure white, measuring 30·3 × 21·9 and 30·9 × 22·1 mm.

Distribution and Races

1. The typical subspecies, *S. pulchra pulchra* (Gray), extends from Gambia, Portuguese Guinea and Sierra Leone (the type locality) to Nigeria and appears to be locally distributed throughout that area. I have examined Gold Coast specimens from Kumasi, Oda and Mampong, while from Nigeria it is recorded from Lagos and from the Niger and Plateau Provinces, but is no doubt more widely distributed than records indicate.

2. *S. p. tibatiensis* Bannerman inhabits the highlands of western Cameroon 3,000–4,000 ft. (Tibati, Genderu, Mbanti, Ribao, Galim, Bafia). It is distinguished from all other races by the female having the rufous bars of the back broader and of a brighter chestnut and by its larger size (wing 85–91 mm.).

3. *S. p. zenkeri* Neumann is restricted to the coastlands of southern Cameroon with type locality Bipinde. The female of this race has the head and neck darker; the upper side is mainly black, with few and narrow rufous bars, the black bars being eight times broader than the rufous bars. The wing is 72–75 mm. The males have smaller spots on the back than the next race.

4. *S. p. centralis* Neumann is the race which extends from the Lower Congo east to Kenya Colony, the Lualaba River, north to the Uelle River and south to the Kasai and northern Angola. It is a brightly coloured race, larger than the last species. The wing is 76–85 mm., the males with larger spots and the females with distinct broad bars of black on the tail.

5. *S. p. batesi* Bannerman has been allied by some writers (quite wrongly) with *S. p. zenkeri*, and by others (with more justification) with *S. p. centralis*. I adhere to my original opinion expressed in *The Birds of Tropical West Africa*, vol. ii, p. 24, footnote. It is nothing like so black on the back as *zenkeri* and is smaller than *centralis*, with wing 72–75 mm., and not so bright on the head in the specimens examined.

CHESTNUT-HEADED PYGMY RAIL

Sarothrura lugens Böhm

A NEW record for West Africa. This species was not included in vol. ii or in the key on page 19. It will be found in the Addenda, vol. viii, for the first time in my larger work.

Synonym. Sarothrura modesta Monard. *Rev. Suisse de Zool.*, **56**, 1949, p. 735; Ngaouyanga, about 100 km. north of Ngaundere on the route to Garoua, French Cameroon.

Description (after C. H. B. Grant, who examined the type specimen). Adult male: Head, nape and sides of face chestnut; rest of upper parts, including tail, black with white streaks. Throat white, rest of under parts, including lower neck, streaked black and white; centre of belly white.

Adult female: Head, nape and sides of face brown, upper parts of body black, including tail, streaked on upper back with white; mantle and rump spotted with white. Wing-coverts with broken white bars. Under parts white, with some blackish-brown markings on chest; flanks and under tail-coverts black, the former with some white bars, the latter with a few white spots.

Bill 13 mm., wing 79–81 mm., tail 57 mm., tarsus 24–25 mm., middle toe with claw 29–31 mm.

Distribution. North-eastern Belgian Congo and western Tanganyika Territory, ranging west apparently to the Adamawa Province of the Cameroons.

This species had never been obtained west of Faradje in the Upper Uelle district until a specimen was secured 100 km. north of Ngaundere in French Cameroon, thus extending the range of the species within our limits and some hundreds of miles to the westward.

Remarks. Dr. A. Monard described as a new species the female example from French Cameroon mentioned above, giving it the name *S. modesta* after making sure that it was not included in my second volume of *The Birds of Tropical West Africa* among the various species of *Sarothrura* which I recognised from West Africa in that work. He unfortunately overlooked the possibility that it might be an East African species, as it has turned out to be, now found far from its hitherto-known range. We were able to examine the type of *S. modesta* at the British Museum and to confirm that it is certainly a female of *S. lugens* (Böhm). The only other possibility was that it might have been *S. lynesi*, which is known from the southern Kasai, but the length of the middle toe (29 mm.) of the Cameroon specimen made that impossible. The females of these two species are very much alike, but the middle toe with claw of *S. lynesi* never exceeds 26 mm. in length and is usually shorter.

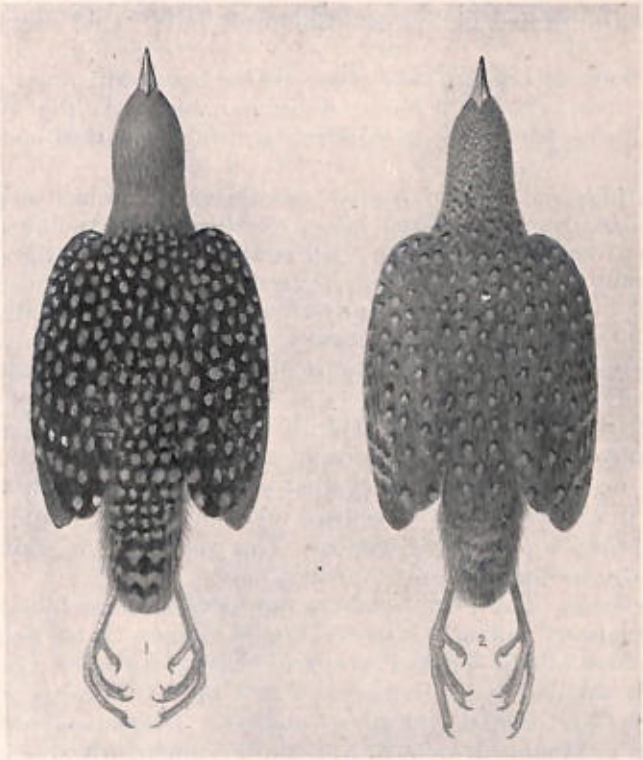
Habits. Dr. J. P. Chapin writes concerning this pygmy rail in the Belgian Congo: "In the open savanna country about Faradje, papyrus swamps are numerous and extensive, but *Sarothrura lugens* was found rather in the grass-grown marshes, where the mud was not so deep. The densely packed vegetation, largely grasses and marantaceous plants, is anywhere from waist- to shoulder-high. The birds' ways are secretive and typically ralline, our specimens being trapped, not shot, for when they flew up it was always unexpected and they went but a short distance before dropping back out of sight. . . . No calls were ever identified with certainty. Only one stomach was examined; it contained finely divided insect remains and two hard seeds."

We know nothing about the nesting of this species.

BUFF-SPOTTED PYGMY RAIL

Sarothrura elegans reichenovi (Sharpe)

THE same size as *Sarothrura pulchra* and the only other spotted rail in our area, the black wings and body are covered on the upper side with sand-coloured spots, but the belly has white spots. That applies to the male only, the head and breast of which are rufous. The



rump is black, subterminally barred with sand-colour or white; the tail is barred bright rufous and black. The bill is black, the legs and feet are greyish brown and the wing measures 81–90 mm.

The adult female is very unlike the male; the entire upper parts are warm brown, spotted with yellow ochre on the back and wing-coverts, each spot being bordered with black above and below. The tail is rufous brown, indistinctly barred with black; the throat is white, the belly white in the middle barred with black; the breast

and flanks are brown, irregularly barred with black. So small are the spots in the female that at even a short distance they fade out and the bird appears only brown.

Unlike the White-spotted Pygmy Rail, the present species is not an inhabitant of swamps, at any rate in southern Cameroon, in which country its habits have been studied more closely than in southern Nigeria. There it lives in the impenetrable tangle of vegetation that grows on cultivated ground which has been abandoned. It has often been captured hiding in the sweet-potato vines; the dense forest it does not inhabit, but is a common inhabitant of second growth and the border regions of the forest far away from water.

S. e. reichenovi is a very close relative of the South African *Sarothrura elegans*, from which it is barely distinguishable. Like that bird, it shows a strong tendency to wander and exhibits marked nocturnal activity.

This little rail has the most extraordinary call, which it utters, particularly after dark, from village clearings and is audible at 300 yards. It has been likened to a low wailing with almost the clarity of a tuning fork. Starting faintly, it swells in volume without change of pitch and then ceases abruptly after three or four seconds. The sound becomes commonplace, and natives attribute it to a variety of unlikely creatures. It is the male which calls so persistently, especially during the rains.

Its food is much as described for the other species, but in one bird a small roach was found. Insects predominate.

The nest is placed on the ground and is not apparently roofed over. In Cameroon eggs have been taken in September and October; in the Ituri in late September. Three or four pure white eggs are laid, measuring 26–28 × 20–21·5 mm.

Distribution. This pygmy rail has now been taken in Liberia and has been heard calling at Nzebêla, French Guinea. It has also been captured at Ubiaja, Benin Province of Nigeria. Its range evidently extends through the forested parts of Upper Guinea as well as through Cameroon, the northern Congo and Gaboon, and probably extends to Mount Elgon in Kenya, but it is apparently absent from the tall equatorial forest. It certainly ranges south to the Congo river and may be looked for in the Kasai and perhaps in northern Angola.

STREAKY-BREASTED PYGMY RAIL

Sarothrura böhmi Reichenow

In appearance this rail closely resembles *S. rufa bonapartii*, but the rufous of the head is less rich and the upper parts are dull black instead of ebony black, and in consequence the white streaks on the back, mantle and wings appear much less white; the chestnut of the head stops short at the base of the neck and is not continued on to the mantle as in *S. rufa bonapartii*. The under parts of *S. böhmi* are much whiter, and the rufous crop is paler and not continued so far down on to the breast as in *S. rufa bonapartii*. The wing is 80–86·5 mm. Other points of difference of a structural nature are referred to in the key.

The Streaky-breasted Pygmy Rail is a bird of high grass and is less addicted to marshland than the Rufous-chested Pygmy Rail, though it may be found in waist-high grass bordering a marsh. We know very little about this rail, and doubt has now been cast on the authenticity of the clutch of eggs found in Uganda to which I referred in my larger work.

Distribution. Extends from Kenya Colony and Nyasaland westwards to the southern Cameroons. Its existence in Upper Guinea rests upon the specimen obtained 65 miles off the coast of French Guinea, which I named *S. böhmi danei*. It is now believed to be an example of *S. böhmi böhmi* which had wandered many hundreds of miles from its habitat. It had a middle toe with claw measuring 23 mm.

PURPLE GALLINULE

Porphyrio madagascariensis (Latham)

This is a fine-looking bird which has earned for itself the name of the King Reedhen. In size it is larger than the European Coot, nearly 17 in. in total length, and, like that bird, its forehead is covered with a broad horny shield, which is red instead of white. The cheeks and throat are turquoise, becoming brighter blue on the breast and fading into purple on the sides, the belly is black and the under tail-coverts are white. Back and mantle are green, the wing-coverts bright purple, the flight feathers black. The bill is red, and the legs, which are immensely powerful, and feet are cherry pink, dusky at the joint. The toes are very long, enabling the bird to run safely over floating herbage. As it walks its tail is flirted, exposing the white under the tail. The wing is 220–256 mm. and the tarsus 85–88 mm.

The King Reedhen lives in reed-covered marshes, where it passes a secretive existence and may easily be overlooked despite its large size and bright colouring. It avoids open water and must have high reeds or coarse sedges in which to escape detection. It breeds in such places, and in the nesting season (June, July and August in the Gold Coast and Nigeria) its harsh, loud call can be heard. In its short flights its long red legs dangle, but in long flights they are held against the tail.



The nest is built in water 2–4 ft. deep, coarse aquatic grasses being built up in a shapeless mass from 1 to 4 ft. above the surface, slightly hollowed on top; when in tall reeds the nest may be attached to the reed stems. Some nests are shielded by a canopy of reeds formed by broken-down reeds. Four or five eggs are laid, white to pale green, handsomely marked with spots and blotches of various shades of brown and purple with ashy shell markings. Thirty eggs average 53·9 × 37·4 mm.

Distribution. Probably found locally throughout Upper Guinea, recorded from Senegal, French Sudan, the Niger (both from the upper river and from Gao), Lake Chad, the perennial lakes of Sokoto and the Keta lagoon in the Gold Coast. In the rest of Africa it is locally distributed from Cape Province to Egypt but is unknown in the Congo forest region and Anglo-Egyptian Sudan.

LESSER GALLINULE, OR ALLEN'S REEDHEN

Porphyrula alleni (Thomson)

In the handsome adult dress, green above and purple below, with blackish head and rump, green shield, red bill and red legs, the Lesser Gallinule is not likely to be confused with any other bird. Although so similar in plumage to the King Reedhen it is very much smaller, about the size of a water-rail, some 10 in. from bill to tail.

It is figured on the accompanying plate in colour. The colossal legs and the green frontal shield should proclaim its identity.

Allen's Reedhen spends its life in extensive reed and papyrus thickets in the vicinity of channels and watercourses in which water-lilies and rushes grow abundantly. It is a common frequenter of rice-fields and of backwaters of the larger rivers. Often it skulks in the reeds during the day, but in the evening and early morning, and on moonlight nights, pairs may be seen swimming about in the open water, picking up insect food and hunting in the manner of a moorhen for fish spawn and small fishes and the seeds of water plants. In frequented places they show indifference to human beings and even when nesting may be approached without difficulty. They may often be seen picking their way daintily over the water-lilies, when as many as a dozen birds may be counted at a time. The note which they utter is harsh and unpleasing.

Nesting takes place in the height of the rains in July and August. The nests are built over water, generally in sedges fringing the open waters of a lake; others on floating islands of vegetation at some distance from shore. The nests are loosely constructed shallow cups of dry sedge, sometimes with a sheltering canopy of growing vegetation, the foundations being raised a few inches above water level. The eggs are pinkish cream, fairly evenly marked with spots and speckles, well defined from the ground colour. Average of forty-one eggs is 36·2 × 21·1 mm., with variation 31·8–39·2 × 23·6–27·5 mm.

Distribution. The whole of Africa from the Sudan and Senegal to the Cape and most African islands. It is found throughout the whole of West Africa from the Senegal River to the Congo and evenly distributed. Although mostly resident, it wanders far afield and has been taken on São Thomé, the Azores, Ascension and even in southern Europe.

AFRICAN MOORHEN

Gallinula chloropus brachyptera (Brehm)

This resident moorhen closely resembles the familiar bird in Britain but is rather smaller in size, the wing measuring 147–175 mm., the tail 65–73 mm. and the tarsus 43–49 mm. As the European Moorhen (*G. c. chloropus*) has reached the Cape Verde Islands on migration, it may conceivably occur on the mainland within our limits, for it has been found in the Anglo-Egyptian Sudan. Its larger size (wing 175–188 mm.) should enable a bird in the hand to be recognised.

The African Moorhen has the crown and face blackish slate, fading to bluish slate on the neck and mantle; the back, scapulars,

wing-coverts and rump are olive-brown and the under parts dark slate-grey. Like our moorhen, it has white oblique streaks on the flanks, white under tail-coverts, green legs with a red garter, a sealing-wax-red bill with greenish-yellow tip and shield of similar red on the forehead. The call, *prruk*, is like that which the European bird utters; in fact, in all its mannerisms it resembles that species closely, nodding its head as it swims, dangling its legs as it flies and rising in the same floppy manner if suddenly disturbed. For distinctions between this and the Lesser Moorhen see under the next species.

In West Africa the bird may be encountered in such places as we might expect to find it from experience of the species in Europe—backwaters and creeks, reservoirs, perennial lakes, reed-swamps and quite small ponds. In its habits it is distinctly more secretive than its larger relative.

As a breeding bird it seems to be extremely local, nesting in June, July and August. The nest has been found on some of the perennial lakes of Sokoto built in high reed-beds among coarse sedges. Others found in the Gold Coast are described as similar in construction to those of the King Reedhen, and the eggs are indistinguishable from those of *G. chloropus chloropus*, varying in size—37–46·5 × 26·5–30·7 mm.—buffy brown, speckled with small brown spots. Five to seven eggs form the clutch.

Distribution. Extends locally throughout Africa from Senegal and Abyssinia to Cape Province, but not in the forest. In West Africa it is reported from many localities between St. Louis and the Cameroons, including the islands of São Thomé and Annobon. It is found locally in all British West African Colonies both near the coast and near the desert in very diverse environments, but is nowhere common and is restricted to a few particular spots such as the Keta lagoon on the Gold Coast and certain lakes in Sokoto in Nigeria, being absent from many other likely localities.

It is curious that the Red-knobbed Coot (*Fulica cristata*) seems to be entirely absent from Equatorial West Africa, nor has the European Coot (*Fulica atra atra*) ever been taken in West Africa in winter, though it swarms north of the Sahara and migrates as far as Khartoum in winter.

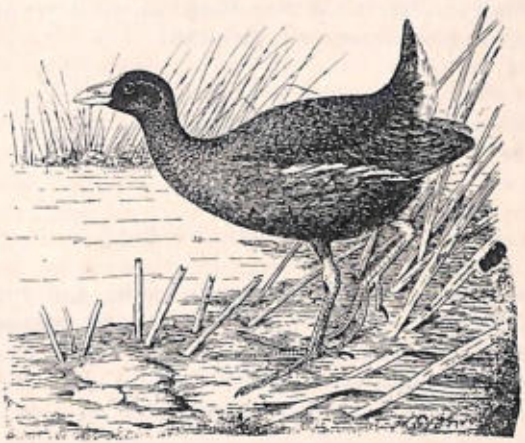
LESSER MOORHEN

Gallinula angulata Sundevall

This is a diminutive example of the African Moorhen which in its appearance and manners closely resembles the last species described except that it is only about half its size, measuring in all 10 in. from bill to tail. There is one striking difference—the bill of the Lesser

Moorhen is bright yellow with only the top of the culmen red to match the red shield on the forehead. The eye is crimson; the legs are yellowish, tinged with green. To give some idea of its small size, the following dimensions may be quoted from my larger work: Bill from base of feathers at gape 18–21 mm., wing 132–146 mm., tail 56–60 mm., tarsus 38–40 mm.

The plumage closely resembles that of *G. c. brachyptera*—slate and olive-brown above, paler below, with flanks broadly streaked with white, and white under tail-coverts.



The general habits of the Lesser Moorhen are much as in the last species described, but it is very much more numerous and in its choice of habitat has some peculiarities. It was found to be common on some of the lakes of Sokoto and in the rice-fields during the breeding season, but was restricted to the close-growing rice and other aquatic grasses which grow in the inundated farmland or in the shallows near the lake shore. It was not seen among coarse sedges, high reed-beds, water-lilies or other expanses of open water. It used to be occasional at Kumasi before the drainage of the swamps and is moderately common today in the Keta district of the Gold Coast. Its manner of walking, swimming and flying resemble the Common Moorhen, and a similar "explosive" alarm note is uttered.

Nests may be found from July to September and are usually well separated from one another. They resemble those of the European Moorhen, built a few inches above water among growing rice, etc., but are smaller and more compact, with shallow cups to receive the eggs. Usually a few growing stems are bent over to form a foundation for the nest and others to form a scant canopy. The clutch varies from four to nine, seven being usual. The eggs vary from those of *G. chloropus brachyptera* by the invariable presence of a few large

blotches of red-brown, the rest of the shell being pretty generally speckled. Measurements show variation of 31–33·5 × 23–27 mm.

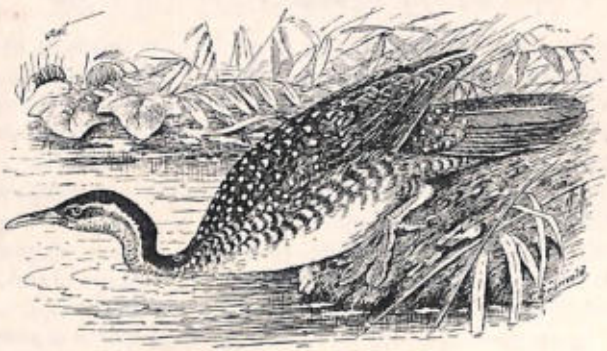
Distribution. Although recorded from Senegal, no recent records have been received from west of the Gold Coast, where it is recorded from Kumasi, Accra and the Keta lagoon. In Nigeria it occurs on the coast and again in Sokoto and Bornu and no doubt more generally, but is evidently more plentiful in the Cameroons and has been found on São Thomé. Of general but local distribution in Africa from Senegal, Darfur and Ethiopia south to Cape Province. Unlike the last species, it has been found in the heart of the equatorial forest but is nowhere very plentiful.

FAMILY HELIORNITHIDAE

FINFOOT

Podica senegalensis Vieillot

THREE races of this curious bird occur within our limits, whose range and distinctions will be given in the last paragraph. The typical race of the Senegal Finfoot is the one which we find in all our British Colonies between the Gambia and Calabar Rivers. The



accompanying text figure indicates its general appearance, with long neck and straight pointed bill, the latter black, red and yellow, 37–44 mm. long. The crown and hind part of the neck are black; a grey throat is bordered by a white stripe separating the two colours; the upper parts of the body are dark brown, including the wings; the mantle is glossed with bottle-green and the whole is covered with round white spots. Much of the breast and belly is white, irregularly marked with black; the flanks are barred. The

tail is broad; the feathers are stiff and 138–165 mm. in length. The wing measures in males 186–215 mm., in females 160–186 mm., the females being smaller in all proportions. Most characteristic are the coot-like toes, orange-red in colour, with scalloped webs and the short metatarsus. The scalloped toes enable the bird to negotiate soft mud with facility.

This is one of the most remarkable birds in Africa. Unusually shy, it may be seen in pairs frequenting mountain streams and wide rivers, mangrove-lined creeks and forest streams. It prefers to swim close to the shore and on the slightest sign of danger scrambles up on to the bank to escape in the thick undergrowth. It is able to progress fast on land and is soon lost. In the water it swims dexterously and can depress its body to leave only the neck and head exposed. It can climb the branches of a small tree with ease, when the stiff-shafted tail may be brought into use. Its note is said to be a guttural growl.

The food of the Finfoot consists of small crabs, snails, prawns, shrimps, millipedes, beetles, dragonfly larvae, grasshoppers and very small frogs. Stones are usually mixed up in the gizzard.

If suddenly disturbed by a canoe a Finfoot will "patter" over the water before taking wing but soon drops back again and makes for the bank. At times it may be seen sitting on boughs overhanging the water. Usually it is silent. It builds its nest on overhanging boughs upon which debris has been accumulated and then stranded by the receding waters. A loosely built platform of reeds and grass is then constructed on this foundation. Two or three eggs are laid (50 × 38 mm.), buffish white spotted with rufous, the spots varying considerably in size from pinpoints upwards.

Distribution

1. The typical subspecies, *P. s. senegalensis* Vieillot, ranges from Senegal to the forested country of Calabar Province and is found generally distributed in the intervening area, including all four British Colonies, thence eastwards through the north-eastern Congo forests.

2. Another race, *P. s. camerunensis* Sjöstedt, takes the place of the typical subspecies from the lower slopes of Cameroon Mountain south to Sette Cama on the Gaboon coast and east across the central Congo forests. This is a darker bird than *P. s. senegalensis*. In fully adult examples the under parts are mottled with blackish or almost wholly black. Wing (male) 177–212 mm., (female) 152–179 mm.

3. A third race, *P. s. albipectus* Stresemann, inhabits the region of the Shiloango River, extending from the Loango coast to the Kasai. Its plumage resembles *P. s. senegalensis*, but in size it approaches the much larger race *P. s. petersii* Hartlaub, which inhabits southern and eastern Africa.

ORDER GRUIFORMES

FAMILY BALEARICIDAE

DEMOISELLE CRANE

Anthropoides virgo (Linnæus)

THERE is no more graceful bird in existence than the Demoiselle Crane, which has only recently been reported to come within our limits in West Africa. It should not be difficult to identify. It is a smaller bird than the Crowned Crane and in colour is a delicate pale bluish grey; the sides of the head, chin, throat and under side of the neck are black. Behind each eye there springs a tuft of long white disintegrated feathers which extend backwards in the manner of ornamental plumes. At the base of the neck very long pectoral plumes droop over the breast. Primaries are slate-black, secondaries grey, some of the latter being tipped with black, and being greatly elongated and pointed entirely conceal the short grey tail. The Demoiselle has a red eye, olive bill tipped with red, and black legs and feet.

It was not until 1937 that this crane was identified in the vicinity of Lake Chad, to which area in certain years the birds appear to come at the end of November, remaining until March; they turn up in flocks of several hundred individuals and are very wild. It is, of course, a migratory species which does not breed within our limits.

Distribution. The home of this crane is Asia Minor, Dobrudsha and southern Russia and has been found breeding also in Algeria and formerly in the south of Spain. In the Egyptian Sudan it ranges south to the Sobat River.

The extension of its winter quarters to French Chad is of much interest.

WEST AFRICAN CROWNED CRANE

Balearica pavonina pavonina (Linnæus)

THE Crowned Crane is unmistakable and must be familiar to most people who travel in the dry belt of West Africa, whether or not they take any interest in the wealth of bird life. In height it stands about 2 ft. from the shoulders. A bunch of stiff straw-coloured bristles with black tips is situated on the hind part of the crown, the fore-crown being covered with thick velvety-black plumes. The bare cheeks are pink and white. The lower part of the throat is rose-colour and bare of feathers, and the pendent wattles are also pink. The pearl-coloured eye is a striking feature in this bird. It is a dark-plumaged bird, the neck being slate-grey and the back black;

the wing-coverts are white, the greater coverts straw-coloured, the primaries black and the secondaries chestnut-maroon. The legs and feet are blue-black; the bill is black. Measurements are: Bill from base 65–70 mm., wing 530–560 mm., tail 236–245 mm., tarsus 192–207 mm.

The chief haunts of the Crowned Crane are the marshlands, but much of its feeding is done on the cultivation, and the birds are frequently to be seen in the sandy beds of rivers or on their banks. Sometimes parties of two or three may be encountered, but more often it gathers into large flocks of 50–100 birds. Often it will perch in trees, choosing for preference one that is isolated with a commanding view. Its flight is characteristic: the wings are beaten heavily, the neck is carried in front, sloping slightly downwards, and the legs are carried at an angle, slightly drooping behind. As it flies the head is turned from side to side, scanning the landscape. A double trumpet-like call is uttered in flight which sounds like a challenge. Again, its discordant trumpetings are the first heralds of sunrise.



The nuptial dance of the Crowned Crane is a remarkable performance, the birds leaping towards one another with flapping wings as a prelude to dancing round one another in circles only to leap away some thirty yards, turn and bound back again with great leaps to whirl around once more.

The nest is built on swampy ground—an accumulation of grasses raised a few inches above the level of the water, upon which little construction effort is expended. Roughly circular, they measure about 30–40 in. across. Two or three eggs are laid, and these are white sparingly marked with small brown and chocolate blotches, averaging 77·8 × 56·6 mm. The breeding season in Nigeria lasts from July to September, in any of which months clutches may be found.

Distribution. This dark race of the widely spread Crowned Crane is restricted to western Africa, where it is recorded from every political division from Senegal to Lake Chad and the Shari River and the northern Cameroons, its place being taken eastwards by *B. pavonina ceciliae*, which has an ash-grey neck and rather different markings on the cheeks. In all British West African Colonies except Sierra Leone the Crowned Crane is common in certain places. It is more numerous in Gambia and in the Northern Territories of the Gold Coast and Nigeria than elsewhere and is commonly found along the whole course of the Upper Niger, being present in great numbers on the alluvial flats where crops of millet and rice are raised. In Bornu flocks of 200 may be encountered.

FAMILY OTIDIDAE

Key to the Bustards

1. Size large (wing over 15½ in.) 2
   Size smaller (wing under 15½ in.) 4
2. Chin and upper part of throat black .. *Neotis nuba*, p. 371
   Chin and upper part of throat white, sometimes with some narrow bars 3
3. Hind neck from nape to base of neck sandy rufous *Neotis denhami*, p. 370
   Hind neck finely barred black and white *Ardeotis arabs stieberi*, p. 368
4. Breast and belly mostly all black 5
   Breast and belly without any black 6
5. Narrow black stripe passing down neck from base of throat; wing-coverts white *Lissotis m. melanogaster** ♂ adult, p. 374
   No black stripe passing down neck; wing-coverts buff *Lophotis savilei** ♂ and ♀ adult, p. 373
6. Upper parts heavily blotched, with heavy black middles to feathers .. .. *Lissotis m. melanogaster* ♀, p. 374
   Upper parts sandy rufous, finely vermiculated with black 7
7. Nape and neck blue-grey; black patch on throat *Eupodotis senegalensis* ♂, p. 372
   Nape and neck sandy rufous, finely vermiculated on foreneck; no black patch on throat *Eupodotis senegalensis* ♀, p. 372

SUDAN BUSTARD

Ardeotis arabs stieberi (Neumann)

(Formerly *Choriotis a. stieberi*)

(see Plate 13, facing page 368)

THE coloured plate of this bustard should be sufficient for the purpose of identification and comparison with Denham's Bustard. Both are large birds; the Sudan Bustard, which is for the most part sandy-coloured above, with neck and breast finely barred or

* Even in the immature dress *L. m. melanogaster* and *L. savilei* should be easily distinguished; the former is considerably larger (wing over 12 in. in first-year birds), while the wing of *L. savilei* never exceeds 10½ in. *L. savilei* is much more sandy rufous on the upper parts and has not the very heavy black middles to all the feathers of the upper parts as has *L. m. melanogaster*. In the latter the white lesser wing-coverts appear at an early stage and are never assumed by *L. savilei*.



SUDAN BUSTARD *Ardeotis arabs stieberi*

DENHAM'S BUSTARD *Neotis denhami*



freckled black and white and a large area of white in the wing, scales anything from 17 to 22 lb. in weight, but there is a huge variation in the size of the sexes, so that the small but fully grown females might easily be mistaken for an entirely different species. The wing of the male varies from 570 to 585 mm., of the female from 512 to 550 mm. In flight old birds have wings most conspicuously varied with bold patches of lavender-grey and white which shows up at a distance of half a mile or more, while immature individuals show a variegated pattern on the wings of light brown and black, in keeping with the general coloration of the body. Even at a considerable distance the Sudan Bustard appears a lighter bird than Denham's, the distinguishing marks of which (especially the black wings boldly marked with white) will be discussed under that species. Both birds occur in much the same area, but opinions differ as to their relative abundance or rarity. The more conspicuous black crest of this bird may be remarked from afar.

In the open country north of the forest the Sudan Bustard roams the grass-covered prairies and arid plains, extending its range well into the waterless desert, as at Taberréshat in French Sudan about lat. 18° N. At the other extreme it may be encountered in quite thick mimosa bush. During the rains it will push much further north into the Sahara belt, but in the dry season, especially after the burning of the grass, it may be found quite commonly throughout tree savanna, local seasonal migration taking place within these limits.

Bustards of all kinds are of great benefit to the country apart from being fine sporting birds, for they consume a prodigous number of insects, grasshoppers and locusts forming a very large proportion of their food. Desert water-melons supply their need for moisture. There are many accounts of the Nubian Bee-eater having been seen riding on the back of this bustard, darting out from its perch to catch insects disturbed by the bustard's feet as it moves along.

The bird has an extended breeding season in the Sudan from April to October. The eggs are laid in the open, either on a small mound of sand or more usually on the bare dry earth covered with scant grass. One or two eggs are laid, yellowish or olive-brown with dark brown blotches and grey undermarkings, measuring 71–77 × 50–53 mm.

Distribution. From the country lying just south of the desert all the way from Mauretania to Lake Chad, the Sudan Bustard is present in pairs or little parties of six or so. As already noted, it will go far into the desert in the rainy season and has been taken 100 km. north of Timbuktu. Along the course of the Niger it is present from its source to Sokoto and is particularly common in Bornu and the vicinity of Chad. In the Gold Coast it roams the open bush north of the forest. It seems to be rare in Gambia, and I have no information

of its status in Sierra Leone. A darker race, *A. arabs butleri*, takes the place of *A. a. stieberi* in the Anglo-Egyptian Sudan, and other races occur in Morocco and Arabia.

DENHAM'S BUSTARD

Neotis denhami (Children)

(see Plate 13, facing page 368)

THIS is the second large bustard inhabiting our area. It is a much darker bird than the last and in the field appears larger. On closer inspection it will be seen to possess a black cap and sandy-chestnut hind neck (not freckled black and white, as in the Sudan Bustard), and this contrasts with the very dark brown back, scapulars and wing-coverts vermiculated with buff. The under side of the neck and upper part of the breast are bluish grey, below which the body plumage is white. The most noticeable feature is the black wings boldly marked with white, which betrays the identity of this bustard from afar, particularly when it takes flight. The bill is lead-colour above, whitish yellow below, and the legs and feet are white or nearly so. The wing of the adult male measures 580–640 mm., of the female 500–535 mm. The female is a much smaller bird than her consort in every way.

Originally discovered in the vicinity of Lake Chad, Denham's Bustard ranges across the whole of north Africa to about lat. 16° N. and perhaps beyond. Although recent observers in the French Sudan and French Niger hold the opinion that it is far outnumbered by the Sudan Bustard, the reverse has been stated to be the case in the hinterland of Nigeria, the Gold and Ivory Coasts, Sierra Leone and Futa-Jalon, where Denham's Bustard holds sway, though both birds may be observed feeding on the same plain. It loves especially the dried-up swamps and rough grassland, but is not restricted to any particular type of grassland and may be met with over a very large area. Seasonal migration certainly takes place to a considerable extent, the birds flying in a northerly direction in April and May and returning south in October and December, when large flights may be observed on the wing passing over such places as Zaria in the line of flight. Soon after their arrival the birds find much to eat on the newly burnt grass, their food being the same as that of the last species.

The breeding season is apparently in January and February. No nesting material is used, the single egg being laid on the bare ground, in which a depression is sometimes scratched. It is olive-brown washed with reddish brown and indistinct smudges of darker brown. Measurements are 77·5–84·5 × 54·8–55 mm.

Distribution. From the western borders of Abyssinia south to Bahr el Jebel, thence across Africa to Lake Chad, the Northern Territories of the Guinea countries, Sierra Leone and Gambia. It passes northwards in the French Sudan and Darfur in the summer (May to August or September), when it is absent from the southern part of its range, which includes the northern Belgian Congo and Ubangi Shari savanna, to which it returns in the dry season, scattering far and wide in the area north of the forest belt. At that time it is the commonest Bustard of the Bauchu plateau and is fairly numerous in Zaria Province on the Kaduna/Jos road. I have records of it from the Ngaundere plateau in northern Cameroon in January.

NUBIAN BUSTARD

Neotis nuba (Cretzschmar)

(see Plate 14, facing page 372)

THERE are more contrasts in the colouring and colour pattern of this bustard than are exhibited in the two last species. A broad black band borders the tawny-chestnut crown, passing over the eye and meeting its fellow on the nape; the sides of the face and lores are white; the neck is blue-grey and the throat black. The remainder of the upper surface is rich tawny rufous heavily vermiculated with black; the under parts are mostly white, but a broad tawny-rufous chest-band is partly concealed by the elongated blue-grey plumes of the foreneck; the bill is pale green, and the legs and feet are creamy white. Wing of the male is 440–455 mm., of the female 350–400 mm.; the tarsus of the male is 110–130 mm., of the female 105–115 mm.

In flight the white under side of the wing and the white under tail-coverts are noticeable. The wing itself is black with a large patch of white. In size the male Nubian Bustard is considerably smaller than Denham's or the Sudan Bustard. It is intermediate between those birds and the smaller bustards such as the Black-bellied. A coloured plate of this species appears in my larger work in vol. ii.

Its habits are the same as those already discussed, but it lives in much more arid country. Two eggs taken in southern Aïr on 17th August are stone-grey with rufous-brown and mauve spots and measure 70·5 × 47·5 mm.

Distribution. Although seldom recorded from within the limits of this book, there is nothing to prevent the Nubian Bustard's range stretching across the entire Sudanese arid belt. It is an inhabitant of the Egyptian Sudan, Kordofan and Red Sea Province, when it apparently extends westwards through the vast Térritoire du Tchad.

It has been obtained six days' journey north of Tanut in Damergu and in Aïr and is reported from west of Zinder and shot at N'Guigmi at the north-western corner of Lake Chad.

SENEGAL BUSTARD

Eupodotis senegalensis (Vieillot)

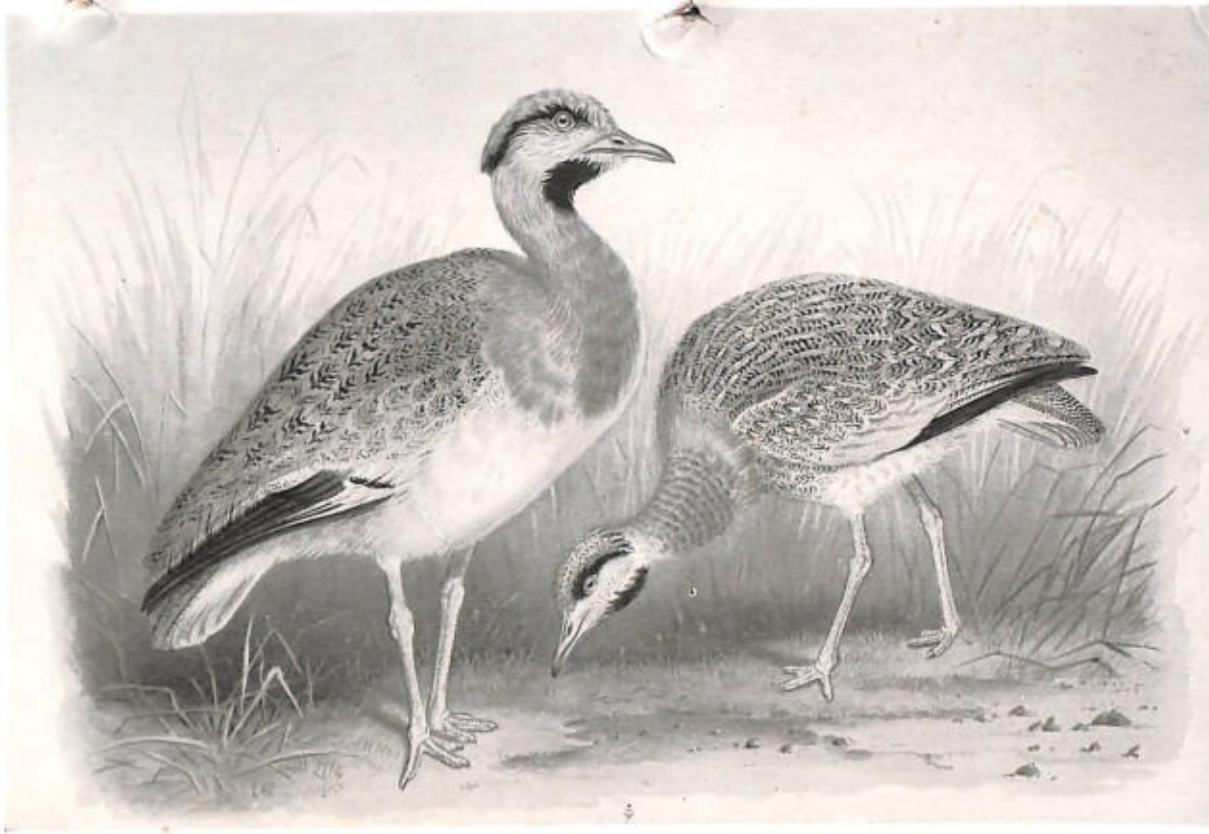
(see Plate 15, facing page 381)

THE Senegal Bustard is much smaller than the Nubian Bustard, but like it has a conspicuously patterned head, the cheeks and area surrounding the eye being white. The black crown, restricted to the male, passes into blue-grey on the hind crown; the grey area is bordered with a black band, which meets the others in a tuft on the nape. The chin and upper part of the throat are white, and a black patch is conspicuous on the lower throat. Crop and neck are blue-grey, passing into tawny-sand colour on the upper breast. The belly is white. The upper parts of this bustard are rufous-sand colour, on close inspection finely vermiculated. The wing is curiously marked, the primaries being black along the border and tip, but all the rest of each quill is white. The secondaries are all black, which results in the spread wing appearing to be divided diagonally.

The male Senegal Bustard stands about 12 in. at the shoulder, but its body is no larger than that of a chicken. The female is slightly smaller, as measurements will show. It has a brown crown and lacks the black patch on the throat and the blue-grey neck. In both sexes the legs are whitish. Wing (male) is 266–285 mm., (female) 260–275 mm.; tarsus (male) is 86–98 mm., (female) 80–91 mm. Both on the wing and when running the neck is carried stretched fully out. The clacking call note sounds like *kakara* or *wuk-caire*, repeated at intervals of two or three seconds.

The Senegal Bustard is a bird of the savanna belt, where it lives in the scrub and light bush, feeding in the evening and early morning on the farm clearings. The scrub bordering such clearings is a likely spot in which to find it. It is, of course, exceedingly wary and is more likely to be flushed from long grass than in more open surroundings, in which it takes refuge by running. The flight is rather laboured, though it can sail fast when going downwind. On landing it always runs or walks away from the spot to which it has been marked down. I have hunted this bird in Senegal close to the shore, where it haunted the long grass on the edges of the étangs.

The breeding season in Nigeria is an extended one; eggs have been found in June and at the end of September and chicks just able to fly on 27th October. The two eggs are deposited on bare ground



NUBIAN BUSTARD
Neotis nuba

in open country, and no attempt at a nest is made. The ground colour of the eggs is greenish buff heavily blotched and spotted all over with light brown and stone-coloured markings. Measurements are 49·5–53 × 37–40 mm.

Distribution. Universally distributed in the dry country up to the border of the desert but not in it. The vast plains of the Combretaceae country are its favourite haunts, but we find it common in the Inundation Zone of the Niger and throughout the Northern Territories of all political areas, especially north of lat. 10° N. It is the commonest bustard in Gambia but has not been reported to me from Sierra Leone, though it has been shot in southern Nigeria in the Calabar Province, which surprised me. It is found in northern Adamawa. It ranges right across Africa north of the forest area to the Nile Valley, Kordofan and Abyssinia.

SAVILE'S PYGMY BUSTARD

Lophotis savilei Lynes

By far the smallest of the bustards in West Africa, an adult male is no larger than a thick-knee, measuring about 16 in. from bill to tail. Unlike the other members of the bustard family within our area, it has a remarkably short neck, while the vinous brush-like tuft of recurved feathers on the nape is equally distinctive. Its face is grey or whitish, washed with buff; the chin and throat are white, with a median black patch on the latter. The general colour of the upper parts is sandy-rufous with black spearhead markings on the back, scapulars and inner coverts. At the base of the neck, on each side, a shoulder-patch of pure white is all the more conspicuous, as the breast is black as well as the belly, both of which have a steely gloss. In flight a pale band divides the black primaries from the base of the wing. Bill, legs and feet are pale yellowish-clay colour. Wing of male is 243–257 mm., female 240–246 mm.; tarsus is 69–75 mm.



In Senegal Savile's Bustard frequents the sandy inland districts in preference to the hard salt-laden ground near the coast. In the

bush and light woodland of Darfur it is nowhere seen much above plain level, meeting the Senegal Bustard only on intermediate ground. Where it occurs it is a common enough species, though not until 1920 were specimens brought home, when it was found to be an undescribed species.

The male has a high-pitched musical piping note, *peep-peep-peep*, audible up to 600 yards, while the female answers with a soft tremulous *whi-whi-whi* or *ti-ti-ti*, quite unlike the call of the male.

The nest has not been discovered, but from their actions in Darfur in mid-August the breeding season must then have been well advanced.

Distribution. From Kordofan and Darfur west to Senegal and the hinterland of Nigeria and south to Chad Territory. In Senegal it is found in the sandy districts north of the Thiês–Niger railway, where it is present at all seasons. Its range has recently been found to extend into Nigeria, where specimens have been shot near Azare, Bauchi Province, and identified by myself. It is reported also from the vicinity of Maiduguri, Bornu, but if it is present regularly in the latter district it is curious that it has never previously been reported, unless it was mistaken for *Lissotis melanogaster*. In French Tchad it is said to have been obtained at Ouadai.

BLACK-BELLIED BUSTARD

Lissotis melanogaster melanogaster (Rüppell)

(see Plate 16, facing page 385)

The Black-bellied Bustard is intermediate in size between the largest (Denham's) and the smallest (Savile's) in our area, but when seen alone appears quite a large bird, males scaling 7 lb. Its neck is long and thin, that of the male having a black band on the under side extending from the throat to the black breast and belly. There is no blue on the neck, as in the male Senegal Bustard, in comparison with which species it is larger and darker. The black under side of the male is discernible, and when on the ground the white shoulder-patches and white border of the wing are noticeable features. In flight there is more white in the wing than in any other bustard. The legs are creamy white in colour, about 10–11 in. long.

The female is less easily distinguished, lacking the black on the neck and under parts, which are buff and white, the upper parts being more tawny than in the male and heavily marked with black.

This is the most widely distributed of all the bustards in West Africa. It is a savanna belt species, ranging from east to west of the continent. It is found in a wide variety of terrain, being exceedingly common in orchard bush as well as in dry plains from the coastal

plains as at Accra to the arid country bordering the desert in French Sudan and French Niger, but it is not a desert bustard and at most only frequents the fringe. It loves to wander over old fields and pastures, frequenting the latter to feed on the dung beetles, of which it is very fond. Other remains found in the crops of specimens examined in Sierra Leone include grasshoppers, palm-kernels, black ants, grass seeds, and various beetles.

Sportsmen are probably more familiar with the Black-bellied Bustard than with any other of the family except perhaps in Senegal, where *Eupodotis senegalensis* greatly outnumbers it. The old males afford a grand sight as they glide gradually to earth with tilted wings, giving an unforgettable impression of black and white outlined against the sky of an early morning, as one of my correspondents wrote of the birds in the Inundation Zone of the Niger. To what extent it is migratory in our area I am not certain.

Widespread as it is, few eggs have been found. Two complete the laying, the eggs being deposited on the bare ground in open scrub, not necessarily under the shade of a bush. No scrape or depression is used. Spherical in shape, the eggs are brownish buff, blotched and smeared with various shades of brown with underlying markings of stone-colour. They average 58·88 × 49·92 mm. The breeding time is in July and August in Nigeria.

Distribution. Locally distributed over the whole of Africa; the typical race extends from Gambia and the French Sudan throughout our area excepting the forest region, and wherever open plains and light bush occur it may be encountered. It is found in all British Colonial Possessions. Ranging right across Africa and south to the Zambesi, its place is taken by a larger subspecies in South Africa.

The following is a summary of its status in our area.

Gambia. Not by any means a common bird. It is looked upon as a prize by sportsmen, who seek for it on the open groundnut country.

Sierra Leone. Frequently seen in the Makari district in the summer and in the vicinity of Teko but distinctly local in the Protectorate. It is hunted in high grass in an area which is partly swamp and partly orchard bush.

French Niger. A favourite habitat in the Inundation Zone of the Niger is the great open grassy plains around Ouroundia; occasionally it approaches the edge of the desert.

Gold Coast. Common and generally distributed in the dry season in the Northern Territories and in the coastal lands from the Accra plains to the eastern border.

Nigeria. Widely spread in the area north of the forest. It is numerous in the bush, especially around Zaria, and has been seen in various localities around Lake Chad. On the Banchi plateau it is the commonest bustard.

FAMILY BURHINIDAE

Key to the Thick-knees or Stone Plovers

1. Ground colour of upper parts bright rufous sand-colour; wings and back boldly spotted with black, crown and neck heavily streaked .. *Oedicnemus capensis maculosus*, p. 379
   Ground colour of upper parts brown or greyish brown, usually with sandy-coloured margins to feathers .. 2
2. Size large (wing over 225 mm.)
   Oedicnemus oedicnemus oedicnemus, p. 376
   Size smaller (wing under 225 mm.) 3
3. Narrow white bar on wing separating lesser wing-coverts from median and greater coverts
   Oedicnemus vermiculatus vermiculatus, p. 381
   Oedicnemus vermiculatus büttikoferi, p. 380
   No white bar on wing separating lesser from median and greater coverts .. *Oedicnemus senegalensis senegalensis*, p. 377

EUROPEAN THICK-KNEE

Oedicnemus oedicnemus oedicnemus (Linnæus)

The European Thick-knee is not likely to be recognised as such unless actually obtained, for it is far too wary a bird to allow close inspection. Of the three species of thick-knees in West Africa the tawny-rufous colouring of *Oe. capensis maculosus* separates it from all the others at once. There remain two other birds in Upper Guinea: *Oe. vermiculatus büttikoferi*, which has much the same colouring as the European Thick-knee and shares with that bird the white band on the wing separating the lesser from the median coverts, but it is smaller in size and has green legs. The other, *Oe. senegalensis*, has no white band on the wing between the lesser and median coverts, is a smaller bird but has yellow legs, as has the European Thick-knee.

The colour of the legs is the first thing to ascertain before fading after death; if yellow, then look for the narrow wing-bar. If that is present and the wing measures over 225 mm., the specimen is sure to be an example of the European Thick-knee on a visit to Africa. I have given a full description of this bird in the eighth volume of my larger work. One other point of distinction between it and *Oe. senegalensis* may be mentioned as a final test. In the European bird the *two* outermost long primaries have a white patch extending on

to the outer web; in *Oe. senegalensis* this white patch extends on to the outer web on all *three* outermost primaries.

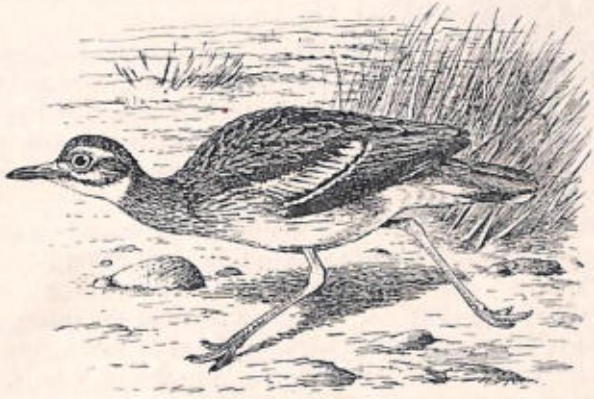
The habitat of the European Thick-knee is the same as that of the Senegal Thick-knee and its habits are likely to be similar when in its winter quarters.

Distribution. A European bird which breeds in Britain and in central and southern Europe. It is partially migratory, wintering in Mediterranean countries, N.E. Africa, the Sudan, etc. On rare occasions it wanders as far as Kenya and Uganda. It is probable that it visits the French Sudan and French Niger and Chad Territory every winter but has only once been actually detected—a bird caught at Tawa, French Niger, about lat. 14° N., within the limits dealt with in this book.

SENEGAL THICK-KNEE

Oedicnemus senegalensis senegalensis Swainson

THE line drawing given of this bird, which measures in the drawing depicted about 14 in. from bill to tail, gives some indication of its general appearance. Its legs, which are pale yellow, are long, the



tarsus measuring 68–78 mm. The upper parts are grey-brown, with cinnamon-buff margins to the feathers, the whole with blackish shaft-streaks, and the total effect is that of a sandy-coloured bird. The face is buffish white and there is a pronounced streak of that colour over the eye. The under parts are buffish white, the throat is heavily streaked with black, and the under tail-coverts are cinnamon. The axillaries and inner lining of the wing are white. When closed the wing shows two dark bands with a pale area between, but

in flight the wings appear darker, with white showing in the middle. Should there be opportunity to observe this bird stationary, its abnormally large pale yellow eye and the broad head will be remarked, but particularly note the colour of the legs—yellow, not green. The wing measures 202–220 mm.

The fact that the thick-knees have only three toes proclaims their affinities with the bustards and is an indication that they can run exceedingly fast. This they prefer to do to taking to the air if danger threatens them.

The Senegal Thick-knee is the commonest member of the group in West Africa. It prefers fairly open land, sand or bare earth, with handy patches of cover close at hand. It loves especially the sandy river beds and may constantly be seen on the mud-banks by the riverside. It has a distinct liking for water, much more so than the Spotted Thick-knee. Sometimes it perches on the rocks in mid-stream. All along the upper waters of the Niger it is a familiar sight, and there it submits meekly enough to bullying by the Spur-wing Plover.

In some villages the Senegal Thick-knee has become absurdly tame and may be heard calling in a weak imitation of the European Thick-knee from some housetop. When it flies it does so with erratic flight, seldom sustained for long. It lives on worms, snails, tadpoles, frogs and small rodents and does most of its feeding at night, when it may be heard calling incessantly.

No nest is made by this thick-knee, which normally deposits its two eggs on the bare ground, occasionally on flat rocks and even on housetops. In colour the eggs are rich buff, more or less heavily spotted and blotched with different shades of brown and blackish, the underlying markings being stone-coloured. They measure 45–50 × 33·5–36·5 mm.

Distribution. Widely spread in western Africa from Senegal to the Loango coast, extending eastwards to Chad and along the northern boundary of the equatorial forest in the Uelle district, where it appears to be migratory. It occurs not only in the interior but in many coastal districts, even in such provinces as Benin, but appears to be more at home in the northern latitudes of Sokoto, Bornu, Kano and along the Upper Niger. It will visit forest clearings but looks very much out of its element in such surroundings. It seems to be a dry-season visitor to many districts, but its movements are not easy to follow. It is found in all our Colonies, including Sierra Leone, where it is distinctly local.

In eastern Africa from Egypt south to Kenya another slightly greyer race, *Oe. s. inornatus*, is found.

SPOTTED THICK-KNEE

Oedicnemus capensis maculosus Temminck

About the same size as the last species discussed, the Spotted Thick-knee is more easily recognised than the other members of the genus in our area. As shown in the line drawing, the spotted plumage is quite distinctive, while the ground colour is tawny rufous, upon which the black markings stand out vividly. The long legs (tarsus 80–82 mm.) are chrome-yellow, the large eye lemon-coloured and the bill black with yellow base. The wing measures 214–235 mm.



The Spotted Thick-knee can run incredibly fast, which it does with its neck held stretched out. If alarmed it will squat rather than run or fly, with head and neck flat against the ground. In flight the wings are decurved and beaten rather slowly, and the legs are stretched out behind the tail. The white patches on the three outer primaries are then very conspicuous.

The country which it affects is the dry bush and the open plains, and when the grass is short it may be encountered in glades in open woodland, especially where there are bare patches with gravel and stones. Water is much less a requirement of this species than the last, and it may be met with far in the Sahara, as in the Aïr Massif.

The eggs of this subspecies have not been collected, but all thick-knees' eggs are very much alike—those of the typical race were described in detail in my larger work.

Distribution. The West African range of *Oe. capensis maculosus* extends from Senegal and Gambia through the Northern Territories of the Ivory and Gold Coasts, Togoland, Dahomey and Nigeria to the Ubangi-Shari, where it has been procured about a hundred miles north of the Ubangi River. Eastwards it extends via Aïr across Africa through Darfur to Eritrea, Somaliland, northern Uganda and Kenya Colony. Recorded localities in British Colonies in western Africa are Kuntaia; Gambia; Gambaga, Bole and Lawra; Gold Coast; near Zaria, Nigeria.

WATER THICK-KNEE

Oedicnemus vermiculatus büttikoferi Reichenow

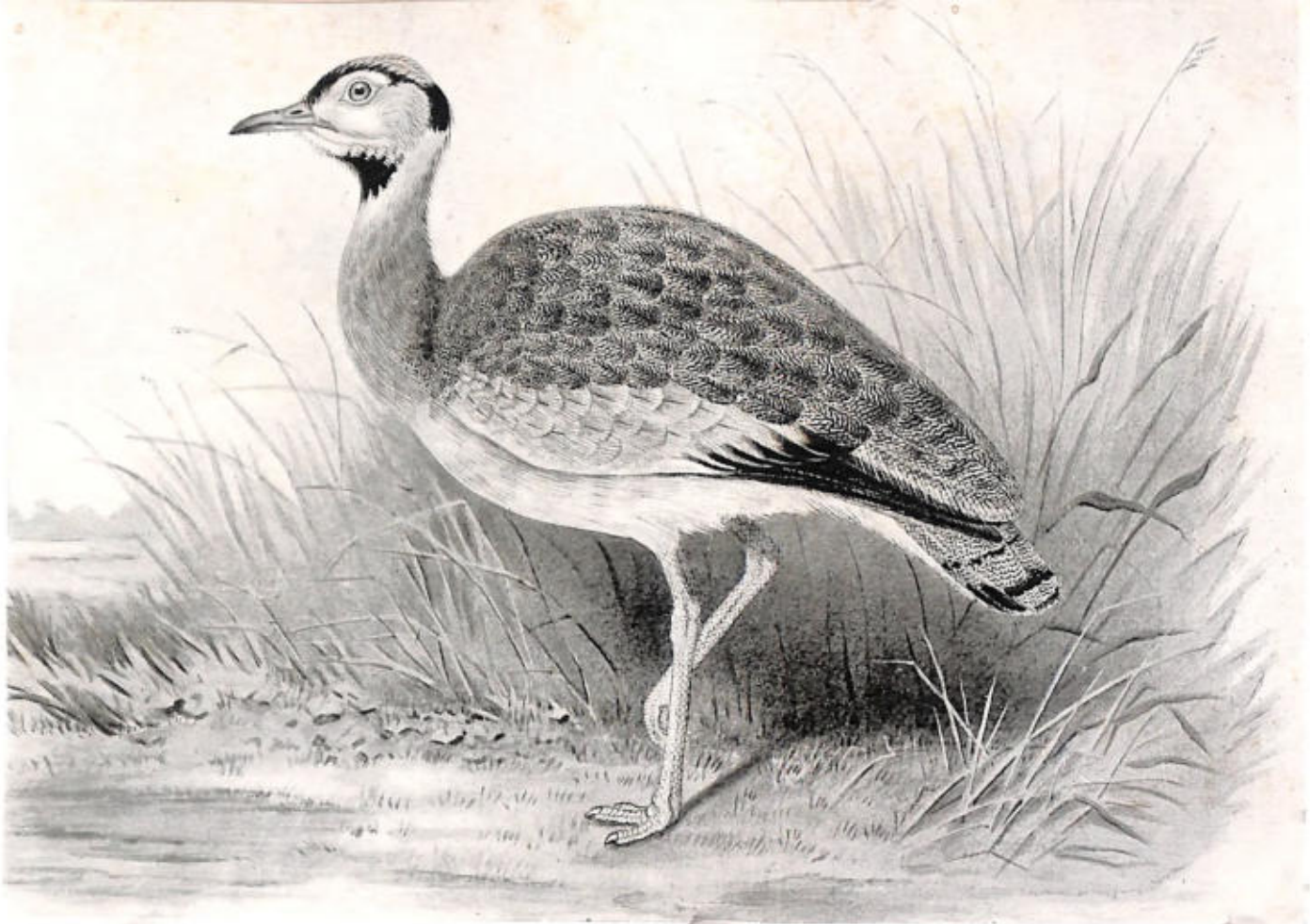
THE best means of distinguishing this species from the Senegal Thick-knee, which it so closely resembles in plumage and other particulars, is by the colour of its legs, which are greenish instead of yellow. In the hand it will be seen to be greyer brown, lacking the sandy-buff margins to the feathers of the crown and upper parts. Another distinction is to be found in the wing, where a white bar separates the lesser series from the other wing-coverts. There is no such dividing line in *Oe. s. senegalensis*. The wing of *Oe. v. büttikoferi* measures 200–203 mm., tarsus 73–79 mm., culmen 50–54 mm.

The country frequented by this thick-knee is essentially different from that in which the Spotted Thick-knee has been found. Water is essential to it, and consequently it is never found in waterless bush or desert. It may be seen, like the Senegal Thick-knee, in the dry or semi-dry beds of rivers but more often near the mouths of rivers and sometimes on the seashore itself. It may be seen on swamps among reeds and on the sandbanks of the larger rivers, running into the adjoining bush when disturbed. In Liberia it frequents the coastal lakes during the dry season, but, as in Nigeria, the birds will often assemble at the river mouths, where they frequent the sandbanks. Specimens examined had been feeding on small crustaceans.

The Water Thick-knee lays two eggs, which it deposits in various situations on the bare earth, in a depression among short grass and creeping plants, on soft soil on the top of some rocky islet in a stream, on the sandy shores of islands or on gravel by a salt lake. The eggs have a whitish-buff or light clay-coloured ground and are heavily smeared and blotched with umber brown and sepia, with underlying markings of lilac stone-colour. Measurements are 45–47 × 34–36·2 mm.

Distribution and Races. In my larger work I included the typical subspecies as just coming within our limits in Lower Guinea, but as Gaboon specimens approach these of Upper Guinea in the larger size of the culmen—the only distinction between the races—I prefer to ally them with the Upper Guinea subspecies. I accept for the range of *Oe. vermiculatus büttikoferi* Liberia to southern Nigeria and also Gaboon (it is not yet recorded from Cameroon).

In Upper Guinea the Water Thick-knee seems to be restricted to the country south of the forest or in the forest belt and is especially found on the shore line between the Dodo and Pennington Rivers of southern Nigeria, as well as recorded from Lagos, the Niger and the Benue. Seen recently near Accra in the Gold Coast, it is common on the lakes and rivers of Nigeria but is not yet reported from Sierra Leone.



SENEGAL BUSTARD
Eupodotis senegalensis

In South and East Africa from Kenya to the Cape, and north to Angola, the smaller-billed *Oe. vermiculatus vermiculatus* takes its place. Gaboon examples are somewhat intermediate.

FAMILY JACANIDAE

LILY TROTTER

Actophilornis africanus (Gmelin)

This striking bird, both in appearance and colouring, is remarkable chiefly for its extraordinarily long toes, which in males acquire a length of the middle toe of 87 mm. Even more peculiar is the hind toe, which has a claw alone of 50 mm. On an average the females are much larger than the males in all proportions. Wing of the male is 135–152 mm., of the female 145–180 mm., but there is much individual variation.



The body is about the size of of an African Crake. Its thin slate-coloured legs are nearly 6 in. long without the toes; the bill, which is blue-grey, is long and straight and the horny frontal shield lead-colour except in breeding seasons, when it changes to vivid blue. The colour of the body is chestnut-maroon; throat and cheeks are white. A golden collar almost surrounds the neck; the hind crown and back of the neck are black, with an oily green or blue gloss. Unlike the rails, the jaçaná has long and narrow wings with black tips, which span 12 in. from tip to tip when extended.

The Lily Trotter has gained its name from its habit of running over the broad leaves of the water-lilies and other aquatic plants, its long fine wide-spreading toes enabling it to traverse such floating vegetation with ease. Its body is very light, and as it runs hither and thither, searching for the seeds of the water-plants and grasses and for the insects which gather upon them, it makes little impression even upon a floating leaf. The young can follow their parents soon after hatching.

The jaçaná is not a shy bird and is a familiar object on all still or nearly still water, backwaters, lagoons, swamps, small lakes, fresh-water creeks and even along the big rivers where there is a growth of rank grass along the shores. The still reaches of the rivers and quiet lily-covered backwaters are its natural home. If injured it can swim and dive with skill, but normally it prefers terra firma, if its carpet of aquatic plants can be so termed.

At the commencement of the breeding season—in April and May—the birds are very noisy, chasing one another and uttering their guttural call—*ka-ka-ka-ka*—repeated without change of tone. In flight the legs and toes are held out behind and the wings beat rapidly. The breeding season lasts from April (when courting and fighting take place) until the end of August. The nest is built on floating vegetation and on the leaves of water-lilies; when natural sites are not available the birds build substantial submerged foundations. The nests are well spaced at intervals, there being no attempt at colonial nesting. Four eggs complete the clutch. The eggs, laid from June to August, are very handsome in shape, sharply pointed at one end and having a highly glossed surface. The ground colour is coffee-coloured, criss-crossed in all directions with irregular black lines and fine pencillings of light brown. Eggs measure 31·6–36·9 × 22·48–24·5 mm.; one, exceptionally broad, is 27·0 × 19·5 mm.

Distribution. Widely dispersed over the whole West African region except in the forest area. When driven from their normal haunts by the drying up of pools they congregate in large numbers in swamps or open water. Thousands of them have then been seen in dense flocks in the inundation zone of the Niger. The jaçaná is spread over the whole Ethiopian region from Senegal and the Egyptian Sudan to Cape Province and is a common bird in all our British West African Possessions. There are no subspecies.

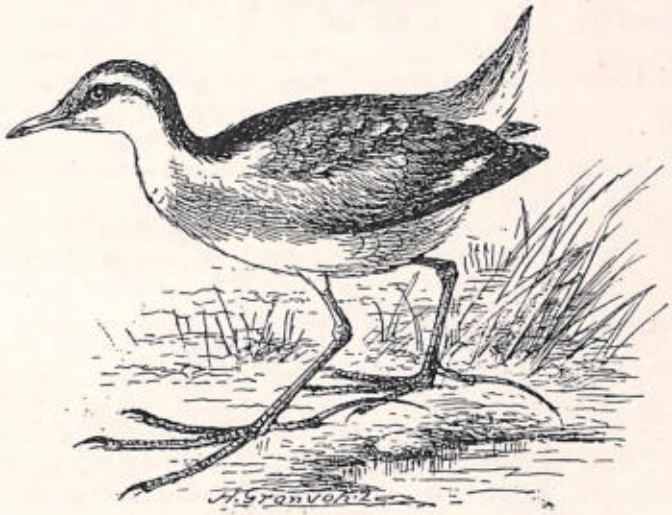
LESSER LILY TROTTER

Microparra capensis (Smith)

In comparison with the Common Jaçaná, the present species is a very much smaller bird which measures under 6 in. in length, and though it stands high on its legs, these are not more than 3 in. in length (tarsus 34–38 mm., mid-toe 47–56 mm.). It may best be distinguished by its chestnut crown and golden-brown forehead. It has no horny shield on the forehead as has the Common Jaçaná, the entire crown being feathered. The lack of this shield and also of any black on the crown and neck is probably the best way to distinguish the Lesser Lily Trotter, which has often been mistaken for the young of its larger relative. The wings when expanded are decidedly

paler, and the broad white band caused by the tips to the secondaries is noticeable in flight. The wing is 81–94 mm. The sexes show little difference in size or in coloration.

In its habits and type of habitat it resembles the Common Lily Trotter but is a much scarcer bird, restricted to certain areas, from which it does not seem to have spread. It appears to be resident where it occurs but its nest has not been found, though it is doubtless to be found in similar situations to that of *Actophilornis africanus*.



Distribution. From the confluence of the Zeraf River with the Upper Nile, south through Uganda and Nyasaland to Cape Province and Damaraland. In West Africa it is recorded from Fort Lamy near Lake Chad, from various places in northern Nigeria: Hadejia, Kano Province, and Kazaure, Kano Province, on Lake Alo, in Bornu Province, and on a swamp near Sokoto in the province of that name and from Andoukou in the French Sudan. It seems to be extremely local but is not uncommon in places where it has been observed.

ORDER CHARADRIIFORMES

SUB-ORDER LIMICOLAE

INTO this sub-order fall three families, which will be dealt with in rotation.

In the following list of English names it will be seen to which family the species are referred.

Family *Rostratulidae*	Family *Charadriidae*	Family *Scolopacidae*
Painted Snipe	West African White-fronted Sand-Plover	Common Snipe
	Kentish Plover	Great Snipe
	Kittlitz' Sand-Plover	Jack Snipe
	Grey Plover	Curlew-Sandpiper
	Caspian Plover	Dunlin
	Siberian Ringed Plover	Little Stint
	Lesser Ringed Plover	Temminck's Stint
	Three-banded Plover	Broad-billed Sand-piper
	Forbes' Banded Plover	Knot
	White-faced Lapwing	Sanderling
	Senegal Plover	Ruff
	White-headed Plover	Turnstone
	Spur-winged Plover	Common Sandpiper
	Senegal Wattled Plover	Green Sandpiper
	Black-headed Plover	Marsh Sandpiper
	Brown-chested Wattled Plover	Greenshank
	Black-winged Stilt	Wood Sandpiper
	Avocet	Redshank
	European Oyster-catcher	Spotted Redshank
	Black Oyster-catcher	Black-tailed Godwit
		Bar-tailed Godwit
		Curlew
		Eastern Curlew
		Sushkin's Curlew
		Whimbrel
		Grey Phalarope



BLACK-BELLIED BUSTARD

Lissotis melanogaster melanogaster

FAMILY ROSTRATULIDAE

PAINTED SNIPE

Rostratula benghalensis benghalensis (Linnæus)

(see Plate 17, facing page 388)

THE Painted Snipe is remarkable for the fact that the female is more gaudily coloured than the male and, moreover, is believed to be polyandrous, while not only in colour but also in domestic duties the relations of the sexes are reversed. Although in its external appearance the Painted Snipe has a superficial resemblance to the Common Snipe, having a similarly fine bill though considerably shorter, it has none of the liveliness of that sporting bird and can only be described as sluggish and more like a rail on the wing than a true member of the snipe family.

In its coloration the female is certainly a beautiful bird. The wings are truly "painted" with oval buff spots on a black ground; back and scapulars are grey-brown vermiculated and blotched with metallic olive-black, and each blotch is tipped with white. The scapulars have a broad buff margin which causes a long streak down each side of the back. An ophthalmic ring and eye-stripe is pure white. The neck and breast are rich chestnut, separated from the white belly by a black band. The bill is dark brown; legs and feet are greenish. The wing is short (122–139 mm.) and rounded.

The male shares with the female the blackish crown divided by a buff streak down the centre, but lacks the rich chestnut breast of his consort and the pure white eye-stripe.

Although not migratory in the true sense of the word, the movements of the Painted Snipe are governed to a large extent by the rains, its arrival and departure being everywhere rather irregular. It enjoys freshly flooded land but inhabits thicker cover than the Common Snipe, in which it will lie until almost trodden upon, when it gets up without the speed of our bird, to fly rather unsteadily (not unlike a rail) and drop again quickly into the herbage.

Proof seems to be strong in support of the Painted Snipe's being polyandrous, female attacking female for the possession of the male, the lady displaying to her would-be suitors and leading them a pretty dance. When the male has been chosen, the female lays the eggs in the nest which her spouse has prepared, and having completed her clutch she forthwith leaves the incubation and rearing of the family to the deserted husband, seeks another male and sets him to do likewise. The hen merely limits the number of her mates to the number of clutches she can comfortably produce. The males appear to take this state of affairs as being all in the day's work.

The nest is usually a depression in the ground lined with leaves and dry grass, placed above water level and well hidden by overhanging grass. Four eggs is the normal complement, with cream or buff ground, spotted, scrawled and blotched with black and sepia and underlying stone-coloured markings. Eggs measure 31·5–39 × 22·5–27·4 mm.

Distribution. Southern Asia and Asia Minor to Japan and China and in Africa from Senegal and Egypt to Cape Province and Madagascar. In West Africa fairly generally but sparsely distributed from most areas, migratory in the dry belt, arriving in Gambia about June, but evidence of local movements is not satisfactory. It probably breeds in the Inundation Zone of the Niger, if not elsewhere, but eggs have not been found to date in our area, though young barely able to fly have been observed. Paired birds have been seen in Sokoto in June and July. It may be encountered from the coastal marshes in suitable spots to Lake Chad and the Inundation Zone of the French Sudan and is found in all our Colonies, but has not been reported from Sierra Leone.

FAMILY CHARADRIIDAE

THE species of this family, of which a list is given on page 384 in the second column, fall more or less naturally into four sub-families: The Shore Plovers (*Charadriinae*); the Lapwings (*Vanellinae*), with which we associate the Stilt; the Avocet (*Recurvirostrinae*) and the Oyster-catchers (*Haematopodinae*).

I do not intend in this handbook to reproduce from my larger work the key to these four groups. Both stilt and avocet are too well known and too striking in appearance to require more than the accompanying text figures (see pp. 407 and 408) to enable them to be identified, and the same applies to the oyster-catchers (p. 409), over which there can be no confusion. Separate keys will be given, however, to the shore and banded plovers and to the lapwings, as each group contains a number of species.

Key to the Shore-Plovers and Banded Plovers

1. Medium-sized plover (wing over 177 mm. (7 in.))
Squatarola squatarola squatarola, p. 391
Small plovers (wing under 152 mm. (6 in.)) 2
2. Dark area across chest (pale drab, black or chestnut) .. 3
No dark area across chest, which is mostly white .. 7

3. Double dark band across chest, between which is a white band 4
   Chest not as described above, either uniformly drab (pale brown) chestnut or black 5
4. Forehead white, contrasting with crown
   Afroxyechus tricollaris tricollaris, p. **394**
   Forehead brown like crown .. *Afroxyechus forbesi*, p. **395**
5. Broad black pectoral band across otherwise pure white breast 6
   Breast drab or chestnut, sometimes bordered narrowly below with black .. .. *Eupoda asiatica*, p. **392**
6. Shafts of all primaries white *Charadrius hiaticula tundrae*, p. **393**
   Shaft of outermost primary white, all other shafts brown
   Charadrius dubius curonicus, p. **394**
7. Conspicuous black band passing from behind eye to meet its fellow in upper mantle; lesser wing-coverts mostly deep black .. *Leucopolius pecuarius pecuarius*, p. **389**
   Black band behind eye slightly, if at all, developed; lesser wing-coverts not deep black, but mostly brown 8
8. White half-collar at back of neck; general colour of upper parts grey-brown, sometimes washed with russet on nape only *Leucopolius alexandrinus alexandrinus*, p. **389**
   No white half-collar at back of neck; entire upper parts strongly washed with rust-colour
   Leucopolius marginatus pallidus and subsp., p. **387**

WHITE-FRONTED SAND-PLOVER

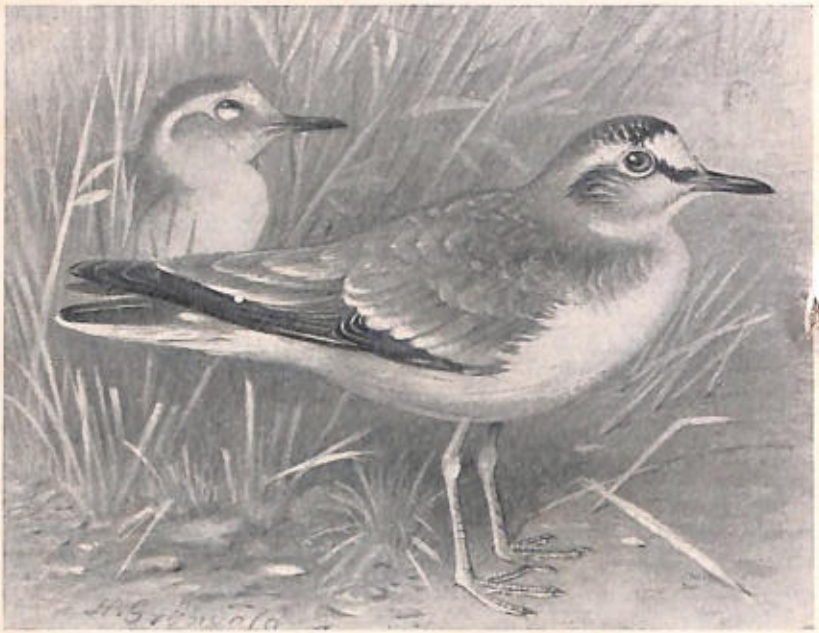
Leucopolius marginatus pallidus (Strickland)

Two races of this sand-plover come within our limits. Rather smaller in size than the Lesser Ringed Plover, this bird may be recognised in its breeding plumage by the decided rusty tinge of its upper parts. A broad white forehead, with a black band separating it from the crown, and a black loral streak are features to note. The under parts are white with rusty patches on each side of the breast. In flight two narrow white wing-bars show prominently. The bill is black, the legs are greenish and the wing measures 97–103 mm.

This is a true shore plover, but one which also ascends the big rivers and may consequently be seen on the sandbanks. It likes muddy shores such as are to be found in the Ondo Province of Nigeria and may be observed at the estuaries of all the rivers. It frequents the shore certainly from August onwards until the following spring and sometimes congregates in flocks of fifty or more. It

occurs on all the coastal lagoons and is entirely a resident African species, breeding on the sandbanks and shores of the rivers, chiefly in April and May.

Eggs are deposited either in a slight depression scraped on a gravel bank or upon little banks of drifted sand made by the action of the wind, no nest being made. The eggs are two in number, with ground of clay-colour, sparingly spotted and irregularly lined with brown and blackish markings with ashy shell markings, and measure 26·4–29·9 × 20·1–22 mm.



Distribution. Restricted to the coast and rivers of West Africa from Liberia to Damaraland, It has not yet been reported from Sierra Leone, though it probably occurs. On the big rivers it is to be found wherever there are sandy margins. It has been found breeding in both the Gold Coast and Nigeria, in the latter country as far inland as Lokoja, Loko and Idah.

L. m. pallidus is found throughout the area mentioned above except on the Upper Niger, where a more rust-coloured subspecies takes its place, ranging from the vicinity of Gao to that of Bamako, which has been named *L. marginatus russatus* Bates, and is common in the Inundation Zone of the Niger.



PAINTED SNIPE

Rostratula benghalensis benghalensis

KENTISH PLOVER

Leucopolius alexandrinus alexandrinus (Linnæus)

THIS bird may easily be confused with the last described, from which it may be distinguished by its darker appearance by having black patches on either side of the breast close to the bend of the wing instead of rust-coloured patches, and by its more ashy-coloured upper parts, which lack the bright rusty tinge of the White-fronted Plover. Like that bird it has a broad white forehead, separated from the hind crown by a black band. A white collar surrounds the neck, and the entire under surface is pure white save for the black patch already mentioned on each side of the breast. The upper parts are ash-brown. As the breeding season approaches the whole of the hind crown becomes washed with tawny. The female lacks the black band on the crown, and the breast patches are ash-colour instead of black. In both sexes a black line extends from the eye to the base of the black bill. Legs and feet are lead-colour; the wing is 104–115 mm.

This is a European migrant which may be looked for between early October and March. I do not believe it breeds on the African mainland in our area, but it does so in the Cape Verde Islands and also in the Canaries. Within our limits it has been observed in company with White-fronted Sand-Plovers on the shores and estuaries.

Distribution. A cosmopolitan species breeding commonly in Europe and Asia and northern Africa and as far south as the Cape Verde archipelago. European migrants visit the mainland to reach the Cape. It is recorded from Senegal, Sierra Leone, Liberia and southern Nigeria, but is doubtless widespread in winter wherever the shore line is sandy or muddy.

KITTLITZ' SAND-PLOVER

Leucopolius pecuarius pecuarius (Temminck)

ANOTHER sand-plover about the size of the White-fronted, which may be distinguished from both that species and the Kentish Plover by the much narrower white forehead and from all of its kind within our area by having a black band passing from behind the eye down the sides of the neck and beneath the white collar, as can be plainly seen in the accompanying text figure. The brown crown with sandy tips and nape are encircled by a white band, which forms a collar on the hind neck. A narrow black band passes from the base of the bill to the eye, and another black bar borders the white forehead.

KENTISH PLOVER

Leucopolius alexandrinus alexandrinus (Linnæus)

THIS bird may easily be confused with the last described, from which it may be distinguished by its darker appearance by having black patches on either side of the breast close to the bend of the wing instead of rust-coloured patches, and by its more ashy-coloured upper parts, which lack the bright rusty tinge of the White-fronted Plover. Like that bird it has a broad white forehead, separated from the hind crown by a black band. A white collar surrounds the neck, and the entire under surface is pure white save for the black patch already mentioned on each side of the breast. The upper parts are ash-brown. As the breeding season approaches the whole of the hind crown becomes washed with tawny. The female lacks the black band on the crown, and the breast patches are ash-colour instead of black. In both sexes a black line extends from the eye to the base of the black bill. Legs and feet are lead-colour; the wing is 104–115 mm.

This is a European migrant which may be looked for between early October and March. I do not believe it breeds on the African mainland in our area, but it does so in the Cape Verde Islands and also in the Canaries. Within our limits it has been observed in company with White-fronted Sand-Plovers on the shores and estuaries.

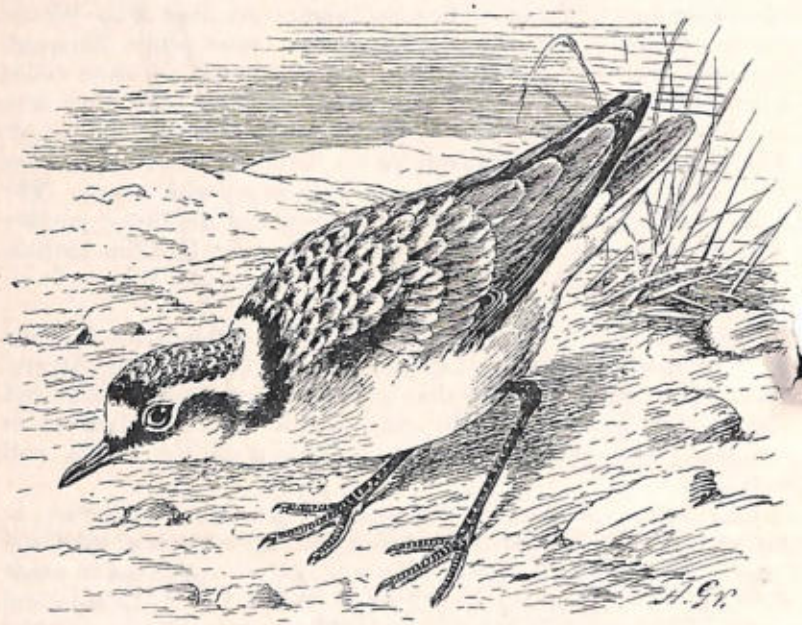
Distribution. A cosmopolitan species breeding commonly in Europe and Asia and northern Africa and as far south as the Cape Verde archipelago. European migrants visit the mainland to reach the Cape. It is recorded from Senegal, Sierra Leone, Liberia and southern Nigeria, but is doubtless widespread in winter wherever the shore line is sandy or muddy.

KITTLITZ' SAND-PLOVER

Leucopolius pecuarius pecuarius (Temminck)

ANOTHER sand-plover about the size of the White-fronted, which may be distinguished from both that species and the Kentish Plover by the much narrower white forehead and from all of its kind within our area by having a black band passing from behind the eye down the sides of the neck and beneath the white collar, as can be plainly seen in the accompanying text figure. The brown crown with sandy tips and nape are encircled by a white band, which forms a collar on the hind neck. A narrow black band passes from the base of the bill to the eye, and another black bar borders the white forehead.

The upper parts are mostly blackish brown, the feathers with sandy-rufous margins. The middle pair of tail-feathers are blackish, the remainder white. Chin and throat are white, but the rest of the under parts are strongly washed with pale sandy rufous. The female closely resembles the male, but the black band on the forecrown is narrower. Bill is black; legs and feet are greenish grey. Wing measures 95–104 mm.



This is an African resident which has a wide distribution and is by no means confined to the coastline, breeding on numerous inland rivers and lakes. Juvenile examples have been taken as far inland as Timbuktu, and throughout the upper waters of the Niger it is absent only from that part of the river where there are continuous rocks and rapids. It does not, like the White-fronted Plover, keep to the sand-banks and shores of the rivers but wanders about on the alluvial flats and may often be seen on cultivated ground. It runs about seeking its food in scattered parties, sometimes in considerable companies. When on mud-flats, with which it assimilates so closely, this bird stays perfectly still if alarmed. Food consists largely of insects, especially small beetles.

Kittlitz' Plover often breeds on the dried mud-flats in preference to the lagoon side, or in mud dust in the marshes. The nests may be

recognised by the scraps of vegetation collected near the nest with which the bird covers the eggs before departing. The eggs are two in number and are embedded either in sand at the lagoon side or in mud dust on the marshes, with only the top exposed. In colour the eggs are whitish, the ground being almost obliterated by the speckles and confluent markings of grey and grey-brown, and a few black lines superimposed in some specimens. They measure 30–33 × 21–22·5 mm. June to August appears to be the breeding season.

Distribution. Restricted to Africa and Madagascar, where it ranges from Senegal to the Egyptian Sudan south to Cape Province. It is found throughout the whole of the area with which I deal in this handbook from the coast to the borders of the desert and is not restricted to lagoons or river-beds. We find it in all our Colonial Possessions.

GREY PLOVER

Squatarola squatarola squatarola (Linnæus)

This well-known shore plover is considerably larger than those which have been dealt with up to now. It resembles its better-known relative, the Golden Plover, in this respect, measuring in total length about 12 in. with a wing expanse of 24 in. In its dull winter garb, ashy-brown above mottled with white, and white under surface mottled with brown, it is not the handsome bird which it becomes later in the season as spring approaches, the upper parts then being boldly spotted black and white, the crown beginning to turn white and the under parts from chin to belly assuming the jet-black feathers with which it is later adorned. When handled the Grey Plover will be seen to have a minute hind toe, which is then a good guide to the bird's identity. The black bill is robust, and the legs, upon which it stands rather higher than the Golden Plover, are blue-grey in colour. The tarsus measures 45–51 mm. and the wing 189–201 mm.

The Grey Plover is not resident in Africa but visits our area regularly from its breeding places in northern Europe and Asia, from which it journeys thousands of miles over the globe. A coastal bird which frequents the shores and lagoons and especially the mouths of the larger rivers, it does not wander inland so far as I am aware, all the records—and there are many—having come from the coast. It visits our area mainly from September until March, but earlier arrivals and later departures are not uncommon and some birds undoubtedly remain in the tropics all through the winter but do not, of course, breed. Birds in full summer dress have been observed in

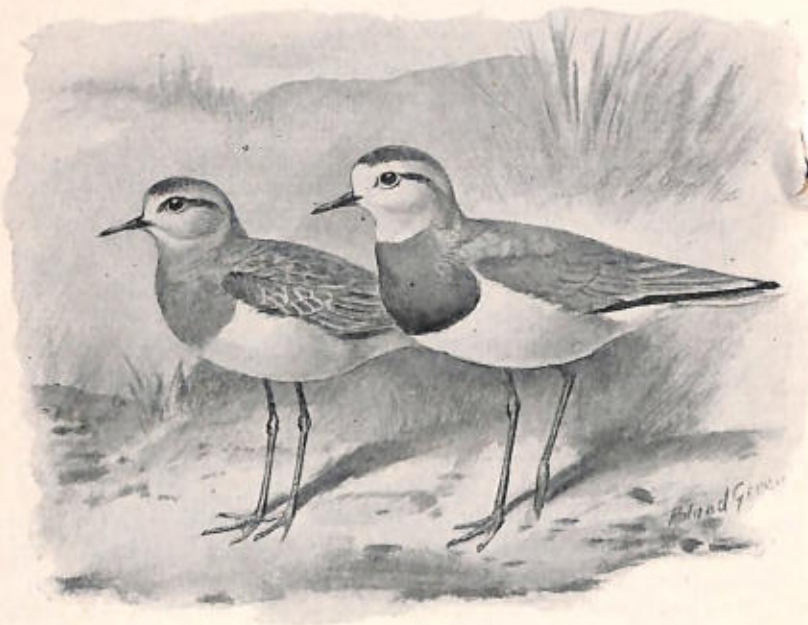
August at Lagos and others in late June, but the majority leave before April is far advanced.

Distribution. A Palaearctic and North American species, breeding in the far north, wintering in Africa and South America. In West Africa it is not recorded away from the coast, but in East Africa it visits the shores of the Great Lakes in the winter months.

CASPIAN PLOVER

Eupoda asiatica (Pallas)

THIS very rare plover—rare, that is to say, within our limits—has a body similar in size to the Marsh Sandpiper (*Glottis stagnatilis*). It has a white forehead, dull grey-brown plumage from crown to upper



tail-coverts, a white throat and belly and pale brown breast with grey fringes to the feathers and (particularly to note) a broad white stripe passing over the eye. The wings are black, with shining white shafts to all the primaries. The tail is brown, the middle feathers are pointed and longer than the rest, and the under tail-coverts are white. A black bill and greenish-slate legs complete the colour scheme of this (in winter) very drab bird. Very different does it appear in summer, when the whole breast is rufous chestnut, divided

from the white belly by a black band, and most of the face, bar the brown crown, is pure white. The wing measures 140–155 mm.

Only comparatively recently has this visitor from Asia made its appearance in the area we deal with, though it does occur spasmodically in East and South Africa as far as Cape Province and Damaraland. The single record for West Africa is of a flock of 8–10 birds on the Tibati airport in northern Cameroon on 19th March, 1943. It may, of course, come much further west and need not be looked for along the shore.

Distribution. South-eastern Russia and the Kirghiz steppes, east to Turkestan, migrating mainly to India in winter but also to Africa, wintering abundantly in the Anglo-Egyptian Sudan. Only once found in West Africa to date, as mentioned above.

SIBERIAN RINGED PLOVER

Charadrius hiaticula tundrae Lowe

Although I gave the typical subspecies in my larger work as the race which occurs in West Africa, I have had to revise that opinion, as examination has shown that all the specimens from western Africa which have been collected are referable to the Northern or Siberian Ringed Plover—a slightly smaller and darker race. The wing measures 115–130 mm.

The Ringed Plover is better known to the average observer than are most of the shore birds which visit West Africa on migration. Despite its small size (6½–7 in. in length, with a wing expanse of 14½ in.) it is a robust-looking bird which, in adult dress, may be recognised by the black band across the forehead, which is white, another band through the eye and a black pectoral band below the white collar. The bill is bright yellow with a black tip; the legs are bright yellow. In flight a white diagonal bar shows across the wing, and the white outer tail-feathers are conspicuous. The primaries are blackish brown, all with their terminal shafts white—a character which distinguishes it from the Lesser Ringed Plover, in which only the outer primary has a white shaft.

Normally an inhabitant of the shore line, the Ringed Plover in its winter quarters will ascend the great rivers to a considerable distance from their mouths and will also visit inland reservoirs, as at Tamale, and open spaces such as village squares, polo grounds and golf courses. They arrive within our limits in October and remain until April, some probably staying in the tropics the whole year round. Early flocks have been noted in Sierra Leone in mid-August.

Distribution. A breeding bird in Scandinavia and Europe north of lat. 60° N., also in Jan Mayen and Spitzbergen and the tundras of Siberia in Russia, breeding at the mouth of the Yenesei, from which it was described. In winter it migrates to Africa, where it disperses throughout the continent, and is a common visitor to western Africa, occurring in all British Possessions. Many pass further south to reach the Cape and south-western Africa.

LESSER RINGED PLOVER

Charadrius dubius curonicus Gmelin

In appearance this bird is exactly like the last, and it is usually only upon close examination that it can be distinguished. There is one infallible guide to its identification. The long outermost primary is the only one to have a white shaft. The shafts of all the others are brown. The bill is black, the base of the lower mandible yellowish; legs and feet are flesh-colour or yellowish green. The wing measures 108–120 mm.

The colour of the bill and legs, less bright yellow than in the Siberian and Common Ringed Plovers, is quite a good field distinction, but only holds good if the bird under observation is fully adult. In flight there is no white diagonal bar across the wing as there is in its larger relative; there is also less white in the secondaries, but that is a matter of comparison and of little value in the field.

Distribution. The Lesser Ringed Plover does not breed south of the Canary Islands but is a common breeding species over much of Europe and northern Asia and through eastern Siberia, as well as in northern Africa. In winter many move south, reaching the Tanganyika coast on the east and the Rio Muni on the west. It is widely spread in West Africa at that season and is recorded from all our Colonies, but it does not cross the Equator on the west coast. In the Northern Provinces this Ringed Plover may be encountered frequenting the sandbanks of the rivers and the shores of lakes, as well as the sea coasts and islands. It is a regular winter visitor to Lake Chad and even reaches the vicinity of the Ja River in southern Cameroon, which is in forest country.

THREE-BANDED PLOVER

Afroxyechus tricollaris tricollaris (Vieillot)

This plover is so similar to Forbes' Plover (to be described next) that a brief comparison between them should enable the Three-banded Plover to be recognised. The latter has a white forehead

instead of light brown; the two bands across the breast are practically black instead of dark brown and are narrower than in Forbes' Plover. The bill is dull venetian red, with the terminal portion black. Legs and feet are flesh-colour. It is rather a smaller bird in all its dimensions, with bill 15–17 mm., wing 104–120 mm., tail 60–68 mm. and tarsus 24–25 mm. (85 measured).

Very little need be said about this bird, which has only twice occurred within our limits, the first record being some thirty miles south-west of Marua (1,300 ft.) in northern Cameroon, which lies about 250 miles south of Lake Chad. The bird was shot on 28th November, 1922, and is evidently but a rare straggler in West Africa with habits very much as in the next bird described.

A second record brings the bird into Upper Guinea, where an adult and two apparently immature examples were quite definitely identified, but not obtained, on the cricket oval of Achimota College, Accra, on 9th and 10th February, 1945.

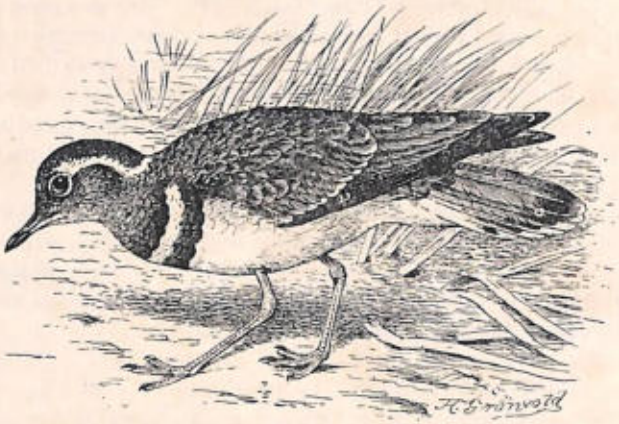
Distribution. Of wide distribution in East Africa from Somaliland and Abyssinia south to Cape Province and Benguella. In my larger work I have given more details concerning its range, habitat, etc. It is now known to have occurred in northern Cameroon and in the Gold Coast as detailed above.

FORBES' BANDED PLOVER

Afroxyechus forbesi (Shelley)

This typically West African plover is about the same size as the European Ringed Plover, which is well known to most people. In colour it is dark brown above, including the forehead and crown. A broad white streak extends from behind the eye to meet its fellow on the nape; the back and mantle are olive-brown; the wings are blackish brown with white tips to the secondaries. The tail is prettily patterned when spread, the outer feathers being white with dark bars and all but the central pair tipped with white and subterminally banded with black. The under side of this plover is distinctively marked, the throat merging from ash-colour to dark brown, below which a white band crosses the breast and is succeeded by another broader band of dark brown. The rest of the under parts are white. The brown eye is surrounded by brick-red eyelids; the bill is dark brown, becoming pinkish at the base, and the legs and feet are pale yellowish or pinkish brown. The size is larger than the Three-banded Plover, with bill 16–18 mm., wing 121–133 mm., tail 63–71 mm. and tarsus 29–32 mm. Forbes' Plover has a large brown eye, to which one's attention is attracted from a distance.

Although resident all the year round, Forbes' Plover is usually seen only in the dry season. It arrives in Nigeria—and no doubt in other countries also—as soon as the rain stops at the end of October, when it appears on golf courses, polo grounds and similar open spaces, where it remains until the first new rains in March, soon after which it disappears completely from its dry-season haunts. It was generally believed to go far away, but that supposition is now known to be false. Instead, the bird seeks out the granite outcrops which are such a feature of the country, some of which stand 500 ft.



or more above the surrounding savanna forest and are seldom explored by man. On such treeless hilltops Forbes' Banded Plover lays its eggs in the pockets of gravel near the summit, making apparently no more nest than does a Ringed Plover on the shingle banks at Dungeness. There is usually some grass growing among the stony expanse in which the chicks can hide, for they can run incredibly fast soon after birth.

The eggs are two or three in number, pale pinkish in colour, heavily marked with irregular streaks of dark brown. The breeding season lasts from May or June until August, and from the late date when eggs have been found it is probably double brooded.

Distribution. Evidently a fairly common bird which may be seen on open spaces near the habitations of man throughout the dry season. I cannot find it recorded from north of French Guinea, but between that country and southern Nigeria it is reported from many localities and has even turned up in a village street in the forest country of Cameroon. It does not leave the country to breed but repairs to isolated localities as described above. After breeding is over, parties of adults and young, up to a dozen or so in number, return to their dry-season haunts, where they are familiar objects and soon become less timid than they are in the breeding season.



GREAT SNIPE
Capella media

Key to the Lapwings and Stilts

1. Legs very long (tarsus over 95 mm.); bill long and fine (over 50 mm.) .. *Himantopus himantopus himantopus*, p. 406
   Legs shorter (tarsus under 95 mm.); bill stouter and shorter (under 40 mm.) 2
2. Fleshy wattles in front of eye 3
   Without any wattles in front of eye 6
3. Wing-coverts black; long sharp spur on carpal joint of wing (over 15 mm. in length in adults); entire crown white .. .. *Xiphidiopterus albiceps*, p. 399
   Wing-coverts not black; short sharp spur on the carpal joint (never exceeding 12 mm. in length) *or* blunt knob just below bend of wing in place of spur .. 4
4. Forehead pale chestnut and patch on breast deep chestnut .. .. .. *Anomalophrys superciliosus*, p. 405
   No chestnut on forehead or breast 5
5. Chin white, throat and streak down breast black *Sarciophorus tectus tectus*, p. 404
   Chin and middle of throat black; sides of face streaked *Afribyx senegallus senegallus*, p. 402
6. Chin and entire throat black; sharp-pointed spur on carpal joint .. .. .. *Hoplopterus spinosus*, p. 401
   Chin and entire throat not black 7
7. Face white; wing-coverts white; breast glossy blue-black; short flattened spur on carpal joint *Hemiparra crassirostris crassirostris*, p. 397
   Face grey or grey-brown; wing-coverts light olive-brown; very small blunt knob on carpal joint *Stephanibyx lugubris*, p. 398

WHITE-FACED LAPWING

Hemiparra crassirostris crassirostris (Hartlaub)

This is a true lapwing in appearance and is quite unmistakable in its striking plumage, the whole of the front of the face and throat being pure white. No wattles hang from below the eye, which distinguishes it at once from the birds in that group and its white face from the Spur-winged Plovers, although it possesses a short sharp spur on the carpal joint. The hind part of the neck and the breast are black, as well as the wing-quills; the back is pale brown and the whole of the wing-coverts white. The latter character is unique so far as West African pluveine birds are concerned.

This is a semi-desert bird, not likely to be encountered in savanna country but preferring the treeless plains which stretch across the

great territory of Chad and Niger to Darfur. It has been encountered in the country of short hygrophilous grass in the vicinity of Lake Chad, where parties of two to four individuals were seen in company with Spur-winged Plovers.

Distribution. The Upper White Nile from Mongalla and the Bahr el Ghazal south to northern Uganda and in the west to Lake Chad, probably through Darfur and Chad Territory. Records within our area are from Kalkala and Mafinderi on flooded grassland in June and from the same area in September and October.

SENEGAL PLOVER

Stephanibyx lugubris (Lesson)

THE Senegal Plover is a rather smaller bird than our European Lapwing but stands higher on the legs, which are fine and blackish in colour; the bill also is black. The upper parts are mostly olive-brown, with a conspicuous white patch on the forehead and also on



the tail, the long upper tail-coverts and the basal half of the tail being pure white and the tip of the tail black. Even when the wing is closed the white secondaries are visible, contrasting with the black primaries. When spread, the black and white wing is a very marked feature. Both axillaries and under wing-coverts are white also. The

whitish throat tones into the ash-grey breast, which is separated from the white belly by a blackish band. There are no pendent wattles and no conspicuous spurs on the wing. The wing measures 166–185 mm., tarsus 57–67 mm.

In its habits this species is very like our European *Vanellus vanellus*, consorting in flocks and visiting the farms during the winter months. Whether it is resident all the year in the localities from which it is recorded is not yet known. In Kenya Colony it is known to lay its eggs in April, but so far it has not been reported to breed in western Africa, It inhabits the open country south of the forest belt and has not been recorded from north of it, all the records coming from the coastal provinces. It is not known to be migratory.

Four eggs found in Kenya are described as dull olivaceous brown, spotted with black and a little umber. Eggs measure 35·5–38 × 26–26·5 mm.

Distribution. Ranges in Africa from Natal to Kenya and Uganda and from the Lower Congo to Sierra Leone, but not from the equatorial or West African forest area. Within our limits it is recorded from various localities in Sierra Leone and Liberia (when they are paired in May) and from the coastal region of the Gold Coast and southern Nigeria. It does not appear to venture far inland and is unknown on the wide plains north of lat. 10° N.

WHITE-HEADED PLOVER

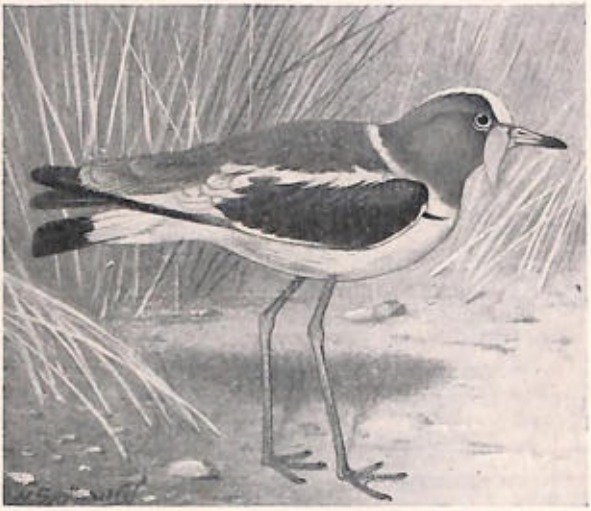
Xiphidiopterus albiceps (Gould)

The long yellow wattles which droop from the eye of this plover distinguish it at once from all but the Senegal Wattled Plover, which is so differently coloured in its plumage. The black wing-coverts of the White-headed Plover and the very long spur on the wing, as well as the uniform grey cheeks (not striped black and white as in the Senegal Wattled Plover), should indicate the species to which it belongs. The entire crown is white; a white collar surrounds the neck and the whole under surface is immaculate white. A prettily patterned black and white wing is ornamented by the black spur, which can easily be observed when the bird takes wing. The legs and feet are pale yellowish green; the bill is bright yellow tipped with black. The wing measures 193–226 mm., tarsus 70–82 mm. The flight is marvellously buoyant.

The White-headed Plover is the member of its family above all others which we associate with the great rivers of West Africa, upon the sandbanks of which it is ever a familiar sight. It does not always remain in flocks, though small companies may be encountered, but is just as likely to be seen in pairs which have their own special

territory, to which they seem very much attached, living on the sandbanks in a perpetual state of war with the Egyptian Plover—the latter well able to hold its own against the more fiercely armed and larger lapwing. Water in some form or other seems essential to its habitat, for if away from the rivers it is encountered on the adjacent marshlands, as in the vast Inundation Zone of the Niger in the French Sudan.

To the big rivers in the Southern Territories of Nigeria and the Gold Coast it seems that this plover is a breeding visitor, only leaving the sandbanks later in the year for some locality as yet unknown.



In May and June, when the rivers rise and the sandbanks are flooded, their numbers diminish and by August all have departed, but where they go is a mystery. Great flocks have been observed flying through Bornu in October, possibly on their return south.

Breeding begins towards the end of April, the nest being a shallow scrape in the sand or shingle and generally on a sandbank in one of the larger rivers. The birds are solitary nesters and all nests are close to the water's edge, so that the eggs may be kept continually damp by the parent, an incubating bird spending much time walking between the water and its eggs. Four or five eggs are laid, of greenish or buffish stone-colour blotched and spotted with various shades of brown and black. Eggs measure 39·8–46·2 × 29·3–32 mm.

Distribution. From Liberia in the west through Upper Guinea south to northern Angola. In eastern Africa the range extends from the Bahr el Ghazal through French Equatorial Africa to the Upper Congo and southwards to the Zambesi. Absent in West Africa from

Senegal, Gambia and Sierra Leone, it is fairly generally distributed along the big rivers of the Gold Coast and Nigeria; it occurs along the Niger to the Inundation Zone of the French Sudan. In Lower Guinea it seems to be uncommon but is found along the main stream of the Congo. It has been obtained in Fernando Po.

SPUR-WINGED PLOVER

Hoplopterus spinosus (Linnæus)

THIS conspicuously marked plover is a study in black, brown and white, the arrangement of which can be seen from the text figure. The black head and throat are in vivid contrast to the white cheeks and nuchal collar, and the black breast is set off to advantage with the ashy wings bordered with white. In flight the under side of the wing is half black and half white, the primaries being black, the axillaries and under wing-coverts snow-white. The wing-span of this plover is about 13 in., the wing measuring 187–210 mm. and the tarsus 59–72 mm. At the bend of the wing is a sharp spur, more developed in the males than in the females. The bill, legs and feet are black; the eye is carmine red. The Spur-winged Plover has a distinctive cry which has a disagreeable quality but is easily recognisable and soon apt to become monotonous.



In the semi-arid belt of western Africa this is a very familiar bird, but water in some form or other seems to be essential to its habitat. Very lapwing-like in appearance, it may be seen in small parties in the river beds, standing on sandbanks or on cultivated land but never far from lake or stream. It loves to frequent the alluvial flats and meadows of the Niger River, where it may be constantly observed on the banks. It is likewise a familiar object on the farmlands and plains in the vicinity of Lake Chad, but never in any great numbers. Occasionally it visits reservoirs, as at Tamale in the Gold Coast, but it does not frequent the coastal lagoons and is essentially a bird which we associate with the Northern Territories of our largest colonies.

The Spur-winged Plover breeds from early May to the end of June in the area between lat. 10° and 20° N., at which time fresh eggs may be taken, while late layings have been found in July. In Sokoto nests have been found in the tiny rocky islets in midstream in the broad sandy river bed and also on the mud-flats left by the receding waters of the perennial lakes. Nests may be in a natural hollow on the rock filled with soil or pebbles, the latter carried there by the bird, but when on the mud-flats a structure of dead grass and reed stems is built into a circular depression to receive the eggs, three or four in number, clay-coloured or buffish, boldly blotched and spotted with black and brown and ash-coloured secondary markings. Measurements of West African eggs are only 36·4–39·1 × 27–28·6 mm. Those from the Nile valley are slightly larger.

Distribution. From Senegal to the equatorial forest of the Congo, which seems to serve as a barrier to its extension south. In eastern Africa it has a more extensive distribution from Egypt (it also occurs in Cyprus, Palestine and Arabia) through the Sudan and the Great Lakes to northern Tanganyika and has been reported as far south as the Vaal River. Within our limits it is found commonly north of lat. 10°, but especially so in the Inundation Zone along the upper waters of the Niger and in the Nigerian Provinces of Kano, Sokoto and Bornu. It has not been recorded from Sierra Leone but is common in the marshlands of Gambia.

SENEGAL WATTLED PLOVER

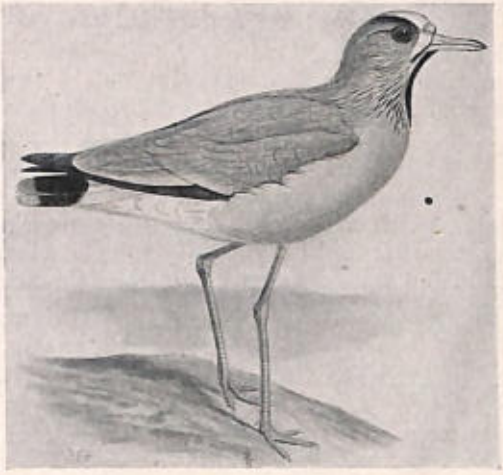
Afribyx senegallus senegallus (Linnæus)

This is another of the lapwing-like plovers which have pendent fleshy wattles in front of the eye, in this species the top half red and the lower half yellow. The crown is blackish brown with the exception of the forepart, which is white, the dark area extending forwards in a band over each eye. The rest of the plumage above is light olive-brown, relieved by the black primaries and white wing-coverts. The sides of the face are streaked with blackish on a grey ground; the throat and chin are jet black, the breast and belly greyish, tinged with brown. When the wings are open the under side shows white. The tail is black terminally and white basally in equal proportions. The legs of this plover are very long and very thin, lemon in colour. The bill is yellow except for the black tip. The wing measures 212–240 mm., tarsus 76–91 mm.

In flight the wings appear black at the tips and brown at the base, with a dividing white band, and the tail is black and white. There should not be much difficulty in distinguishing this bird from the White-headed Plover, which has much more white about the head

and body and moreover has black wing-coverts contrasting with the back, whereas in the Senegal Wattled Plover the wing-coverts are the same olive-brown as the rest of the upper parts.

The Senegal Wattled Plover is a common bird in West Africa, particularly in the semi-arid belt in which Gambia lies, but it is of much wider distribution than the White-headed Plover, not being dependent upon rivers and sandbanks to the same extent as that bird but is fond of frequenting marshy ground, and therefore to a large extent the two birds may occur together. They will often be seen on newly cleared ground, but on the whole it is rather a local species which may be seen occasionally on grassy plains far from river or lake. When the grass has been burned this plover gathers



with many other birds to share in the feast of ready-cooked insects. It is migratory in the south of its range, being absent from June onwards to October from the savannas of the northern Congo and the Uelle River district.

The nest may be placed on cleared land in a depression in the ground around which small bits of grass have been arranged; at other times the eggs will be deposited in a dried-up river bed in a scraping. In shape the eggs are sharply pointed ovates with buff ground colour profusely spotted and blotched with confluent markings of grey and blackish brown, heaviest at the broad end. They measure 45–48·5 × 31–32 mm.

Distribution. Three races of this plover are recognised in Africa. The typical species ranges from Senegal to northern Cameroon east through French Sudan and Chad area to the Nile Valley. In East Africa a slightly larger race, *A. s. major*, ranges from the Egyptian

Sudan to Uganda, where it meets the South African subspecies. In the West African area embraced by this handbook these plovers gather in late winter on the sandbanks of the Upper Niger when not breeding, but at other times they range far over the grassy plains away from the rivers. It is one of the few members of the plover family recorded from Sierra Leone. It is common in the dry season in the Gold Coast both in the Northern Territories and on the Accra plains. Occasionally it visits Lagos, but is rare on the coast. It is common on the Bauchi plateau and migrates through Bornu in October. In northern Nigeria it is fairly generally distributed.

BLACK-HEADED PLOVER

Sarciophorus tectus tectus (Boddaert)

This is a small bird in comparison with the White-headed and Senegal Plovers, 11½ in. from bill to tail, and with much shorter legs. In appearance it is the most like our European Lapwing, and the resemblance is carried to the flight and voice, though the cry is somewhat deeper-pitched. Its black head, contrasting with the grey-brown back and wings, distinguishes it from all but the Spur-winged Plover, but that bird has a white neck and black breast and sides, whereas in the Black-headed Plover the colours are reversed.



The eye wattles are small and brick-red in colour; the bill is dull red with a black tip, and the legs and feet are dull carmine. The wing measures 185–195 mm. and the tarsus 55–61 mm.

The Black-headed Plover has a preference for dry ground and wide open spaces and may be encountered in pairs or small parties on open patches in the bush where the ground is bare or the grass very short. In the country south of the Sahara it inhabits the wide steppe country, but it does not penetrate into the desert itself. Swampy ground it shuns entirely. On moonlight nights this plover is very active, and its peevish cry may be heard at all hours. In many of their ways they remind one of our European Lapwing—the same restless running about; the same little companies of five or six which all take wing together upon being disturbed but settle again without flying very far. There is a partial migration northwards during the rains.

The birds breed from March to May on the open plains among sandy or stony soil, making their nest on ground devoid of vegetation: a shallow circular scrape with the rim slightly raised. The scrape may be lined with a few flakes of dried mud or not lined at all. The eggs have a ground colour of buff or clay, blotched, spotted and scrawled with black and dark umber with similar underlying markings of ash-colour. Measurements are 30·4–33·4 × 23·2–23·7 mm.

Distribution. The dry thorn-scrub belt extending from Senegal, Gambia and Portuguese Guinea across the French Sudan and French Niger territory and the Northern Territories of the Ivory and Gold Coast and Nigeria across the continent to the Red Sea, a smaller race, *S. t. latifrons*, taking its place from Somaliland to Kenya Colony. In the countries cited this plover is more often encountered in French Niger territory and the four northern provinces of Nigeria than anywhere along the course of the great river.

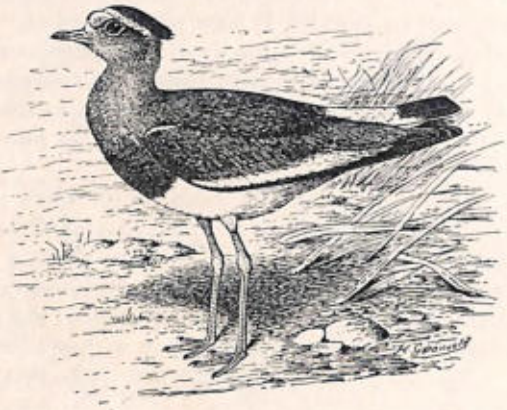
BROWN-CHESTED WATTLED PLOVER

Anomalophrys superciliosus (Reichenow)

In general appearance this rare plover is more like the Senegal Plover than the other members of its group, but it has longer wings and shorter legs than that bird. Its colouring is subdued—olive-brown above with a chestnut forehead and black crown and crest. The best field marks to look for are the large chestnut patch on the breast and the dusky-red legs. The belly is white, as are the upper tail-coverts and the basal half of the tail, which has a broad black tip. The bill is black, the eye wattle dull yellow. The wing measures 190–196 mm., tarsus 53–57 mm. Immature birds lack the black crest and have the rufous of the forehead extending back over the eye on to the nape.

Only in a very restricted area of West Africa has this plover been

obtained, and whether it is resident or simply a migrant (possibly to breed) has still to be ascertained. It seems to be a bird which inhabits the orchard bush, where it arrives in the dry season. On their first arrival in the Owerri Province of southern Nigeria the birds, which appeared quite suddenly in December, frequented



patches of almost bare ground in the open orchard bush but subsequently resorted to the newly burned areas. They were noted until July, later frequenting the farms of cassava and ground beans with sparse and small trees. It was impossible to discover whether it had bred in the area, and so far as I am aware its eggs are still unknown from any part of Africa.

Distribution. The few localities where this plover has been found within our area prove that it is by no means generally distributed. It has been recorded from Krachi Island on the Volta, Bismarckburg in Togoland, from the Rio del Rey, between Calabar and Cameroon Mountain and from the Okigwi district of the Owerri Province, southern Nigeria. Additional records from the Uelle and Aruwimi Rivers and the Ubangi-Shari prove that the bird extends through Equatorial Africa east to Kavirondo and to the Kasai district of the Congo. It passes the Ituri on migration and has been recorded from several localities within the limits of the Congo forest.

BLACK-WINGED STILT

Himantopus himantopus himantopus (Linnæus)

This bird is quite unmistakable, owing to its extraordinarily long fine legs, 8–9 in. in length from where they join the body, varying in colour seasonally from rose-pink to vermilion. The bill is also extremely fine and about 2½ in. in length, black in colour. The

adult male birds are pure white with jet-black mantle and wings, while young ones differ only in having the head and neck grey, brown mantles and buff edges to the scapulars. Adult females are like the males except that the mantle, scapulars and wings are brown instead of buff. The tail is grey, the outer feathers inclining to white, and the eye is red. The wing measures 220–250 mm., and the tarsus of males 120–137 mm., of females 95–120 mm. In flight the under surface of the wing is black; the axillaries are white. The legs are carried stretched fully out beneath the tail. There is no white visible in the opened wing of the Stilt, by which it may be distinguished in flight from the Avocet.



The Stilt is an example of those species which both breed within our limits and presumably stay the whole year in the tropics and is also a migrant from Europe, very large numbers flying across the Mediterranean between October and November to spend the cold months of the year in tropical Africa. How far south these European migrants proceed is still open to doubt. In western Africa they are certainly stopped by the equatorial forest, but in the coastal region they are reported from as far south as the Loango coast and Gaboon.

In Africa the Stilt frequents shallow pools, open lakes and lagoons and the mouths of wide rivers, showing a preference for those with sandbanks where it can wade knee-deep in search of the floating larvae, molluscs and spawn which, together with numerous insects, constitute its food supply.

To many localities within our limits it is a dry-season visitor, arriving in October and departing again in April, all except the birds which make their home in a few favoured localities which shall be specified. Breeding colonies have been found in the Gold Coast on the coastal lagoons, and their remarkable nuptial dance may be witnessed in May which I have described in the eighth volume of my larger work. Nests may be placed on the margin of firm mud between water and vegetation, where a depression had been scraped

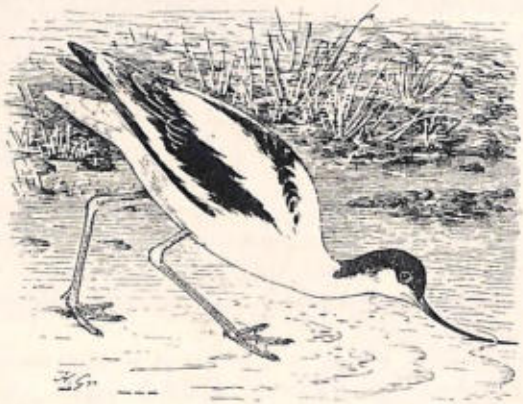
out and small scraps of vegetation added. The nests may be well concealed among the herbage and are difficult to find. Four eggs are laid, greenish buff or pale brown, covered with irregular spots, streaks and blotches of brown and sepia, densest round the large end. Eggs measure 40–46 × 31–32 mm.

Distribution. Widely spread in southern Europe, Asia and northern Africa, many Palaearctic birds migrating to Africa in winter, whence they proceed far south and certainly reach the Equator. As there are also breeding colonies in southern Africa and Madagascar, it is uncertain to what extent these birds are resident. There is a resident population in West Africa whose numbers are hugely augmented in the dry season by migrants from the north, when it is to be found from Senegal to Nigeria and the Cameroons. Breeding colonies are known only in the Gold Coast, but it is likely to nest elsewhere and is a common visitor to all our Colonies, while dates proclaim that it is resident all the year round in isolated localities.

AVOCET

Recurvirostra avosetta Linnæus

This is another striking-looking bird, with black and white plumage but with much shorter and stouter legs than the Stilt and chiefly remarkable for the long fine upturned bill, the latter black in colour,



while the legs are blue-grey. The accompanying illustration shows the distribution of black and white in the plumage. The median coverts and primaries are black, the inner primaries having white bases. The eye of the Avocet is red. The bill measures 75–91 mm., wing 205–233 mm., tarsus 80–97 mm. The males are rather larger

than the females, but this is barely noticeable in life. In size of body it may be compared with the European Whimbrel.

To West Africa north of the Equator the Avocet is only a rare visitor in winter, almost certainly from Europe, although in East Africa there are records of its breeding, and some are undoubtedly resident. Chicks have been taken in Uganda, and it nests in South Africa also. In East Africa it has been taken along the highland brackish lakes, but in West Africa it must usually be looked for on the coastline, though a dozen were reported to have been seen in the Combretaceae country just south of the Sahara.

It is a shy bird, not easily approached, and is more likely to be seen on the sandbanks at the mouths of estuaries than by inland rivers. Migrants are reported crossing the Straits of Gibraltar in November and again in March or April, but I doubt if these visitors from Europe proceed beyond French Sudan except rarely, and very few have ever been reported from within our area. When feeding, the Avocet scoops its bill from side to side with the regular motion of a pendulum as it slowly wades in the shallows.

In Europe three to five eggs with a clay-buff ground, spotted with black, are laid in a depression on the bare mud or sand or in short grass. In size they average 50·5 × 35 mm.

Distribution. A European bird whose range extends to Mongolia and India and is locally distributed in eastern Africa to Cape Province, breeding very sparingly in the tropics. To West Africa it is known only as a rare visitor and has been recorded from Upper Guinea only from Little Popo on the coast of Togoland, on the sandbanks at the mouth of the Rio del Rey at the base of Cameroon Mountain, and another flock in a rain pool between Tawa and Tillabéry, French Niger, on 26th June. It has been taken on Maio, Cape Verde Islands, and recorded on poor evidence from Senegal. It has not yet been found breeding in West Africa.

EUROPEAN OYSTER-CATCHER

Haematopus ostralegus ostralegus Linnæus

Not easily confused with any other species in its pied black and white plumage, heavy straight orange bill and coral-pink legs, the Oyster-catcher is too well known to need detailed description. The bill measures 62–88·5 mm., wing 236–275·5 mm., tarsus 44–56 mm. The eye of the oyster-catcher is blue, surrounded by a carmine ring.

This is a European migrant to tropical Africa which is never numerous. It may be seen from September onwards in suitable

localities on the coast from Senegal to the Gold Coast and frequents the swamps and vicinity of the Gambia River, where it is not uncommon in winter. Only within recent years has it been reported from the Gold Coast. Birds have been observed near the lagoons and at Accra. The only other country from which the European Oyster-catcher has been reported is Sierra Leone, or rather from the islands (Plantain, Mut and Banana) off the coast. It returns north again from mid-March to April to spend the summer in Europe and rear its young. The latest date when it has been reported in Gambia is 29th May, long after it should have left the tropics.

A Black Oyster-catcher (*Haematopus moquini* Bonaparte) inhabits South-West Africa and has been reported on slender evidence to occur as far north as Gaboon, but no Black Oyster-catcher has ever been reported from the coasts or islands of Upper Guinea, although a race inhabits the eastern Canary Islands. Its colour is entirely black, with vermilion-pinkish-red legs and feet.

Distribution. The typical race of the European Oyster-catcher breeds from the Scandinavian countries to Spain and in the eastern Mediterranean area. Many cross the Straits of Gibraltar in autumn and may be found in winter in Upper Guinea. Those which occur at that season in eastern Africa are believed to belong to another European race (*longipes*) which breeds in the Yenesei area.

FAMILY SCOLOPACIDAE

Key to the sub-families of the Scolopacidae, based on external characters

1. Bill pitted terminally, between 38 and 88 mm. (i.e. between 1½ and 3½ in.) in length in various species, straight and slightly swollen towards tip, both upper and lower mandibles furnished with sensitive membranous covering which in life is flexible but after death becomes stiff, and being pitted is rough to the touch .. .. *Scolopacinae*, p. 412
   Bill not pitted terminally 2
2. Feet lobate, i.e. the toes furnished with scalloped membranes like coots and grebes .. .. *Phalaropodinae*, p. 436
   Feet not lobate 3
3. Bill over 66 mm. in length, either strongly curved downwards or slightly upcurved .. .. *Limosinae*, p. 430
   Bill under 66 mm. in length 4

4. Bill short* and stout, tapering to point, not exceeding 24 mm. in length measured from base of feathering; wing over 145 mm. in length .. .. *Arenariinae*, p. **421**
Bill not short* and stout; when wing exceeds 145 mm. bill invariably exceeds 24 mm. .. *Eroliinae*†, p. **414**
Tringinae, p. **422**

Key to the African Snipe, including the Painted Snipe

1. Large mirror-like spots on primaries
Painted Snipe, *Rostratula b. benghalensis*,‡ p. **385**
Without any mirror-like spots on primaries 2

2. Size large (wing over 140 mm. ($5\frac{1}{2}$ in.)) and with broad white tips to median wing-coverts
Great Snipe, *Capella media*, p. **412**
Size smaller (wing under 140 mm. ($5\frac{1}{2}$ in.)); no broad white tips to median wing-coverts 3

3. Pale buff stripe down middle of crown; wings exceeding 120 mm ($4\frac{3}{4}$ in.) 4
No pale buff stripe down middle of crown; wings not exceeding 120 mm. ($4\frac{3}{4}$ in.)
Jack Snipe, *Lymnocryptes minima*, p. **413**

4. With 14 tail-feathers, bill normally under 71 mm., four outermost tail-feathers with ground colour more buff than white
Common Snipe, *Capella gallinago gallinago*, p. **412**
With 16 tail-feathers, bill normally over 71 mm., four outermost tail-feathers with ground colour white
Ethiopian Snipe, *Capella nigripennis*,§ p. **411**

* In comparison with the length of the wing.

† All but two sub-families have now been eliminated, and the distinguishing characters of these two remaining sub-families are not visible to the eye. They are divided on anatomical grounds. Full keys based on external characters are given to the genera and species in the *Eroliinae* on p. 414 and to those in *Tringinae* on p. 422. For their osteological characters see *Ibis*, 1931, pp. 744–5.

‡ Not a true snipe, but included in this key for the convenience of sportsmen.

§ The Ethiopean Snipe (*Capella nigripennis*) is included in this key but is not dealt with in the text, for, although it is believed it may occur in West Africa, the fact has not been definitely established. Sportsmen obtaining specimens in West Africa believed to belong to this species are requested to forward the skin (or at any rate the wing, tail and bill) to the authorities of the British Museum (Natural History), London, S.W., so that a record may be kept of the occurrence if confirmed. This particularly refers to a snipe with sixteen tail-feathers.

SUB-FAMILY SCOLOPACINAE

COMMON SNIPE

Capella gallinago gallinago (Linnæus)

THE snipe requires little description, as its pretty variegated plumage is well known to all sportsmen, as is the zigzag flight after quickly rising from the ground. The buff band down the centre of the crown is sometimes noticeable, for the snipe will usually lie until almost trodden upon. Its larger size distinguishes it from the Jack Snipe, the latter lacking the buff streak down the crown. The Ethiopian Snipe with very long bill, which has sixteen instead of fourteen tail-feathers, is quite impossible to distinguish from the Common Snipe unless in the hand. So far it has not been identified in West Africa.

A migrant from Europe in large numbers, the Common Snipe frequents marshlands, beds of streams and water-holes, but owing to the vast areas which they have at their disposal it is not possible to make large bags. It is to be found in most of the swamps during the winter months. Although they may be found from October onwards, the main body appears to turn up in December. Snipe have been observed in Gambia as late as 5th May, but from most of the localities they take their departure before the middle of March.

Distribution. Resident and breeding throughout Europe and Asia, many passing across the Mediterranean in winter, reaching Tanganyika on the east and in West Africa to the whole of Upper Guinea, but it is not known south of the Congo forest belt. Asiatic birds winter in India, Borneo, etc. It does not breed south of the Mediterranean.

GREAT SNIPE

Capella media (Linnæus)

(see Plate 18, facing page 397)

THE markedly large size of the Great Snipe in comparison with the Common Snipe, proportionately short bill and stouter legs, white spots on the wing-coverts, more boldly barred under parts and the much greater amount of white in the tail-feathers, are the points of difference to note. The accompanying illustration shows the pattern of its plumage. In its coloration it is very similar to the Common Snipe, but is blacker above. When handled the tail-pattern can be examined, and it will be seen that there are sixteen tail-feathers in this species (fourteen in the Common Snipe).

In its habits this snipe is more solitary than its better-known relations and may be found on less marshy ground, often on quite dry ground. It arrives from Europe surprisingly early, about the second or third week of August, and by the 12th of that month has been reported from as far south as Zaria in Nigeria. It remains in its winter quarters until the end of February, the latest date of which I have record being 28th February, when it was shot in Sierra Leone. In the vicinity of Ilorin, from which place many reports have reached me, the Great Snipe arrives at the latter part of August, is very numerous in September, but seems to decrease in numbers during October or November.

The sluggish flight, in comparison with the Common Snipe, is unmistakable. It does not zigzag when flushed but flies direct and is much slower in its movements. The Great Snipe does not nest in Africa.

Distribution. A breeding bird in Europe and Asia from Scandinavia to Russia, passing through southern Europe and south-western Asia on migration to winter in India and Africa. In western Europe it does not breed south of the Pyrenees. Many winter in the Mediterranean countries of northern Africa, but others proceed further south to reach Nigeria on the west and Cape Province on the east. It is more widely distributed in eastern Equatorial Africa than in Upper Guinea but occurs in small numbers on the west coast and has been reported from all our Colonies except Gambia, where, however, it is likely to turn up sooner or later.

JACK SNIPE

Lymnocryptes minima (Brünnich)

THE very small size of the Jack Snipe, measuring as it does only 7½ in. from bill to tail, is the surest guide to identification. The two cream stripes down each side of the back are a feature shared with the Common Snipe, but there is no pale stripe down the middle of the crown in the Jack Snipe. When handled it will be seen that it has only twelve feathers in the tail.

The Jack Snipe cannot compare with the Common Snipe as a game bird. It is altogether more sluggish when it gets up but flies fast and direct once it is away. It frequents much the same sort of terrain as its larger relative but prefers somewhat denser cover. It is, of course, a winter visitor from Europe, and though it has been recorded on a number of occasions from West Africa it can only be considered rare.

Distribution. Breeds from Lapland and Finland east to Siberia (not in northern latitudes) and winters in the Mediterranean basin

and in Africa, reaching Kenya on the east and Nigeria on the west. Within our limits it is recorded from Gambia and Casamance, the Gold Coast, Nigeria and Lake Chad between November and the end of February, where it has occurred on flooded land, by streams and on the banks of reservoirs, as at Tamale.

SUB-FAMILY EROLIINAE

Key to the Eroliinae

1. Wing over 140 mm. (5½ in.) 2
   Wing under 140 mm. (5½ in.) 3
2. Tarsus over 40 mm.; axillaries white
   Philomachus pugnax, p. 420
   Tarsus under 35 mm.; axillaries barred white and sepia
   Calidris canutus canutus, p. 418
3. Bill in front of nostrils broad and strongly flattened and slightly recurved except at tip; wing under 112 mm. in length .. ..*Limicola falcinellus falcinellus*,* p. 414
   Bill in front of nostrils not broad and flattened and without distinct upward curve at base 4
4. Wing over 105 mm. 5
   Wing under 105 mm. 7
5. No short hind toe present .. .. *Crocethia alba*, p. 419
   Short hind toe present 6
6. Upper tail-coverts blackish; bill almost straight
   Erolia alpina alpina, p. 415
   Upper tail-coverts white; bill slightly decurved
   Erolia testacea, p. 415
7. Shafts of all primaries white; outermost tail-feathers pale brown .. .. *Erolia minuta*, p. 416
   Shafts of all but the outermost long primary brown; outermost tail-feathers pure white *Erolia temminckii*, p. 417

* The Broad-billed Sandpiper (*Limicola falcinellus falcinellus*) is included in this key on the strength of a specimen in the Rothschild collection in New York which is supposed to have been obtained in Senegal. It is a bird which winters in the Mediterranean eastwards to India and is unlikely to occur in tropical Africa except as a rare vagrant. It is dealt with in my second volume of *The Birds of Tropical West Africa* on p. 149, but is not included in the main text of this handbook.

CURLEW-SANDPIPER

Erolia testacea (Pallas)

This is a small shore bird about 8½ in. from bill to tail and with a rather long, slightly downcurved bill. In general colour the upper parts are grey-brown, rather darker on the back than on the crown, the upper tail-coverts being white. The breast is greyish, finely streaked with brown, the belly white. The blackish-brown primaries have white shafts. The tail-feathers are ashy bordered with white and, like the primaries, have white shafts. The bill measures 31–42 mm., wing 120–136 mm., tarsus 27–30·5 mm.

In size this sandpiper is rather larger than the Dunlin, with which it often consorts, standing higher on its black legs and with a longer bill. The white upper tail-coverts distinguish it in winter plumage from the Dunlin, which has dark coverts, only the lateral feathers being white in the Dunlin. In summer the vinous-chestnut under parts of the Curlew-Sandpiper distinguish it from the Dunlin, which has black and white under parts and no sign of chestnut.

Specimens in all stages of plumage may be found in tropical Africa, for though the Curlew-Sandpiper is a winter visitor from northern Asia it remains late in the tropics and may be obtained sometimes in full nuptial plumage. In Africa it frequents especially the muddy estuaries of the large rivers but may also be seen on the adjoining swamps or the borders of brackish lagoons. Flocks of many hundreds are sometimes observed, especially when migration is in full swing. Some arrive as early as August, but the main body much later in September and October, and they may remain even until June, but mostly depart in April or early May.

Distribution. Breeding in the Arctic regions of Asia, this bird undertakes huge migrations and has a winter range which in Africa alone extends from the Mediterranean to the Cape. Its travels extend to India, Malay, Australia and New Zealand. In West Africa it is found on all suitable shores and even on the borders of inland lakes and rivers, reaching Lake Chad among other distant points.

LAPLAND DUNLIN

Erolia alpina alpina Linnæus

In winter plumage the Dunlin is ash-brown on the upper surface, some of the feathers, especially those on the mantle, with dark centres. The lower back, rump and upper tail-coverts are blackish brown with ashy or cinnamon-brown fringes. Sides of the rump and

lateral tail-coverts only are white. The breast is pale ash-colour with fine dark shaft-streaks; the rest of the under parts are white. Bill measures 25–37 mm., wing 106–122 mm., tarsus 22–26·5 mm.

The Dunlin is rather smaller than the Curlew-Sandpiper and the olive-brown legs are noticeably shorter, as is also the black bill. In flight a white wing-bar is an obvious feature but does not distinguish it from the Curlew-Sandpiper, which it resembles so closely in winter dress. The best guide is the absence of the all-white rump, for the Dunlin has a dark rump with only the sides white, the middle upper tail-coverts being blackish. The distinctions between the Dunlin and Sanderling will be given under the latter bird.

In summer dress the Lapland Dunlin becomes brightly coloured, the dark upper parts being then broadly edged with orange-cinnamon; the breast becomes white streaked with black and the belly black with a varying amount of white feathers intermixed.

The habitat of the Lapland Dunlin when in winter quarters is similar to that of the Curlew-Sandpiper, but whereas the latter is a well-known visitor to West Africa, the Dunlin has never been reported from the mainland of the area with which I am dealing. It occurs on passage in the Cape Verde Islands and is almost certain to be found as far south as Gambia and Senegal but has not actually been reported.

Distribution. This race breeds in northern Europe and Russia east to Koelguev and winters in the Mediterranean and northern Africa. Its African range is very restricted when compared with the last species, but it certainly passes through the Canaries and Cape Verde Islands. In East Africa it is found as far south as Somaliland.

LITTLE STINT

Erolia minuta (Leisler)

The diminutive size of this little wader distinguishes it from all the other winter visitors of this group to West Africa with the exception of Temminck's Stint, which is equally small. Grey-brown above in winter dress, white below, without the grey-brown breast of Temminck's, the Little Stint measures under 6 in. from bill to tail. It appears paler on the upper parts than Temminck's and in the hand may be known from that bird by the white shafts to all the primaries. In Temminck's Stint only the long outer primary has a white shaft, all the others being dark. The bill measures 17–22 mm., wing 90–102 mm., tarsus 19–22 mm.

In flight the Little Stint shows a rump which is dark in the middle with a patch of white on either side of the brown upper tail-coverts. A narrow white bar is visible on the wing. In summer

plumage the Little Stint has the upper parts mottled with orange-cinnamon and black, the forehead white, broad cinnamon margins to scapulars and mantle and the rump edged with the same colour. The under parts are white except the breast, which is washed with pinkish cinnamon and with dusky markings, giving the appearance of having a broad speckled band.

This is a numerous visitor to West Africa from September until May, some birds evidently remaining in the tropics even in the summer months. It frequents the shore line but also occurs regularly on inland waters and may be observed in such localities as the Inundation Zone of the Niger in French Sudan, on the sandbanks of the great rivers and on adjoining swamps and marshes. Nowhere is it more common than in Nigeria, both on the shore and, on migration, on the inland shallow lakes of the northern provinces.

Distribution. A breeding bird from Norway to western Siberia, on the northern Russian tundras and on certain Arctic islands, wandering over the face of the globe in winter. Many reach India, Burma and Malay, others winter in the Mediterranean basin, while others scatter over Africa, reaching the Cape and Damaraland. It occurs throughout western Africa within our specified area from Senegal to the Congo, preferring muddy shores and wet sandbanks but being fairly generally distributed.

TEMMINCK'S STINT

Erolia temminckii (Leisler)

In winter plumage Temminck's Stint has the forehead greyish white, the crown, mantle and scapulars olive-brown, the back, rump, upper tail-coverts and wing-coverts sepia, and the greater coverts tipped with white. Primaries are blackish brown; the outermost long primary (the second) has a white shaft and all the other primaries dark shafts. The central pair of tail-feathers are blackish brown, the outermost pair white and the others pale ashy. Chin and throat are white; the breast is ashy or pale brown; remaining under parts are white, as are the axillaries. The bill is black; legs and feet are slate-colour. The bill measures 16–20 mm. wing 90–103 mm., tarsus 16–18 mm.

In summer plumage this stint is more mottled above than in winter, the feathers with black centres and fringes tinged with rufous; the breast feathers are warm buff streaked with dusky markings and tipped with white.

In size there is nothing to choose between this bird and the Little Stint. Indeed, unless handled they are very hard to distinguish, but those who know its call are in a position to identify Temminck's

Stint in the field. In flight the pure white outer tail-feathers may perhaps be observed. The surest guide when in the hand is the dark shafts to all but the second (the outermost) primary; the shaft of this long primary alone is white.

Although often frequenting the same type of country as the Little Stint, Temminck's Stint shows a preference for inland waters rather than salt. It has been obtained occasionally in West Africa on reservoirs, sandbanks of the Niger, the Inundation Zone and on swampy fields. During the period of migration it may frequently be found by the salt ponds and points on the coast, but it is not usual to find it on the seashore, for it normally avoids salt water. An autumn migrant from Europe and northern Asia, its route is mainly overland.

Distribution. Breeding in the far north from Scandinavia to eastern Siberia, Temminck's Stint winters in Africa, India, Ceylon and Burma. To Africa it is a visitor in small numbers. Many winter in the Mediterranean basin, and only recently have we learned that it extends south as far as Uganda. In western Africa it is recorded from Senegal, the French Sudan, the Gold Coast, Lake Chad and from a few points on the upper Niger.

KNOT

Calidris canutus canutus (Linnæus)

This is a larger and more robust-looking bird than any we have yet discussed in this handbook. It measures 10½ in. in total length, its black bill and olive-green legs are comparatively short and thick, and the colouring of its plumage during the winter months is inconspicuous. Grey above, white below, it is not until the summer plumage begins to appear that it takes on a brighter garb. In full breeding plumage, which is assumed sometimes before the bird quits the tropics, the crown and nape are dark brown, the feathers edged with chestnut or pinkish cinnamon, while the whole of the upper parts are suffused with chestnut, especially the rump. The whole under side then becomes chestnut.

The Knot is to be encountered on sandy or muddy shores, preferring wide estuaries where it can feed on saltwater molluscs and crustaceans; insects, larvae and vegetable food are also consumed.

Although in its migrations the Knot travels immense distances, it is not a common visitor to West Africa. A few small bands reach Gambia, and there are records from the Cape Verde Islands and from the Gold Coast and Nigeria, but for the most part the west coast lies outside the main route of this species, which reaches Walfish Bay in South-West Africa and Zanzibar in East Africa.

Distribution. Breeding in the Arctic regions, the Knot travels far in winter, reaching Australia, New Zealand, India and Africa, but some remain north of the Mediterranean on the shores of western Europe from Britain to Portugal, though the main body pass south in September and October, to return again in May.

SANDERLING

Crocethia alba (Pallas)

As in so many of the wading birds, there is an astonishing difference between the summer and winter plumage of the Sanderling. In size it is rather larger than the Dunlin and is a neat, compact bird, in winter dress light grey above, white below. In flight a distinct white wing-bar is conspicuous, while the white rump is divided by the dark upper tail-coverts. The mottled black and white plumage of the autumn dress is much more noticeable than the plain grey assumed in winter. The summer plumage is striking, the breast becoming pale chestnut and the upper parts a mixture of chestnut, black and white. Compared with the other waders on the shore, the Sanderling has a much whiter general appearance. The bill and legs are black. The bill measures 21–28·5 mm., wing 116–130 mm., tarsus 22–26 mm.

From numerous records which have reached me it appears that sanderlings may be encountered as far south as Lagos as early in the autumn as the third week of August, though the main body turn up later in September and October. Many also pass down the west coast to winter further south. It is seldom seen far from the sea coast, but passes down both east and west sides of the continent in considerable numbers and may be observed in very large flocks. The return journey to the Arctic tundras does not take place until late in the spring or early summer, the birds arriving on their breeding grounds in late June and early July.

Distribution. The breeding range of the Sanderling includes the Arctic regions of both hemispheres, from which it migrates to the most distant parts of the earth, reaching South America, South Africa, India, China and Australia. Within the limits of West Africa it is found on the shores of all our Colonies in winter and migrates down both coasts of Africa. It has once been recorded from northern Nigeria, but it is unusual to meet with it away from the shore line or estuaries.

RUFF AND REEVE

Philomachus pugnax (Linnæus)



THIS bird is peculiar in that the male—the Ruff—has a different English name from the female, which is known as the Reeve. The former has acquired its name from the remarkable collar or ruff of feathers with which it is adorned during the breeding season. These ruffs may be of many different colours, varying from all white or all black to purple or chestnut, while in others this erectile collar may be barred, flecked, spotted or freckled with any of these colours or with a combination of two or more. It is rare to find a Ruff in tropical Africa which has assumed its full breeding dress, but specimens are in existence which prove that some occur.

In winter dress the Ruff and the considerably smaller Reeve are dull-looking birds, the former rather smaller than a redshank, about 11 in. from bill to tail, but with longer wings and a shorter bill. In colour it is dull ash-brown above or mottled brown and black, mainly white below with a dusky breast. In flight a narrow white wing-bar is perhaps perceptible, while an oval white patch on each side of the dark tail is the best guide to its identity at all seasons. The bill (male) measures 34–38 mm., (female) 28–32 mm.; wing (male) 177–192 mm., (female) 149–163·5 mm.; tarsus 45–52 mm. The legs and feet are orange-yellow and the bill is dark brown.

The chief winter quarters of the Ruff and Reeve in western Africa have been discovered since the publication of my second volume of *The Birds of Tropical West Africa* (1931), and we now know that incredible numbers pass the off-season in the French Sudan and French Niger territory and in the vicinity of the brackish lakes which lie north of lat. 11° N. in northern Nigeria. To reach these objectives, which lie mainly between the Inundation Zone of the Niger and Lake Chad, the birds must cross the inhospitable waste of the Sahara, but this crossing they would accomplish with much less danger than attaches to the little Passerine birds which brave the same journey. September and October mark the height of the southern passage, while the return journey is made—generally in parties of eight to twenty individuals—in March and April. On occasions the birds pack into a vast flock numbering several hundred birds.

The life history of the Ruff is of exceptional interest. The males are polygamous and fight among themselves for the possession of the females. A marsh and swamp-loving bird for the most part, it normally shuns the coast, but not invariably, as it has been found at the Salt Pans at Accra, and some pass through the Canaries

regularly in small numbers, proving that individuals use a route across the sea. It never nests in Africa.

Distribution. Breeds from northern France to Lapland east to Russia and Siberia as far as lat. 76° N. In winter its range is immense. It then reaches China and Japan and South Africa. The equatorial forest seems to act for no apparent reason as a barrier to its progress in West Africa, but on the eastern side of the continent its range extends to Cape Province.

SUB-FAMILY ARENARIINA

TURNSTONE

Arenaria interpres interpres (Linnæus)

In winter the Turnstone is dull-coloured, the upper parts being brown variegated with black, the rump and long upper tail-coverts white and the shorter coverts black, thus forming a band across the rump. The throat is white, the breast blackish brown continued in a half-collar round the neck, the rest of the under parts, axillaries and under surface of the wing being white.

A striking change takes place in summer, when the breeding dress is assumed gradually, and specimens in intermediate garb may be met with in West Africa before their departure for their breeding grounds. The crown finally becomes white streaked with black; the lores are white, and a black patch passes in front of the eye and on the cheeks. The breast is black, merging into a band which almost encircles the neck and is separated from the mantle by a half-collar of white. The mantle, scapulars and wing-coverts are variegated, bright chestnut and black. The upper throat and belly are white, the bill is blackish and the legs and feet are orange. The bill measures 20–24 mm., wing 146–162 mm., tarsus 23–29 mm.

In flight the Turnstone shows its white rump, across which is a black patch, and a white bar in the wing is then a conspicuous feature. Both in winter and summer the orange legs are noticeable. In total length the Turnstone measures nearly 10 in.

This is a purely maritime species which prefers rocky coasts to the wide expanse of sand and mud preferred by most wading shore birds. Rocky coasts are not so commonly found within our limits, and the turnstones which winter in West Africa perforce have to frequent the estuaries and mangrove swamps which border the shore line and extend some way up the large rivers. The lagoons and salt pans are more favoured, but nowhere is the Turnstone really common. On one occasion it has been reported from the upper reaches of the Niger, where a specimen was secured at Gao.

Although sparingly found in West Africa, flocks of fifty or more have been seen in Sierra Leone, and many occur annually at the mouth of the Gambia, when it has been seen late in April. The majority of our winter visitors leave the coast before May, but some perhaps stay all the year round and do not go north with the main body in September and October.

Distribution. Breeds in the extreme north of Europe and Asia; is migratory to the four corners of the earth in winter. It has then been reported from both shores of Africa to Cape Province. In West Africa it is to be found on many parts of the coast from Senegal to Gaboon and is known from the Cape Verde and other islands. It has been reported from all British Colonies and even from the muddy shores of Ondo Province in Nigeria.

SUB-FAMILY TRINGINAE

Key to the species of the Tringinae

1. Wing normally over 152 mm. (6 in.) 2
   Wing normally under 152 mm. (6 in.) 4
2. Wing over 175 mm., bill slightly recurved
   Glottis nebularius, p. 428
   Wing under 175 mm., bill straight 3
3. Bill over 50 mm., barred tail more black than white
   Tringa erythropus, p. 428
   Bill under 50 mm., barred tail more white than black
   Tringa totanus totanus, p. 427
4. Middle pair of tail-feathers entirely or very nearly uniform, barring (if present on central rectrices) very faint and restricted to terminal third of feathers .. 5
   Middle pair of tail-feathers conspicuously barred .. 6
5. Bill very long and upturned (50 mm. or over); legs and feet bright orange .. .. .. *Xenus cinereus*, p. 423
   Bill much shorter (under 27 mm.) and not upturned; legs and feet greenish grey .. *Actitis hypoleucos*, p. 424
6. Three outermost tail-feathers mostly white with dark submarginal, occasionally interrupted, line or freckling down the outer web; upper parts greyish (see p. 425, No. 1) .. .. .. *Glottis stagnatilis*, p. 429
   Three outermost tail-feathers without submarginal line or fine freckling down outer web, often with heavy spot or bars on one or more feathers; outermost feather occasionally pure white but sometimes with triangular spots on outer web (see p. 425, Nos. 2, 3); upper parts dark olive or olive-brown 7

7. Wing-coverts uniform, without whitish spots; shaft of outermost long primary dark.. .. *Tringa ocrophus*, p. 425
Wing-coverts with whitish tips and notches; shaft of outermost long primary white .. *Tringa glareola*, p. 426

TEREK SANDPIPER

Xenus cinereus (Güldenstädt)

THE most arresting features of the Terek Sandpiper in winter dress are the bright orange legs and feet and the blackish long upturned bill, the base of the mandibles being pale orange. The body colouring of the upper parts is ash-grey, including the rump, which



at once distinguishes it from the white-rumped Redshank. In size the Terek is considerably smaller than that bird, measuring 9 in. in total length. The under parts are white, ashy on the sides of the breast and on the throat. Another point to note is the white axillaries and white under tail-coverts.

In flight it has some resemblance to a Redshank, owing to the amount of white on the secondaries and on the tail. When seen standing, the blackish shoulders, major coverts and primaries form a dark line down the side in contrast to the ashy colouring of the back and the white breast. The call note is a soft *twit-a-whit-wit-wit*. The bill measures 41–51·6 mm., wing 126–141 mm., tarsus 25–30 mm.

The northern Palaearctic region is the summer home of the Terek Sandpiper, and its presence in Africa, particularly in western Africa, is not to be expected regularly. Only once has it occurred within

our limits, when three birds were identified in October 1947 at Mekwen near Lagos, southern Nigeria.

Distribution. Breeds from Finland to Siberia, wintering in India, Malay and Australia but only casually in Africa, where some twenty-odd examples have been recorded, mostly from eastern Africa and Madagascar.

COMMON SANDPIPER

Actitis hypoleucos (Linnæus)

THE present species is so much a part of our lochs and rivers in Britain that it seems curious to see it frequenting the streams and lakesides in tropical Africa so far from its northern haunts. It is a small sandpiper, only 7 in. from bill to tail, olive above, white below, and with a dusky breast. In build it is slender and more graceful in appearance than the Dunlin or Curlew Sandpiper. It constantly flirts the tail, when the white under tail-coverts are obvious, and has a habit of bobbing its head. In flight, which is rapid and silent, the wings appear rounded, a broad white bar being conspicuous. Its bill is dark brown; its legs and feet are greenish grey. The bill measures 23–26·5 mm., wing 106–114 mm., tarsus 22–25 mm.

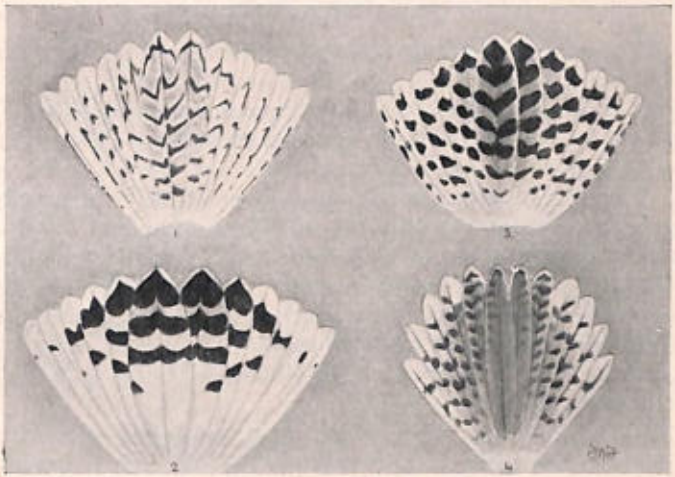
Although it has been recorded in almost every month of the year from tropical Africa, yet it is not a breeding bird south of the Mediterranean basin, though once said to have done so in Uganda. It begins to move south through Europe in August, and has even reached the latitude of Timbuktu by the middle of that month. The majority arrive in the tropics in September, and in mid-winter it is one of the most frequently seen of all the European waders, found as it is on the seashore, along the creeks and rivers and in many isolated places of the interior. It will even come down in forest clearings and will follow running watercourses wherever they are to be found in any type of country. A number certainly spend all the year round in Africa and do not go north to breed, but, as already remarked, they do not nest in the tropics. It must be as well known in Africa as it is in Britain, and, being a fairly tame bird, may be closely approached.

Distribution. Breeds in Europe from the Arctic to the Mediterranean and in Asia eastwards to Japan. Its winter range is vast, including India, the East Indies, Australia and Tasmania, while in Africa it occurs over the whole country to Cape Province and Madagascar. The majority depart at the end of March and do not return before August, though some remain in their winter quarters the whole year round.

GREEN SANDPIPER

Tringa ocrophus Linnæus

DECIDEDLY larger than either the Common or Wood Sandpiper, measuring about 9 in. from bill to tail, the Green Sandpiper may be recognised from all the sandpipers which visit West Africa by the black under surface of the wing, but as this character cannot be seen unless the wing is raised we must rely on other features for its determination. Its legs are short; thus it should not be confused with the



Tails of (1) Marsh, (2) Green, (3) Wood, and (4) Common, Sandpipers

Marsh Sandpiper, which it resembles in the size of its body. From that species it may be distinguished in addition by the presence of black bars on the tail and by the lack of any white forehead and face. It is confused most readily with the Wood Sandpiper, but the latter is much smaller and has less white on the rump and tail. Moreover the dark wings of the Green Sandpiper should serve to distinguish it from the Wood Sandpiper in flight. No doubt the loud note of the Green Sandpiper is the best guide to its identification—*tui-tui-tui*. The bill is black; the legs and feet are olive. The bill measures 32–36 mm., wing 133–152 mm., tarsus 32–35 mm.

Another winter visitor from Europe, the Green Sandpiper occurs frequently on most of the rivers and streams in West Africa from October onwards. It is usually to be seen singly or in couples feeding at the water's edge on insects and their larvae, small worms, spiders, and so forth. Some of the first-year birds probably remain in the tropics until the following season. It is a regular dry-season visitor

to some of the larger clearings, as at Kumasi, and may regularly be observed on the banks of reservoirs. It is more often seen on swamps than is the Common Sandpiper, which prefers running water. It does not favour the seashore.

Distribution. A breeding bird from the Arctic Circle to Central Russia, Poland and Germany, wintering in eastern Asia and in many parts of Africa but less common in the west than in the east. It is, however, reported from most West African countries between Senegal and Angola and is then scattered far and wide over the country.

WOOD SANDPIPER

Tringa glareola Linnæus

A SMALL sandpiper, 7–8 in. in length, and about the same size as the Common Sandpiper but in appearance darker, with the bronze-brown upper parts more spotted. In some ways it resembles a miniature Green Sandpiper (*T. ochrophus*), but with longer legs. The white rump, and at any rate the middle tail-feathers, are banded from base to tip instead of with three heavy blackish bars to [illegible] the tip only, as in the Green Sandpiper. When handled the [illegible] the outermost long primary is seen to be white—a character which distinguishes it from the Green Sandpiper. The bill is black; the legs and feet are sage-green. The bill measures 25–30 mm., wing 118–128 mm., tarsus 35–39 mm.

This is another sandpiper which must be sought wherever there are pools in the interior, and even in the dry belt it may be encountered in winter wherever the remnants of a stream have been left. Its favourite resorts are the stagnant pools in semi-arid country where insects thrive in abundance. It may also be seen by the reservoirs, as at Sekondi and Tamale. Usually they appear in couples or three or four together in the dry season. I have been puzzled by reports that this bird becomes more numerous on the marshes about Sokoto in the middle of July and that throughout that month to August they are to be seen in small or large flocks, consorting with other waders. These must be very early arrivals in the country, for it can hardly be supposed that such numbers remain in northern Nigeria all through the year. It breeds, of course, in northern Europe and is normally to be found in tropical Africa from September to March. Like the Common Sandpiper, this species may often be seen to alight on the branches of a tree, but though named the Wood Sandpiper it is by no means confined to wooded country in winter, but is found usually in open or grassy spots near marshes and watercourses, as was discovered even in the Congo.

Distribution. Breeding up to the limit of tree growth in northern Europe and as far south as Holland, Germany and the valley of the Danube, extending across Asia to Kamchatka, the Wood Sandpiper migrates in winter to India, Malay, Australia and Africa. In the last named they reach Cape Province and are then found throughout the continent, including the whole of West Africa and the islands. It is one of the commonest visiting waders to all four British Colonies.

COMMON REDSHANK

Tringa totanus totanus (Linnæus)

A MEDIUM-SIZED wading bird some 11 in. in length with long narrow wings, a pinkish horn-coloured bill of $1\frac{3}{4}$ in. and long fine orange legs. The wing measures 152–162 mm., tarsus 45–50 mm. The upper parts are olive-brown, the lower back and rump white and the upper tail-coverts and tail white with narrow sepia bars. The under parts are mostly white; the breast is streaked with ash-brown, and the sides are dusky. On the ground the redshank is a graceful bird which stands high on its long legs and may often be observed bowing its body.

Its loud call, so well known to shore shooters in Britain, will probably first attract attention. In flight it shows a conspicuous white back and a large white area in the wing (most of the secondaries are pure white) as well as the barred tail. It is a noisy, restless bird and is not likely to behave differently in Africa from what it does on our own coasts.

In its winter quarters in Africa it may be observed singly. Far inland two or three may be observed together, as at Timbuktu and Niamey on the Niger, and considerable flocks may be witnessed in the vicinity of the Keta lagoon in the Gold Coast. It seems to frequent certain chosen spots in West Africa to the exclusion of many localities which are apparently equally suitable. Marshy ground, lagoons, rocky islands and muddy estuaries, mangrove swamps and inland reservoirs are all likely places in which to encounter it, but from the data available it must be considered distinctly local in its distribution in western Africa and by no means universally distributed.

Distribution. Breeding from the Arctic Circle to the Mediterranean, this is one of the best-known and most plentiful of its family. Many pass the winter in Europe but others migrate far afield, and it then occurs in Africa, mainly north of the Equator, though a few reach the Cape and Damaraland. Within our limits it is found in all our Colonies but is local, and though numerous in some districts is not to be met with everywhere. It is not known to breed south of Morocco, and even that locality requires to be substantiated. Great numbers winter in the Mediterranean basin.

DUSKY REDSHANK

Tringa erythropus (Pallas)

FROM the last species the Dusky Redshank can be distinguished best by its call note—sharp, whistling notes very unlike the cry of *T. totanus*. In summer it can be recognised by the sooty-black, faintly spotted plumage, but in winter there is little to choose between it and the Common Redshank. It has, however, a much longer and finer bill (2½ in. in length) and a generally larger size (12 in. from bill to tail). In flight the expanded wing exhibits much less white, the secondaries being barred instead of pure white. The bill is dark brown; the legs and feet are orange-red. Measurements in detail are as follows: Bill 53–64 mm., wing 152·5–170 mm., tarsus 52·5–60 mm.

The records of the Dusky Redshank in West Africa are not numerous. Within our limits it has been obtained in the vicinity of Timbuktu, Niamey on the Niger, Zaria, Ibadan, Kano and near Sokoto in Nigeria, in Senegal, and again just north of the Congo mouth on the Loango coast. It can only be considered an accidental visitor.

Distribution. Breeds in northern Scandinavia and in Arctic Europe and Asia east to Kamchatka, migrating in winter to Africa, Ceylon, Burma and China. Many remain in the Mediterranean area and comparatively few ever reach the Equator. Those examples which have occurred in West Africa are enumerated above.

GREENSHANK

Glottis nebularius (Gunnerus)

IN comparison with most of the sandpipers the Greenshank is a distinctly large bird, measuring some 13 in. from bill to tail, with a wing expanse of 24 in. Its body is slender and its carriage very graceful. The olive-green legs are very long and extremely fine. The bill is characteristic, slightly upturned and black in colour. In winter dress the upper parts are hoary grey, the under parts and rump pure white. The tail, too, is white, with the middle feathers barred. The wings are dark, and there is no white wing-bar. The primaries are sepia, the secondaries brown, paler on the inner web. In summer the upper parts are of a richer brown and more heavily streaked with sepia, and the white edges to the feathers are then more conspicuous. The throat and breast are then heavily streaked and the flanks irregularly barred with sepia. The bill measures 50–58 mm., wing 180–193 mm., tarsus 55–64 mm. The Greenshank has a characteristic note, peculiarly wild and sweet.

In comparison with the redshank, the present species can only be described as exceedingly numerous. It is not restricted to any particular part of the coast but may be encountered in all manner of localities. On the large rivers such as the Niger, Benue and Volta it may be seen until the end of May, usually feeding near the edge of the sandbanks or on the adjoining marshes. It is a dry-season visitor in great numbers to the coastal waters and lagoons and may be met with in equal numbers in the muddy estuaries of the rivers, as on the coasts of Benin and Ondo in southern Nigeria. Drainage creeks and mangrove swamps are also much frequented, but as soon as the rivers fall the Greenshanks repair to the sandbanks and journey far from the coast almost to the borders of the Sahara. It is most commonly to be seen on the Upper Niger in January and February. From September until May the bird may be encountered in West Africa, and reports have reached me of its presence near the coast during the latter part of July. Even so far south as the British Cameroons it is recorded from the end of July to 14th April.

Distribution. Northern Europe and Asia from Scotland to Kamchatka is the breeding ground of the Greenshank, which travels south in winter to spend the off-season in India, Malaya, Australia, New Zealand and Africa, a few remaining in their winter quarters during the northern summer. Its travels take it to Cape Province, and it moves down both coasts as well as the Nile Valley. Many are to be found in the vicinity of the Great Lakes.

MARSH SANDPIPER

Glottis stagnatilis (Bechstein)

THE general appearance of the Marsh Sandpiper is like a miniature greenshank with a very slender bill. For its size (9½ in. from bill to tail) it has exceptionally long legs. In body it is slightly larger than the Green Sandpiper, lacking, when in winter plumage, the dark spotting on the breast and the dark terminal markings on the tail of that bird. At rest the Marsh Sandpiper may be distinguished from the Green Sandpiper by the much paler upper parts and the longer legs. The forehead and eye-stripe are white, the crown, mantle and scapulars ash-brown, the back, rump and upper tail-coverts white, the coverts with some irregular sepia bars. The tail is mostly white, the central pair with both margins ashy, the outer with ashy outer margins and some freckling on the inner web. The under parts from chin to vent are white. The bill is dark brown, green at the base; legs and feet are olive. The bill measures 37–42 mm., wing 132–143 mm., tarsus 47–52 mm.

In summer dress the upper parts are paler ash with a reddish-buff tinge, and the white throat and breast are spotted and the sides barred.

To many parts of the coast the Marsh Sandpiper is one of the commonest waders. That is particularly the case on the Gold Coast and in Nigeria. Although it is known to prefer inland waters and in consequence is common in the Inundation Zone of the Niger, it sometimes gathers in immense numbers on the shore. Several thousands together have been identified on the coast of Ondo Province.

West Africa does not possess anything resembling the system of great lakes in East Africa, and it is unquestionably to the latter that the Marsh Sandpiper is attracted when away from its breeding grounds. It visits such inland localities as the Upper Niger, and reservoirs and inland waterways and pools are more likely to attract it than the coastal areas, save perhaps during migration or just prior to its departure north.

Distribution. Breeds in central and south-eastern Europe, Turkestan and southern Siberia, wintering in Asia, Malay, Australia and Africa. In the last named it extends from the Mediterranean to the Cape. Within our limits it is now known to be more common than was formerly the case, and between September and the end of April it may turn up either singly or in hundreds in far-separated localities.

SUB-FAMILY LIMOSINAE

BLACK-TAILED GODWIT

Limosa limosa limosa (Linnæus)

A RATHER large, long-legged, graceful bird with body about the size of the Whimbrel (about 17 in. from bill to tail), but easily distinguished by the very long bill, more or less straight but slightly upturned. The bill will measure as much as 5 in. in the adult female; the male's is rather shorter. In winter this godwit appears light brown above and whitish below, with an ashy-brown breast and neck. The white rump is a striking feature and the terminal half of the tail is uniform black, only the outer tail-feathers showing white in flight. This feature distinguishes it easily from the Bar-tailed Godwit, and is noticeable in the air as well as on the ground. When on the wing the legs protrude far beyond the tail like a rudder ($3\frac{1}{2}$–4 in.), and the wing itself has a broad, ill-defined white band diagonally across it as well as a white patch on the flight

feathers. The bill is flesh-pink at base, terminally brown; legs and feet are dark green. The bill measures 76–124 mm., wing 200–240 mm., tarsus 75–92 mm.

Black-tailed Godwits are early arrivals in West Africa from their European breeding grounds. I have records of their appearing in the Inundation Zone of the Niger around 20th August, from which date onwards they may be seen in small numbers, but they become much more numerous from 1st October. Specimens are reported from various places in June, and it is always difficult to account for these birds, which should certainly be far from the tropics at that time of year.

The European birds winter largely in the Mediterranean basin, whence a few wander south into Upper Guinea, but it is not a common species within the area dealt with in this handbook. Those birds which breed in western Asia probably winter in India. The records of this godwit in Africa—even in the north-eastern half of the continent—are not at all numerous. Perhaps the marshy lands of the French Sudan are the most attractive to it, but it is also quite well known in the swamps of Gambia in parties of six or more. It is as likely to be encountered on the coastal lagoons as on the borders of Lake Chad. Its large size and deliberate movements when consorting with other waders should enable it to be picked out, especially if the observer is sufficiently close to note the long bill and the black tail.

Its call is considered to be more musical than that of the Bar-tailed Godwit and to be uttered in three syllables. It breeds in Europe from the end of April onwards, so that birds which are still in Africa in June must surely have given up all intention of nesting.

Distribution. Breeds in Holland, Belgium, northern Germany and Russia, as well as in western Asia, wintering in the Mediterranean basin, a few wandering as far south as lat. 12° N. It is recorded from within our limits from Gambia, Cape Verde Islands, Portuguese Guinea, Sierra Leone, French Sudan, northern Nigeria (Bornu, Sokoto and Zaria) and from Lake Chad.

BAR-TAILED GODWIT

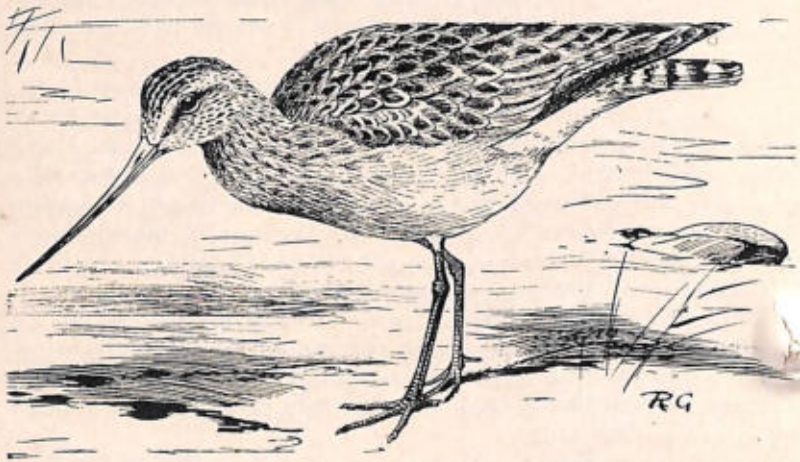
Limosa lapponica lapponica (Linnæus)

In winter plumage the Bar-tailed Godwit is ash-grey above, with dark sepia markings and white edges to each feather, the lower throat and breast being ashy with narrow brown streaks and the rest of the under parts white.

In summer dress the plumage is much brighter, the feathers of the upper parts being edged with cinnamon-pink, including the upper

tail-coverts. The eye-stripe, cheeks and neck and entire under parts are orange-cinnamon, and the neck is finely streaked with sepia. There is, of course, much individual variation. The bill is flesh-colour at the base, terminally blackish horn; the legs and feet are greenish grey. The bill measures 72–108 mm., wing 195–227 mm., tarsus 46–57 mm.

In winter plumage this godwit may be distinguished from the Black-tailed Godwit, which it resembles in general appearance, by



its smaller size, shorter bill (barely over 4 in. in the largest female, but more upturned than in *L. limosa*), shorter legs, distinctly streaked crown and upper surface and uniformly barred tail below the white rump. In flight there is no white wing-patch or wing-bar visible and the legs do not protrude more than a couple of inches beyond the tail. The call is a loud *low-eet, low-eet.*

In its winter quarters in Africa the Bar-tail seeks the same environment as it does in Europe—estuaries, sandbanks, mud-flats and adjoining swamps. Inland waters are seldom visited. It is the shore line and brackish lagoons such as that at Keta in the Gold Coast which attract it, and in such places it can be picked out from the multitude of shore birds without much difficulty, the pronounced upturned bill assisting to that end. It is, of course, only a visitor from northern Europe which breeds in the far north in June, by which month all but a few stragglers or non-breeding birds have left Africa.

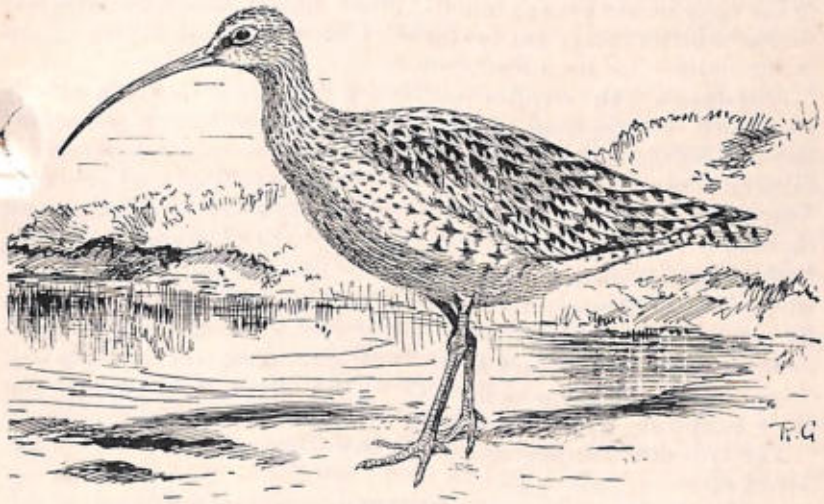
Distribution. Breeds in Europe from Lapland through Russia north to lat. 60°, east to the Ural Province, migrating to central and southern Europe in winter, many remaining in the Mediterranean basin but some continuing south to reach Somaliland in the east and

Nigeria in the west of the African continent. Within our limits flocks of 200 or more have been seen in the Gold Coast and smaller numbers on the coasts of Sierra Leone and Gambia. Asiatic breeding birds winter apparently in north-western India and the Mekran coast.

CURLEW

Numenius arquatus arquatus (Linnæus)

ALTHOUGH three races of the Curlew have been recorded from within our limits, there is no doubt that the Common Curlew which breeds in Britain and in most of Europe is the one which is such a numerous visitor to West Africa. The other two, to be mentioned later, are either chance visitors or rare vagrants.



The European Curlew is too well known to require much description. It is a large bird with streaked brown and buff plumage, a conspicuous white back and a distinctive cry. Its downcurved, long, slender bill is an unmistakable guide to its identification. The Whimbrel, which resembles the Curlew in this respect, is a much smaller bird with two broad sepia bands down each side of the crown, whereas in the Curlew the entire crown is uniformly streaked. The well-known cry is unmistakable, but to what extent it is uttered in Africa requires further observation. In colour the bill of the Curlew is reddish horn, flesh-colour at the base. Legs and feet are greenish grey. The bill measures (male) 110–122 mm., (female) 127–166 mm.; wing 280–310 mm.; tarsus 70–88 mm.

Curlews arrive early in their winter quarters, and many are to be seen in Gambia and the Inundation Zone of the Niger before August is out. Some early arrivals have been recorded from Gambia and the Gold Coast by 1st August and others from British Cameroon by the end of July, but the main body come in September, by which time they have spread all along the coast and along the main waterways of the interior. Later in the year its bubbling cry may be heard on the muddy shores of the southern Nigerian Provinces, and very large gatherings have been witnessed at the mouths of the rivers in January, when hundreds of curlews frequent the estuaries.

On the whole, the Curlew is a bird of the shore line and adjoining swamps and lagoons, and though it is to be found a long way up the estuaries it seems that it only frequents the sandbanks of the Niger during the period of migration. It has then been observed at many points between the Nigerian boundary and the upper reaches of the river in the French Sudan. Some appear to remain in Africa throughout the year, but no proof of its breeding in Africa—even in the south—has been forthcoming.

Distribution. The typical subspecies with which we are chiefly concerned breeds from Britain and northern France eastwards through northern Europe to Russia, where it meets the range of the Siberian race. In winter it passes through central and southern Europe in great numbers, many electing to remain in Europe all the winter but large numbers continuing south. Curlews pass down both coasts of Africa to reach the Cape and are present within the whole coastal area of West Africa from the end of July to March. By what route birds reach the Inundation Zone of the Niger and such localities as Gao and Lake Chad is as yet uncertain. Passage across the desert seems unlikely, and it is more probable that the birds ascend the great rivers from the coast.

The two other subspecies which have been recorded from West Africa are:

1. The Eastern Curlew (*Numenius arquatus orientalis* Brehm), which is paler in colouring but needs careful comparison before it can be determined, even when in the hand. It is recorded in my second volume under the name *orientalis* of Cuvier. It breeds in the southern Baikal region and in western Siberia and has been recorded from the Upper Niger, Sierra Leone and the Gold Coast and from Lake Chad.

2. The Dwarf Curlew (*Numenius arquatus suschkini* Neumann), said to be distinguished only by its small size, has bill 118–139 mm. and wing 255–285 mm. Obtained three times in West Africa in Rio de Oro, Senegal and Nigeria (Lagos). This race is the breeding bird of the Kirgis steppe between the Volga and upper Tobol, but its validity is still doubtful.

WHIMBREL

Numenius phaeopus phaeopus (Linnæus)

In general appearance the Whimbrel resembles a small curlew; the curved bill does not exceed 3½ in. in length, but one needs to be fairly close to remark the distinctions other than the smaller size. The Whimbrel is more spotted in appearance than streaked, the sepia feathers of the scapulars and mantle having small white notches. The back and rump are white, the tail is barred pale brown and sepia; the white breast is streaked with brown, and the rest of the under parts are white. The bill is dark horn, but the base of the mandibles is flesh-colour; the legs and feet are greenish grey. The bill measures 76–87 mm., wing 228–265 mm., tarsus 51–61 mm.

At close quarters the difference in the crown between the Whimbrel and Curlew can be noted, the former with two bands of sepia down each side and the central stripe pale, the Curlew with a white crown regularly streaked all over with sepia.

Like the Curlew, the Whimbrel visits West Africa in winter in considerable numbers and appears to be the commoner of the two species in Gambia and Sierra Leone, whereas the reverse is apparently the case in the Gold Coast and Nigeria. For all that the Whimbrel is a common bird, especially to the Keta flats and sandbanks of the former colony, and there are many to be seen in Nigeria in the estuaries of the Dodo and Pennington Rivers and at Forcados, where the smaller birds are said to outnumber the Curlew.

On passage the Whimbrel may be observed far in the interior, and I have notes of a large migration seen in the Inundation Zone of the Niger in the vicinity of the Diaka River on 23rd August, when flocks of fifteen or more were seen passing at regular intervals. That some of these birds make the journey from Iceland has been proved by a ringed bird which was taken at Dakar three months after it had been banded in that island.

Whimbrels are fairly punctual arrivals on their northern breeding grounds, which they reach in May, and many depart south again in July and August, barely giving them time to rear their young. There are more records of this bird being seen in tropical Africa in the summer months (when they should be breeding in the north) than almost any other wading bird. There is a regular migration down both sides of Africa and also down the valley of the Nile, by which route the Whimbrel would appear to reach the central African lake system. Within our limits it is common everywhere from Senegal to the mouth of the Congo, but especially so in Upper Guinea. A few are certainly present, in Sierra Leone especially, in all months of the year.

Distribution. Breeds from the northern isles of Britain, Scandinavia and Iceland eastwards to the Lena River in western Siberia, migrating in winter to Cape Province, Madagascar, and western India. Its local distribution has been mentioned above. It is found as a regular dry-season visitor in all British West African Colonies and mandated territory as well as being widely distributed in French territory, especially along the coast.

SUB-FAMILY PHALAROPODINAE

GREY PHALAROPE

Phalaropus fulicarius jourdaini Iredale

THE little Grey Phalarope in its grey winter dress has been likened by observant naturalists to a miniature (very miniature, for it measures only 8 in. from bill to tail) gull. It swims high upon the



water and bobs its head in the manner of a moorhen. At the season when it comes within the limits dealt with in this book its plumage is pearl-grey on the back and wings, with a white face, neck and under parts, and a broad white bar across the wing. At close quarters a dark patch is noticeable behind the eye and the tail also appears dark. Some irregular black feathers on the back and black long inner secondaries combine to give a rather patchy appearance. In winter the bill is black, and the legs and feet—the latter, which

are partly webbed, can seldom be seen—are brownish grey. The bill measures 22–24·5 mm., wing 123–136 mm., tarsus 20–22 mm.

As spring approaches the Grey Phalarope begins to don its nuptial plumage and a great transformation takes place. The white forehead becomes blackish peppered with buff, the crown and upper parts become conspicuously streaked, the middles of the feathers blackish, and the fringes chestnut-buff. The entire under parts become chestnut-brown, with a varying amount of white on the belly. In other respects the winter and summer plumages are more or less alike, but in summer the bill is mostly yellow. Examples may be found in southern waters which are in intermediate dress. Traces of summer plumage are visible in individuals as early as the first week of February. Only in summer plumage can the two races be determined. That which winters in West African waters is almost certainly the race here specified.

In its huge autumnal migrations the Grey Phalarope passes down the western coasts of Europe and Africa certainly as far as lat. 31° 47′ S., which is off the western coast of Cape Province. Breeding on the Arctic coasts and islands of both hemispheres, the birds travel southwards in great numbers, usually keeping far out to sea and away from land. Nesting does not begin before the end of June, and September is the month when the trek southwards begins, continuing right through October. There are now many records of Grey Phalaropes being seen travelling off the Guinea coasts. The birds travel in flocks, some of which must number 200 birds, and these flocks continue to pass until several thousand Phalaropes must pass a given point in a day. The birds fly swiftly, skimming the water and following the trough of the waves. When tired, they rest on the water and feed on the floating vegetable matter, molluscs and crustacea, and the larvae of insects.

Distribution. The Arctic regions of both hemispheres, migrating at sea as far as Chile, Patagonia and south-western Africa. Two races have been named—one in the old and one in the new world. Many have been observed on passage or resting at sea off the Cape Verde Islands, Senegal, Bathurst, Freetown, Liberia, the Gulf of Guinea, Cameroon, off Walfish Bay and Cape Province, and from various intermediate points. The birds assuredly winter at sea in these latitudes and only come ashore (in the Arctic) to rear their young. At all times they are extremely tame and when resting on the water almost allow themselves to be run down by an approaching vessel. Opinion is divided as to whether the race named *jourdaini* can be accepted as valid. I confess to being doubtful whether it should be recognised but retain it here as it was so listed in my larger work.

SUB-ORDER LARI-LIMICOLAE

Key to the families and sub-families of the Lari-Limicolae

1. Three anterior toes with complete or partial webs .. 2
   Three anterior toes united with membrane only at extreme base, if at all .. .. Family *Glareolidae*, p. 438
   (For sub-families see par. 5)
2. Bill much compressed laterally to form scissor-like edge; lower mandible considerably longer than upper
   Sub-family *Rynchopinae*, p. 477
   Bill not strikingly compressed laterally, lower mandible not longer than upper 3
3. Bill with cere present, upper mandible sharply decurved at tip; central pair of tail-feathers elongated
   Family *Stercorariidae*, p. 451
   Bill without cere, upper mandible straight or gradually decurved; central pair of tail-feathers not elongated 4
4. Both mandibles more or less equal in length, upper not curving over lower; tail generally forked
   Sub-family *Sterninae*, p. 460
   Upper mandible rather longer and gradually curving over lower; tail not forked .. Sub-family *Larinae*, p. 454
5. No hind toe present .. Sub-family *Cursoriinae*, p. 438
   Small hind toe present .. Sub-family *Glareolinae*, p. 445

FAMILY GLAREOLIDAE

Key to the sub-families of the Glareolidae

No hind toe present .. .. .. *Cursoriinae*, p. 438
A small hind toe present .. .. .. *Glareolinae*, p. 445

SUB-FAMILY CURSORIINAE

Key to the Coursers

1. Under wing-coverts black 2
   Under wing-coverts not black 3
2. Wing exceeding 140 mm. (5½ in.); hind crown dove-grey in adult; no black patch on belly
   Cursorius cursor and subsp., p. 439

Wing not exceeding 140 mm. (5½ in.); hind crown not grey; small black patch on belly
Cursorius temminckii temminckii, p. 440

3. Crown and mantle black; rest of upper parts, including rump, pale dove-grey *Pluvianus aegyptius* and subsp., p. 443
Crown and mantle not black; upper parts, except rump, brown .. .. *Rhinoptilus chalcopterus* and subsp., p. 441

CREAM-COLOURED COURSER

Cursorius cursor cursor (Latham)

THE sandy isabelline colouring of this desert-frequenting bird, with black flight feathers and conspicuous white streak passing from above the eye to the hind crown and with almost white legs, should enable it to be identified, as both in flight and when on the ground it has characteristics which betray it. As it raises its wings the whole under side of the primaries and wing-lining will be seen to be black, but as it drops to the ground and closes its wings the bird assimilates so closely to the colour of the ground that it is exceedingly difficult to see until it runs, which it does incredibly fast. The alarm cry is a short piping note twice repeated. The bill is black; legs and feet are palest cream. The bill is 22–25 mm., wing 151–167 mm., tarsus 50–58 mm.

Only in sandy country bordering the desert is the Courser likely to be encountered, probably in little flocks which are very wary and not easy of approach. Ever on the alert, the birds quickly put cover between them and the observer but prefer to escape on foot rather than by taking to the air. Like all desert birds, their eggs are difficult to find, and are deposited on the bare earth, the larger stones being scratched aside. Eggs are cream or buff with pencillings and scrawls of various shades of brown and grey shell markings. Average measurement is 34·67 mm. × 27·1 mm. (Jourdain).

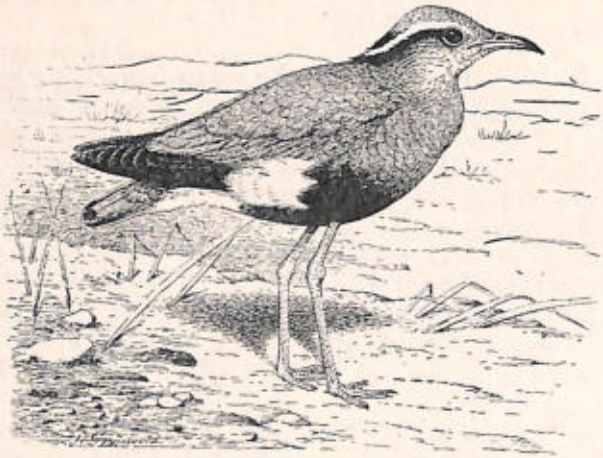
Distribution. Restricted to the desert parts of Africa, Palestine and Mesopotamia, ranging in Africa from the British Sudan and Somaliland westwards to Lake Chad and the French Sudan, the vicinity of Timbuktu, the Inundation Zone of the Niger around Lake Fagguibine in sand-dune country, and to the French Niger territory.

Another subspecies, *C. c. exsul* Hartert, is restricted to the desert islands of the Cape Verde archipelago, and another, which bears my own name, to the eastern islands of the Canary archipelago.

TEMMINCK'S COURSER

Cursorius temminckii temminckii Swainson

ALTHOUGH this is a true courser in its habits, it is a very small bird in comparison with the last, for in total length it does not exceed 8 inches from bill to tail. In colouring it is altogether darker, the upper parts being brown but with the same distinctive white band bordered with black which surrounds the crown, the crown being chestnut. It has a white throat, chestnut breast, a black patch on



the belly and white at either side. As it runs from the observer a white patch is visible on either side of the tail. In flight the lining of the wing appears black. The bill is dark horn; the legs are almost white. The bill is 17–18 mm., wing 123–128 mm., tarsus 38–42 mm.

So diminutive is this bird in life that it has even been likened to a Crested Lark. It runs with speed and spends much of its life in the thorn-scrub savanna but occurs also in grass woodland and may be seen on the plains covered with short grass. Not confined to any particular habitat, it has been seen on the edge of the desert (at Tawa) and in sand dunes at Kanioumé, French Sudan, but is just as much at home on a parade ground or aerodrome, as at Tamale and Apapa in the Gold Coast. Burnt ground always attracts it, and on the Bauchi plateau of Nigeria it is a familiar bird on recently burned orchard bush. It has a striking cry which has been likened to a squeaking hinge and another much softer, vibrant note. Although far from shy, it prefers unfrequented ground.

The eggs are laid on the ground and have a ground colour of chalky white, scrawled with sepia lines and underlying markings of

stone-colour. In some examples the ground is almost obliterated by the underlying markings, which may take the form of speckling rather than a network of lines. Measurements are 26–31 × 22–24·5 mm.

Distribution. Widely distributed in Africa, the typical race ranges from Senegal to Nigeria and from Abyssinia to the Cape, while another subspecies has been recognised from Damaraland. From within our limits *C. t. temminckii* has been reported from all political divisions from Senegambia to Hausaland. Eastwards it ranges to the desert at lat. 15° N and occurs both inland, as in the Inundation Zone of the Niger, and at Lake Chad, as well as close to the coast, Accra, Lagos, Abeokuta, Owerri, etc. It seems to be universally distributed wherever the terrain is suited to its requirements but avoids forested areas. It appears to be absent from the interior of the Sahara and from Darfur, Kordofan and the country west of the Nile.

BRONZE-WING COURSER

Rhinoptilus chalcopterus chalcopterus (Temminck)

This is a larger bird than the Cream-coloured Courser and may be likened in size and length of leg and wing to the Senegal Plover (*lugubris*). On the ground and in flight its appearance is not at all unlike the true coursers, but it also has a marked resemblance to the plovers, being, in my opinion, a connecting link between the two groups. Earth-brown above, with conspicuous white patches on the sides of the face; a white band at the base of the tail, which is also tipped with white, and the black flight feathers should enable the bird to be identified. The legs are long and purplish and the base of the bill is red, with the tip black. If the bird is facing the observer, a white forehead and black line across the light brown breast are all that will be seen. On close enough inspection (or immediately when handled) the identity will be solved by the metallic purplish tips to the black wing-feathers. Legs and feet are purplish red. The bill is 18–19 mm., wing 167–187 mm., tarsus 67–77 mm.

The Bronze-wing Courser prefers more bush-covered country than the other members of the family but, like the last species, loves to frequent ground which has been recently burnt.

There is some reason to believe that it is a migratory species from some other part of Africa—perhaps from south of the equatorial forest—which turns up on rather rare occasions in Upper Guinea. It evidently does much of its feeding at night and may remain quiet most of the day, so that it is not often encountered. Its presence

may be recognised by its peculiar cry—a low note followed by a more raucous one, interpreted by a German naturalist as *gror rärg*. Little flocks may be encountered, chiefly at dusk, after which their note can be frequently heard in country where they are not uncommon. Care must be taken not to confuse the notes with those uttered by an owl. The birds lie very close and seldom fly far,



even though flushed from under one's feet. It appears to be found in Upper Guinea only in the dry season and possibly does not breed in our area.

The eggs are deposited in the open on bare ground, not infrequently just after the grass has been burnt, a slight scrape or hoof-mark serving as a sufficient nest. The eggs are handsome, plentifully blotched with sepia and black among spots of mauve and various shades of grey, most of the ground being obliterated. Measurements are 34·3–36 × 26·3–26·9 mm.

Distribution. Only the northern race of the Bronze-wing Courser comes within our limits in Upper Guinea, ranging as it does from Senegal and the Egyptian Sudan (about lat. 10° N.) to Kenya and northern Nigeria. In West Africa it is not often seen but has been reported from Gambia, Konakry, the Plateau and Bauchi Provinces of Nigeria, Say on the Niger, the upper Volta, and the vicinity of Tamale and Yapei in the Gold Coast. Its nocturnal habits no doubt account for the paucity of observations upon it.

South of lat. 4° S. another subspecies, *R. c. albofasciatus* Sharpe, takes its place, to which some reference is made on page 201 of volume ii of my larger work.

EGYPTIAN PLOVER OR CROCODILE-BIRD

Pluvianus aegyptius aegyptius (Linnæus)

THE Crocodile-bird, as this species is familiarly known through its supposed association with that reptile from the days of Herodotus and Pliny, must be well known to all travellers on the great African rivers, especially where they run through the dry thorn belt. Nowhere is it more numerous than on the Niger, Benue and Black Volta, where the birds congregate upon the sandbanks and upon



the level foreshore. No one can fail to recognise it, for it has a most pleasing colour pattern, particularly in flight, when the grey wings contrast with black bands across the white flight feathers, all of which are tipped with black. At rest it looks rather stumpy. A black crown is margined by a broad white stripe passing over the eye and meeting its fellow on the nape. Below the white stripe a glossy black band passes through the eye on to the nape and beyond to form a V on the back with a long stem, as can be seen in the picture. The chin is white and the buff throat is separated from the belly by a black band or necklace across the chest. A black bill (15–18 mm.) and rather short, greyish-blue legs (tarsus 33–36 mm.) are noticeable by reason of the latter's peculiar colour. The wing measures 127–139 mm. and the tail 55–62 mm.

In my larger work, volume ii, and supplement volume viii, a long account of this exceptionally interesting bird is given, but space in the handbook forbids anything but a brief notice.

Fortunately it can be watched at very close quarters, for it is most confiding. The flight is graceful and skimming, the outstretched wings appearing like a black and white patterned cape. When searching for its food, consisting of small seeds, beetles, water-flies, particles of tiny fish and organic substances, it advances with a quick, jerky step, every now and again scratching back the sand with a lightning flick of the foot. Again, it may be observed standing solitary and motionless, all hunched up, as depicted in the accompanying drawing. During flight it utters a number of notes rapidly uttered but not easily expressed on paper.

Its breeding habits are of great interest. The eggs are certainly partially buried in the sand and before being left by the sitting bird are (unless she or he be rudely disturbed) completely covered over. Most naturalists aver that the eggs are buried to a depth of two or three inches and can only be found by marking the sitting bird and then running one's fingers through the sand she has vacated. Certainly eggs are never found exposed, unless it be just the tops showing, but on its return to brood the bird will very probably remove with its bill the top layer of sand. Chicks when just hatched are treated in exactly the same manner and are completely buried beneath the surface when the parent is alarmed. The old birds have on occasion been seen to damp the spot, below which the eggs lay hidden, by regurgitation after drinking at the water's edge. Recent observations tend to show that the eggs lie with their pointed ends downwards. The normal clutch is two, but clutches of three have been found. The breeding season is in April and May in Nigeria, when the rivers are low. The eggs are buff, streaked and lined with various shades of brown and occasionally with small blotches and underlying stone-coloured and ashy markings. Average size is 30·7 or 30·8 × 24·1 or 23·5 mm. in two series each of seventeen eggs. The tiny young can run with prodigious speed and can swim well soon after hatching.

Distribution. From Egypt to Uganda and from the whole of western Africa from the Senegal River to northern Cameroon, mainly where the rivers run through the arid belt. Not common in Gambia or Sierra Leone but more so on the Black Volta and widely spread in northern Nigeria on the larger rivers. Fairly numerous on both the Upper and Lower Benue and extends to the rivers of Chad and the Shari. North of lat. 10° N. it is ubiquitous on all rivers and streams. It is rarely found in coastal districts but has been reported from several localities in southern Nigeria. It is frequent on the Upper Niger and where that river runs through

the Inundation Zone. In January 1952, five were seen at Basse in the Upper River Province of Gambia. South of the equatorial forest another subspecies, *P. a. angolae* A. Meinertzhagen, occurs in northern Angola and the western Belgian Congo, distinguished by its smaller-size wing (125–131 mm.).

SUB-FAMILY GLAREOLINAE

Key to the Pratincoles

1. Wing exceeding 177 mm. (7 in.) in length; outermost rectrices greatly elongated (swallow-tailed); no light nuchal patch or collar 2
   Wing not exceeding 177 mm. (7 in.) in length; tail forked, but outermost rectrices not elongated to form a swallow-tail; light nuchal patch or collar contrasting with back and crown 3
2. Axillaries and most of under wing-coverts rich chestnut *Glareola pratincola pratincola* et subsp., p. 445
   Axillaries and under wing-coverts black *Glareola nordmanni*, p. 447
3. A broad white band across secondaries and much white on primaries; general colour of upper parts pearl-grey *Galachrysia cinerea*, p. 450
   No white on primaries or secondaries; general colour of upper parts sooty 4
4. Nuchal patch white .. *Galachrysia nuchalis nuchalis*, p. 448
   Nuchal patch rufous chestnut *Galachrysia nuchalis liberiae*, p. 448

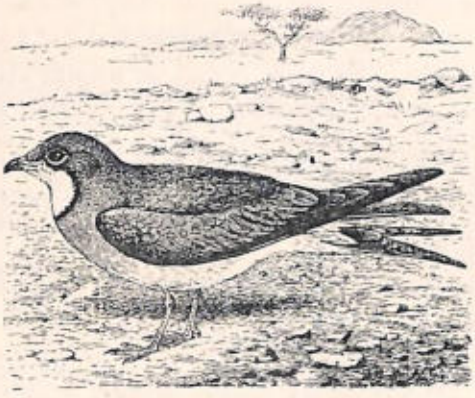
WEST AFRICAN PRATINCOLE

Glareola pratincola boweni Bannerman

THE pratincole which is resident in West Africa, though subject to local migration, is rather darker in its coloration and smaller in its dimensions than the European Pratincole, *G. p. pratincola* (Linn.), which latter was included in my *The Birds of Tropical West Africa* on a record from the Cape Verde Islands. I have never seen specimens from the mainland of West Africa which could be assigned to the European race.

Bowen's Pratincole—for it was Mr. Bowen who first recognised the distinctions of the West African race—is a comparatively small bird, 10½ in. in length. It has a short decurved bill, red at the base and black at the tip, and long pointed wings (an expanse of 22 in.), a swallow-shaped tail exhibiting a considerable amount of white,

and very short reddish-brown legs. Its colouring is olive-brown above with white upper tail-coverts which are very noticeable in flight. The chin and throat are cream and yellowish buff, entirely encircled by a narrow black band which extends from just below each eye. The rest of the under parts merge from cinnamon-buff on the breast to white on the belly. An important feature is the



colour of the axillaries, which are bright bay or deep chestnut, as well as a chestnut patch on the under wing-coverts; the quill lining is brown throughout. The bill measures 12–16 mm., wing 185–196 mm., tarsus 30–33 mm.

Both on the ground, where it has a habit of standing with its back to the observer, and in the air, the pratincole has a superficial resemblance to a large brown swallow with black wings. As it flies it has a characteristic habit of opening and shutting its forked tail, and as the rectrices then show much white, the comparison is not far-fetched.

Pratincoles arrive in a locality in immense flocks and are especially in evidence between November and April. It is an inhabitant of the banks of rivers and the shores of lagoons and is a familiar object on the sandbanks of the rivers when these are exposed. Often flocks may be encountered in flooded areas around Lake Chad early in the year, but its range is a wide one and it is equally to be found in coastal districts such as on the lagoons which stretch along the coast between Accra and the Volta. Its numbers vary considerably in different localities, governed perhaps by the food supply. In some years they come after the locusts; in others none are to be seen, and their local movements can only be described as highly erratic. Insects of many kinds constitute their food supply and their evolutions can be seen to advantage at a bush fire.

In the early summer the pratincoles repair to their breeding grounds, which are not governed by latitude. Young have been seen in the vicinity of Timbuktu and many apparently breed in the Inundation Zone of the Niger and others by the coastal lagoons of the Gold Coast. The birds breed in colonies, some laying their eggs in a scraping close to high water level, when the sitting bird may be almost hidden by the surrounding vegetation. Others choose bare ground at some distance from the water. Two or three eggs are laid. The breeding season begins in April and is continued in May. Eggs have a stone or buff ground and are thickly spotted or marbled with black or brown spots and blotches with purplish underlying markings.

One colony of about forty pairs was discovered on the left bank of the Niger two miles downstream from Niamey on 31st May, 1949, in which the nests were scattered on a flat expanse of sun-baked mud, the only vegetation being scattered tussocks of grass cropped close by cattle. This colony lay a quarter of a mile from the Niger, and the constant stream of birds passing to and fro led to its discovery. The feeding ground to which the birds repaired covered no more than 200 yards of foreshore covered with short grass and strewn liberally with pebbles. Display at the nest was continuous (see *Ibis*, 1950, p. 480). The nests were small depressions in the bare ground and in cattle hoof-marks. Eighteen eggs from this colony measured 29·8 × 22·8 mm., max. 32·3 × 22·4 mm. and 30·4 × 23·6 mm., min. 27·4 × 22·2 mm. and 30·8 × 21·9 mm. (after Serle).

Distribution. The whole of Upper Guinea from Senegal and the Inundation Zone of the French Sudan to Lake Chad and Nigeria. This race is known from almost every political area but is local and subject to considerable movements. After the breeding season immense numbers have been observed flying down the Niger from the beginning of September, while at Gao a flock of such vast numbers was seen on 10th August, 1942, that the birds filled the air like a cloud.

The European representative, *G. pratincola pratincola*, which has been recorded from São Thiago, Cape Verde Islands, may occasionally visit West Africa in winter from Europe but has not yet been recognised on the mainland.

BLACK-WINGED PRATINCOLE

Glareola nordmanni Fischer

The description given for the West African Pratincole applies equally to this species with the exception that the primaries (which in *G. p. boweni* are sepia) are in this bird blacker and that both the

axillaries and under wing-coverts are black. The secondaries have only a fraction of white at the tip, and the quill lining is black, not brown. The under parts are very similar in both species, but the breast of *G. nordmanni* is a shade darker, both the brown of the breast and the buff of the lower chest. The bill is 15–20 mm., wing 184–210 mm. The bill is black with red at the base; the legs and feet are black.

This pratincole is a visitor from south-eastern Europe and western Asia which migrates southward to western and central Africa and even reaches the Cape. A great many winter in South Africa and pass over the equatorial forest belt at a great height, while others turn west and may be met with in both Upper and Lower Guinea. They arrive in Somaliland in September and have been reported from Cameroon in the same month. They have been noted in the Belgian Congo dropping in for a rest by ones and twos in the larger clearings about Stanleyville and the Ituri.

Like the West African Pratincole, it spends much of its time hawking for insects, and when locusts are about the pratincoles arrive in numbers and must destroy countless thousands. By the latter part of May the birds have returned north from their winter sojourn to breed on the South Russian steppes.

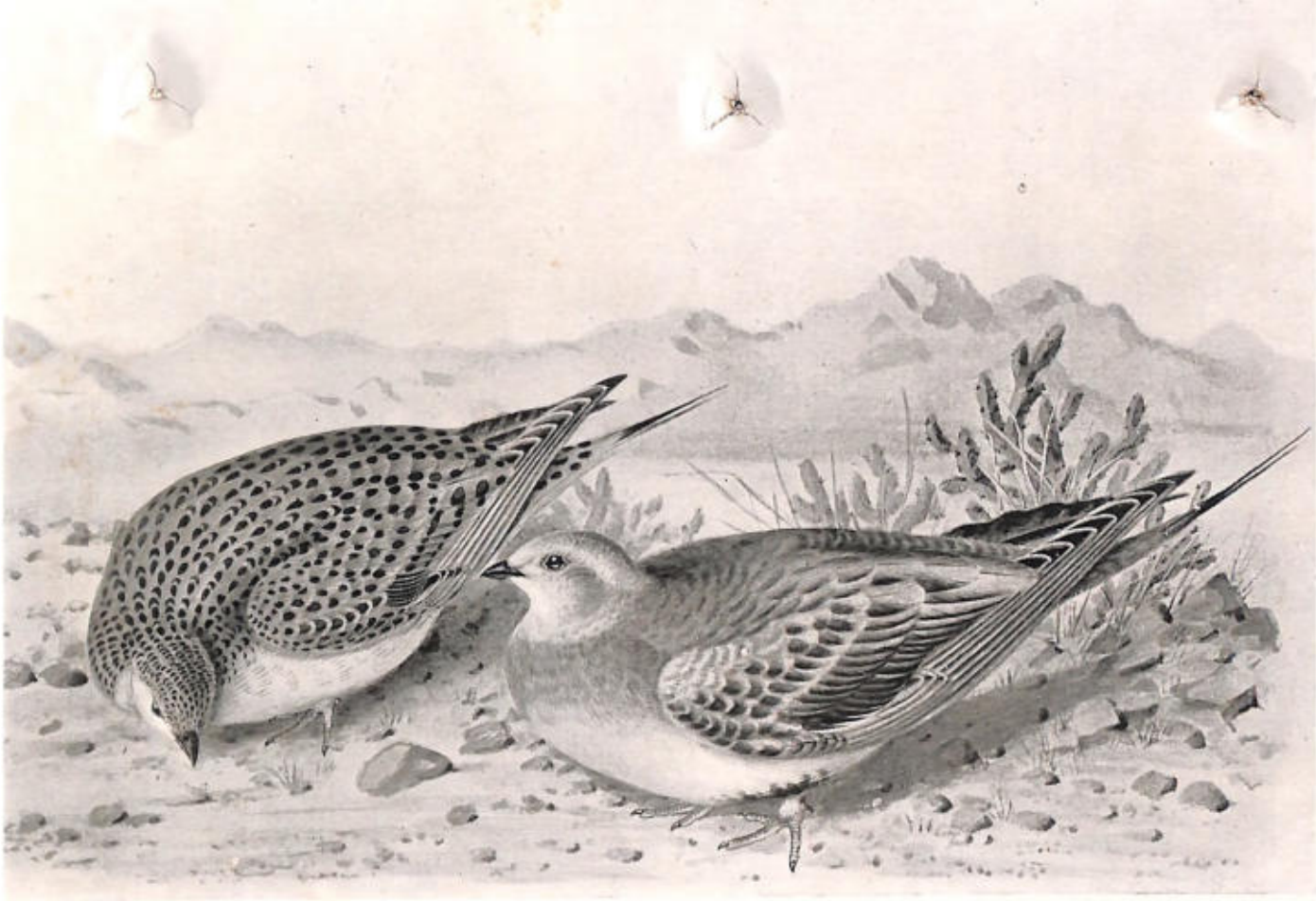
Distribution. Breeds from Dobrudja to Tomsk in Siberia, migrating south in winter to reach all parts of Africa in varying numbers. Within our limits it is recorded from Togoland, Nigeria, southern Cameroon, Gaboon and Principe and doubtfully from Gambia. It is evidently very rare, or has gone unrecognised from west of the Gold Coast.

COLLARED PRATINCOLE

Galachrysia nuchalis (Gray)

Two races of this pratincole come within our limits—the White-collared Pratincole (*G. nuchalis nuchalis* (Gray)) and the Chestnut-collared Pratincole (*G. nuchalis liberiae* (Schlegel))—which differ in the manner indicated by their colloquial names. Their distribution will be noted in the last paragraph.

The bird with which we are mainly concerned is the one with a chestnut collar, which is restricted to West Africa. In size it measures 7½ in. and has an expanse of 16½ in. Its plumage is sooty brown, with a rufous patch at the back of the neck which extends round the head to form a chestnut collar. The tail is dark brown, white at the base, the white increasing outwardly so that the outermost rectrices are entirely white save for a diagonal band across the tip and a narrow black border. Throat and breast are dark

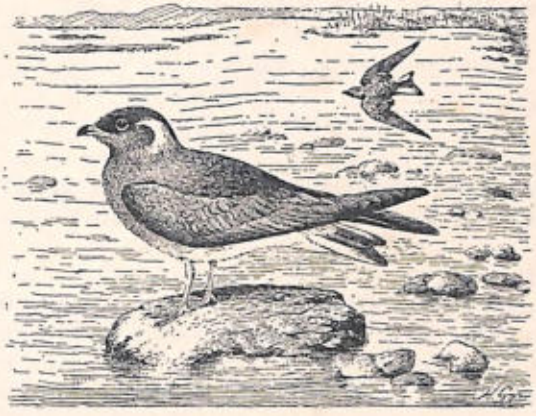


SPOTTED SAND-GROUSE
Pterocles senegallus

ash-grey and the belly and under tail-coverts white. The axillaries are grey and the under wing-coverts sooty. The bill and legs are coral-red, the former with a black tip. The bill is 10–12 mm., wing 139–152 mm., tarsus 19–20 mm.

The White-collared Pratincole is exactly like the above, but the muchal collar is white instead of rufous.

The Chestnut-collared Pratincole frequents the rocks and rocky islands of our larger rivers and is practically confined to those



reaches of the streams in which there are rapids studded with bare rocks. It may also be seen on sandbanks, but the latter is much more the haunt of the Grey Pratincole, which prefers sandbanks to rocks and rapids. Occasionally both species may be seen together, as was Sir Bernard Bourdillon's experience at Onitsha.

The Niger above and below Yelwa is peculiarly suited to this pratincole, and there it is to be found nesting in considerable numbers. Several hundred pairs had eggs on 11th and 12th May. Eggs were laid on the bare rock, generally on a ledge or in some tiny crevice. Two eggs complete the clutch. At this time the pratincoles utter a beautiful trilling song and birds may be seen indulging in love-flight, when they glide for several seconds with both wings raised over the back. At dusk great numbers may be seen flying low over the surface of the water, uttering occasionally a weak piping call. The eggs are greenish or greyish white or clay-colour, thickly and irregularly blotched, spotted and hair-lined with different shades of brown, with underlying blotches of grey. Average measurement is 28·8 × 21·7 mm.

Distribution. *G. n. liberiae* inhabits the rivers of Upper Guinea from Sierra Leone to the Cross river in southern Nigeria and the Sanaga in Cameroon and is especially numerous in Liberia. On the Niger

it occurs mainly between Tillabéry and Ansongo, at Busa and in the vicinity of Yelwa where the river is studded with rocks. On the Volta it is reported from between Yegi and Krachi, but it may be found on all the large rivers in suitable reaches.

G. n. nuchalis ranges from the banks of the Nile westwards to Lake Chad and the rivers Mungo, Lom and Sanaga in Cameroon and the Ogowé River in Gaboon. Both this and the Chestnut-collared Pratincole occur on the rocky reaches of the Sanaga River. Beyond our limits this bird extends south to the Kwanza and Zambesi and east to Abyssinia.

GREY PRATINCOLE

Galachrysia cinerea Fraser

This inhabitant of the sandbanks of the great rivers in West Africa is a small bird which when motionless blends with the colour of the sand and is then almost invisible. It is about the size of the last species described, grey on the upper parts, with a white rump; black and white wings and tail, the latter slightly forked, the pattern of which is both pretty and conspicuous when spread. Outer primaries are blackish brown; secondaries are white, with black tips. On the side of the face is a small blackish patch; the nape is pale chestnut. The entire under parts are white, slightly washed (in the typical race) with cinnamon-buff on the sides. A conspicuous feature when within close distance is the bright red short bill which has a black tip, and the red legs, which are also short. The bill is 12–13 mm., wing 137–150 mm., tarsus 23–24 mm.

Within our limits two races occur: *G. cinerea cinerea* Fraser, which is widely distributed, and *G. c. colorata* Bates, with a restricted range on the Upper Niger. The latter has the rufous nuchal collar much wider and the whole breast strongly tinged with pale rufous.

This charming little bird is a familiar species on all the great rivers, where parties ranging from ten to a hundred or more may be encountered on the sandbanks, especially those which are beyond the reach of easy observation. Their colouring renders them almost invisible until they begin to run, which they do with great rapidity. When flushed, they skim over the water and return to the bank some distance ahead. Although gregarious they seem to be individually independent, each bird appearing to select its own bit of ground for feeding; but if disturbed, all will rise simultaneously and fly in the same direction. Their food consists of flies, beetles and small grasshoppers, with which grit and particles of quartz may be found in the stomach.

The Grey Pratincole breeds in the spring and fresh eggs may be

found from the third week of March to late in May, when the rivers come down in flood. The birds tend to be colonial in their nesting habits, laying their two eggs only a few yards apart in a circular scrape in the bare sand or shingle never more than a hundred yards from the water's edge. Yellowish buff is the commonest ground colour of the eggs, varying to pale stone, with the surface richly marbled, spotted, blotched and lined with various shades of brown and sepia. Average measurement is 26·2 × 20·6 mm.

Distribution. *G. cinerea cinerea* is widely distributed on the rivers Volta, Niger and Benue and other smaller rivers where sandbanks occur south to the Lower Congo and east to the Ubangi, the Shari and the Kasai rivers. It is not recorded from west of the Gold Coast in Upper Guinea. Its northern range reaches from the mouth of the Niger to French Niger territory.

Another subspecies, *G. c. colorata*, has recently been described from the Upper Niger, where it inhabits the sandbanks between Timbuktu, Ké Masina and Kulikoro in the French Sudan.

FAMILY STERCORARIIDAE

Key to the Skuas (Stercorarius)

1. Size large (wing over 335 mm. (13¼ in.)), elongated middle tail-feathers not tapering to a fine point, usually twisted vertically in adults *Stercorarius pomarinus*, p. 452
2. Size smaller (wing under 335 mm. (13¼ in.)), elongated middle tail-feathers tapering to a point, never twisted vertically .. .. .. *Stercorarius parasiticus*, p. 451

ARCTIC OR RICHARDSON'S SKUA

Stercorarius parasiticus (Linnæus)

This is a circumpolar and sub-Arctic bird which after breeding in the far north passes south in winter down the European, African and American coasts, thus coming within the waters which bound the coasts of West Africa.

There are two distinct colour phases exhibited in this skua, with intergradations between them. The colour has no relation to sex or season, and dark and light birds will pair indiscriminately. In adult dress of either light, dark or intermediate phase this skua should be recognisable by the characteristic wedge-shaped tail, the two central tail-feathers tapering to a fine point protruding nearly 3½ in. beyond the others, the remaining short tail-feathers

being broad and blunt at the tip. The short, rather weak-looking bill is hawk-like in appearance, strongly hooked at the tip. Often the plumage is an equally good guide, usually either (*a*) black crown, sooty brown above, white collar, white under parts, sooty band across breast, white patch in extended wing, or (*b*) entirely dark brown all over with small white patch in wing; (*c*) dark brown, barred pale rufous above and below; large white patch in wing (immature), (*d*) dark brown above, all white below, the breast barred; large white patch in wing (immature). Measurements are: Bill 27–29 mm., wing 300–328 mm. The central tail-feathers may be as long as 214 mm. Its body is about the size of a Common Gull.

The flight is buoyant, graceful and rather hawk-like, and despite assertions to the contrary an odd bird will sometimes join and follow a ship far out at sea in the manner of a seagull.

Like all members of its family, the Arctic Skua robs other sea-birds of their prey, compelling them to disgorge the fish they have swallowed, which the skua then appropriates by catching it in mid-air. The present species is one of the most pugnacious of the family. It is this skua which breeds as far south as the Shetlands and Orkneys and is a regular autumn migrant down the coasts of Britain, France and Portugal, becoming quite common during winter in many parts of South-West Africa. It probably only occurs on passage off the Guinea coast.

Distribution. Breeds from Alaska to Siberia, wintering in tropical seas, when it reaches Peru, Cape Province and Australia. Off the coasts of West Africa it has been reported from off Sierra Leone, Liberia, southern Nigeria and Gaboon, but is likely to be found anywhere at sea, especially during the late autumn and early spring on its journeys to and from its breeding grounds.

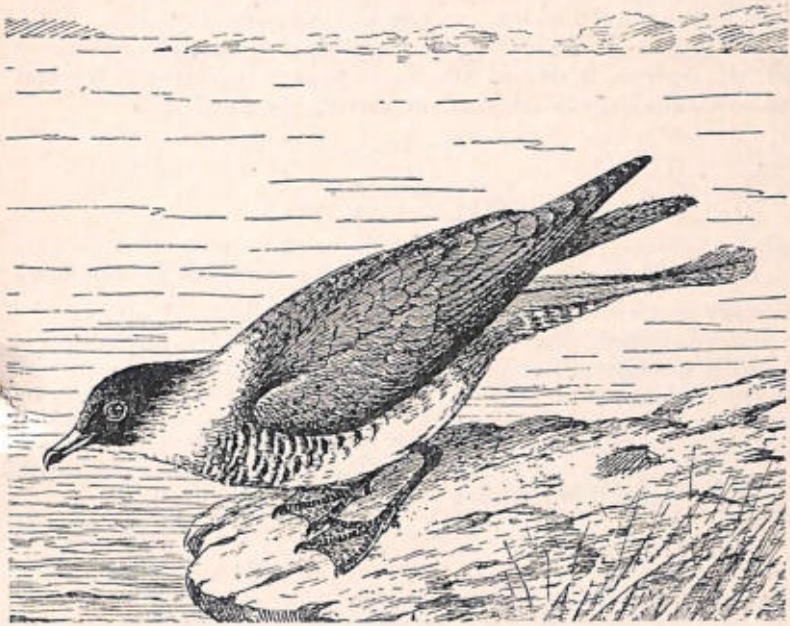
POMATORHINE SKUA

Stercorarius pomarinus (Temminck)

In comparison with the last species, this is a much larger bird and in the adult dress may be recognised by the remarkable tail, the central pair of feathers of which protrude nearly 2½ in. beyond the other feathers and are twisted vertically as well as being round at the tip. In the Arctic Skua it will be remembered that these central feathers also protrude beyond the others, but they are not twisted and, moreover, taper gradually to a fine point. The Pomatorhine Skua is altogether blacker in appearance, the barred area on the breast being much darker than in the Arctic Skua, which has the crop band dusky but not barred. Again, the crown in the Pomatorhine Skua is glossy black, contrasting sharply with the straw-coloured

cheeks; in the Arctic Skua the cap is brown and the cheeks only are tinged with golden yellow, much of the contrast being lost. In flight the white in the primaries is much more noticeable in the present species and covers a larger area.

The dark form of the Pomatorhine Skua can best be distinguished from the similar phase in the Arctic Skua by its larger size, stouter



bill, larger area of white in primaries, and "heavier" general appearance on the wing. In certain stages of immaturity both species pass through a similar stage, when only the larger size—a poor field character unless both can be seen at once—separates the two species. The bill is brown; legs and feet are reddish black. The bill from feathers is 38–40 mm., wing 345–370 mm.

This is another Arctic breeding species which is not found nesting so far south as Richardson's Skua but is equally widely distributed in winter and is much the commoner of the two in West African waters. It certainly wanders down the whole West African coast to Damaraland and probably beyond but is especially numerous in January and February between Dakar and Freetown and off the whole coast of Mauretania, but it may be encountered in this area any time after mid-September.

Probably many spend the entire winter harrying the gulls and terns which frequent the coasts of Upper Guinea, mainly earning

their living in the same unscrupulous way as Richardson's Skua, but at times foraging on their own account, and they have then been known to kill small waders. It will also follow shoals of porpoises, which drive fish to the surface. Many of these skuas will follow a vessel at sea, and I have known them to fly so close to the rails as to enable their twisted tail-feathers to be clearly observed. They remain in West African waters until spring is far advanced and have been observed off Freetown as late as 19th April.

Distribution. Breeds in late June and July at various places north of lat. 70° N. from Alaska to Siberia, in winter migrating to tropical seas, including the South Atlantic and Pacific Oceans.

FAMILY LARIDAE

Key to the subfamilies of the Laridae—Gulls, Terns and Scissor-bills

1. Bill much compressed laterally, lower mandible extending considerably beyond upper .. .. *Rynchopinae*, p. 477
   Bill not laterally compressed, lower mandible not longer than upper 2
2. Both mandibles almost straight and more or less equal in length, tail more or less forked .. .. *Sterninae*, p. 460
   Upper mandible curving over lower at tip; tail square *Larinae*, p. 454

SUB-FAMILY LARINAE (GULLS)

*Key to the Gulls in adult plumage**

1. Size large (wing over 355 mm. (14 in.)) 2
   Size smaller (wing under 355 mm. (14 in.)) 3
2. Back and mantle blackish (wearing browner) *Larus fuscus fuscus*, p. 456
   Back and mantle slate-grey .. *Larus fuscus graellsii*, p. 456
   Back and mantle pale dove-grey .. .. *Larus atlantis*, p. 455
3. Small hind toe, furnished with nail, present 4
   No hind toe with nail present, its place being taken by a diminutive nailless fleshy knob under 2 mm. in length *Rissa tridactyla tridactyla*, p. 460

* The changes of plumage through which the gulls pass before attaining maturity prohibit this key being used with certainty for immature specimens. It will be possible, however, to identify certain birds from it, even though they have not reached maturity.

4. Outer primary mostly white on inner web, outer web black or margined with black; no mirror 5
   Outer primary mostly black on both webs, white sub-terminal mirror present .. .. .. *Larus cirrocephalus*, p. 458

5. Black on the outer web of the second and third primary; bill normally under 36 mm. in length
   Larus ridibundus ridibundus, p. 459
   No black on outer web of second and third primaries; bill normally over 36 mm. in length .. *Larus genëi*, p. 456

ATLANTIC ISLANDS GULL

Larus atlantis Dwight

This is the largest of the gulls which visit the African coasts in winter, being over 22 in. in length from bill to tail and with an expanse of wing over 52 in., and may be recognised from the two Lesser Black-backed Gulls by the much paler pearl-grey plumage of the back and wings when seen in company with either. It is astonishingly difficult to carry shades of colour in one's head, and a bird which one is really familiar with at close quarters often looks very different as it glides around in the brilliant sunshine. The bright yellow feet of the adults do not distinguish this gull from the two Lesser Black-backs, whose feet are also yellow but more of a chrome yellow. In flight the single white sub-apical mirror on the outermost black primary is noticeable.

In winter dress both adult and immature Lesser Black-backs have the white head covered with fine dark streaks, whereas the Atlantic Islands Gull does not, once it is adult, assume a streaked head at any time of the year, apparently.

The Atlantic Islands Gull is only a visitor to West African waters from the islands in the north Atlantic, where they breed.

Distribution. Breeds in all the islands from the Azores to the Canary Islands but not apparently in the Cape Verde Archipelago. It wanders far and wide after the breeding season is over and has been taken as far south as Angola. Within the limits of Upper Guinea it is most frequently seen on the beach at Bathurst, where it has been noted from November until April.

LESSER BLACK-BACKED GULL

Larus fuscus Linnæus

Both races of this gull, the Scandinavian form *Larus fuscus fuscus* Linn. and the British form *Larus fuscus graellsii* Brehm, are found on the shores of West Africa in winter. In the former the mantle is sooty black; in the latter slate-grey. The Scandinavian bird is so dark on the back that it should be easy to recognise, but the British race which is shades paler might be confused with the Atlantic Islands Gull unless both can be seen together, when the difference between them is apparent.

Although both of these races wander south and reach Lagos, the British-breeding bird is very much more numerous, as we should expect. It is, in fact, the exception to meet with the Scandinavian race, at any rate south of Freetown, but in that harbour in February it has been estimated that of 250 gulls present, 12–15 were *L. fuscus fuscus*, 90–100 *L. fuscus graellsii* and the remainder *L. atlantis*. After 10th May all these gulls have normally left the harbours and lagoons. The British form is a regular winter visitor to the Gold Coast and to the mouths of the Nigerian rivers, among which odd examples of the Scandinavian form may be recognised by their blacker backs.

Distribution. *L. fuscus fuscus* breeds in northern Europe from Scandinavia eastwards to the Dwina (White Sea), many migrating across Europe from the Baltic to the eastern Mediterranean and thence down the East African coast to reach the great lakes of Central Africa. A few pass down the shores of the western Atlantic to reach West Africa.

L. fuscus graellsii breeds in Britain, the Channel Islands and on the coasts of France, many spending the winter on the coasts of south-western Europe, in the western Mediterranean and northern Atlantic islands. Thence it passes down the West African coast to reach the Gulf of Guinea and Cameroon, but is rare so far south.

SLENDER-BILLED GULL

Larus genëi Brème Linnæus

The rosy-pink tint on all the white plumage of this gull distinguishes it at once from any of the other gulls in our area, particularly as the true Rosy Gull (*Larus roseus*) of circumpolar range does not occur. In size it approaches closely to the Grey-headed Gull (*cirrocephalus*) and to the Brown-headed Gull (*ridibundus*), but its bill is decidedly longer than either.

The following are points of difference to observe in the field between the Slender-billed, Brown-headed and Grey-headed Gulls and the Kittiwake, in adult winter plumage.

	Bill	*Legs and feet*	*Special Features*
L. genëi (Slender-billed Gull)	Dark red	Dark red	Head and neck white winter and summer, rosy tinge on body plumage. Longer bill than the following three species.
L. ridibundus (Brown-headed Gull)	Carmine	Carmine	Head white in winter, dark patch behind eye. Head brown in summer.
L. cirrocephalus (Grey-headed Gull)	Dark crimson	Dark crimson	Head entirely grey with white collar or (in winter) white with partially grey hood.
R. tridactyla (Kittiwake)	Greenish yellow	Blackish brown	Grey half-collar and black auricular patch.

It may further be observed that the wing pattern in the Slender-billed Gull closely resembles that of the Brown-headed Gull in having a great extent of the flight feathers white, while in the Grey-headed Gull the primaries are for the most part black. The bill is 35–46 mm., wing 278–320 mm.

Young birds lack the rosy tint of the adults, and have grey patches on the crown and ear-coverts and brown patches on the wing-coverts.

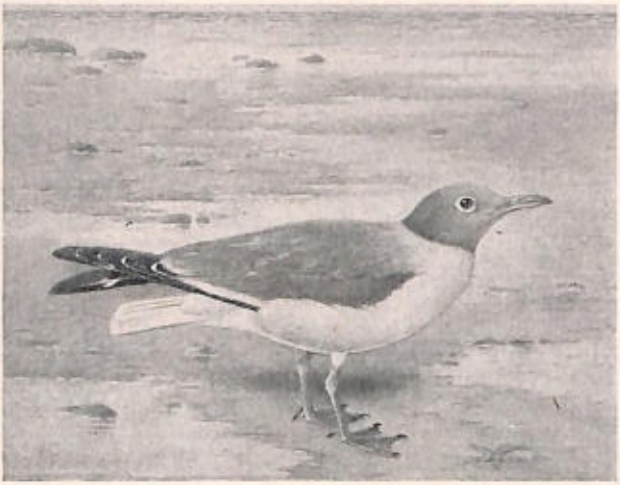
This is quite a common gull on the coasts of Mauretania, where its feeding habits are said to be more like a tern than a gull. It has a very distinctive harsh cry and a flight similar in many ways to that of the Sandwich Tern. A winter visitor from south-eastern Europe, it is unlikely to be encountered south of the Gambia. It is a maritime species which does not ascend the rivers.

Distribution. Breeds in the Black and Caspian Sea area, whence many winter in the Mediterranean, some passing through the Straits to wend their way down the West African coast. While it is quite a common species at Port Etienne in Mauretania, it is rare further south but has been recorded from Dakar.

GREY-HEADED GULL

Larus cirrocephalus Vieillot

EASILY recognised from the other gulls in our area by its pale grey head, forming a hood which is sharply defined from the white neck and breast. The mantle, back and wing-coverts are also grey and the wings show much more black in the primaries than in other gulls, the long outer primary being entirely black save for a large sub-apical white mirror; the second similar but outer web is white at base; the third to fifth without any mirror but with an increasing



amount of white on outer web extending on the fourth, fifth and sixth primary more than half-way to the tip; the remainder are mostly grey without any markings.

In winter the grey cap is paler but is still an obvious character. The colour of the soft parts is given in the table included with the last species. The bill is 35–41 mm., wing 285–325 mm.

This is a resident gull in West Africa which is found both on the coasts and on inland waters and has many times been recorded from Lake Chad and occasionally from the Middle and Upper Niger and Benue rivers. It breeds in Gambia and on the coasts and islands of French Guinea and is commonly seen at all times of year on the coast from Freetown northwards to Senegal but is less often reported from further east.

It probably breeds on the islands of Lake Chad, for it does so in numbers on Lake Naivasha, from which locality the account of its

breeding habits is available. Nests were built in clumps in the papyrus swamp and made of lumps of peaty mud mixed with roots and petioles of aquatic plants, being almost concealed with grasses, rushes and water-lilies. The egg is olive, streaked and blotched with dark brown. Two or three complete the clutch. They measure 49·5–56·5 × 34·5–38·5 mm.

Distribution. This is the common species of the Great African Lakes and is a bird with a wide range, including South America (Argentine to Brazil and Peru), Central Africa and West Africa from Lake Chad to French Guinea and Gambia, also Abyssinia, whence it wanders freely in the winter months and may be met with on inland and maritime waters equally, reaching Madagascar on the east and Walfish Bay on the west coasts of Africa.

BROWN-HEADED GULL

Larus ridibundus ridibundus Linnæus

This is the misnamed "Black-headed" Gull of Great Britain and Europe generally, which in winter loses its dark brown head and must then be recognised by its rather small size and the small dark patch in the region of the ear-coverts. There is also a blacker spot just in front of the eye. In its general dimensions it resembles the Grey-headed Gull, but it has a finer, shorter bill and there is a striking difference in the pattern of the wing, there being twice the area of white in the wing of *L. ridibundus* than on the primaries of *L. cirrocephalus*. An illustration of the two wings is given on p. 227 of vol. ii of *The Birds of Tropical West Africa*. The carmine colour of the bill and feet distinguishes at all seasons the Brown-headed Gull from the Kittiwake, which has a greenish-yellow bill and dark brown feet. As the breeding season approaches the Brown-headed Gulls begin to don their brown hoods and are then quite unmistakable.

Considering what a wanderer this gull is known to be, it is surprising that it has not been recorded from the Guinea coast, but it has now been reported from the Upper Niger and is likely to ascend the Gambia to reach such a distant point inland. I have had reports of it being seen at Timbuktu, Mopti in French Sudan, at Dakar and on the Gambia River, and it is known to be a frequent visitor to the shores of Mauretania.

Distribution. Breeds in temperate northern Europe and Asia, including Britain, wandering in winter to India, the Philippines and Africa, reaching Somaliland on the east and Gambia on the west.

KITTIWAKE

Rissa tridactyla tridactyla (Linnæus)

THE Kittiwake is about the size of the Grey-headed Gull. It may be distinguished from all gulls in our area by the colour of the feet, which in adults are blackish, in immature birds brown. The bill in adults is greenish yellow. Upper parts are light grey, head and under parts pure white. In winter a grey half-collar separates the white crown and mantle and a blackish-grey auricular patch is a conspicuous mark. Immature birds are more easily identified than the adults with their black half-collar and cheek patch and the black diagonal bands across the wings. When in the hand the Kittiwake will be seen to have only three toes, the hind toe being infinitesimal. Young birds have the bill black.

This truly maritime species may be recognised at sea by those familiar with it by its flight, which is characteristic, the wings beating more rapidly than in other gulls.

Distribution. Breeds in Britain and sub-Arctic Europe south to the coasts of Brittany and west to the Gulf of St. Lawrence, wandering in winter to the Mediterranean and Atlantic islands. From within our limits it is recorded only from Senegal and the Cape Verde Islands in winter.

SUB-FAMILY STERNINAE (TERNS)

*Key to the Terns in adult plumage**

1. Plumage entirely snowy white, including the head
Leucanous albus albus,† p. 460
Plumage not entirely snowy white, either crown or body always dark or streaked 2
2. Upper parts of mantle and back black, brown or dark smoke-grey 3
Upper parts of body pale grey, crown only black (or in winter crown streaked black or brown and white, hind crown sometimes blackish) 8
3. Crown grey or whitish 4
Crown black or blackish 5
4. Body plumage black *Megalopterus minutus atlanticus*, p. 477
Body plumage brown .. *Anous stolidus stolidus*, p. 476
5. Under parts white 6
Under parts not white 7

* In immature plumage it is impossible to give a key.

† The Atlantic White Tern has not yet been recorded from West Africa; it is included in the key, as it may some day wander within our limits from St. Helena, but it is not dealt with in the main text.

6. Size large (wing over 267 mm. (10½ in.)) *Sterna fuscata*, p. 471
Size smaller (wing under 267 mm. (10½ in.))
Sterna anaethetus melanoptera, p. 471

7. Body plumage smoke-grey, including wings and tail
Chlidonias nigra nigra, p. 472
Body plumage black, entire tail and lesser wing-coverts white .. .. *Chlidonias leucoptera*, p. 473

8. Size very small (wing under 178 mm. (7 in.)) 9
Size very large (wing over 382 mm. (15 in.))
Hydroprogne caspia caspia, p. 462
Size intermediate between above, wing generally falling between 8 and 14½ in. 10

9. Forehead white .. .. *Sterna albifrons guineae*, p. 468
Forehead black .. .. .. *Sterna balaenarum*, p. 470

10. Size larger (wing normally over 284 mm. (11¼ in.)) .. 11
Size smaller (wing normally under 284 mm. (11¼ in.))* 13

11. Bill short and rather deep, not exceeding 40 mm. in length
Gelochelidon nilotica nilotica, p. 462
Bill long and slender 12

12. Bill orange or yellow, over 58 mm. in length
Sterna maximà albidorsalis, p. 467
Bill black, tip sometimes yellow, under 58 mm. in length
Sterna sandvicensis sandvicensis, p. 465

13. Outermost tail-feathers not greatly elongated to form a "swallow-tail"; tail and upper tail-coverts decidedly grey like rest of upper surface; belly washed with blackish in summer, all white in winter
Chlidonias leucopareia leucopareia, p. 475
Outermost tail-feathers greatly elongated, forming a "swallow-tail"; tail-feathers and upper tail-coverts white or whitish; belly not washed with blackish in summer† 14

14. Outermost tail-feathers entirely white on outer web. Under parts pure white with rosy tinge in summer
Sterna dougallii dougallii, p. 464
Outermost tail-feathers with dark outer web. Under parts strongly washed with grey in summer 15

15. Tarsus under 18 mm.; bill in summer almost entirely red; blackish tip, if present, very restricted *Sterna macrura*, p. 464
Tarsus 18 mm. or over; bill in summer with more or less extended blackish tip .. .. ..*Sterna hirundo*, p. 463

* On very rare occasions examples of *S. hirundo* and *S. macrura* have been obtained with wing measurements exceeding those given here as the maximum, but never from within our limits.

† In winter plumage the terns in Sections 14 and 15 of this key are exceedingly difficult to distinguish from one another.

GULL-BILLED TERN

Gelochelidon nilotica nilotica (Gmelin)

SOMEWHAT similar in size to the Sandwich Tern but easily recognised by its stout all-black bill; its plumage is silvery grey above, white below. In winter the nape is streaky with a dark patch behind the eye; in summer the bird has a black cap, but at that season it should not be present in West African waters. Legs and feet are black. The bill measures 35–38 mm., wing 285–330 mm., tarsus 33–35 mm.

In its flight and actions this is a typical tern, gaining its living by hovering over water and diving for its fishy prey. It prefers fresh water to salt and may be looked for on our larger rivers and lagoons rather than by the seashore. Frogs and even locusts are consumed by this bird on occasions, and it has been observed to hawk high in the air to capture insects.

It does not breed within our area and is present only in winter, when it comes within our limits between October and March.

Distribution. Widely but locally distributed as a breeding bird in Europe from the Baltic to the Mediterranean and in temperate Asia. Its nearest breeding ground appears to be in western Morocco. In winter it migrates down the Nile to the Great Lakes and in West Africa is much more numerous in the Inundation Zone of the Niger and on the upper reaches of the river than it is on the coast. It is reported from Casamance and Sierra Leone. It also occurs on Lake Chad.

CASPIAN TERN

Hydroprogne caspia caspia (Pallas)

THE enormous size of this tern (about 20 in. in length, with wing expanse of over 50 in.) precludes confusion with any other terns in our area, but it is quite possible to mistake it for a gull at any distance. Its brilliant red bill is very heavy and measures nearly 3 in. in length. Its body is silvery grey with, in summer, a black crown; in winter the crown is streaked heavily with black. It can be recognised at a distance by the amount of black in the primaries. The bill measures 64–78 mm., wing 395–425 mm., tarsus 44–49 mm. Legs and feet are black tinged with red.

Tern-like in its habits, other smaller terns appear to hold it in awe. It is a wonderful diver but will also pick up small fish from the surface.

The status of this bird in West Africa is a little uncertain. According to some accounts it is present all the year round and colonies where it is supposed to breed have been brought to my notice, but no one appears to have actually seen it nesting or found

its eggs in West Africa. Certain it is that Caspian Terns from Europe and the Mediterranean region visit tropical Africa in winter. I have had reports of these terns being present in Nigeria from 20th July until 25th April. It remains to be seen whether, as has been suggested, it has any nesting colonies in our area.

Distribution. Breeds locally in North America, Europe and Asia, and in South Africa and on Lake Rudolf. Reports of its breeding elsewhere in Africa require confirmation. In Europe it occurs from Scandinavia east to the Caspian and south to the Mediterranean, European birds visiting Africa in winter, when some come within our area and have been recorded from many parts of the coast from Senegal to Gaboon.

COMMON TERN

Sterna hirundo Linnæus

In winter dress this tern is dove-grey with a dark diagonal band across each wing, the under parts being white. In summer the bird has a jet-black cap with white forehead. The pointed bill is mainly black in winter with a vermilion patch in the angle of the gape, but in summer is red with a black tip. It is a small bird, 14 in. from bill to the tip of its prominently forked tail. The narrow, pointed wings help to give it a swallow-like appearance. The outer primaries of the Common, Arctic and Roseate Terns are figured in my larger work, *The Birds of Tropical West Africa*, vol. ii, text figure 71, to show the distinctions between these three birds. The bill measures 35–36 mm., wing 260–280 mm., tarsus 18–21 mm.

Its flight is wonderfully buoyant and, like all members of its family, it plunges into the waves to capture small fish.

A great many Common Terns migrate to West Africa in winter from Europe and may be observed passing down the coast in autumn from early in September and north again in the spring. Like some other European breeding birds which normally winter in the tropics, the Common Tern has now been found to have a nesting colony on Walker Island off the southern Nigerian coast, and this no doubt explains the number of Common Terns seen in the vicinity of Lagos between the end of April and the third week of July and birds seen off the mouth of the Congo in the latter month.

Distribution. Breeds throughout the greater part of Europe, whence many pass southwards to winter in Africa, reaching Cape Province. At that season it is widely spread in West Africa and, as noted above, a breeding colony has recently been discovered in Nigeria. It may nest locally on other parts of the coast.

ARCTIC TERN

Sterna macrura Naumann

THE Arctic Tern is practically indistinguishable in life from the Common Tern unless the call can be distinguished. When in the hand its identity can be established more easily. It resembles *Sterna hirundo* except in the following particulars: (1) The blackish line down the inner web of the outer primary is distinctly narrower; (2) the under surface is more stone-grey in colour, lacking sooty-mauve tinge; (3) the innermost tail-feathers are without any grey on the outer web, which is usually confined to the two longest rectrices; (4) the secondaries and lower scapulars with more white; (5) a shorter tarsus (under 18 mm.) and usually shorter bill (29–33 mm.). The wing measures 260–280 mm.

In winter plumages the same differences are apparent in the markings on the outer primary, scapulars and secondaries as in summer (see 1 and 4, *supra*); the structure of the legs is always a sure guide to identity (see 5, *supra*). In winter plumage two differences are noticeable between the Arctic and Common Tern, the former having a white rump and upper tail-coverts; the lesser coverts are almost black in the Common Tern in winter and much paler in the Arctic, but this can only be seen on comparison.

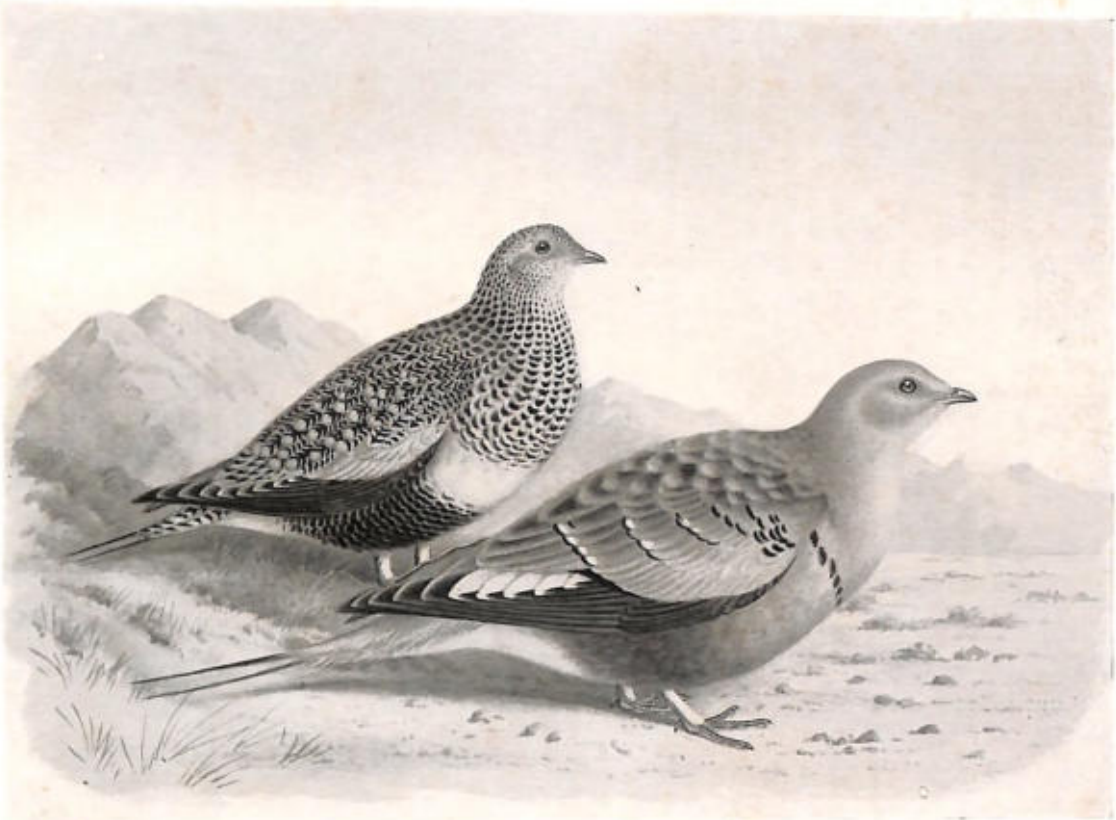
Distribution. This circumpolar species, which breeds as far south as Holland and the Scilly Isles and also in Arctic America and Asia, has been reported to reach even Antarctic seas in winter, when it wanders far and wide. Owing to its similarity to the Common Tern, many may escape detection in West African waters, from which we have only isolated records, one of which comes from the sea coast below Cameroon Mountain.

ROSEATE TERN

Sterna dougallii dougallii Montagu

THIS is another tern which has rarely been recognised in West Africa. It resembles the Common Tern but has a noticeably longer bill. Unless at very close quarters it is impossible to discern that the outer tail-feathers are all white without the darker outer margin exhibited by the Common and Arctic Terns.

The following description, copied from my larger work, will enable it to be identified in the hand. (Adult Male and Female, Summer) Crown and nape black. Upper parts very pale grey, including wings, rump and tail; under parts white with a beautiful rosy blush. Eye dark brown; bill (summer) basal portion vermilion,



CHESTNUT-BELLIED SAND-GROUSE

Pterocles exustus exustus

terminally black—(winter) black; legs and feet (summer) vermilion—(winter) orange-red. Measurements—Bill (exposed culmen) 37–42 mm.; wing 225–240 mm.; tail 154–200 mm.; tarsus 18–20 mm. (18 measured).

Compared with the Common and Arctic Terns, this species shows the following differences: (1) The area between the black nape and mantle is pure white, not tinged with grey, and spreads over a wider area; (2) the entire upper parts are considerably paler grey than in either the Common or Arctic Terns; (3) the tail is palest ash-grey with white shafts, no dark outer webs to the outermost rectrices, which are almost white and more tapering; (4) the white inner web to the outermost primary extends to the extreme tip, not falling short as in the Common Tern and Arctic Tern; (5) the wings are much shorter (compare measurements); (6) the bill is much longer than in either Arctic or Common; (7) in summer there is no strong mauvish-grey (Common) or stone-grey (Arctic) wash on under parts, which are white tinged with rosy. In winter these differences are not apparent.

In winter plumage the same differences enumerated in 1–6 *supra* hold good and the rosy tinge on the white under parts is not nearly so marked. The white forehead is usually more spotted with black than in the Common or Arctic Terns in winter.

Distribution. Breeds on Atlantic coasts from lat. 57° N. to the Mediterranean and on the east American coast to the West Indies. It wanders far in winter and has been reported to reach Cape Province, but is very rare. It is in fact one of the rarest of the terns, even at its now reduced breeding places. That a number must winter somewhere south of the Rio de Oro has been proved by the flocks of Roseate Terns seen at Port Etienne, Mauretania, migrating up that coast in spring. Although I have never seen a specimen from West Africa, the late Sir Bernard Bourdillon has twice recognised the bird on Lagos beach between 25th April and 18th July—a very odd date.

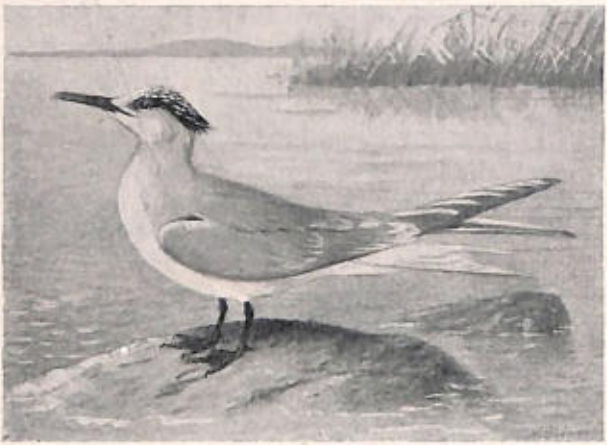
SANDWICH TERN

Sterna sandvicensis sandvicensis Latham

This is one of the intermediate-sized terns; in length it is some 15 in. from bill tip to tail tip, with wing expanse of 36 in. It is therefore considerably larger than the Common or Arctic Terns, though equally much smaller in itself than the African Royal Tern (*S. maxima albidorsalis*).

Although it has been taken on the Gold Coast in summer plumage, it usually occurs within our area in winter dress, when its size is the

best guide to its identification. At that season the forehead is white, the crown streaked black and white; neck and body are white, and wings palest grey. The bill is black, long and slender with yellowish tip; legs and feet are black. Compared with the smaller Common, Arctic and Roseate Terns, the Sandwich has a less-forked tail and considerably longer pointed wings. Compared with the larger



African Royal Tern and Caspian Tern, the bill is the best distinction—black with a yellow tip in the Sandwich, yellow in the Royal Tern and the Caspian. The latter species, of course, is very much larger in all its dimensions (see p. 462). In *S. sandvicensis* the bill measures 51–58 mm., wing 285–328 mm., tarsus 26–28 mm.

West Africa, or rather the seas off the West African coast, are the winter quarters of the Sandwich Tern, which migrates in vast numbers down the whole western coastline, largely avoiding the eastern coast, many ringed examples having been recovered, proving their country of origin and the immense journeys which they undertake. Some even round the Cape of Good Hope and continue up the east coast to Natal. Many first-year birds probably remain north of the Equator, and it is now recognised that some birds of all ages from one year upwards remain in the tropics throughout the breeding season instead of migrating northwards in spring. It is also worthy of note that some at any rate of the first- and second-year birds do not assume breeding dress even in the breeding season.

Perhaps the greatest number winter off Angola, but the Gold Coast is also very much favoured and no fewer than fifty examples ringed in Britain have been recovered there over a period of about

thirty years, and others from Denmark, Holland and Germany have been recovered in West African waters.

Distribution. Breeds in Great Britain and especially on the Farne Islands, Denmark, and islands in the North Sea to the western Mediterranean and in numbers on the Black and Caspian Seas. It occurs regularly in winter from the Moroccan coast and Atlantic islands to the Cape. It is found off the coasts of all our West African Colonies, but is less often observed in Nigeria, where the coastline is not so suitable as further west. It has, however, been seen on Lagos beach during every month of the year in small numbers.

AFRICAN ROYAL TERN

Sterna maxima albidorsalis Hartert

In point of size the African Royal Tern is intermediate between the smaller Sandwich and the larger Caspian, and measures from bill to tail about 18 in., of which the bill from the gape is about 3 in. With a black crown and crest in summer, the forecrown mostly



white in winter with a black hind crest, the most noticeable feature in this tern is undoubtedly the large powerful bill, the upper mandible alone being as thick as both mandibles of the Sandwich. The bill measures 62–68 mm., wing 335–360 mm., tarsus 30–33 mm.

The yellow colour of the bill at all seasons is conspicuous at a distance. The upper plumage is so pale grey that it appears white when on the wing, though not snowy white. Its flight is said by

Sjöstedt to be more gull-like and less buoyant than in most terns, the wings being beaten more regularly. It dives from a great height upon its prey. The cry is described as loud and harsh.

This is a resident tern in western Africa, but whether it breeds south of the Gambia River seems to me very doubtful. No nesting colony has ever been found up to the date of writing, and it was formerly believed that it only visited the West African harbours and lagoons during the non-breeding season; that supposition has not proved correct. The Royal Tern which breeds on the western coasts of the Atlantic is now known to represent a different subspecies, while paired birds, with their sex organs enlarged and in full breeding dress (with black caps), have been taken in Mauretania in early May. The species may breed in western Morocco or between Cap Blanco and the mouth of the Senegal River—territory which is largely unexplored.

Between August and March it is present from Gambia to the Congo mouth in varying numbers in winter dress. A maritime species, it may be seen sitting on buoys or logs in the harbours, and some are still present on the Cameroon and Congo coasts during the northern summer.

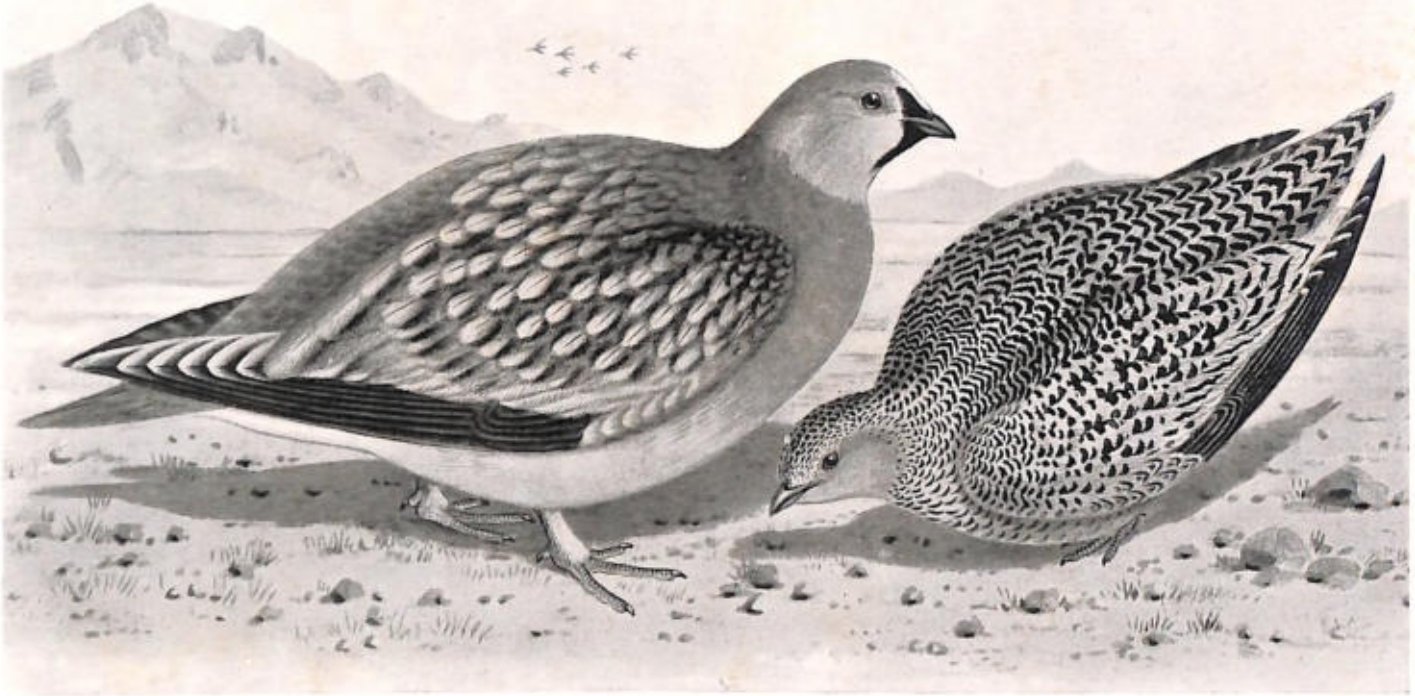
Distribution. Originally described from Cap Blanco, whence it ranges north to the Straits of Gibraltar and south in winter to Benguella. Its breeding place remains to be discovered. A flock seen at Albreda, Gambia River, on 2nd February, 1952, suggests a possible breeding colony.

WEST AFRICAN LITTLE TERN

Sterna albifrons guineae Bannerman

The very small size of the Little Tern distinguishes it from all but the Damara Tern (for the distinctions of which see under that species). It measures about 8 in. in total length and has a wing expanse of 20 in. The upper parts are pale grey, the tail and under parts white. In summer the forehead, cheeks and throat are white, the crown and nape jet-black; a black band passes from the base of the bill to the eye. The two outer primaries are black on the outer web, with a black band down the inner web, the remaining primaries and secondaries being grey. The bill in summer is yellow with a dusky (not black) tip; the legs and feet are dull yellow. The bill measures 28–30 mm., wing 160·5–170 mm.

In winter the bird loses the black on the head; the crown is then speckled with white, the legs become darker tinged with reddish and the bill turns black.



CORONETED SAND-GROUSE

Pterocles coronatus coronatus

This is a common bird on all the large rivers and lagoons during the summer months, and after the breeding season is over it may be seen at the mouths of estuaries and along the sea coast.

The nesting season is a long one, lasting from April to August, but most of the birds breed on the sandbanks of the Niger and Benue from April to June. It has been found nesting near Accra in



August and in spring by the Keta lagoon as well as in the Inundation Zone of the Upper Niger, to name a few localities where colonies have been discovered. On the river sandbanks the bird scrapes out a shallow depression in the sand or shingle and no nest material is added. In the Keta lagoon area human heel-marks were often used in which to lay the eggs. Some birds had made scoops in the dry mud and paved the depression with small bivalve shells, but usually the site is unlined. The clutch consists of two or three eggs. The ground colour varies: buff, ochraceous or grey marked with spots and blotches of various shades of brown, and pale violet shell markings. Average size is 29·9 × 22·6 mm.

Distribution. S. a. guineae is the resident Little Tern and is restricted to West Africa, breeding in the French Sudan, the Gold Coast and Nigeria and ranging to the Shari River and south to Gaboon.

The typical subspecies *S. albifrons albifrons* probably visits West Africa—at any rate as far south as the Gambia—in winter. It is slightly larger (wing 164–180 mm.) and in summer has a yellow bill with prominent jet-black tip. Large numbers of this European bird have been observed passing north in spring up the Mauretanian coast, pointing to their having wintered further south in West Africa.

DAMARA TERN

Sterna balaenarum (Strickland)

This bird is the same size as the Little Tern, from which it is distinguished by having an entirely black bill, only the extreme base of the lower mandible being yellowish. The bill is even finer than



in the Little Tern but about the same length. Another distinction is that the forehead of *S. balaenarum* never becomes pure white as in *S. albifrons*. The whole cap is black from the base of the bill to the nape but was flecked with white in one example examined which was shot at Walfish Bay in November. In flight the whole of the mantle, back, upper tail-coverts and tail are grey in the Damara Tern, but in the Little Tern the upper tail-coverts and tail are pure white, showing a strong contrast with the back. Another distinction is that the shafts of the primaries are white in the Damara Tern, brown in the Little Tern. The bill measures 27–29 mm., wing 165–176 mm.

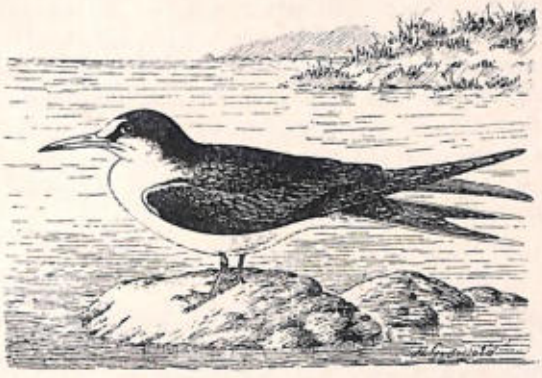
The Damara Tern breeds south of the Equator and ranges northwards as far as Lagos in the northern hemisphere summer, when it is to be seen on Lagos beach from the latter part of April through the summer months until the beginning of November, after which all have left for the south.

Distribution. Ranges from Table Bay along the coasts of South-West Africa to Massahe near Landana. It breeds at Walfish Bay and on other parts of the coast and migrates northwards in the northern summer, extending as far as Lagos and the Gulf of Guinea.

SOOTY TERN

Sterna fuscata fuscata Linnæus

THE Sooty Tern is easily recognised from all but the Bridled Tern by its black upper parts and white forehead and under parts. A black band passes from in front of the eye to the base of the bill, separating the white forehead from the white cheeks. The black



tail is strongly forked, and when extended the outer feathers show white on the outer web. These outer feathers have white shafts and all the other tail-feathers, which are sooty black like the back, have dark shafts. The bill is black; the legs and feet are also black. The bill measures 40–44 mm., wing 272–305 mm., tarsus 20–22 mm. In winter the sooty crown and lores are flecked with white.

Distribution. This is perhaps only an accidental wanderer to the shores of West Africa, for it has not been found breeding nearer than Ascension in the South Atlantic. Examples have been obtained off the islands of the Gulf of Guinea and I have recorded it from Benin City, and from Lagos beach after rough weather. It is a widely spread species, but the typical race is confined to the islands of the Atlantic from the Caribbean Sea southwards.

ATLANTIC BRIDLED TERN

Sterna anaethetus melanoptera Swainson

CLOSELY resembles the Sooty Tern (*S. fuscata*), from which it differs in having the white forehead narrower and continued in an eye-brow-streak over and beyond the eye; the white of the throat continued round the neck to form a collar; the mantle, scapulars

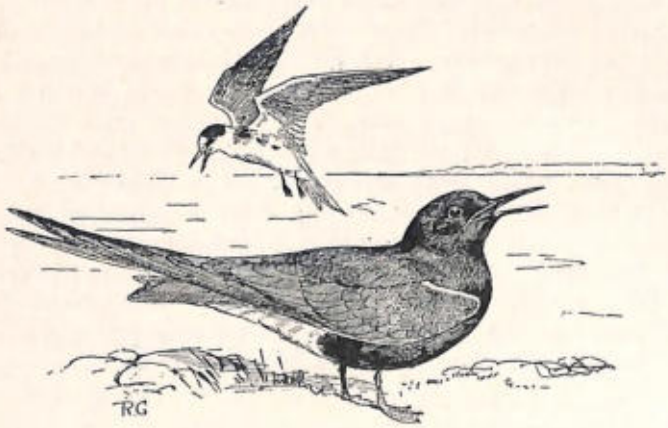
and back dark greyish brown; the wing-coverts considerably more grey-brown, only the lesser coverts blackish; the under parts greyish white rather than pure white; in size smaller. The bill measures 38–41 mm., wing 251–263 mm., tarsus 19–21 mm. In the field the surest guide is, of course, the white collar round the neck. The bill is black, as in the Sooty Tern.

Distribution. The habits of this tern in West African waters are little known, and its status is also doubtful. It appears to be resident on the islets in the Gulf of Guinea and probably breeds on rocks off Principe and São Thomé, where birds but no eggs have been obtained. It has been reported to me from off the West African coast in greater numbers in November, December and January than at other times and is said to have bred years ago near the mouth of the Niger.

BLACK TERN

Chlidonias nigra nigra (Linnæus)

This is a small tern, 9½ in. from bill to tail, easily recognised in summer by its sooty-black head and under parts and slate-grey wings, slightly forked grey tail and black bill. The grey wings



distinguish it in summer plumage from the White-winged Black Tern, from which it is indistinguishable in winter dress, both having white forehead, under parts and collar. The Black Tern is also liable to be confused with the Whiskered Tern in winter, as, apart from the larger size and less-black bill of the latter, there is no field character by which the Black Tern can be recognised. The Black

Tern is, of the three, the more often seen on the coast, the White-winged and Whiskered Terns being more inland, lake and river frequenting species.

In full winter plumage the Black Tern has the forepart of the head white, sometimes flecked with blackish, the rest of the crown and ear-coverts being blackish, with some white mottling on the nape. In front of the eye is a narrow rim of black; sides of the neck and collar are white. Under parts are white, with a blackish patch on either side of the breast. Upper parts are pale grey. The bill measures 25–28 mm., wing 195–220 mm., tarsus 16–17 mm. The legs and feet are in colour burnt sienna.

Distribution. Breeds in Europe from lat. 60° N. to the Mediterranean countries and in Asia to the Yenesei. In winter it migrates south to Africa, reaching Lake Victoria on the east and Angola on the west. Literally thousands of these terns migrate down the west coast of Africa and also over the desert to reach their winter quarters, where they may be met with on all rivers and inland lakes, coastal lagoons and the seashore. A very large number must spend their first and perhaps second year in tropical waters and not return to Europe, but from observations on the Mauretanian coast it is apparent that the Black Tern is by far the most abundant of all the migratory terns along that coast, tens of thousands passing northwards from mid-April until the end of May, by which months the majority are in full breeding plumage, when recognition is simple.

WHITE-WINGED BLACK TERN

Chlidonias leucoptera Temminck

In summer plumage this tern should be easily recognised from the other two marsh terns by the all-black head and body, all-white tail, which is square and not forked, and especially by the light grey wings and pure white shoulder patches. In this dress it is a striking bird and is much blacker in body than the so-called Black Tern, which is altogether more sooty brown without any white on the wings or tail. In winter dress these two terns are so alike that it is useless to attempt to discriminate between them. When handled, the plumages are much alike, but there are no black patches on either side of the breast in *C. leucoptera*. This tern has a paler rump than the Black Tern, and in many intermediate stages of plumage assumed in spring and autumn the white tail and shoulder patches are apparent and form a clue to the bird's identity. The bill is black with a reddish tinge; the legs and feet are vermilion. The bill measures 20–24 mm., wing 200–221 mm., tarsus 20–21 mm.

The more square-shaped tail of the White-winged Black Tern is a helpful field mark.

This is more of a marsh tern than the last species and is probably the more numerous in the Inundation Zone of the Niger than elsewhere in West Africa. It shuns the sea coast except when migrating but may be looked for on any freshwater lagoon, fishing in the same manner as the Black Tern, picking its food from the surface and living largely on aquatic insects and their larvae and small fish.



Some may be seen on the sandbanks of the Upper Niger or hovering over the water. A great many of these terns migrate down the White Nile to reach the Great Lakes, but as a winter visitor to West Africa it is much less common. Some probably remain all the year round in the tropics.

Distribution. Breeds in south-eastern Europe from Hungary eastwards to China, migrating to New Zealand, Australia and South Africa. It is mainly observed in East Africa. Within our limits it is reported from the Upper Niger, French Sudan and French Niger territory, Lake Chad, stretches of the Lower Niger, the Keta lagoon in the Gold Coast and from the Liberian coast.

WHISKERED TERN

Chlidonias leucopareia leucopareia (Temminck)

In comparison with the other two marsh-frequenting terns we have dealt with the Whiskered Tern is somewhat larger, and like those species it may be recognised without difficulty in summer plumage. It then has a black crown, white face and all ash-grey upper surface inclining to slate on the mantle, and ash-grey wings and tail. A crimson bill (which turns blackish in winter) should be



some guide to its identification in summer. In winter, apart from its larger size, if seen in company with the Black and/or White-winged Black Tern, the present species has no character by which it can be distinguished. The bill is longer and not jet black, but that is a useless field mark. The bill measures 30–34 mm., wing 227–245 mm., tarsus 22–25 mm.

Owing to the difficulty of distinguishing the Whiskered Tern in winter the records of its occurrence in West Africa south of the Gambia are not numerous, but it may be much commoner than is generally supposed. To the Gambia and adjoining marshes it is evidently a numerous winter visitor, and its presence at Timbuktu suggests that it may be a regular visitor to the Upper Niger and the Inundation Zone around Lake Debo.

Great numbers of Whiskered Terns are reported to breed in western Morocco, and it is probably from this colony that the West African birds originate. It has been reported from Lake Chad. It

is apparently a race of the Whiskered Tern—*C. l. sclateri*—which breeds on Lake Naivasha and not the White-winged Black Tern, as erroneously reported. Those which occur in West Africa are believed to be all of the European typical race.

Distribution. Breeds from Spain and Morocco eastwards to Russia and Turkestan, migrating south in winter to reach the Upper Niger, Gambia, the Congo and Lake Chad. In East Africa it migrates to the White Nile, but south of the Equator its place is taken by a resident breeding subspecies.

ATLANTIC OR COMMON NODDY

Anous stolidus stolidus (Linnæus)

In size the Noddy is about the same as the Sooty Tern, larger than the Common Tern. In plumage it is entirely dark umber brown above and below, the crown lavender-grey but not sharply defined,



merging gradually into the chocolate nape; where it joins the bill it is almost white. Bill and legs are black. The bill measures 41–54 mm., wing 253–280 mm., tail 138–151 mm., tarsus 24–25 mm. Care must be taken not to confuse it with the next species mentioned.

From accounts of past naturalists the Noddy breeds within our limits only in the Gulf of Guinea, where its eggs have been taken on Sette-Pedras off São Thomé, and most of the isolated rocks off that and neighbouring islands are likely to be tenanted by the birds in the breeding season.

No account of its breeding habits on these islets has been left to us, but on St. Paul's Rocks in mid-Atlantic it lays its eggs on the bare rock. In the West Indian islands this same tern nests in colonies in low bushes, and where tree growth exists it may prefer



LICHTENSTEIN'S SAND-GROUSE

Pterocles lichtensteinii targius

to nest off the ground. The eggs are described fully in the second volume of my larger work.

Distribution. The Atlantic Ocean from the West Indies and the Gulf of Guinea south to Tristan da Cunha, Ascension, St. Helena and St. Paul's Rocks. It has been recorded from off the Gold Coast, southern Nigeria and the Cameroons and from Principe, Annobon and São Thomé.

WHITE-CAPPED NODDY

Megalopterus minutus atlanticus Mathews

ENTIRELY sooty black in colour except for the crown, which is white, not grey as in the Common Noddy. Its size is small—smaller, in fact, than the Common Tern—but the tail is long and only slightly forked. Compared with the Common Noddy, this species is much blacker in plumage and the white cap much more of a contrast. The Common Noddy is considerably larger in its dimensions, as the following measurements of the White-capped Noddy show. The bill measures 42–50 mm., wing 210–233 mm., tail 108–124 mm., tarsus 21–22 mm. The bill is long and straight and black in colour, like the legs and feet.

Although not as yet reported to breed on the rocky islets in the Gulf of Guinea it very probably does so, as it has been found in numbers off Annobon and wanders to various parts of the Guinea coast.

Distribution. The South Atlantic, breeding on some of the same islands as the Common Noddy, extending from British Honduras to the Gulf of Guinea and south to Fernando Noronha and Inaccessible Island. I have examined specimens obtained off the Gold Coast and Sierra Leone.

SUB-FAMILY RYNCHOPINAE

AFRICAN SKIMMER OR SCISSOR-BILL

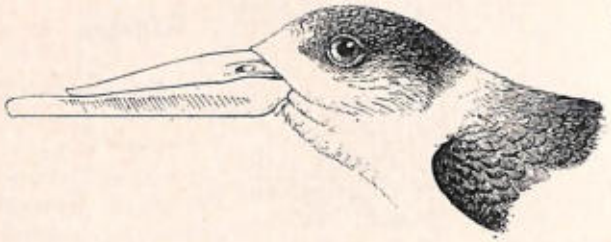
Rynchops flavirostris Vieillot

THERE can be no mistaking this characteristic species, owing to its peculiarly formed bill, the lower mandible protruding anything from 12 to 35 mm. beyond the upper. In shape it is laterally compressed, especially the lower mandible, which has almost the appearance of a razor shell such as one finds on the beaches of Britain. When "fishing," the bird flies with its bill literally cutting the surface of the water, the mandibles open and the lower one immersed.

In size the skimmer may be likened to a Sooty Tern, but there the resemblance ends. In summer plumage it is dark brown above except

for a white forehead and most of the tail, but the dark brown of the back extends down the middle of the tail to the tip, as is well shown in Plate 9 of my second volume of *The Birds of Tropical West Africa*. The outer tail-feathers are pure white, and the under parts are all white.

In winter the skimmer has a broad but ill-defined neckband of white mixed with brown, and the plumage is generally duller and the bill paler. In summer the bill varies from coral red to deep orange on the upper mandible, paler and yellower on the lower.



Legs and feet are vermilion. Bill: Upper mandible measures 53–70 mm., lower 50–102 mm., wing 305–375 mm., tail 108–128 mm., tarsus 25–30 mm.

Large open stretches of water are necessary to the skimmer's mode of feeding, preferably where the water is shallow, for it appears to find difficulty in feeding in flood water. It will fish in small compact parties and is then a familiar sight on the Senegal, Niger, Benue, Volta and other rivers where conditions are favourable to it. There the birds may be seen skimming close above the surface with wings bent well back. They also frequent the coastal lagoons but avoid the open sea. Pairs may often be seen fishing thus in the closest unison. Chiefly an early morning or late evening feeder, it will spend much of the day basking on the sandbanks, many birds huddled together and all facing in the same direction.

Breeding begins in March and continues until June, but most birds have laid in April and May. Two or three eggs form the normal clutch. The nest is a large deep scrape in the sand or shingle, usually on a sandbank, the birds breeding in large scattered colonies, often in close association with the Grey Pratincole. Eggs are pale clay-coloured or buff, boldly blotched with various shades of brown with purplish-grey secondary markings and some hair lines. Average of sixty-four eggs is 37·8 × 27·8 mm.

Distribution. Tropical Africa generally, from Senegal and the Sudan to the Orange River and Zambesi, wherever large stretches of open water exist. It is widely spread throughout the whole of our area and may be encountered on all large rivers and lagoons in all British Colonies.

ORDER COLUMBIFORMES

Key to the sub-orders of the Columbiformes

1. Hind toe rudimentary or absent, bill not soft at base .. 2
   Hind toe normal, bill soft at base .. Sub-order *Columbae*, p. 489
2. Size comparatively large (about that of a pigeon), tarsus feathered to base of toes, wings long and pointed
   Sub-order *Pterocli*, p. 479
   Size very small (smaller than quail), tarsus bare, wings short and rounded .. .. Sub-order *Turnices*, p. 485

SUB-ORDER PTEROCLI

FAMILY PTEROCLIDIDAE (SAND-GROUSE)

Key to the Sand-Grouses (Pteroclididae)

1. Middle pair of tail-feathers tapering to a point and noticeably elongated beyond the others but not necessarily ending in filaments 2
   Middle pair of tail-feathers rounded at tips, not noticeably elongated beyond the others 7
2. Breast plain (not uniformly spotted or barred), sometimes with single narrow black band across middle of chest 3
   Breast uniformly spotted or barred 5
3. A single narrow black band across chest: belly and thighs deep chestnut .. .. *Pterocles exustus exustus* ♂, p. 481
   No black band across chest; belly and thighs not deep chestnut 4
4. Central tail-feathers pointed but not ending in pin-tailed filaments; chin black, but no black on belly
   Pterocles coronatus coronatus ♂, p. 482
   Central tail-feathers ending in pin-tailed filaments much elongated; black patch on belly but no black on chin
   Pterocles senegallus ♂, p. 480
5. Upper breast uniformly and narrowly barred
   Pterocles coronatus coronatus ♀, p. 482
   Upper breast not barred but heavily spotted 6
6. Mantle, scapulars and rump spotted with dull black; primaries sandy buff .. .. *Pterocles senegallus* ♀, p. 480
   Mantle, scapulars and rump irregularly barred with black; primaries mostly blackish brown
   Pterocles exustus exustus ♀, p. 481

7. Broad band of chestnut or/and white across chest .. 8
   No broad band of chestnut or/and white across chest .. 9
8. Chestnut band across chest followed by broad white band; neck uniformly coloured
   Pterocles quadricinctus quadricinctus ♂, p. 484
   The blackish-chestnut band across chest not followed by white band; neck barred
   Pterocles lichtensteinii targius ♂, p. 483
9. Throat and upper breast uniform cinnamon-buff
   Pterocles quadricinctus quadricinctus ♀, p. 484
   Throat speckled with black, neck and upper breast narrowly barred .. *Pterocles lichtensteinii targius* ♀, p. 483

SPOTTED SAND-GROUSE

Pterocles senegallus (Linnæus)

(see Plate 19, facing page 448)

THE long pointed middle tail-feathers extending beyond the rest of the tail distinguish this sand-grouse from all but the Pin-tailed* Sand-Grouse in our area (p. 481). Compared with that species, the males of the Spotted Sand-Grouse have a much brighter yellow face and lack the black band across the chest and the deep chestnut which overspreads the belly in the Pin-tailed Sand-Grouse. Both species are isabelline in colour above, and both show white at the extremity of the tail, but it is only the Pin-tailed Sand-Grouse which shows broad white tips to the inner part of the wing, the wings of the Spotted Sand-Grouse having no white in them at all.

Like the male, the central tail-feathers of the female end in long filaments, which is the first thing to look for. Unlike the male, it has the upper parts covered with round blackish spots (not black bars as in the female Pin-tailed Sand-Grouse) and only the middle of the belly is black (in the female Pin-tail the entire belly appears black). There is no white in the wing (which is a conspicuous feature in both sexes of the Pin-tailed Sand-Grouse). The call is described as a musical *cuddle-cuddle-cuddle*. The bill is pale horn-blue, the tip black; the feet and under side of tarsus are milk-white, the upper side of the tarsus is feathered to the toes. The wing measures 183–201 mm.

Although this sand-grouse was said to have been described from Senegal, there is no record of it from so far west and the type is

* The name "Pin-tailed" should correctly be given only to *Pterocles alchata* (Linn.), which does not range as far south as our area. It has crept into use in West Africa for *Pterocles exustus* (Temm.), as the tail of that bird also ends in pin-tailed filaments. A more correct name for *P. exustus* is "Chestnut-bellied Sand-Grouse."

more likely to have come from elsewhere, possibly the Algerian Sahara, where it is exceedingly numerous. It may perhaps straggle within our limits and has been obtained in the southern Sahara at Aïr. Whether it extends so far west as Lake Chad and the Niger territory has yet to be proved. It has the same habits as other sand-grouse which will be described hereafter.

Distribution. From the Algerian Sahara as far north as Biskra and Egypt south to Somaliland and west to Aïr, its range extending eastwards through Arabia, Persia and Mesopotamia.

CHESTNUT-BELLIED OR PIN-TAILED* SAND-GROUSE

Pterocles exustus exustus (Temminck)

(see Plate 20, facing page 465)

EXCEPT for the Spotted Sand-Grouse, which has already been discussed and which barely comes within our limits, the Chestnut-bellied Sand-Grouse is the only member of the family which has the central tail-feathers elongated and ending in two fine streamers. In colour the male is mottled isabelline and pale yellowish buff on the upper parts, with the face yellow ochre, a narrow black band across the vinaceous-isabelline breast, and the belly inclining to black. The female is very unlike the male; the upper parts are alternately barred with black and large pale yellow patches; the breast is heavily spotted and the black belly barred with buff or chestnut; between the breast and belly is a neutral area of yellowish buff. The front of the tarsus is white and feathered. The bill measures 11–12 mm., wing 165–186 mm., tarsus 22–24 mm.

This sand-grouse is one of the commonest birds along the southern border of the Sahara. During the heat of the day the birds remain out in the desert, getting what shade they can from the small acacias and other desert shrubs. When flying overhead the sexes look much alike, but once settled on the ground the mottled females are more easy to distinguish.

This bird is usually encountered in flocks of from half a dozen to fifty or more but sometimes gathering to the numbers of two or three hundred. They come to drink in the morning, flying in small flocks, not necessarily at daybreak, flying to the rain pools or other known drinking places with clockwork regularity from a great distance, uttering pretty soft twittering notes as they come. Their food consists of seeds of desert plants and shrubs such as panicum and acacia. A second drink is taken in very hot weather about two hours before sunset.

* See footnote on opposite page.

Eggs, two or three in number, are laid on the bare ground in a slight depression, but no nest is attempted. The breeding season lasts from March till May. The eggs vary considerably, some being heavily marked, others almost plain, the ground varying from pale olive to cream, with the shell closely covered with smears, spots and blotches of brown of various shades. Average measurements are maximum 40 × 28 mm., minimum 34 × 25 mm.

Distribution. The dry country bordering the desert from Senegal and Gambia eastwards through French Sahara to Lake Chad, Aïr and the Niger territory, extending south to the borders of northern Nigeria.

CORONETED SAND-GROUSE

Pterocles coronatus coronatus Lichtenstein

(see Plate 21, facing page 468)

THE male closely resembles the male of the Spotted Sand-Grouse (*senegallus*) but lacks the elongated central tail-feathers, which, although terminating in a point, do not extend far beyond the other rectrices. From that species as well as from the Chestnut-bellied Sand-Grouse the male Coroneted Sand-Grouse may always be distinguished by the black patch on the chin and the two parallel black streaks on either side of the forehead. Moreover, it has a perfectly plain isabelline-coloured under surface without the longitudinal black streak up the middle of the belly of *senegallus* or the blackish belly of *exustus*. When handled it is much more pinkish vinaceous than sandy isabelline. From the other species which occur in the same territory the yellow on the face and neck should distinguish it.

The females of the Coroneted and the Spotted should not be confused, for, apart from the same differences in the tail as the males exhibit, the Coroneted Sand-Grouse is vinaceous, barred above and below, while the Spotted Sand-Grouse is, as its name implies, covered with round black spots on upper parts and breast. Like its consort, the hen Coroneted has yellow on the face, which distinguishes it when shot from the hens of all the other species in the area except the aforementioned and the hen Chestnut-bellied, and in *exustus* the breast is spotted and the belly all black. The bill measures 10–11 mm., wing 183–205 mm., tail 75–86 mm., tarsus 22–24 mm.

In its habits this sand-grouse closely resembles the other members of the family, coming to water early in the morning and again in the evening, heralding its approach with loud *kla-kla-kla's*. It lays its two (sometimes three) eggs on the bare desert in a slight scratching.

Distribution. This is another sand-grouse the western range of which is still uncertain. It is an inhabitant of the northern, eastern and southern Sahara from southern Algeria to Egypt and the northern Sudan. It has been obtained at Aïr but not further west. It may or may not extend into the Chad territory and to the western borders of the Sahara in French Sudan and French Niger territory.

LICHTENSTEIN'S SAND-GROUSE

Pterocles lichtensteinii targius Von Schweppenburg

(see Plate 22, facing page 477)

LICHTENSTEIN'S Sand-Grouse should not be confused with the Spotted or Chestnut-bellied Sand-Grouse, as these two species have elongated central tail-feathers giving them a distinctive appearance, whereas in Lichtenstein's the tail is square. It is a smaller bird than those mentioned, and the male is heavily barred above as well as on the collar and belly, with whitish bars on the wings. Reddish buff in general colour, it has a single blackish band across the plain breast and a black and white crown. Unlike the Coroneted Sand-Grouse, there is no white in the tail. The female is sandy rufous narrowly barred with black above and below. Both male and female are most liable to confusion with the Four-banded Sand-Grouse, but that species has a conspicuous white band across the chest in the male and no bars on the breast and collar. The bill measures 11–15 mm., wing 188 mm., tail 69–74 mm., tarsus 25–26 mm.

This sand-grouse prefers rocky or bush-clad country to absolute desert and is usually met with in small flocks or in pairs. It seems to avoid packing. It is mainly vegetarian in its diet, living principally upon the seeds of desert plants. Its call is attractive, more like a whistle, resembling *quitoo quitoo*, repeated two or three times, but it is not easily distinguished from that of the Chestnut-bellied Sand-Grouse in the opinion of some.

This sand-grouse drinks before sunrise and after dusk and is thus the earliest in the morning and the latest in the evening to come to drink. In the Sudan the birds breed in February, and the season is a protracted one.

Distribution. The race named *targius* is restricted to the Tuareg country of the Sahara, the birds living in isolated localities where the terrain is suitable, such as the Ahaggar Mountains and the Aïr Massif. The typical race ranges further east in the British Sudan, and other races occur in Abyssinia and Somaliland.

FOUR-BANDED SAND-GROUSE

Pterocles quadricinctus quadricinctus Temminck

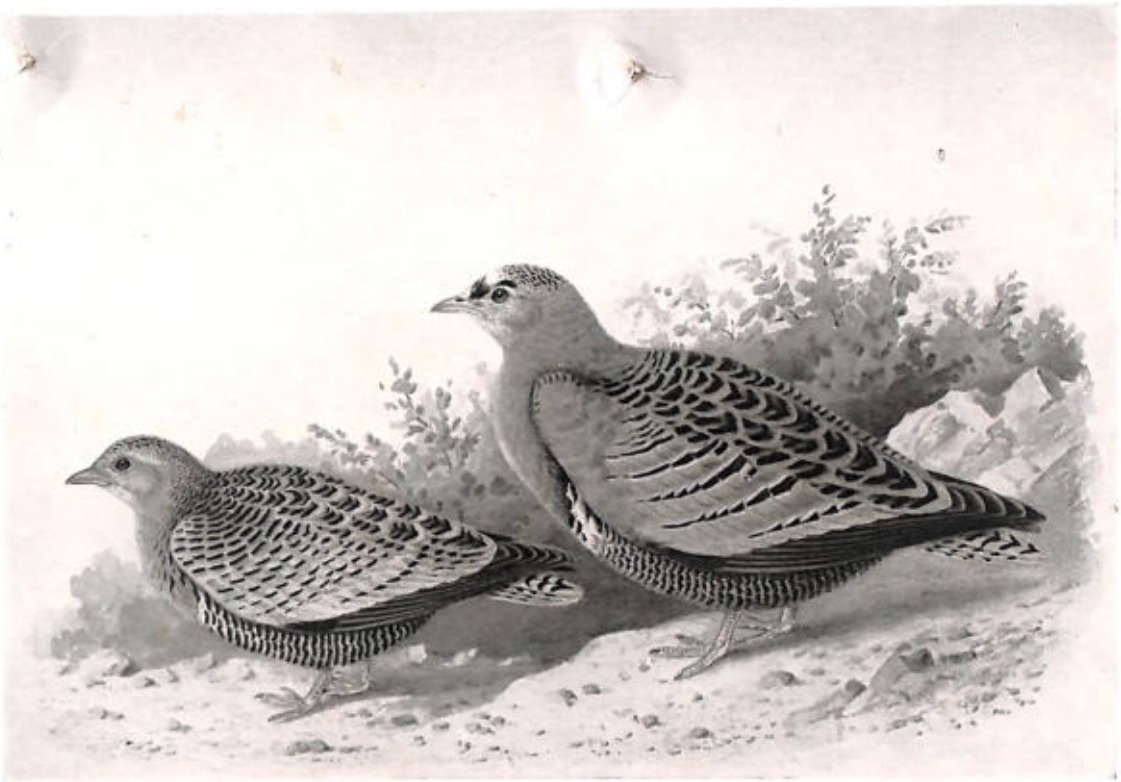
(see Plate 28, facing this page)

THIS is one of the smaller species which by reason of its short rounded tail will not be confused with the Chestnut-bellied Sand-Grouse. The black and white forehead of the male, and the three bands, chestnut, white and black, in the order named, dividing the isabelline breast from the barred black and white belly, are features to observe. On the ground the heavy black bars bordered with white across the sandy-coloured wing are conspicuous at close quarters, and in flight the grey secondaries with the diagonal black bar contrast with the black primaries. Unlike the Chestnut-bellied, with its sand-coloured mottled back, the Four-banded Sand-Grouse is heavily barred on the upper parts in both sexes. The feet of this sand-grouse are pale yellow. The bill measures 12–15 mm., wing 175–184 mm., tail 72–80 mm., tarsus 23–26 mm.

This is the commonest sand-grouse in West Africa and is to be met with in the more open bush country north of 10° N. Nowhere is it more numerous than in Bornu, and there it may be encountered sometimes as far south as lat. 9° N. but not beyond. It does not penetrate into the desert and is subject to strong migratory movements within our boundaries. It is most often encountered in the dry season, little parties of four to eight birds being commonly seen and sometimes flocks of thirty or more. The birds move north in the wet season, about the end of May or June. The majority of the birds are believed to go north of British territory to rear their young, but a few remain, as records of young and eggs taken in Gambia and the Northern Territories of the Gold Coast and Nigeria proclaim. The bird breeds in the vicinity of Kaduna, Zaria Province, full-fledged young being abroad in December, January and February.

This sand-grouse drinks only once a day, the flight to water beginning about twenty minutes before sunset and ending about fifty minutes after the sun is down. It may be recognised on the wing by the loud twittering made by an approaching flock, which proclaims the species from afar.

The breeding season appears to be most irregular. In Gambia and the Sudan the normal season appears to be from February to June, but eggs have been found on the Bauchi plateau of Nigeria and in the Province of Zaria in November and December. The Four-banded Sand-Grouse chooses various types of ground upon which to deposit its eggs—bare stony soil, shingle beds or broken scrub, when the "nest" may be under the shelter of a bush or shrub.



FOUR-BANDED SAND-GROUSE

Pterocles quadricinctus quadricinctus

FOUR-BANDED SAND-GROUSE

Pterocles quadricinctus quadricinctus Temminck

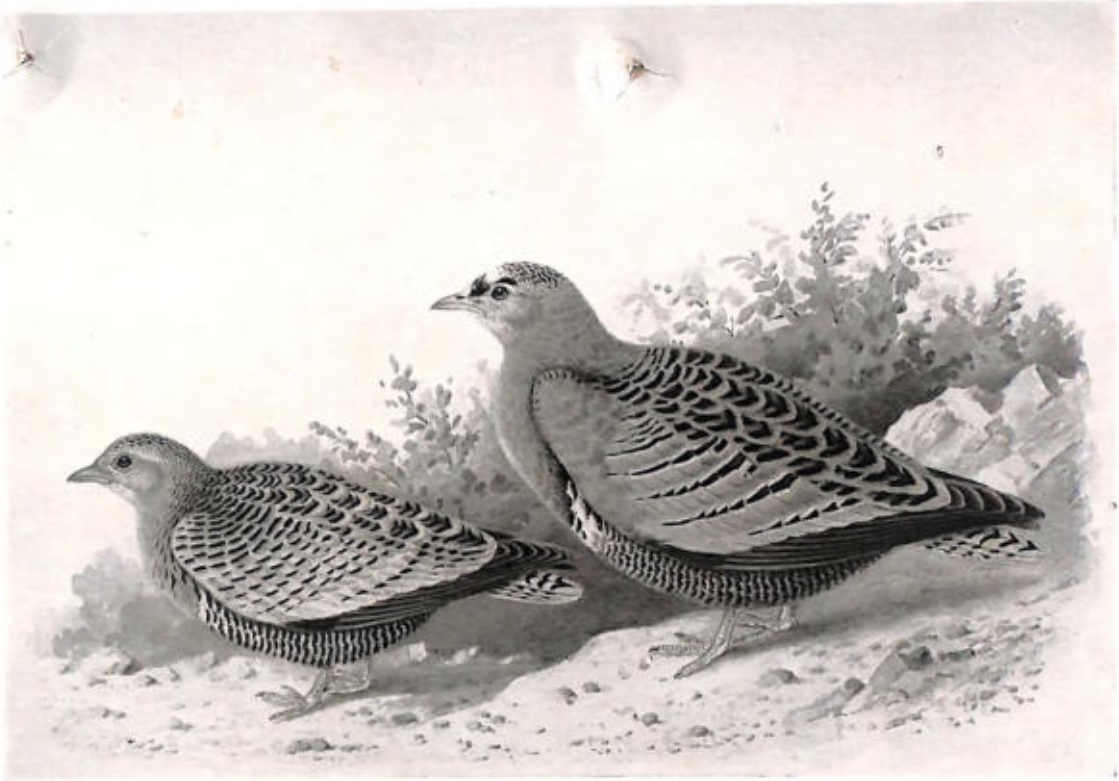
(see Plate 28, facing this page)

THIS is one of the smaller species which by reason of its short rounded tail will not be confused with the Chestnut-bellied Sand-Grouse. The black and white forehead of the male, and the three bands, chestnut, white and black, in the order named, dividing the isabelline breast from the barred black and white belly, are features to observe. On the ground the heavy black bars bordered with white across the sandy-coloured wing are conspicuous at close quarters, and in flight the grey secondaries with the diagonal black bar contrast with the black primaries. Unlike the Chestnut-bellied, with its sand-coloured mottled back, the Four-banded Sand-Grouse is heavily barred on the upper parts in both sexes. The feet of this sand-grouse are pale yellow. The bill measures 12–15 mm., wing 175–184 mm., tail 72–80 mm., tarsus 23–26 mm.

This is the commonest sand-grouse in West Africa and is to be met with in the more open bush country north of 10° N. Nowhere is it more numerous than in Bornu, and there it may be encountered sometimes as far south as lat. 9° N. but not beyond. It does not penetrate into the desert and is subject to strong migratory movements within our boundaries. It is most often encountered in the dry season, little parties of four to eight birds being commonly seen and sometimes flocks of thirty or more. The birds move north in the wet season, about the end of May or June. The majority of the birds are believed to go north of British territory to rear their young, but a few remain, as records of young and eggs taken in Gambia and the Northern Territories of the Gold Coast and Nigeria proclaim. The bird breeds in the vicinity of Kaduna, Zaria Province, full-fledged young being abroad in December, January and February.

This sand-grouse drinks only once a day, the flight to water beginning about twenty minutes before sunset and ending about fifty minutes after the sun is down. It may be recognised on the wing by the loud twittering made by an approaching flock, which proclaims the species from afar.

The breeding season appears to be most irregular. In Gambia and the Sudan the normal season appears to be from February to June, but eggs have been found on the Bauchi plateau of Nigeria and in the Province of Zaria in November and December. The Four-banded Sand-Grouse chooses various types of ground upon which to deposit its eggs—bare stony soil, shingle beds or broken scrub, when the "nest" may be under the shelter of a bush or shrub.



FOUR-BANDED SAND-GROUSE

Pterocles quadricinctus quadricinctus

A slight depression, sometimes with a few grasses placed there by the bird itself, serves as the "nest." Two or three eggs are laid, with salmon-buff ground, spotted and flecked with orange-brown and a few mauve blotches. Measurements are 36·4–38 × 26·2–27·9 mm.

Distribution. This, the typical subspecies, ranges from Senegal to northern Cameroon throughout the Sudanese arid belt, up to but not north of lat. 15° N. Its southern range in the extreme west extends to about lat. 10° N. in the dry bush savanna but occasionally in Nigeria to lat. 9° N. It ranges further south than any other sand-grouse, but though present in numbers in Gambia and the Northern Territories of the Gold Coast and Nigeria it does not occur in Sierra Leone. Its place is taken east of Lake Chad and the French Sudan by *P. quadricinctus lowei*, which ranges to Abyssinia, Uganda and Kenya Colony.

SUB-ORDER TURNICES

FAMILY TURNICIDAE

Key to the Button-Quail and Quail-Plover

1. Median and greater wing-coverts plain creamy white, general colour above sandy rufous
Ortyxelos meiffrenii, p. 487

Median and greater wing-coverts not plain creamy white, general colour above not sandy rufous 2

2. Upper parts grey-brown and rufous, some of the feathers with black bars; no white tips to feathers of nape; distinct cream stripe down centre of rufous crown
Turnix sylvatica lepurana, p. 485

Upper parts blackish, vermiculated with chestnut; feathers on nape tipped with white; no distinct stripe down centre of blackish crown .. .. *Turnix nana*, p. 487

AFRICAN BUTTON-QUAIL

Turnix sylvatica lepurana (Smith)

(see Plate 24, facing page 493)

THIS tiny bird (the males between 5 and 6 in. in length, the females about ½ in. longer) has often been likened to a miniature English partridge. It may be compared in size with a small bush-lark

(*Mirafra*). The partridge-like plumage of the upper parts and rust-coloured breast with black spots on either side, rather stout medium bill, bare yellowish flesh-coloured legs and absence of a hind toe are characters to observe. In flight the wings, with an expanse of 9 in., look very rounded, and with the almost complete absence of visible tail give a crescent shape to the bird on the wing. It is extraordinarily difficult to flush from cover, and often escapes detection by hiding. When flushed the whirr of its wings is astonishingly loud and startling.

The button-quail or hemipode is remarkable for the fact that the females are so much larger than the males and their colouring so much brighter. When flushed it is not easily recognised, the general colour of the upper parts being grey-brown, with the mantle and back finely barred and vermiculated with black and chestnut and cream fringes to the feathers. The chin is white, the throat creamy; the under parts are rust-colour with black V-shaped marks down the side of the breast. The bill measures 10–11 mm., wing (male) 70–77 mm., (female) 81–87 mm.

Sandy grass-grown wastes, old cultivated land, maritime plains such as occur at Accra; cotton, millet and maize plantations, especially when returning to the wild—such is the terrain upon which the button-quail may be found. Its food consists of insects, ants, grass seeds, millet, etc.

No bird is more difficult to flush from cover, and its presence is most likely to be betrayed by its peculiar whistle or *coo*, like the sound of wind passing through a pipe, which may be heard especially on moonlight nights. It has a curious whizzing flight and alights in an upright position with wings outstretched. Its migrations are little understood, but there seems to be an influx of visitors at certain times of year—in Gambia, for instance, their numbers increase in April.

This button-quail lays its three eggs in a slight depression in the soil which is lined scantily with a few grasses and plant roots. The eggs have a pale brown ground with ashy spots and blotches and heavier markings of brown and tawny evenly distributed over the shell. A nest with two heavily incubated eggs was found in Sokoto on 31st July. They measured 24·9 × 18·5 mm. and 24 × 18·5 mm.

Distribution. Sparsely but generally distributed throughout Africa from the Sudan to Cape Province. It is recorded from many localities between Senegal and southern Nigeria both inland and near the coast, but not in the desert or forest area.

NATAL BUTTON-QUAIL

Turnix nana (Sundevall)

(see Plate 25, facing page 496)

This button-quail is very similar in appearance to the last described, but instead of the upper parts being grey-brown and rufous they are blackish vermiculated with chestnut, the result being a much darker bird. The feathers of the nape are tipped with white, and there is no distinct stripe down the centre of the crown as there is in the African Button-Quail. There is very little difference between the two species in size, but again the female is larger than the male. The wing in the male is 73–78 mm., in the female 79–82 mm.

In its general habits the Natal Button-Quail resembles the last species but certainly seems to be a much rarer bird in our area. It prefers sandy dry soil and sandy grass-grown wastes. It has, in point of fact, been seldom recorded. Whether it breeds within our limits—the eggs are described in my *The Birds of Tropical West Africa*—seems to be doubtful. It may possibly be only a visitor. It has been found in Sierra Leone inhabiting open plains covered with three-foot-high grass, and like the last species may be flushed from waste land. There is, of course, no reason why it should not be resident, but that remains to be proved.

The eggs are said to resemble those of the African Button-Quail but to be smaller in size, i.e. 22 × 18 mm.

Distribution. Originally described from Natal, the East African range extends from Cape Province to Lake Nyasa and Uganda. On the western side of the continent it is recorded from northern Angola, the Gold Coast (Accra) and Sierra Leone (Waterloo). No recent examples have been recorded from West Africa.

QUAIL-PLOVER OR BUSH-LARK QUAIL

Ortyxelos meiffrenii (Vieillot)

This extremely small bird masquerading as a game-bird, but far removed from that group in every other respect, has the appearance of a bush-lark which has been crossed with a quail. As will be seen from the accompanying drawing, it has a prominent eye-stripe, cream in colour. The general colour of the upper parts, including the crown, is sandy rufous, and the feathers of the mantle and back are edged with cream. The scapulars have a golden-buff fringe; the centre of the feathers is rufous and buff. The wing is prettily patterned black, white and sandy buff; the throat is white, the

breast golden buff; the feathers on either side are rufous with white edges; the rest of the under parts is white. The bill is yellowish and feet and legs are flesh-colour. The bill is 8·5–10 mm., wing 74–79 mm., tail 27–32 mm., tarsus 18–20 mm. The sexes appear to be alike.

Although some observers have likened this bird to a tiny quail, the moment it rises from the ground all similarity disappears. It flies



with jerky undulations, often rising a long way from the ground, when it looks like a bob-tailed, broad-winged lark. In flight, or when spreading the wing, the white shoulder-patches and secondaries are very noticeable.

When on the ground it is very secretive, concealing itself in grass, through which it can thread its way very rapidly, running in a crouching attitude. Sometimes it will attempt to elude discovery by crouching until almost trodden upon. On the plains of Kordofan the Quail-Plover lives among the detestable burr-bearing grass known as Heskanit, interspersed with a thistle-like Blepharis. It seems to be always associated with a similar environment.

It breeds in the winter months soon after the new year, the nest being a tiny scoop in light open bush made in firm sand near the foot of some herb, with a few bits of leaves and stalks as lining. Eggs are stone-colour with underlying inky-purple and surface spots and blotches of black. The clutch is two. Eggs measure 17·2–18 × 14·7–15 mm.

Distribution. From Senegal and Kordofan south to Kenya and Uganda. In West Africa it ranges to Bornu and Lake Chad. I

have recent records of it from several separated localities along the border of the desert, mostly north of lat. 13° N.; one from Gao; several from the Inundation Zone of the Niger: Korienze and Sendigue; and from the north of Nigeria: Katsena, Zinder, Maidugari and Zogo. In the extreme west it has been taken 20 km. from St. Louis in Senegal and far to the east is commonly seen in the vicinity of Lake Chad.

SUB-ORDER COLUMBAE

FAMILY COLUMBIDAE

Key to the genera of the family Columbidae

1. General colour of plumage olive-green and yellow; rectrices 14 in number .. .. .. *Vinago*, p. 513
   General colour of plumage not olive-green; rectrices 12 in number 2
2. A black half-collar present on hind neck .. *Streptopelia*, p. 497
   No black half-collar present on hind neck 3
3. Size large (wing over 200 mm. in length) *Columba*, p. 493
   Size smaller (wing under 185 mm. in length) 4
4. A gorget or crop-band of black feathers tipped with chestnut .. .. *Stigmatopelia*, p. 504
   No crop-band of black feathers tipped with chestnut .. 5
5. Metallic spot or spots present on inner half of wing .. 6
   No metallic spots present on wing 9
6. General colour of upper parts chestnut washed with violet; head bright blue .. .. .. *Calopelia*, p. 511
   General colour of upper parts brown; head not bright blue 7
7. Outermost remex (wing-feather) greatly attenuated for one-third of distance from tip .. .. *Tympanistria*, p. 507
   Outermost remex not attenuated 8
8. Tail very long and graduated, central rectrices more than twice length of outermost .. .. .. *Oena*, p. 506
   Tail graduated but not very long, central rectrices not twice length of outermost .. .. *Turtur*, p. 509
9. Outer pairs of tail-feathers tipped with grey *Aplopelia*, p. 512
   Outer pairs of tail-feathers not tipped with grey *Turturoena*, p. 496

Key to the species of Pigeons and Doves

1. Tail composed of 14 feathers, colour of plumage mainly olive-green 2
   Tail composed of 12 feathers, colour of plumage not mainly olive-green 4

2. Bright red cere or bare skin at base of bill extending well on to forehead .. *Vinago australis* and subspecies, p. **514**
   Cere not bright red and not extending on to forehead .. 3

3. Lower part of breast and belly uniform bright yellow *Vinago waalia*, p. **513**
   Lower part of breast and belly dark greyish-olive like throat, yellow only on ventral region *Vinago s. thomae*, p. **516**

4. Large pigeons, as large as or larger than Rock Pigeon (wing in length 190 mm. (7½ in.) or over). No black collar on nape and no metallic spots on wings .. 5
   Smaller pigeons (wing under 190 mm. (7½ in.) in length). *Either* metallic spot or spots on wing, *or* highly glossed mantle, *or* black or spotted half-collar, present .. 11

5. Mantle glossed with metallic feathers with green or purple reflections.. 6
   Mantle without metallic reflections 8

6. General colour of plumage light grey, rump uniform with back.. .. .. .. *Columba livia targia*, p. **493**
   General colour of plumage dark slate-grey 7

7. Outer web of outermost tail-feather white except at tip *Columba livia gymnocyclus*, p. **493**
   Outer web of outermost tail-feather grey except at tip *Columba livia atlantis*, p. **493**

8. Mantle and scapulars grey, feathers with paler edges giving scale-like appearance .. *Columba unicincta*, p. **495**
   Mantle and scapulars vinous or maroon, feathers not scale-like 9

9. Considerable space round eye bare of feathers, rump palest grey .. .. *Columba guinea guinea*, p. **493**
   Space round eye not bare of feathers, rump blackish or dark slate 10

10. Breast thickly covered with triangular-shaped white spots *Columba arquatrix sjöstedti*, p. **494**
    Breast uniform maroon without white spots *Columba thomensis*, p. **495**

11. Body plumage chestnut, mantle washed mauve, head blue, brilliant metallic spot or spots on wing 12
Body plumage not chestnut, head not uniform blue .. 13

12. Metallic wing-spots green .. *Calopelia puella puella*, p. 511
Metallic wing-spots golden bronze
Calopelia puella brehmeri, p. 512

13. Wing-feathers (primaries) mostly chestnut, metallic (or glossy) spot or spots on wings 14
Wing-feathers not chestnut, without metallic or glossy spots on wings 17

14. Tail very long and graduated (central feathers over 120 mm. and more than double length of outermost)
Oena capensis capensis, p. 506
Tail not very long (under 95 mm. and rounded, central feathers not double length of outermost) 15

15. Outermost wing-feather (primary) strikingly attenuated, inner web but little broader than outer web for one-third of distance from tip
Tympanistria tympanistria fraseri, p. 507
Outermost wing-feather normal, not attenuated as described above 16

16. Bill bright red .. .. *Turtur afer*, p. 509 and subspecies, p. 510
Bill black or dark purplish red
Turtur abyssinica delicatula, p. 510

17. Foreneck spotted with black, forming a gorget
Stigmatopelia senegalensis senegalensis, p. 504 and subspecies, p. 506
Foreneck not spotted with black 18

18. With black or black and white half-collar on nape, no metallic feathers on mantle 19
With mantle glossed with metallic, no black or black and white half-collar on nape 24

19. Feathers of wing-coverts and scapulars edged with chestnut or cinnamon-rufous 20
Feathers of wing-coverts and scapulars uniform earth-brown, not edged with chestnut or cinnamon-rufous 21

20. Black feathers on sides of neck conspicuously tipped with white .. .. .. *Streptopelia turtur turtur*, p. 497
S. t. hoggara, p. 498
Black feathers on sides of neck not tipped with white
Streptopelia hypopyrrhus, p. 498

21. Under tail-coverts dark grey, size generally larger (wing over 168 mm.) 22
Under tail-coverts pale cream or white, size generally smaller (wing under 171 mm.) 23

22. Tail-feathers basally blackish, terminally brown, no white tips to any of rectrices
Streptopelia semitorquata erythrophrys, p. 499
Tail-feathers (except central pair) slate-grey at base, terminally paler grey, four outermost pairs shading into white at tip .. .. *Streptopelia decipiens shelleyi*, p. 501

23. Three outer pairs of tail-feathers white terminally, sharply defined from black basal portion
Streptopelia vinacea vinacea, p. 502
and subspecies, p. 503
Three outermost pairs of tail-feathers white terminally, gradually merging into grey basally, no sharply defined contrast as with above species
Streptopelia roseogrisea bornuensis, p. 503

24. Nape of head chestnut 25
Nape of head not chestnut 26

25. Tail slate-colour, all but central feathers freckled with chestnut terminally *Turturoena iriditorques iriditorques* ♀, p. 496
Tail black, no chestnut freckling towards tip of feathers
Turturoena iriditorques incerta ♀

26. With a broad cinnamon tip to all but the central tail-feathers; broad collar at base of neck of pale chestnut tipped with metallic violet
Turturoena iriditorques iriditorques ♂, p. 496
No cinnamon tip to tail-feathers and no chestnut collar shot with violet 27

27. Breast and most of under parts grey 28
Breast and most of under parts brownish or vinous .. 29

28. Under tail-coverts pale grey, legs and feet dark claret-red
Aplopelia simplex ♂, p. 512
and subspecies ♂, p. 513
Under tail-coverts cinnamon-brown, legs and feet bright red .. .. *Turturoena malherbii*, p. 497

29. Entire mantle strongly washed with metallic green; breast and under parts pinkish vinous
Aplopelia principalis, p. 513
Mantle slightly washed with metallic green; breast and under parts dull earth-brown, grey-brown or chestnut-brown .. .. *Aplopelia simplex* ♀, p. 512
and subspecies ♀, p. 513



AFRICAN BUTTON-QUAIL

Turnix sylvatica lepurana

SENEGAL ROCK-PIGEON

Columba livia gymnocyclus G. R. Gray

This is a dark race of the same rock-pigeon which frequents the sea-cliffs of Britain. It is considerably smaller than the Common European Wood-Pigeon and measures only 12 in. from bill to tail. The body plumage is dark slate-colour, except for a white patch on the rump; two black bands cross the wings, and there is a broad blackish tip to the tail. At very close quarters the eye appears yellow, the bill is black, and the feet and legs are red. The bill measures 18–20 mm., wing 190–214 mm., tail 85–105 mm., tarsus 23–28 mm.

This pigeon lives in the precipices and cliffs of Senegal. I have seen it on Cape Verde, and it occurs also inland on the rocky outcrops. Its flight is extraordinarily swift, and like rock-pigeons everywhere, it is difficult to shoot and extremely wild.

Distribution. Of local distribution, known only from Senegal but probably also on the Loss islands.

Three other races occur within our limits:

1. *Columba livia targia* von Schweppenburg, which is light blue-grey above and grey on the rump, with little contrast between the back; the under surface of the body is blue-grey with amethyst reflections on the throat and neck. This race is restricted to the mountain ranges of the Sahara, Ahaggar, Aïr and probably Adrar.

2. *Columba livia atlantis* Bannerman, which is dark slate above. The rump is light grey in strong contrast and the breast deep vinous; the rest of the under parts is grey. It is found in the Azores and Cape Verde Islands.

3. *Columba livia lividior* Bates has a white rump and grey back and body plumage, paler than in *C. l. gymnocyclus* and bluer in shade. It inhabits the rocky cliffs of the French Sudan east of Mopti and may be the form which is found on the rocky outcrops of the Gold Coast hinterland around Gambaga.

SPECKLED PIGEON

Columba guinea guinea Linnæus

(see Plate 26, facing page 513)

This is a fine large pigeon 14–15 in. in length with noticeably bifurcated neck-feathers. The head and neck, rump and whole under parts are blue-grey, darkest on the crown and back; the mantle, scapulars and wing-coverts are vinous chestnut, the coverts with triangular-shaped white tips. A collar of stiff bifid feathers

surrounds the neck, chestnut in colour with grey tips, glossed with green and amethyst. The tail is ash-grey broadly tipped with black and a dusky median band. The bare skin round the eye is red, the iris itself varying from amber to light red-brown; the bill is lead-colour and the cere red and whitish; legs and feet are dull purple. The bill measures 21–24 mm., wing 225–240 mm., tail 100–116 mm., tarsus 24–27 mm.

There are various interpretations of the loud gruff call-note, deep and crooning in character, which, once the call has been learned, should betray the bird's presence. It is an inhabitant of thorn-scrub savanna and to a lesser extent the tree savanna and has a marked preference for the Run or Giginya palm (*Borassus flabellifer*), among the stalks of whose huge fan-shaped leaves the Speckled Pigeons roost and nest. The birds are usually seen in pairs in dry weather and spend much of their time in thick-foliaged trees such as figs, near cultivated land. It is never found near the desert but occurs commonly on the peanut fields and where millet is grown; thus it is more numerous in the thickly populated areas. Many gather together in the evening to roost in company in palm-trees or on roofs of large buildings. During the rains from April onwards it is found in flocks, but at the end of the rains the flocks break up into pairs and remain paired throughout the dry season.

Eggs may be found from November to April, the nest being a circular platform of dead twigs with some grass stems and rootlets. The eggs are pure white, smooth and glossy and measure usually 36·4–37·5 × 27·5–28·3 mm.; exceptionally they are larger.

Distribution. Ranges from Gambia to N. Cameroon (Adamawa and Banso Mountains) throughout the thorn-scrub savanna, south almost to the borders of the forest belt and north to the limit of cultivation. In East Africa it occurs from the Sudan to Abyssinia, Somaliland and the whole of British East Africa to Tanganyika.

CAMEROON MOUNTAIN OLIVE PIGEON

Columba arquatrix sjöstedti Reichenow

This handsome pigeon is not olive in colour as might be imagined, but a beautiful deep maroon plum colour. The breast is heavily spotted with white, the crown and neck are blue-grey, and wings and rump are darker grey, the median wing-coverts with white spots. Primaries and secondaries are blackish and the tail blue-black. The bill in breeding season is orange-vermilion but later becomes darker red, terminally yellowish horn. In size it resembles the average domestic breed. The bill measures 18–20 mm., wing 209–225 mm., tail 118–138 mm., tarsus 22–26 mm.

Discovered on the mountain high up in the cloud belt, Sjöstedt's Pigeon, as it is sometimes named, is a representative of the Olive Pigeon which inhabits similar or higher altitudes in South and East Africa and has another close relation on São Thomé to which I accord specific rank.



Distribution. C. a. sjöstedti inhabits the higher forested altitudes of Cameroon Mountain from 6,000 ft. upwards to the edge of the tree-fern belt.

On the island of São Thomé a closely allied species occurs, *Columba thomensis* Bocage, considered by some to be another race of *C. arquatrix*. It is larger than the Cameroon bird, with much smaller white spots on the wing-coverts and no white spots on the maroon breast. It is confined to the island after which it is named and is believed to be fairly abundant in a restricted zone. The crops of specimens obtained in 1949 were found to contain berries of *Schefflera Mannii*, a tree belonging to the mist-forest region (1,400–2,025 m.), and rarely found below it. This tree also grows on Annobon, Fernando Po and Cameroon Mountain. This pigeon is said to be very tame, and many are unfortunately shot.

SCALY GREY PIGEON

Columba unicincta Cassin

Of the pigeons which inhabit West Africa this is one of the largest and is entirely "French" grey in colour except for the breast, which is vinous. The wings are slate with light grey edges to all the coverts, giving them a scaly appearance. A broad band, outwardly white, inwardly grey, crosses the slate-coloured tail, and all the rectrices have the terminal portion blackish. The chin and upper part of the throat are pure white; the rest of the throat is pale grey washed with vinous pink. The belly and under tail-coverts are white. The bill is blue and plumbeous, the bare skin round the eye red or purplish; legs and feet are dark. The bill measures 18–22 mm., wing 200–220 mm., tail 108–136 mm., tarsus 23–27 mm.

It is in the innermost depths of the forest that this pigeon must be sought, and there its deep mellow note may betray it, for it is unlikely to be seen. It is constantly uttering its booming call, which is so unlike the sound made by any bird that until traced to the Scaly Pigeon naturalists thought it was made by some animal. It lives in the top of the forest trees and seldom comes within gunshot. It lives on berries, seeds and fruit of the forest trees.

This bird is never seen in flocks and seldom more than three together, but it may occasionally be observed sitting on very high leafless boughs. It nests 70 ft. up in high trees, but not unnaturally the nests are inaccessible and the eggs have not been taken.

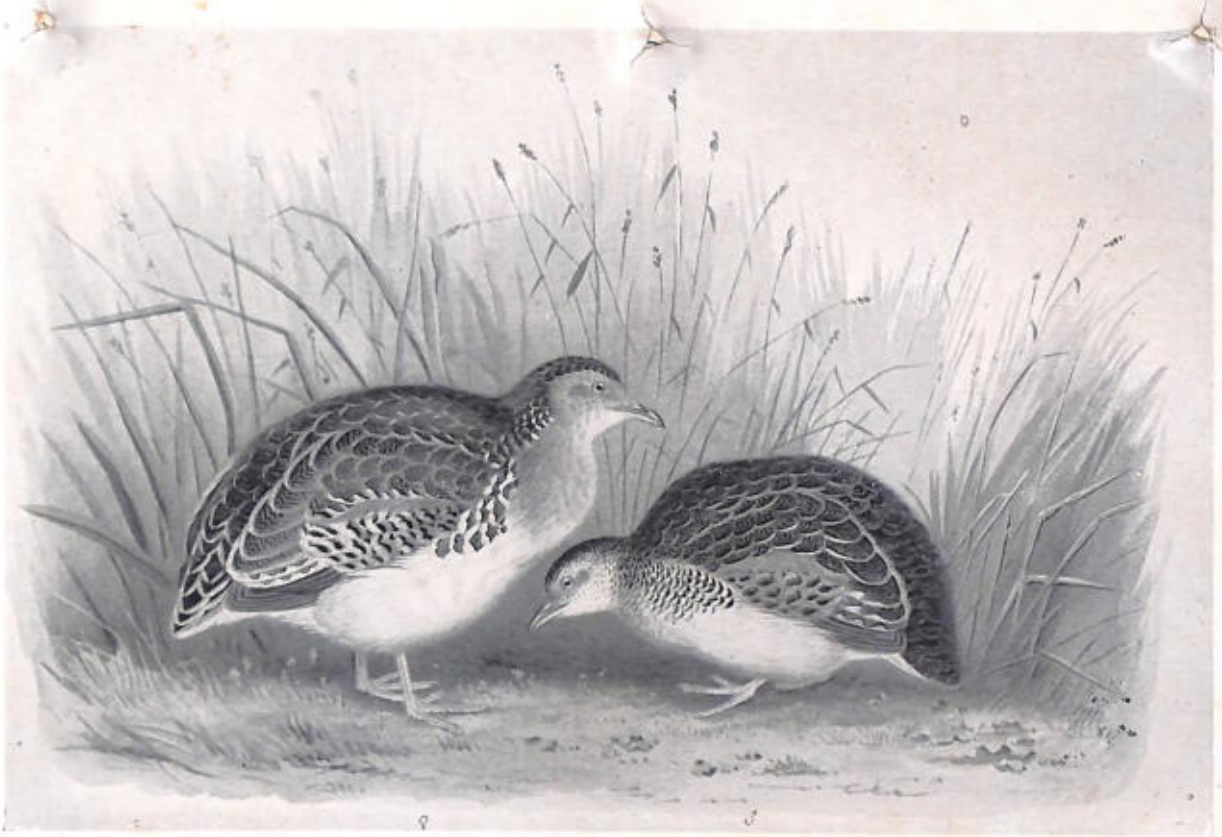
Distribution. The forests of West Africa from Liberia to southern Cameroon and the Ubangi River, the Congo forest east to the Semliki and the forest of Uganda. In Upper Guinea this pigeon was only known from Liberia until 1934, when it was found at Ejura, Ashanti, Gold Coast. It is likely to exist in all closed forests which are still standing between Sierra Leone and the Congo.

BRONZE-NAPED PIGEON

Turturoena iriditorques iriditorques (Cassin)

A SMALL pigeon, 11 in. in total length, with short wings and a short tail. The sexes are not alike. The male has the head dark grey, the tips of the feathers of the nape and sides of the neck metallic green or amethyst passing into copper on the lower part of the neck. The rest of the upper parts are blackish slate; the feathers of the mantle are glossed with purple and green, and the wings are almost black. The tail has the middle feathers blackish slate, paler towards the tip, the remainder slate on the outer web, rufous brown on the inner; all but the central rectrices are broadly tipped with yellowish-buff. The sides of the face and throat are grey, the breast and belly vinous. The female differs in having the crown and nape rufous, and the copper colour on the lower hind neck of the male is wanting in the female. The bill measures 15–16 mm., wing 152–170 mm., tail 90–100 mm., tarsus 19–22 mm. The bill is bluish; legs and feet are coral-red.

In the districts where this pigeon occurs it is not particularly rare, but there are wide stretches of forest from which it seems to be absent. It keeps high up in the forest trees, and its sad cooing notes are always uttered from the tree-tops. It starts with a faint murmuring, gradually getting louder and then dying away. It seems to keep silent during the rains. It has been met with in dense thickets of low bush, but tall forest trees along rivers are a likely place in which to find it. It feeds on the fruit and seeds of the



NATAL BUTTON-QUAIL
Turnix nana

Musanga tree and others, and a nest has been found in a Haronga tree. It probably breeds during the rains.

Distribution. The West and Central African forest region from Sierra Leone to Angola and the Lower Congo, extending eastwards via the Uelle River and gallery forests of the Congo to Mayombe. It is found in all British Colonies except Gambia.

SÃO THOMÉ BRONZE-NAPED PIGEON

Turturoena malherbii (Verreaux)

THIS is a small dark pigeon, blackish above, grey below, with bright red legs and feet, which is restricted to three islands in the Gulf of Guinea. The crown is grey, paler on the forehead; the nape, hind neck and mantle are glossed with metallic purple. The rest of the upper parts are blackish glossed with oily green. Primaries and secondaries are black, the innermost secondaries with a purplish wash. The tail is slate-grey, the inner webs with a varying amount of ochreous wash towards the extremity. The chin is white; cheeks, throat and entire under parts are grey; and the ventral region is freckled or smeared with ochreous. The under tail-coverts are ochreous, but there is considerable diversity shown, ranging from pale uniform chestnut to buff. Some are closely freckled with white; in others the freckling is absent. The axillaries and under wing-coverts are grey. The eye is pale grey; the bill is lead-grey at base, tip pale; legs and feet are bright red. The bill (from feathers) (male and female) measures 16–18 mm.; wing (male) 178–182 mm.; (female) 165–176 mm.; tail 94–115 mm.; tarsus 22–23 mm.

Distribution. Principe, São Thomé and Annobon, but not yet recorded from Fernando Po and may not be found there.

EUROPEAN TURTLE-DOVE

Streptopelia turtur turtur (Linnæus)

THIS small dove, well known in England as a summer visitor, and on the Continent, must be familiar to most Englishmen. Its small size (total length about 10½ in.) distinguishes it from the larger pigeons of the Gambia, but it is liable to be confused with the still smaller Senegal Dove (*S. s. senegalensis*); the black markings which are present on the wings of the Turtle-Dove are absent in the Senegal Dove, and there is a black and white half-collar on the side of the neck in the Turtle-Dove and no white on the neck of the Senegal Dove; the latter, too, is more rufous-sandy colour above and has a vinacious, not a grey, head.

In flight the broad white tips to all but the central tail-feathers are very conspicuous; the wings are narrow and pointed, and the flight is swift. Upon alighting the graduated tail is often spread wide, and the amount of white then apparent is seen to be more extensive than in the Senegal Dove. The wing of the European Turtle-Dove measures 154–170 mm., the tail 93–103 mm.

This is a winter visitor from Europe and perhaps too from the Canary Islands, to which it comes to breed. Its status in West Africa is that of a passage migrant. It seems regularly to pass through Gambia in February in considerable numbers, but how far south in West Africa it penetrates is uncertain. It has been observed on its northern passage as late as 9th April in the North Bank Province of our oldest colony, Gambia, and obtained in mid-September in the French Sudan north-east of Burrem on its way south.

A huge migration of Turtle-Doves has also been reported from the Lake Chad area on 20th March, many hundreds passing in a north-north-easterly direction, but whether these last were of the typical European race or belonged to the Saharan subspecies, *S. t. hoggara*, was not proved, as none were obtained.

Distribution. The European Turtle-Dove (*S. turtur turtur*) breeds throughout Europe from south of the Baltic to the Mediterranean and also in the Canary Islands and neighbouring archipelagos. It moves south in winter, when it occurs commonly in northern Africa and ranges south to Abyssinia, the French Sudan and Gambia.

Another subspecies, *Streptopelia turtur hoggara* von Schweppenburg, breeds in the Ahaggar Mountains and in Air and doubtless in other suitable parts of the southern Sahara. It is a sandy-coloured representative of the European bird which in its isabelline plumage closely resembles the Egyptian Turtle-Dove, *S. t. isabellina*. The wing measures 164–176 mm.

ADAMAWAN TURTLE-DOVE

Streptopelia hypopyrrhus (Reichenow)

This is a larger dove than the European Turtle-Dove, with longer wings and tail; it measures about 12 in. from bill to tail. Its face is palest grey and the crown dark grey like the breast, the rest of the under parts pinkish cinnamon. The upper side is brown, with pale rufous edges to the feathers. On each side of the neck is a black half-collar. Unlike the European Turtle-Dove, the tail is not graduated but square, and is black with grey tips, which show on all but the middle feathers when the tail is expanded. The eye is golden red,

the skin round the eye claret, the bill black; legs and feet are claret-colour. The bill measures 15–19 mm., wing 168–186 mm., tail 105–125 mm., tarsus 23–27 mm.

Although restricted to a comparatively small area in northern Nigeria, so far as is known, this dove is said to be quite numerous



on the Bauchi plateau, where it frequents the bushes and creepers that fill the courses of small streams. It is also frequently seen around Pankshin and is to be found in that neighbourhood wherever there are trees along the banks of streams. Its voice is a deep coo, not unlike that of the European Wood-Pigeon but in a lower tone.

It nests in the trees and bushes described. Another locality where it has been taken is Ngaundere—a plateau of about 2,000 ft. altitude in northern Cameroon. Its eggs have not been taken.

Distribution. Restricted to the areas mentioned above in northern Nigeria and northern Cameroon, where it is not uncommon.

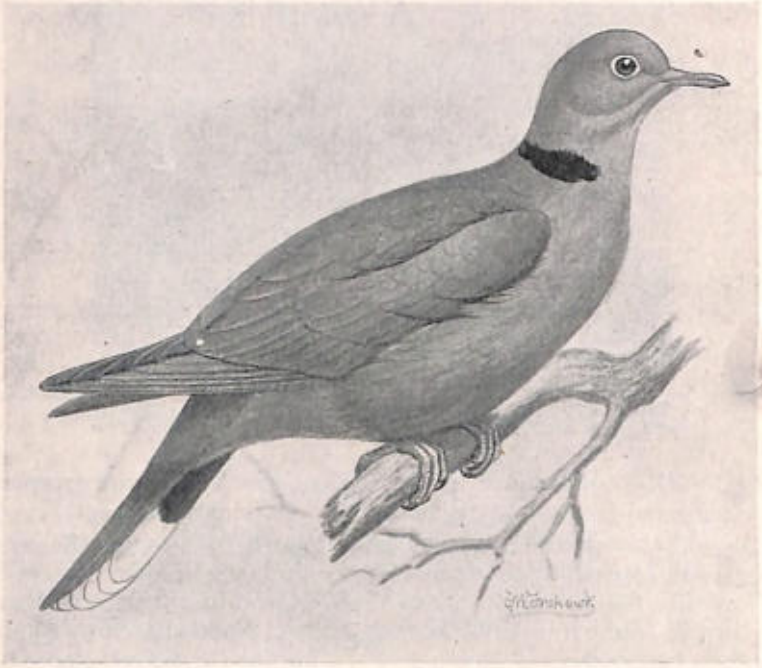
RED-EYED TURTLE-DOVE

Streptopelia semitorquata erythrophrys (Swainson)

The claret-red bare skin surrounding the eye of this Turtle-Dove is more conspicuous than the golden-red iris itself, from which the bird takes its name. It is rather large in size, brown above, vinous-pink below and on the neck, with a grey crown and jet-black collar at the base of the neck. The tail is grey-brown terminally, black basally, with a grey-blue wash. The legs and feet are claret-colour

and the bill is black. The bill measures 15–19 mm., wing 168–186 mm., tail 105–125 mm., tarsus 24–27 mm. The sexes are alike.

As this is one of the commonest pigeons in West Africa, many are familiar with it, and its note, *coo-coo, cu-coo-coo-coo*, repeated over and over again, is apt to become a monotonous sound in the bush. It is a bird of the open country and not of the forest, preferring plantations, farms and second growth. Most of its food is



found on the ground and is almost entirely vegetable in nature—berries, nuts, fruits and seeds of many plants. The male has a pronounced "love flight," rising with clapping wings to glide down in display. The resident birds have their numbers augmented at certain seasons and considerable local movement takes place.

The nesting season is so variable that no particular time can be stated as usual in which to find fresh eggs. In Nigeria it lasts from November to August. Nests are constantly placed in bushes and trees overhanging water, to which these doves seem very partial. The nest is more or less a platform of twigs, sometimes without any lining, at other times with a lining of grass and rootlets, upon which the two white eggs are deposited. These average in size 29·4 × 23·1 mm.

Distribution. The whole of West Africa from Senegal to Angola, inhabiting the savanna country and cleared forest but especially the wooded banks of streams. Other races take its place in East Africa from the Sudan southwards. Care must be taken not to confuse the Red-eyed Dove with the next species discussed, for the distinctions between which see under Mourning-Dove.

NIGER MOURNING-DOVE

Streptopelia decipiens shelleyi (Salvadori)

This dove is so like the Red-eyed Dove, in both plumage and size, that in the districts in which both occur one may easily be mistaken for the other. Both have grey crowns, black half-collar at base of neck, brown upper parts and vinous under parts. The distinctions are not easily discernible in the field. The Niger Mourning-Dove is paler above and below, and the outer wing-coverts are pale blue-grey rather than dark slate-brown. The only character worth anything in the field is to be found in the tail. The Niger Mourning-Dove has all but the middle pair of feathers grey and the tips pure white; the Red-eyed Dove, on the other hand, has a brown tail with a deep black band across the base. The bill is black; legs and feet are purplish red. The bill measures 18–20 mm., wing 167–188 mm.

The quavering note of the Mourning-Dove is the best guide to its identification, differing as it does from the note of all other doves and pigeons in West Africa. It has been described as a laughing cackle and as a growling sound. It is a species which lives much closer to the desert than the Red-eyed Dove on the whole, and from the gardens of Bornu and Sokoto we can follow it all along the Upper Niger to the Inundation Zone in the French Sudan, where it is especially abundant at and around Mopti. Like many of its family it is a thirsty bird and prefers to make its habitat near streams, but its range extends further north along the Niger than was formerly realised.

Eggs have been taken in the Inundation Zone between 28th September and 5th October, and a bird was found laying in January. In the Kano Province of Nigeria fresh eggs have been taken from 27th July to 8th September, and in Sokoto Province nests with eggs or young have been found from January to September, with nesting at its height in April. The nest is a typical flimsy structure of twigs with sometimes added tendrils and roots and may be found in such trees as mango, mahogany, fig or palm. Eggs are white or tinged with cream and average 31·2 × 22·9 mm.

Distribution. Widely spread in the semi-arid belt. It occurs commonly in northern Cameroon, Chad territory, Bornu, Kano

and Sokoto and along the Niger to Gao; thence there is a probable break in its distribution until the Inundation Zone is reached, ranging westwards to the Senegal River. It extends north to Timbuktu, where it is firmly established as a breeding species on the very edge of the desert.

VINACEOUS TURTLE-DOVE

Streptopelia vinacea vinacea (Gmelin)

THIS is a small dove, 10½ in. in length from bill to tail, at least one-third smaller than the Red-eyed Dove or the much rarer Niger Mourning-Dove, and unlike those species it has a vinous-pink instead of a grey head. It is earth-brown above, vinous-pink below and has the same black half-collar at the base of the neck, but the tail shows very much more white than either of the larger doves mentioned, the terminal third of the outer rectrices being white, sharply defined from the black basal area. The pattern of the tail is divided by the middle pairs of feathers, being uniform brown like the back. Its monotonous call, *Better go home*, is a well-known sound in the bush. The eye is brown, not red, and the feet are claret. It is most liable to confusion with the Rosy-grey Dove, but see that species for a comparison. The bill is black; legs and feet are claret-colour. The bill measures 11–13 mm., wing 134–143 mm., tail 90–97 mm.



This species has earned for itself the name Country Dove in opposition to *S. senegalensis*, which is known as the Town Dove, the two species inhabiting much the same area in the Sudanese arid and savanna country. It is by far the commonest dove in Gambia, and is found everywhere in large numbers on the farms, rice-fields and swamps in flocks of hundreds. Throughout the rest of Upper Guinea it is a bird of the Northern Territories and is extremely

numerous in the Combretaceae country—vast dry plains thinly covered with bushes and small trees—lying south of the Upper Niger. In the Gold Coast we find it from Accra to the eastern border as commonly as it occurs north of the forest. Its call is to be heard on all sides in the country which it inhabits—a *coo-cu-cu-coo* hurriedly repeated, a nervous succession of notes which might not be identified with the voice of a dove unless traced to its source.

The nesting period is an extended one, in fact nests may be found in almost any month, but the period November to March is the most favoured. Nests are placed 5–25 ft. from the ground in orchard bush and on cultivated land and are flimsy structures of twigs and rootlets. The two white eggs average in size 26·7 × 20·5 mm.

Distribution. The typical subspecies ranges from Senegal to Nigeria throughout the whole extent of the grass woodland and much of the thorn-scrub belts. It occurs in all four British Colonies.

Two other races have been described from within our limits:

1. *S. vinacea grotei* Reichenow, a very much paler race restricted to the semi-arid country between the Upper Benue and Lake Chad but not the country bordering the desert further west, as one might expect.

2. *S. vinacea savannae* Bates, a race strikingly darker than the above race and darker than *S. vinacea vinacea* but to a lesser degree. It inhabits the high savanna country in Cameroon: Adamawa, Upper Nun valley, Tibati plateau, Ngaundere plateau—all above 2,800 ft.

ROSY-GREY OR PINK-HEADED DOVE

Streptopelia roseogrisea bornuensis Bannerman

Yet another of the four doves in our area which has a black collar at the base of the neck. It is a little larger than the Vinaceous Dove, but in its earth-brown back, greyish rump and mauvish-vinous under parts it closely resembles that bird. The end of the tail is white, as it is in *S. vinacea*, but the base is grey, not black as in that species. Its head, too, is vinous, not grey. The points which distinguish the Rosy-grey Dove in the field from the Vinaceous Dove are (1) larger size, (2) more whitish appearance, (3) softer and more dove-like note. The bill is black; the legs and feet are purplish brown. The bill measures 15–17 mm., wing 157–171 mm., tail 97–114 mm.

Distribution. The Rosy-grey Dove, the most desert-loving of all the doves, inhabits the sandy wastes of the thorn-scrub belt and the sandy river beds in the north of the savanna belt, but it has not been recorded from north of 20° N. Its range extends from Lake

Chad to the Inundation Zone of the Niger, and it is extremely common at Timbuktu in November. A southward movement takes place from the desert about the end of September. This dove



extends well into Mauretania but in that area appears even paler than the Bornu race.

It is possible that examples of *S. roseogrisea* inhabiting the country between Zinder and Aïr must be allied with the typical eastern subspecies *S. roseogrisea roseogrisea*, the under side of which is paler and the roseate hue much less conspicuous. The range of that bird includes the Egyptian Sudan, White Nile and Darfur, westwards nearly to Chad.

SENEGAL OR LAUGHING DOVE

Stigmatopelia senegalensis senegalensis (Linnæus)

The Senegal Dove, which is sometimes termed the Town Dove by reason of its attachment to the dwellings of man, is a small dove 10½ in. in total length, resembling in size the Vinaceous Dove. *S. senegalensis* is copper-bronze in colour and distinguished by the pale blue-grey wing-coverts, a spotted black collar on the foreneck and lack of a black band or collar on the hind neck; the rump appears dark grey. The tail is rather long, with the middle pair of rectrices brown washed with grey; the next two pairs are grey and the remainder is blackish-slate at the base and terminally white;

the outermost feather with the terminal half and the fringe of the entire outer web is white. The breast below the collar is vinous, like the head, and the belly and under tail-coverts are white. The bill is black; legs and feet are purplish red. The bill measures 14–15 mm., wing 128–135 mm., tail 103–107 mm.

This very common dove has much the same general range as the Vinaceous Dove but is much more a lover of the town and villages.



It is one of the tamest birds in West Africa and will freely enter dwellings to seek shade. Even the native boys leave it alone, and consequently it has few enemies and thrives exceedingly. It is to be found everywhere in the dry country bordering the desert wherever man has his habitations, but it does not enter the true desert like the Rosy-grey Dove, and nomadic dwellings do not attract it.

It gleans much of its livelihood from the threshing floor, and wherever millet is stored, threshed or handled, there will be the Town Doves gathered to take toll of the wasted grain.

It nests all the year round and in Nigeria alone eggs have been taken in every month, November to January being a period when breeding seems to be at its height in the central provinces. Although nests are usually placed in small trees surrounding the compounds it will also build in the cultivated country some way from habitations. The nests are the usual flimsy platforms carelessly constructed of twigs, roots and tendrils. Two white or creamy-white eggs complete the clutch and the eggs average 24·6 × 19·2 mm., but eggs of 27·2 × 20·1 mm. are on record.

Distribution. The typical subspecies ranges from Senegal to Nigeria and northern Cameroon throughout the entire dry belt, reaching the sea coast on the Accra plains but normally occurring north of the forest belt of West Africa. It has penetrated as far as Aïr and the other oases in the Central Sahara but does not occur in the uninhabited desert.

Two other subspecies come within our limits:

1. *S. senegalensis aequatorialis* (Erlanger) has browner upper parts, is less bright cinnamon on the mantle and ranges from southern Nigeria eastwards to the Bahr el Ghazal, Kenya and Uganda by way of the country north of the Congo forest.

2. *S. senegalensis thomé* Bannerman, with paler vinous head and plum-colour extending on to the mantle and darker grey wing-coverts, is restricted to the islands of São Thomé and Principe in the Gulf of Guinea.

LONG-TAILED OR NAMAQUA DOVE

Oena capensis capensis (Linnæus)

(see Plate 26, facing page 513)

THIS is the most easily distinguished of all the doves in our area. Its small size, slender build and long tail (the middle feathers as long as the body) are features of both sexes. The general colour is brown, with the belly white; both male and female have two blackish bands crossing the rump. The male alone has a black mask and breast, which make it very conspicuous; in the hen these parts are greyish with a white forehead. When the tail is expanded it is seen to be a curious shape, the outer feathers being very short, the central pair very long and the remainder graduated in proportion. The bird's total length from the tip of the bill to the tip of the tail is but 10 in., and the wing expanse 7 in. The wing measures 102–109 mm., the central tail-feathers 125–138 mm.

A bird of wide distribution in Africa, the present species in West Africa is practically confined to the thorn-scrub belt, only occasionally venturing into the grass woodland, though it has occurred as far south in Nigeria as Ilorin. It is fairly general as far south as lat. 9° N., but decreases in numbers south of lat. 11° N. Its favourite haunt is the scrub and very open bush, thus Senegal and Gambia are countries in which it is especially numerous everywhere at certain seasons. Cleared cultivated areas around the towns and villages prove very attractive to it, but it will penetrate a long way north and, next to the Rosy-grey Dove, it ranges further into the desert than any other member of its family, occurring at such isolated spots as Taberréshat Well, lat. 18° N. It is a common

species at Timbuktu and in the northern provinces of Nigeria is ubiquitous at certain times of year.

It is subject to strong migratory movements. From June to October it disappears completely from Sokoto and no doubt from all the country on the same latitude about the same time. In Zaria it is found throughout the dry season from October to March, and in Gambia from November to June it is plentiful. Migration has been observed on a large scale between Zinder and Agadés in August, but we have still much to learn as to what governs these periodic movements.

The nest is built close to the ground in dwarf shrubs, usually under 4 ft. from the ground, and is a slender platform of twigs and tendrils. Two or three eggs may be laid (usually two), cream in colour, averaging 20·6 × 15·2 mm.

Distribution. The whole of Africa from Senegal and the Egyptian Sudan to Cape Province but not in the equatorial or West African forest regions. Found abundantly in the dry country of West Africa but not in Sierra Leone or Liberia and only north of the forest in the other countries, inhabiting the country north of lat. 10° N. The only known race, *Oena capensis aliena* Bangs, inhabits Madagascar.

TAMBOURINE DOVE

Tympanistria tympanistria fraseri Bonaparte

A SMALL dove, about 8¼ in. from bill to tail, with wing expanse of 13 in. The male should be easily identified by reason of its entirely white under parts, forehead and eye-stripe, the rest of the plumage above being dark brown. There is one visible blackish band across the rump (another concealed) and a dark spot on the wing. In flight the open wing-feathers appear rufous with a dark border, and the outer tail-feathers have a dark band across them near the tip. As the wings are beaten fast the rufous under side is plainly visible and will be seen to be much lighter than in the Wood Dove. The female looks very like the male but has a grey breast and a more greyish forehead. The bill is purple-lake with blackish tip; legs and feet are purple-lake. The bill measures 13–16 mm., wing 106–117 mm., tail 72–85 mm.

This dove is found in the groves and gallery forests of the savanna belt and is restricted in the true forest region to the second-growth patches, in the dense cover of which it is not easily seen. Its favourite feeding grounds are the bush paths, and it may be flushed from standing crops such as corn and cassava, rubber plantations and banana groves, wooded streams and kurimis. It is a shy and timid bird which makes off at the first sign of danger.

The call note suggests the gentle tapping of a tambourine—*trouk-trouk-trouk, triip-tu-tu-tu.* Although it has been considered a ground dove, the Tambourine Dove may often be seen to perch in fairly high trees as well as low ones, but most of its feeding is no doubt done on the ground.



Its nests are easy to find, as it will often build in bushes on abandoned land and in small plantations such as cacao. Two eggs are laid, ivory-white to light brownish cream, 22·7–25·3 × 17·3–19·4 mm. in size.

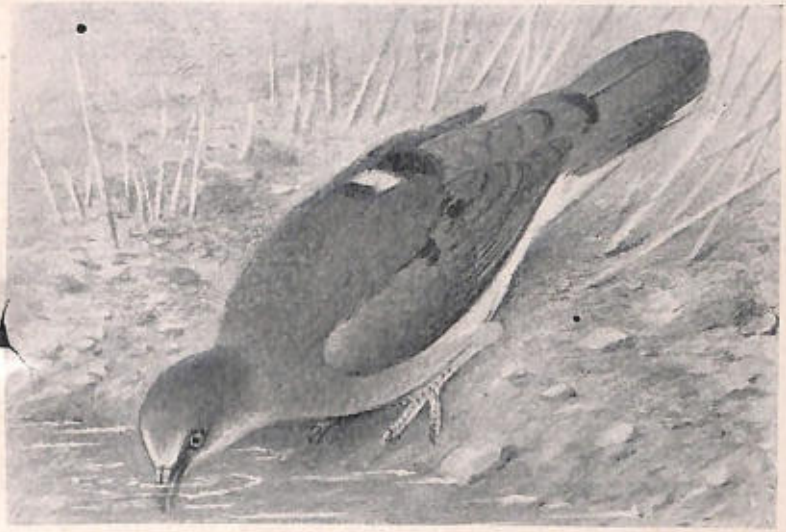
Distribution. Widely spread throughout tropical Africa, the race with which we are here concerned extends from southern Abyssinia to the Zambesi valley and from Sierra Leone to Angola. It is absent from the Anglo-Egyptian Sudan and on the west from north and west of Sierra Leone, so that its range does not include Gambia. It has been obtained on an island in Lake Chad, but that is much further north than its normal habitat, which extends from the coastal bush up to and including the forest belt. Its range includes Fernando Po.

RED-BILLED WOOD-DOVE

Turtur afer Linnæus

Two races of this Wood-Dove inhabit our area whose distinctions and range will be discussed in the last paragraph.

The Red-billed Dove is slightly under 9 in. in total length, with a grey crown, earth-brown upper parts and vinous-pink under parts.



A conspicuous black band crosses the rump (the second band is usually concealed), and on the brown wing-coverts and secondaries are some metallic purple or burnished green spots. In flight the open wings appear rufous, with a dark border. The tail-feathers, partly grey and partly brown, have a broad subterminal black band. It is most important to note the colour of the bill in this bird—dark red at the base with orange or yellow tip, not black—for this is almost the only field distinction between this species and the Black-billed Wood-Dove (*Turtur abyssinica delicatula*), which occurs in the same territory.

This tame little dove must be familiar to anyone with any interest in the bird life of West Africa, for it is as much at home in the forest clearings as in the open bush and may frequently be flushed from the forest or bush paths. It feeds chiefly on the ground, getting its living on the edge of cultivation. It avoids the heavy forest and dense bush. In the grass country it becomes much less numerous than it is in the tree savanna, and as the dry belt near the

desert is reached its numbers quickly diminish. Its quadrisyllabic *coo* is a well-known sound of the bush.

The Red-billed Dove nests in small trees about villages and farms and in cassava, building its platform of dry leaves or twigs near the fork. Neither nest nor eggs can be distinguished from that of the Tambourine Dove unless the sitting bird is seen. The two eggs are opaque cream-colour and measure 22–25·1 × 17–18·3 mm.

Distribution. In the western, drier part of the range of the Red-billed Dove we find the typical subspecies *T. afer afer* Linnæus inhabiting Senegal, Gambia, Portuguese Guinea and probably Futa Jalon. It is a pale brown bird with vinous under parts as described and an inhabitant of dry bush country, though not of the area encroaching upon the desert. I would restrict its range to that area defined.

To the east of the range of the typical subspecies there occurs the bird which I ally with *Turtur afer kilimensis* (Mearns), which has a very wide distribution beginning in Sierra Leone and reaching to Angola as well as having a still wider range in East Africa. It is darker throughout than *T. afer afer* and is more richly coloured. This is the common West African Red-billed Dove which occurs in all our Colonies except Gambia, where the paler bird is found.

The soft parts of the Red-billed Dove are similar in both races. The bill is dark red, the tip yellow-orange; the legs and feet are claret-colour. The wing of *T. afer afer* measures 103–116 mm., the tail 82–87 mm. A larger series of *T. afer kilimensis* has wings 97–118 mm., and tails 71–86 mm. respectively.

BLACK-BILLED WOOD-DOVE

Turtur abyssinica delicatula (Sharpe)

In general colour this Wood-Dove is like the last species described, but on the whole is more grey than brown in colouring. The difference is so small that for generations the two species were believed to be one and the same until it was discovered that one always has a red bill and the other always a black. Then it was realised that the black-billed species, *T. abyssinica delicatula* (they cannot be considered races, as their breeding area overlaps), was slightly different in the colour of the upper parts. Both birds have a mournful note and both have the dark bands across the rump, which is a useful character to observe when they are flushed. *T. a. delicatula* has a black bill and dark purplish-brown legs. The wing measures 107–113 mm., the tail 80–90 mm.

In habits the two are very similar. Nests of the Black-billed Dove are small platforms of sticks placed in shrubs a few feet from

the ground or in small trees 5–25 ft. from ground level. Two eggs are the full complement, uniform brownish cream in colour and measuring 20·5–23·5 × 15·8–17·3 mm.

Distribution. The range of this dove is treated in more detail in my larger work. The Black-billed Wood-Dove is confined to the drier belts of Africa from Senegal eastwards to the White Nile. In the extreme west of its range, Senegal, and probably Gambia (from which I have not yet seen a specimen) and Portuguese Guinea, it overlaps the range of *T. afer afer*, thence by way of the French Sudan and Upper Volta and northern provinces of Nigeria (south to the Plateau, Benue and Niger Provinces) east to Chad, the Shari and Bahr el Ghazal, it extends to the Nile. In the Gold Coast it is found on the Accra plains in company with the Red-billed species, the latter being much the more numerous. At Ilorin, in Nigeria, the status of the birds is reversed.

BLUE-HEADED DOVE

Calopelia puella puella (Schlegel)

(see Plate 26, facing page 513)

Two races of this dove occur within our limits whose distribution will be given in the last paragraph. It is the typical form which occurs in the West African forest region to western Cameroon. This forest-frequenting dove should be easily identified, as its plumage is distinctive. The head is grey-blue, the whole of the body plumage rich cinnamon-brown; the neck and upper breast are washed with mauve, and the wings are brown with (in the present subspecies) metallic green spots on the wing-coverts and inner secondaries. At rest the tail appears all rufous, but when spread the grey base and black subterminal band to the three outermost feathers are noticeable. The bill is dark red, the tip greenish; legs and feet are dark red to crimson. The bill measures 16–17 mm., wing 127–135 mm., tail 93–113 mm.

It is a shy dove, which is not easy to observe on account of the density of the forest in which it lives and from which it never ventures, even into clearings. Very early in the morning it will come on to a forest path to peck about and search for insects and seeds, and it will feast upon driver ants when opportunity occurs. It is nearly always alone, or at most in pairs. From various accounts I gather that it is more numerous than is generally supposed in some of the forest reserves, its extreme shyness giving a false impression of its status.

Its nest is placed on the horizontal limb of a tree near the ground, and is composed of decaying stems and leaves with some rootlets. A single egg measures 27·5 × 21 mm.

Distribution. The two races of this dove are as follows:

1. *Calopelia puella puella* (Schlegel) ranges from Sierra Leone throughout the whole forest country of Upper Guinea to and including Cameroon Mountain, with characters as already described.

2. *Calopelia puella brehmeri* (Hartlaub) is found from southern Cameroon (Ja River) to the Portuguese Congo, ranging eastward across the Congo forest to the Semliki valley. It differs from the Upper Guinea race in having the metallic wing-spots golden copper instead of green, and in other minor points mentioned in my larger work. The wing measures 124–139 mm., the tail 97–112 mm. Where the range of the two races meets, somewhat intermediate examples may be found.

CAMEROON MOUNTAIN LEMON-DOVE

Aplopelia simplex inornata (Reichenow)

No fewer than five valid races of the Lemon-Dove have been described from our area and will be listed hereafter. Two are represented on the mainland and three in the islands in the Gulf of Guinea. The only one which comes within British territory is listed above and was discovered on Cameroon Mountain.

Like all the Lemon-Doves, it is a forest-frequenting species. It is a small pigeon about 11 in. from bill to tail, the forehead white becoming greyer towards the crown, the metallic green or amethyst reflections on the occiput and neck. The upper parts are purplish or bronze-brown, including the wings and the central tail-feathers; the outer pairs of tail-feathers are blackish, broadly tipped with grey on both webs. The throat is white and the under parts are grey, including the under tail-coverts. The bill measures 12–14 mm., wing 138–151 mm., tail 85–102 mm.

We know very little about the Lemon-Doves, but all appear to glean most of their food on the ground, upon which they spend much of their time, at other times sitting silently hour after hour on some low branch. Many are caught on the forest floor by boys in deadfall traps.

The nest is described as being of firmer construction than is usual among pigeons, the base being composed of sticks upon which tendrils are laid, with sometimes dry leaves and petioles. The eggs are cream-coloured. Those of the southern Cameroon race (*plumbescens*) measure 26·5–28·5 × 20–22 mm.

Distribution and Races. *A. s. inornata* ranges from Cameroon Mountain to the Genderu Mountains (4,500–6,000 ft.). The female has pale cinnamon under tail-coverts. *A. s. plumbescens* (Sharpe) inhabits the forests of southern Cameroon and the female has white



LONG-TAILED DOVE
Oena capensis capensis

SPECKLED PIGEON
Columba guinea guinea

BLUE-HEADED DOVE
Calopelia puella puella

YELLOW-BELLIED FRUIT-PIGEON
Vinago waalia

under tail-coverts. *A. s. poensis* (Alexander) is restricted to Fernando Po and the female has grey under tail-coverts. *A. s. hypoleuca* (Salvadori) is restricted to Annobon and the female is unknown. *A. s. simplex* (Hartlaub) is restricted to the island of São Thomé, the female having cinnamon under tail-coverts. The males are all very much alike in these races and practically indistinguishable, even in the hand.

There is also a representative on Principe, *Aplopelia principalis* (Hartlaub), which is accorded specific rank as the males have pinkish-vinaceous under parts instead of grey as in the males of the other Lemon-Doves. It is restricted to Principe. The wing measures 139–155 mm.

YELLOW-BELLIED FRUIT-PIGEON

Vinago waalia Meyer

(see Plate 26, facing page 513)

As its colloquial name implies, this fine pigeon has a bright yellow belly, and that alone should distinguish it from all the pigeons in Africa. Its upper surface, including the head and neck, is ashy olive-green, the wings are brown, with purplish-vinous lesser and median coverts forming a large wine-coloured patch on the shoulders. At close quarters it will be seen to have a bright blue eye with red rim; the bill is lilac at the base, whitish at the tip; the legs and feet are orange. It is a large bird, 12½ in. from bill to tail and with a wing expanse of 20 in. and the following detailed measurements: Bill 14–18 mm., wing 171–182 mm., tail 95–110 mm., tarsus 25–28 mm.

It is a bird of the thorn-scrub savanna with a marked preference for fig-trees, upon the ripe fruit of which it feeds. Despite its rather striking colouring it is well camouflaged in the foliage of a leafy tree, and then is not easy to see until it flies. It haunts the highest branches and utters a crooning whistle, very pleasant to the ear, in addition to the more usual notes, but these are not easily reduced to words, for its vocabulary (for a pigeon) is a large one. Little parties of three to six may be encountered in the bush, travelling very fast and direct and swerving among the trees, but when the figs are ripe much larger flocks gather for the feast. As the various species of *Ficus* bear fruit at different times, there is a considerable local movement of this pigeon from one feeding ground to another. It will fly as much as twelve miles from its usual retreat to feed on ripe figs. It is much sought after by sportsmen and is naturally wary.

The nest is a very small flimsy affair of twigs and rootlets—a mere apology for a nest—through which the two eggs are visible from

below. In Gambia the breeding season begins in March and the tabu-tree is commonly chosen in which to build—a large-leaved evergreen. In Nigeria the nesting season is a long one, lasting from January until May. The white egg measures 33–34 × 24–25 mm. and is smooth and glossy in texture.

Distribution. The whole thorn-scrub belt of Upper Guinea from Senegal to North Adamawa in Cameroon, reaching the coastal area and the dry plains of the Gold Coast, but it is usually a bird of the Northern Territories with a wide north to south distribution from north of the forest to the limit of the northern range of the fig-tree. About lat. 14½° N. is roughly the northern limit to which it extends, at any rate in the French Sudan. Its range is restricted very much by the growth of the various species of *Ficus*.

GREEN FRUIT-PIGEON

Vinago australis Linnæus

(Formerly *Vinago calva* Temminck and Knip)

The Green Pigeon, which is represented by four subspecies in our area (to be specified hereafter), is a smaller bird than the Yellow-bellied Pigeon (*V. waalia*), measuring not more than 11 in. from bill to tail. The general colour of the plumage is olive-green throughout, a grey tail, blackish flight feathers with a pale yellow diagonal wing-bar and dark maroon shoulder patches. The under tail-coverts are mostly chestnut. The bill is bluish green at the tip with the base and cere sealing-wax red, the latter extending well out to the forehead. The measurements of *V. a. sharpei* are: Bill 20–26 mm., wing 140–161 mm., tail 75–90 mm., the other races showing slight variation according to range.

Green Pigeons are found over a very wide extent of variable territory in West Africa, frequenting as they do the forest area and the savanna and in the extreme west the dry belt, wherever the fruit trees upon which they feed flourish. It may often be seen in the coastal districts among the taller mangroves and is a frequent visitor to forest clearings. As it is entirely dependent upon the fruit and berries of various trees, especially that of *Musanga smithii* (the Umbrella tree), it moves from one place to another and, being exceedingly numerous, travels in very large flocks. Its absence from some localities, which at first seems surprising, may be explained by the fact that no fruit is available in the vicinity. In the west of its range it is subject to much more noticeable periodic migrations than it is in the moister area further east.

The nest is very slight and frail. Only one egg is laid, white in

colour, and measuring about 28–33 × 22–25 mm. Nests were found in Nigeria from January until August inclusive.

Distribution and Races. Of the four races of this Fruit-Pigeon which come within our limits three occur in British Colonies.

1. *Vinago australis calva* Temm. and Knip ranges from the Owerri Province of Nigeria through British and French Cameroons to northern Angola and eastwards to the Ituri. The wing measures 150–164 mm.



2. *Vinago australis sharpei* Reichenow ranges from the Benin Province of Nigeria to Sierra Leone. It has a more yellowish-green head and the rest of the plumage is generally paler than in *V. a. calva*. The wing measures 140–161 mm.

3. *Vinago australis nudirostris* Swainson ranges from Portuguese Guinea to Senegal. It is distinguished from both of the above by its more yellowish-green under surface. The wing measures 154–167 mm.

4. *Vinago australis poensis* (Hartert and Goodson) is restricted to the island of Fernando Po, and is brighter olive above and below than *V. a. calva* on the opposite mainland and rather larger. The wing measures 155–175 mm.

Very full field notes on these pigeons have been given in the second and eighth volumes of my larger work, which, for lack of space, cannot be repeated here even in brief. The change of specific name from *calva*, as used in my larger work, to *australis* is necessitated

by the discovery that there is no specific distinction between the pigeons to which these names refer and *australis* of Linnæus is the older name.

The representative of the Green Pigeon on São Thomé must be considered a species:

Vinago S. thomae Gmelin. It is dark olive in colour with purple shoulder patches and a narrow yellow bar on the wing. It is darker and duller in plumage than any in the *V. australis* group. The bill is decidedly heavier and more arched and it lacks the red exaggerated cere. The bill measures 17·5–19 mm., wing 164–179 mm., tail 84–88 mm. It is restricted to São Thomé in the Gulf of Guinea.

ORDER PSITTACIFORMES

FAMILY PSITTACIDAE

Key to the Parrots

1. General colour of plumage grey, tail either bright red or washed with dull red *Psittacus e. erithacus* and subsp., p. **517**
   General colour of plumage green or olive-brown, with or without yellow or red on under surface 2
2. Tail strongly graduated, central tail-feathers greatly elongated, greater than length of wing
   Psittacula krameri krameri, p. **522**
   Tail square or wedge-shaped; central tail-feathers not elongated, shorter than length of wing 3
3. Size very small (lovebirds) (wing not exceeding 100 mm. (4 in.)) 4
   Size much larger (small parrots) (wing exceeding 127 mm. (5 in.)) 5
4. Black collar at base of neck, no pink on face
   Agapornis s. swinderniana and subspecies, p. **524**
   No black collar at base of neck, some pink on face
   Agapornis pullaria guineensis, p. **523**
5. Belly either yellow, orange or scarlet
   Poicephalus s. senegalus, p. **520**
   and subspecies, p. **521**
   Belly green or greenish blue 6
6. Throat and upper breast grey or olive-brown, contrasting with rest of green or greenish-blue under parts .. 7
   Throat and upper breast green like rest of under parts
   Poicephalus g. gulielmi and subspecies, p. **519**

7. Bill very large and ending in elongated fine point (measured in straight line from base of cere to tip exceeds 33 mm.) .. *Poicephalus robustus fuscicollis*, p. 518
Bill much smaller, tip of upper mandible not elongated to fine point (measured in straight line from base of cere to tip under 26 mm.) 8

8. Under wing-coverts and patch on shoulders bright canary yellow .. .. .. *Poicephalus meyeri*, p. 521
Under wing-coverts green and no patch of yellow on shoulders .. .. *Poicephalus crassus*, p. 520

GREY PARROT

Psittacus erithacus Linnæus

THREE races of the Grey Parrot occur within our limits, and will be enumerated hereafter. Its colouring is unique—entirely grey, with paler grey rump and a bright scarlet tail and under tail-coverts—and it should be easily recognised. The heavy curved bill is blackish, the eye cream-colour; the legs and feet are black. A naked space round the eye and the cere is whitish flesh-colour. The bill (of typical subspecies) measures 31–37·5 mm., wing 233–255 mm., tail 87–111 mm., tarsus 21–25 mm. When flying, the red tail and under tail-coverts are noticeable. The flight is very swift, the wings being beaten rapidly.

Those who are familiar with the cage bird and family pet will have difficulty in reconciling it with the wild bird, so shy and difficult to approach. As it is dependent on the fruit of various trees for its livelihood it moves from one place to another, according to which trees are bearing fruit. It is a common enough species in certain localities, but owing to the destruction of the high forest trees in which it nests it is certainly much less numerous today than formerly. In some districts, as in the Warri Province of Nigeria, it seems to live only in the area of the creeks and swamps. It is very partial to the kernel of the oil-palm, and where these trees flourish the Grey Parrot is likely to be present, but fruit and seeds of all kinds are eaten, and when grain is in season the parrots do much damage to the crop.

The Grey Parrot is a sociable bird, and when not in flocks it is usual to meet with it in pairs. The birds have their regular flight routes from the tall trees in which they regularly roost to their feeding place and back in the evening, uttering their loud cries as they fly.

The highest trees are selected for breeding purposes, the eggs being laid in a hole in the trunk. Two eggs are normally laid, white and glossless. Published measurements are 37–40 × 29–31 mm.

Distribution and Races. The Grey Parrot ranges from Sierra Leone to the Congo, east to Kenya and Uganda and Tanganyika, and is found in Angola. The three races which occur in West Africa are:

1. *Psittacus erithacus erithacus* Linnæus ranges from the Ivory Coast to Cameroon and Ubangi, thence to the Grest Equatorial forest, and east via the Ubangi and Uelle Rivers.

2. *Psittacus erithacus timneh* Fraser is restricted to the extreme western extensions of the forest area: Sierra Leone, French Guinea and Liberia. If differs from the typical race in its plumage, being slate-grey rather than pale grey; the tail is dark red instead of scarlet, and the bill is redder. It is also smaller in size, with wing 212–223 mm.

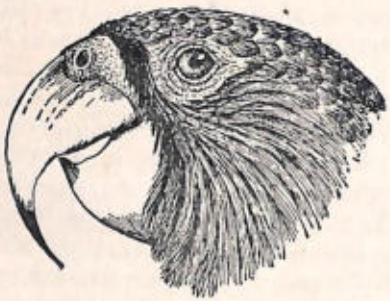
3. *Psittacus erithacus princeps* Alexander is restricted to the island of Principe in the Gulf of Guinea. It resembles *P. e. timneh* in its dark plumage, but the feathers of under parts are tipped with purple. In size it is as large as West African mainland examples, with wing 225–253 mm.

BROWN-NECKED PARROT

Poicephalus robustus fuscicollis (Kuhl)

(see Plate 27, facing page 528)

In this species, the sexes of which differ in plumage, it is unexpectedly the female which is the brighter coloured, having a rose-red forecrown which in the male is grey-brown with only a faint rosy tinge. In size it is about 11½ in. from bill to tail. The neck and hind crown are grey streaked indistinctly with brown, the mantle and scapulars dark green, the rump and under parts bright green with an orange-red border to the wings and inner coverts, and orange-red thighs. Primaries and tail-feathers are dark brown. As can be seen in the accompanying drawing, the horn-grey bill is very powerful. Legs and feet are grey. The bill (from cere) measures 39–46 mm., wing 204–223 mm., tail 88–106 mm., tarsus 20–23 mm.



Although not restricted in its range to the Gambia, this fine parrot is more numerous there than anywhere else; they never seem to wander far from the river or its creeks and keep to that part of the country where the mangroves are most luxuriant, breeding in

the holes of the larger trees. In winter they go about in small parties, visiting the farms and clearings to feed on the groundnuts. On the wing these parrots appear top-heavy, but they fly with great speed. Their cries are harsh and unpleasant. The breeding season in Gambia is in March and April.

Distribution. Confined to the drier parts of West Africa from Senegal to northern Nigeria but local in the east of its range. Common in Gambia and Portuguese Guinea, it is much less often recorded from Togoland, the Gold Coast (Northern Territories) and Nigeria. To the last named it is a visitor to the Plateau Province in April and May, disappearing again after two months. Other races of this parrot occur in South and East Africa.

RED-CROWNED PARROT

Poicephalus gulielmi (Jardine)

THREE races of this parrot come within our limits. The sexes are alike in plumage. It is rather smaller in size than the Grey Parrot but with an equally powerful bill. The plumage is mainly dark green on the under side, the wings and upper parts are black with green borders to the mantle and wing-coverts, the wings and tail are black and the rump is bright yellowish green. In the Gold Coast race the orange on the crown is a feature to note (in the other two races the crown patch is scarlet), and there is a scarlet or orange patch at the bend of the wing and on the thighs according to the subspecies.

Three races were recognised in my larger work:

1. *Poicephalus gulielmi gulielmi* (Jardine), which ranges from the Coanza River in Angola to the Lower Congo, Ubangi and northern Belgian Congo. The wing measures 195–203 mm., bill 28–32 mm. The crown is scarlet.

2. *Poicephalus gulielmi aubryanus* Souancé, ranging from the Rio Muni, Gaboon and Cameroon to Cameroon Mountain, which differs from the above only in its larger dimensions. The wing measures 192–210 mm., bill 32–36 mm. The crown is scarlet.

3. *Poicephalus gulielmi fantiensis* Neumann, known only from the Gold Coast forests but probably also in the forests of the Ivory Coast, differs from both of the above in having the crown and patches on wings and thighs orange instead of scarlet. The wing measures 177–192 mm., bill 31–32 mm.

This is a scarce parrot in the forests where it occurs and from which it appears not to wander. Consequently nothing is known of its habits, and there are few specimens in collections. Its eggs have not been found.

NIAM-NIAM PARROT

Poicephalus crassus (Sharpe)

A SMALL parrot, slightly larger than the Senegal Parrot, with head and breast brown, the rest green, and the back and rump light green, contrasting with the dark mantle. The wings and tail are brown and the under parts below the breast light green; the under wing-coverts are green. The bill measures 24 mm., wing 155–178 mm., tail 71–76 mm., tarsus 18 mm.

This parrot seems to have a preference for forested mountains but in its ways of life does not differ much from the other members of this genus in Africa. It is, however, much more shy than the Grey Parrot. It breeds in the middle of the rains, from August to September.

The cry is very sharp and screeching and is continually uttered, both during flight and when perched. It barely comes within the limits of this book.

Distribution. From the Bahr el Ghazal Province and the Uelle district to the Sanga Ouham region, being not rare in the upper basin of the Ouham within easy distance of the Cameroon border.

SENEGAL PARROT

Poicephalus senegalus (Linnæus)

(see Plate 27, facing page 528)

THREE clearly differentiated races of this brightly coloured little parrot come within our limits, one having a yellow belly, one a scarlet belly and another an orange belly. In size it is not more than 10 in. in total length. The breast and upper parts are bright grass-green, the head is grey or grey-brown, and the belly is as described above, according to the subspecies. The eye is cadmium-yellow, bill horn; legs and feet are olive. The bill (of *P. s. senegalus*) measures 21–26 mm., wing 153–164 mm., tail 63–73 mm., tarsus 14–18 mm. The males have larger and heavier bills than the females, otherwise there is no distinction between the sexes.

The "Senegal" is one of the most delightful of all the parrot family, making a charming pet and becoming extremely tame, though only learning to "talk" a few words. It is an exceedingly common species in the dry belt of West Africa and may be seen in flocks flying from one place to another, when their brilliantly coloured under parts are conspicuous. Once in a tree they are extremely difficult to see, blending in so naturally with the leaves and branches.

The cry is sharp and screeching and can be distinguished from that of the Long-tailed Parrakeet in the same area. The Senegal Parrot plays havoc with the groundnut crop. In the Sudan belt the *Acacia albida* trees are sought after, the green pods being broken open, but maize and millet crops come in for their share of robbery. The parrots move from one spot to another according to season and to the ripening of fruits and grain. From the extreme north there is certainly a movement south in the driest part of the year.

In northern Nigeria—and this doubtless applies everywhere north of the forest—the Senegal Parrot is to be found almost anywhere where there are large trees, but it prefers the more open forest to the kurimis and is usually more numerous where baobabs, shea-butter and locust-bean trees are found, in the holes of which it lays its two white eggs, usually far out of human reach. Nesting takes place towards the end of the rains. Nestlings can easily be reared, as I have proved, on a diet of chewed-up groundnuts.

Distribution and Races. The three subspecies with their range and characters are as follows:

1. *Poicephalus senegalus senegalus* (Linnæus) has the sides, flanks and under tail-coverts canary yellow, centre of belly orange. It ranges from Senegal to Portuguese Guinea and the Casamance border north to the Inundation Zone of the Niger in French Sudan.

2. *Poicephalus senegalus versteri* Finsch has the under side scarlet from breast to vent, only the sides yellow. This race occurs in the savanna belt of the Ivory Coast and Gold Coast and in the savanna of Nigeria but not in the extreme northern provinces of the latter, where we find:

3. *Poicephalus senegalus mesotypus* Reichenow, similar to the last, but paler above and with belly orange. Extends from Sokoto to northern Adamawa.

BROWN PARROT

Poicephalus meyeri meyeri (Cretschmar)

THE Brown Parrot has been separated into numerous races in Africa, one of which just comes within our limits in the Shari region. It is a distinctive species, with the head and neck brown, the former with a broad band of canary yellow across the middle; the mantle, back, scapulars and wings are brown strongly washed with olive, the rump and upper tail-coverts bluish veridian, the breast is brown, and the rest of the under parts pale grass-green. The thighs are yellow, and there is a large yellow patch on each shoulder. It is a parrot which cannot be mistaken for any other. In flight the yellow under wing-coverts can be seen. The eye is red, the bill, legs

and feet are blackish. The bill measures 19–24 mm., wing 140–158 mm., tail 65–75 mm., tarsus 15–17 mm.

A wary parrot, not easy to approach; little bands may be seen going about in the thorn-bush and wooded savanna, where they are locally distributed much as the Senegal Parrot. It is a very noisy bird which shares much the same habits as others of its family, feeding on the fruit of trees and raiding native grain-fields.

Its round white eggs are laid in the holes in trees. Two measure 27 × 24 mm.

Distribution. Extends from Eritrea and the Egyptian Sudan to French Equatorial Africa west to the Lagone River to north-eastern Cameroon and the environs of Lake Chad.

LONG-TAILED PARRAKEET

Psittacula krameri krameri (Scopoli)

(see Plate 27, facing page 528)

A SLENDERLY built parrakeet, entirely yellowish green in colour, including the head, wings and tail. The male has a black throat and an ill-defined rose-coloured collar and bluish nape. The under parts are like the back. The most striking feature is the very strongly graduated tail of very narrow feathers, the middle pair 150–280 mm. long, green in colour and strongly washed with blue. The under side of the tail appears yellow when seen from below. The adult female is entirely green and lacks the rose collar, blue nape and black gorget of the male. Both sexes have reddish bills and olive-green feet. When the tail is spread the inner webs of all but the central pair of rectrices are seen to be yellow, the outer webs green. Wing measurements are 140–162 mm.

In total length this parrakeet varies according to the length of the tail, 15 in. being a fair average. Owing to the long tail, it is easily distinguished from all other members of the parrot family in West Africa. Its flight is extremely rapid, and as it flies it utters its noisy scream and constantly fans its tail.

The Long-tailed Parrakeet has much the same range as the Senegal Parrot and is widely spread in the Northern Territories in the thorn-scrub savanna, frequenting especially the areas where large trees flourish on the edge of farmland and in scattered bush.

It nests in holes in trees, using natural ones where these are available or excavating a new one, always very high up. White eggs to the number of four are laid in Africa; in India and Ceylon the same species lays six eggs occasionally.

Bush fruit and grain constitute most of its diet, and it can no doubt do a lot of harm to crops and fig-trees. As a cage bird it is most unsatisfactory and almost impossible to tame.

Distribution. The typical race of this parrakeet ranges across the whole dry belt of Africa from Senegal to the White Nile, other races taking its place to the east and in India. Within our limits it is found from Senegal to a little north of the equatorial forest belt and is common but somewhat local in the Northern Territories of all British Colonies except Sierra Leone, where it is absent, the dry belt not reaching to the northern boundaries. In the Gold Coast it extends to the sea coast on the dry Accra plains. In Nigeria it is rare south of lat. 10° N. It is locally distributed in the French Sudan and during the rains ranges far into the Sahel, but along the course of the Upper Niger and on the southern borders of the Sahara it is absent.

RED-HEADED LOVEBIRD

Agapornis pullaria guineensis (Von Müller)

THE diminutive size of this small member of the parrot family, together with the striking rose-red face, bright green plumage and wings and bright blue rump of the male, enable it to be recognised at sight. The tail when closed appears green with a black subterminal band, but when spread all but the middle pair have red centres followed by a broad band of jet black, the base of the feathers being yellow and the tips green. The result is extremely decorative, contrasting with the bright blue rump. The female differs in having the forehead yellow or yellowish pink, the throat much yellower and the pink on each side paler. The most important difference is to be found in the under wing-coverts, which are black in the male and green in the female; the wing-lining too, is much blacker in the male. The bill is orange-red, the legs and feet are greyish green. The bill measures 13–15 mm., wing 87–97 mm., tail 34–42 mm., tarsus 9–11 mm.

This is a bird of the savanna country, and it will be found especially where tall grass grows, whether in open country or in clearings in the forest. It is not an inhabitant of closed forest but penetrates its borders in search of the grass seeds upon which it mainly thrives.

It is a gregarious species and may often be seen in flocks up to twenty individuals. As it flies it utters a squeaky cry. There are few prettier sights than a little flock busily engaged in feeding, clinging to the grass stems at all angles, when it shows off its colouring to perfection. In trees it is less easy to discern. Many will roost on the same bough, huddling close together just as they are wont to do in captivity. It feeds largely on the seeds of *Sorghum halepense* and favours districts where *Selerocarya birroca* is abundant.

and feet are blackish. The bill measures 19–24 mm., wing 140–158 mm., tail 65–75 mm., tarsus 15–17 mm.

A wary parrot, not easy to approach; little bands may be seen going about in the thorn-bush and wooded savanna, where they are locally distributed much as the Senegal Parrot. It is a very noisy bird which shares much the same habits as others of its family, feeding on the fruit of trees and raiding native grain-fields.

Its round white eggs are laid in the holes in trees. Two measure 27 × 24 mm.

Distribution. Extends from Eritrea and the Egyptian Sudan to French Equatorial Africa west to the Lagone River to north-eastern Cameroon and the environs of Lake Chad.

LONG-TAILED PARRAKEET

Psittacula krameri krameri (Scopoli)

(see Plate 27, facing page 528)

A SLENDERLY built parrakeet, entirely yellowish green in colour, including the head, wings and tail. The male has a black throat and an ill-defined rose-coloured collar and bluish nape. The under parts are like the back. The most striking feature is the very strongly graduated tail of very narrow feathers, the middle pair 150–280 mm. long, green in colour and strongly washed with blue. The under side of the tail appears yellow when seen from below. The adult female is entirely green and lacks the rose collar, blue nape and black gorget of the male. Both sexes have reddish bills and olive-green feet. When the tail is spread the inner webs of all but the central pair of rectrices are seen to be yellow, the outer webs green. Wing measurements are 140–162 mm.

In total length this parrakeet varies according to the length of the tail, 15 in. being a fair average. Owing to the long tail, it is easily distinguished from all other members of the parrot family in West Africa. Its flight is extremely rapid, and as it flies it utters its noisy scream and constantly fans its tail.

The Long-tailed Parrakeet has much the same range as the Senegal Parrot and is widely spread in the Northern Territories in the thorn-scrub savanna, frequenting especially the areas where large trees flourish on the edge of farmland and in scattered bush.

It nests in holes in trees, using natural ones where these are available or excavating a new one, always very high up. White eggs to the number of four are laid in Africa; in India and Ceylon the same species lays six eggs occasionally.

Bush fruit and grain constitute most of its diet, and it can no doubt do a lot of harm to crops and fig-trees. As a cage bird it is most unsatisfactory and almost impossible to tame.

Distribution. The typical race of this parrakeet ranges across the whole dry belt of Africa from Senegal to the White Nile, other races taking its place to the east and in India. Within our limits it is found from Senegal to a little north of the equatorial forest belt and is common but somewhat local in the Northern Territories of all British Colonies except Sierra Leone, where it is absent, the dry belt not reaching to the northern boundaries. In the Gold Coast it extends to the sea coast on the dry Accra plains. In Nigeria it is rare south of lat. 10° N. It is locally distributed in the French Sudan and during the rains ranges far into the Sahel, but along the course of the Upper Niger and on the southern borders of the Sahara it is absent.

RED-HEADED LOVEBIRD

Agapornis pullaria guineensis (Von Müller)

The diminutive size of this small member of the parrot family, together with the striking rose-red face, bright green plumage and wings and bright blue rump of the male, enable it to be recognised at sight. The tail when closed appears green with a black subterminal band, but when spread all but the middle pair have red centres followed by a broad band of jet black, the base of the feathers being yellow and the tips green. The result is extremely decorative, contrasting with the bright blue rump. The female differs in having the forehead yellow or yellowish pink, the throat much yellower and the pink on each side paler. The most important difference is to be found in the under wing-coverts, which are black in the male and green in the female; the wing-lining too, is much blacker in the male. The bill is orange-red, the legs and feet are greyish green. The bill measures 13–15 mm., wing 87–97 mm., tail 34–42 mm., tarsus 9–11 mm.

This is a bird of the savanna country, and it will be found especially where tall grass grows, whether in open country or in clearings in the forest. It is not an inhabitant of closed forest but penetrates its borders in search of the grass seeds upon which it mainly thrives.

It is a gregarious species and may often be seen in flocks up to twenty individuals. As it flies it utters a squeaky cry. There are few prettier sights than a little flock busily engaged in feeding, clinging to the grass stems at all angles, when it shows off its colouring to perfection. In trees it is less easy to discern. Many will roost on the same bough, huddling close together just as they are wont to do in captivity. It feeds largely on the seeds of *Sorghum halepense* and favours districts where *Selerocarya birroca* is abundant.

The nest hole is excavated in the side of a mud nest of a species of termite which breeds in trees, the ants proving a great protection to the birds, which they do not molest. Two or three white eggs are laid, possibly more, measuring 20 × 16 mm.

Distribution. The West African race of this lovebird ranges from Futa Jalon and Sierra Leone through the savanna grasslands to northern Angola and is also found on Fernando Po, Principe and São Thomé islands. Its place is taken in the south-western Sudan, Abyssinia, Uganda, eastern Belgian Congo and north-western Tanganyika by the typical bird. Everywhere local in West Africa its numbers have greatly diminished within the last century, and in the vicinity of settlements it is increasingly scarce. Most of the records are from south of the West African forest belt.

BLACK-COLLARED LOVEBIRD

Agapornis swinderniana (Kuhl)

Two races of the Black-collared Lovebird are found in West Africa. The present species and the Red-headed Lovebird are the same size, about 5½ in. in total length. In colour it is mainly green, of a darker shade than the last. The entire head is bright green, the mantle, back and wings are darker; a black collar bordered below with chrome-yellow in the typical subspecies and with orange-red in the other extends across the back of the neck. The rump and upper tail-coverts are bright purplish blue, the tail is dark green terminally, red basally, with a black band separating the two colours. The under parts and under wing-coverts are green, the quill-lining is blackish, and the throat is washed with yellow. Bill and feet are grey. The bill measures 13–14 mm., wing 87–90 mm., tail 32–35 mm., tarsus 11 mm.

This is not a bird of the tall grass as is the last species discussed, but is truly arboreal, spending its life in the upper branches of the tall forest trees, from which it seldom departs. Only rarely does it come near the ground. It obtains much of its food on the climbing figs which grow upon large trees, often at the edges of clearings, but will occasionally visit fields of rice and sesame.

Its flight is rapid and as it moves in little bands of ten to fifteen their twittering notes remind one of crossbills as they pass overhead. Figs are greedily devoured, but insects, caterpillars and beetle larvae are also eaten and no doubt other fruits in season. The feeding habits of this and the Red-headed Lovebird are entirely dissimilar.

The nest has never been found. Owing to its habitat in the forest canopy it is difficult to decide how rare it really is. Few naturalists have collected specimens or even seen it. The Upper Guinea race

may occur beyond the Liberian borders, but it still remains to be discovered elsewhere.

Distribution and Races

1. *Agapornis swinderniana swinderniana* (Kuhl), known only from the forests of Liberia. The black collar is bordered below with chrome-yellow.

2. *Agapornis swinderniana zenkeri* Reichenow inhabits the forests and gallery forests of western and southern Cameroon and the Belgian Congo east to the Ituri and Semliki valley and south to the edge of the forest belt. Its main distinction is in having the feathers immediately below the black neck-band orange-red instead of chrome-yellow. The bill measures 12–14 mm., wing 90–96 mm., tail 30–36 mm., tarsus 10–11 mm.

ORDER STRIGIFORMES

FAMILY STRIGIDAE

Key to the Owls

1. Tarsus practically bare of feathers; soles of feet furnished with tiny spiny spicules (like foot of osprey) 2
   Tarsus feathered either completely or at any rate (as in Barn Owls) half-way down tarsus; soles of feet with horny or scaly pads rough to the touch, but without any spiny spicules present 3
2. Upper surface of body barred .. .. *Scotopelia peli*, p. 548
   Upper surface of body vermiculated *Scotopelia bouvieri*, p. 550
   Upper surface of body uniform, neither barred nor vermiculated .. .. .. *Scotopelia ussheri*, p. 549
3. Tarsus not feathered to base of toes, feathers gradually thinning out on lower part of tarsus; facial disc very well developed and reaching far above eyes; inner edge of middle toe pectinated. See separate key to the *Tytonidae* (Barn Owls) .. .. p. 528
   Forepart of tarsus* feathered to base of toes; facial disc less complete and conspicuous than in Barn Owls (*Tyto*) and not reaching so high above eye; inner edge of middle toe not pectinated 4

* Hind part of tarsus also feathered except in one species, i.e. *Otus leucopsis*, which I have been unable to examine but which is said by Salvadori to have the posterior portion of tarsus bare of feathers.

4. Size small (wing under 8 in. (203 mm.) in length) .. 5
   Size larger (wing over 9 in. (228 mm.) in length) .. 16
5. Mantle and breast barred .. *Glaucidium sjöstedti*, p. 541
   Mantle and breast not barred 6
6. Wing over 170 mm., broad black patch on each side of face; ear-tufts (horns) very long and conspiuous
   Ptilopsis leucotis leucotis, p. 536
   Wing under 170 mm., no black patch on side of face; ear-tufts (horns) either absent or short and inconspicuous 7
7. Tail ornamented with round white spots 8
   Tail barred or vermiculated but without any round white spots 11
8. Tail with three large round white spots on inner web of each feather 9
   Tail with about six small white spots on each web .. 10
9. Flanks spotted with black *Glaucidium tephronotum pycrafti*, p. 540
   Flanks streaked with brown and rufous
   Glaucidium tephronotum tephronotum, p. 540
10. Crown and back thickly spotted with white
   Glaucidium perlatum (adult), p. 538
   Crown and back uniform brown not spotted with white
   Glaucidium perlatum (immature), p. 538
11. Feathers of legs spotted, streaked or freckled; upper and under parts with black shaft-streaks 12
   Feathers of legs unicoloured without spots, streaks or freckles; upper and under parts without black shaft-streaks 13
12. 1st (outermost) primary between 5th and 6th in length, sometimes equal to 5th; size larger (wing 150–166 mm.)
   Otus scops scops, p. 533
   1st (outermost) primary between 6th and 7th in length; size smaller (wing 120–138 mm.)
   Otus senegalensis senegalensis, p. 534
   Otus senegalensis feae, p. 535
13. Ground colour of under parts white streaked and smeared with brown; leg-feathers uniform white or cream-colour .. .. *Carine noctua solitudinis*, p. 538
   Ground colour of under parts sandy rufous or cinnamon-brown; leg-feathers orange, rufous or cinnamon-brown 14
14. Triple set of bands on head and neck; flanks barred; posterior part of tarsus bare .. .. *Otus leucopsis*, p. 535

No bands on head and neck; flanks not barred; posterior part of tarsus feathered like front 15

15. Greater coverts with conspicuous white spots on outer web; under parts cinnamon-brown with conspicuous black shaft-streaks joining white spots
Otus icterorhyncha icterorhyncha, p. **535**

No white spots on outer web of greater coverts; under parts bright cinnamon-rufous, black shaft-streaks joining white spots minute and hardly visible
Otus icterorhyncha holerythra, p. **536**

16. Horns or ear-tufts absent; under parts heavily banded chocolate-brown and white *Strix woodfordii nuchalis*, p. **532**

Horns or ear-tufts present; under parts not banded chocolate-brown and white 17

17. Size very large (wing over 340 mm.) 18

Size smaller (wing under 340 mm.) 19

18. General colour isabelline sand-colour mottled with blackish and white .. *Bubo ascalaphus desertorum*, p. **542**

General colour grey-brown; under parts white vermiculated and narrowly barred with brown *Bubo lacteus*, p. **544**

General colour blackish brown above; whole under side broadly banded black and white .. *Bubo shelleyi*, p. **545**

19. Feathers of legs uniform, not streaked, barred or speckled 20

Feathers of legs streaked, barred or speckled 21

20. Upper parts cream or buff, heavily streaked with dark brown .. .. .. *Asio flammeus flammeus*, p. **531**

Upper parts uniform, mud-brown or umber brown freckled with buff .. *Asio capensis tingitanus*, p. **531**

21 Entire feathers of head greatly elongated to form mane; under parts with conspicuous dark chestnut shaft-streaks .. .. *Jubula lettii*, p. **537**

Feathers of head not elongated to form mane; under parts not streaked 22

22. Under parts white blotched with dark brown
Bubo leucostictus, p. **546**

Under parts not white blotched with dark brown .. 23

23. Entire upper parts and wings orange-tawny banded with black .. .. .. *Bubo poensis poensis*, p. **547**

Upper parts brown varying from rufous to dark brown, closely vermiculated with black, white, buff and various shades of brown, no bars or bands on upper surface .. .. .. *Bubo africanus cinerascens*, p. **543**

FAMILY TYTONIDAE

Separate key to the Barn Owls

1. Head unspotted, rest of upper parts with very few minute white specks, general colour of upper parts dark sooty brown .. .. .. *Tyto capensis*, p. 529
   Head and upper parts freely spotted or flecked with white; general colour of upper parts light grey or dark blackish grey on orange-buff or rufous ground .. 2
2. Under parts white or pale golden buff with small dark spots .. .. *Tyto alba affinis*, p. 528
   Under parts deep rufous or rufous buff, with numerous twin spots of black and buff 3
3. Erect feathers of facial disc white, faced with rufous hair-like bristles .. .. .. *Tyto alba thomensis*, p. 529
   Erect feathers of facial disc entirely dirty chestnut colour, faced with some blackish bristles *Tyto alba detorta*, p. 529

AFRICAN BARN OWL

Tyto alba affinis Blyth

SIMILAR in appearance to the European Barn Owl, but darker. The upper side is dark orange-buff, including the crown; the face is white and breast golden buff to whitish, spotted with blackish arrow-head markings. The tail is orange-buff crossed with four blackish bars. The ruff is glistening white, the bill whitish, the tarsus scantily feathered; the feet are brown. The bill measures 30–34 mm., wing 260–295 mm., tail 95–122 mm., tarsus 53–67 mm.

The call-note is a long-drawn eerie screech. This night-flying bird spends the daylight hours in seclusion hidden from view in hollow giant trees or among boulders in outcrops of rock, caves and such-like secluded spots. It comes out to hunt at dusk, preying upon all manner of small creatures.

Although not numerous anywhere, it is widespread and may be seen in varied country, forest clearings, agricultural land or semi-desert, where it lives in the rocky bluffs. It breeds in a variety of situations, sometimes appropriating a disused bungalow, or more likely the large nests of other birds. Eggs may also be laid in caves or in hollow trees. Four or five dull white eggs are laid. Six taken in West Africa measure 39–40·4 × 31–31·3 mm.



LONG-TAILED PARRAKEET
Psittacula krameri krameri

BROWN-NECKED PARROT
Poicephalus robustus fuscicollis ♀

SCARLET-BELLIED SENEGAL PARROT
Poicephalus senegalus versteri

YELLOW-BELLIED SENEGAL PARROT
Poicephalus senegalus senegalus

Distribution and Races. The African Barn Owl has an enormous range in tropical Africa south to Cape Province and is found in West Africa from Gambia, Sierra Leone and the French Sudan (Inundation Zone) to Lake Chad, the Banso mountains of Cameroon



and southern Nigeria (Benin and Owerri)—that is to say, from the coast to the borders of the Sahara (Timbuktu and Tawa). It is absent from the southern Cameroon and equatorial Congo forests.

Two other races are found in islands off the coast: *T. alba detorta* Hartert in the Cape Verde archipelago, and *T. alba thomensis* Hartlaub in São Thomé, Gulf of Guinea. Both are very dark in coloration but differ from one another in size and the spotting on the breast. In addition *T. a. poënsis* (Fraser) has been named from Fernando Po.

GRASS OWL

Tyto capensis (Smith)

VERY similar in size, general appearance and colour pattern (but not in colour) to the Barn Owl. In the tone of its plumage it is a much darker bird, the upper parts being very dark brown with minute white specks, the under parts ochraceous buff with small

dark spots not very thickly sprinkled over the plumage. The face is white, the bill whitish and the eye almost black. The legs are exceptionally long and but sparsely feathered on the lower part of the tarsus. The wing measures 283–345 mm., the tarsus 77–83 mm. When I wrote the third volume of my larger work the Grass Owl



had never been obtained in West Africa north of the Congo River, but I suggested that it might well be found at some future date in the grasslands of northern Cameroon. In point of fact it has turned up on Manenguba Mountain in the British Cameroon highlands at an altitude of 6,500 ft. and has been described as a new subspecies.

Distribution and Races

1. *Tyto capensis capensis* (A. Smith), a South African species which ranges to the grass country of the Lower Congo.

2. *Tyto capensis cameroonensis* Serle, which is darker above and purer white below than any known example from elsewhere, has the spots on the under surface smaller and sparser and the lower border of the facial ruff pure white without dark tips. This race was discovered on the grass and bracken-covered hillside of the Manenguba Mountain (6,500 ft.), British Cameroon.

FAMILY STRIGIDAE

SUB-FAMILY STRINGINAE

SHORT-EARED OWL

Asio flammeus flammeus (Pontoppidan)

This fine owl is well known in Europe and is about the size of the Barn Owl, buff or pale rufous above streaked with dark brown. It may be distinguished by the short ear-tufts. The under parts vary individually from cream to deep buff, and the breast feathers are prominently streaked with dark brown shaft-streaks. The thighs, under tail-coverts and legs are unmarked cream or buff, the legs and toes feathered. A point to observe is the intensity of the black feathers surrounding the eye. The bill is horn-coloured, the eye yellow. The bill measures 29–31 mm., wing 298–317 mm., tail 130–143 mm.

Distribution. Widely distributed in Europe and Asia, this owl migrates in large numbers in winter to Africa but does not extend south of the Equator. It is much more commonly found in the Sudan, Abyssinia and Somaliland than in West Africa, where it is recorded from Gambia and Lake Chad but is probably more widely spread. It is a bird of the open grasslands and marshy areas, and rests on the ground and not in trees.

ALGERIAN MARSH OWL

Asio capensis tingitanus (Loche)

This Marsh Owl may be distinguished from the Short-eared Owl, which it closely resembles in size (being 13–14 in. in the flesh), by the uniform earth-brown colour of the plumage slightly vermiculated but without the conspicuous dark streaks. The pale buff feathers on the legs are, however, in sharp contrast. The ear-tufts are more often visible. In flight both these owls have barred wings, but the Marsh Owl appears a darker bird throughout, without the pale blotches on the coverts of the Short-eared Owl. Both occur in the same type of habitat. The eye of the Marsh Owl is said to be umber or blue-black; the bill is black and feet are dark greenish grey. The bill measures 30–34 mm., wing 283–312 mm., tail 131–153 mm., tarsus 57–70 mm.

This is evidently a fairly numerous bird in suitable localities and, as its name implies, may be sought wherever there is marshy ground. It appears to be resident in West Africa and not a visitor from North

Africa, as I once supposed. In British Cameroons it ascends to 7,000 ft.

It may be flushed from long grass on boggy ground, when it will circle round close to the ground uttering a grunting noise, and is sometimes seen quartering flooded rice-fields. The black ring round the eye is then very conspicuous. Once it has resettled it is almost impossible to flush a second time. It probably breeds in the early spring months, making its nest in the long grass, but its eggs have not yet been taken within our limits. A bird shot at the end of June in Nigeria was not in breeding condition.

Distribution. Resident in northern Africa and southern Spain and apparently also in the French Sudan in the Inundation Zone and in swampy areas in northern Nigeria. It is recorded from Lake Chad and Sokoto and the Jos Division of the Plateau Province, as well as from the Cameroon highlands, Bamenda Division.

WEST AFRICAN WOOD OWL

Strix woodfordii nuchalis (Sharpe)

The Wood Owl of West Africa is impossible to confuse with any other species owing to its very distinctive coloration and pattern.



Dark chocolate above with a few large white spots on the scapulars parallel with the wing, a chocolate face and breast, the latter with conspicuous white bars; the rest of the under parts, the ground colour of which is paler than the breast, is also barred white and chocolate, the white bars being much broader than those on the breast. A yellow bill, yellow feet and dark brown eye complete the colour scheme. The bill measures 28–33 mm., wing 235–273 mm., tail 123–145 mm., tarsus 42–55 mm.

This is a woodland and forest bird and is probably the commonest owl in the Upper Guinea forest region, as it certainly is in southern Cameroon, where it occurs around the native villages, attracted by the mice which frequent the waste ground of cleared spaces. It devours a great number of insects, particularly beetles,

as well as small rodents, cockroaches and grasshoppers. The cry of this owl is either a single loud and rather high-pitched hoot or a lower *hu-hu, t'hu-u, t'hu.* The two cries are dissimilar and believed to be uttered by the male and female respectively.

The egg is laid in the hole of a tree deep in the forest, sometimes as much as 100 ft. above ground, and the nest is consequently seldom discovered. One found near Kumasi in February contained one egg only, and as never more than one young one is seen the bird probably lays but one egg. Another single egg taken in Cameroon measured 45 × 39·5 mm. In the North Belgian Congo the breeding season lasts from November to April.

Distribution. A number of races of this owl have been described from the forests of Africa south to Cape Province. The West African subspecies ranges from Sierra Leone to Angola and across the equatorial forest to Uganda. As already observed, it is the most widely spread and numerous of the forest owls, but it does not leave the shade of the forest and in more open country is found only in the denser patches of woodland. It will ascend forested mountains, as on Mt. Manenguba, British Cameroons, to 6,500 ft.

EUROPEAN SCOPS OWL

Otus scops scops (Linnæus)

In outward appearance this owl is almost indistinguishable from the African Scops Owl and unless handled cannot possibly be recognised. In plumage it is usually paler and in size relatively larger—the bill measures 16–19 mm., wing 150–166 mm., tail 60–74 mm., tarsus 27–30 mm. Structurally the first primary usually falls between the fifth and sixth, but sometimes equals the fifth. In *O. senegalensis* the first primary falls between the sixth and seventh.

To what extent this visitor from Europe reaches West Africa it is difficult to say. It certainly crosses the Sahara on its migrations and has been taken in the Bilma oasis and at Timbuktu. Like the next species to be described, it is more likely to be found in the thorn-scrub belt and acacia country than elsewhere. It resembles the Senegal Scops Owl in its mode of life.

Distribution. Resident in southern Europe and northern Africa. The typical subspecies of the Mediterranean region migrates in winter to reach the northern edge of the Congo forest, Uganda and Kenya but has only been recognised twice within our limits. It has not been found beyond the fringe of the Sahara and is unlikely to reach Upper Guinea except casually.

AFRICAN SCOPS OWL

Otus senegalensis senegalensis (Swainson)

THIS owl has two phases of colouring; in one the general plumage is grey, in the other grey strongly washed with rufous; all the feathers have dark shaft-stripes and are finely vermiculated with brown. The feathers of the nape, mantle and scapulars are ornamented with white patches. The crown is similarly coloured with heavy black middles to the feathers, and the ear-coverts are elongated to form short ear-tufts. On each side of the neck is a collar of silky white feathers banded with sepia. The grey tail, vermiculated with buff and black, is crossed by four or five whitish-buff bands with irregular blackish borders. The under parts resemble the back but the black streaks are heavier and white patches more prominent, and the whole is closely vermiculated white, brown and rufous. The eye is sulphur-yellow, the feet are dirty grey. The bill measures 16–19 mm., wing 123–138 mm., tail 57–64 mm., tarsus 21–26 mm. The distinctions between this and the European Scops Owl are given under the latter species.



In brief, the African Scops Owl, which is resident in our area, may be recognised by its small size (7–8 in. in length), grey or rufous-brown plumage relieved with black, two or three white spots on the coverts and patterned brown and white wings caused by the whitish patches along the margins of the flight feathers. The small

ear-tufts and finely streaked under parts serve to distinguish it from the commoner Pearl-spotted Owlet.

This is an entirely nocturnal species which is commonly found in the thorn scrub and open savanna country, spending the days in the cover of acacias and similar woodland or in dense thickets. Showing little fear, it will habitually seek refuge in the rafters of houses or in gardens of bungalows. It preys mainly on insects. The male utters a low liquid whistle which the female answers in a lower tone.

The African Scops Owl breeds in spring, April and May, laying its two to four white eggs in holes of limbs of large trees, acacias often being chosen for the purpose. Eggs measure 31–33·5 × 25·5–26·2 mm.

Distribution and Races

The African Scops Owl, *O. s. senegalensis*, ranges from Senegal across the Sudanese arid belt and south to the Congo but avoids the lowland forest area of West Africa and does not occur in mountain forests. Not yet recorded from Sierra Leone, it is found in the Northern Territories of all other British Colonies.

Numerous races have been described from Africa, but the only other which comes within our limits is a darker island form, *Otus senagalensis feae* (Salvadori), restricted to the island of Annobon in the Gulf of Guinea.

The Scops Owl which is restricted to the island of São Thomé, *Otus leucopsis* (Hartlaub), is not considered a subspecies of *O. senegalensis*. It is described in the third volume of my larger work on p. 21 and is the only Scops Owl on the island.

SANDY SCOPS OWL

Otus icterorhyncha (Shelley)

Two races of this owl occur in West Africa. A small owl (7–8 in. in length) of a warm ruddy-brown colour, spotted above and below with buff and with white spots on the outer scapulars. The facial disc is uniform brown, and short "ears" are visible when erected. The wing-feathers are barred black and brown with conspicuous large white spots on the greater coverts. The breast is brown with minute white spots, more rufous brown on the rest of the under parts, the diamond-shaped white spots larger. The feathers on the legs are uniform rufous brown. The bill measures 19–20 mm., wing 126–134 mm., tail 65–72 mm., tarsus about 22 mm.

Distribution and Races. The Sandy Scops Owl has been found only in the Gold Coast and is evidently extremely rarely seen. Certainly it is a nocturnal forest bird which visits clearings in search of its prey. Even the locality where the "type" was collected is unspecified, for it

bears only "Fanti" on the label. Another was secured sixty miles west of Kumasi and recently a bird believed to be this species was seen, also in the Kumasi area. Although so rarely recorded, it is quite likely to occur in any part of the forests of Upper Guinea and is unlikely to be restricted to the small area where it has been found so far.

In the forests of Lower Guinea from southern Cameroon to the Congo and across the equatorial forest of the Belgian Congo to the Ituri another subspecies, *Otus icterorhyncha holerythra* Sharpe, is found. It differs from the Gold Coast race in being much more chestnut above and bright cinnamon-rufous below, with black shaft-streaks less pronounced on the breast. Its colloquial name is the Cinnamon Scops Owl. A forest dweller entirely, nothing is known about its life-history, and the same applies to the typical subspecies in the Gold Coast.

WHITE-FACED OWL

Ptilopsis leucotis leucotis (Temminck)

(see Plate 28, facing page 545)

THIS is a much larger owl than the Scops Owls we have already dealt with, measuring about 11 in. from bill to tail. It is very distinctly marked, the face being white bordered with two black bands, while the ears, which are tipped with black, are long and conspicuous features when erect. The general colour is a mixture of sandy brown and grey with narrow black streaks on the back and breast, and narrowly barred brown wings. A bright yellow eye (when adult), pale bill and white-stockinged legs should prevent its confusion with any other species. The bill measures 25–28 mm., wing 180–202 mm., tail 78–96 mm., tarsus 37–42 mm.

This nocturnal owl is chiefly a bird of the semi-arid belt, extending into the savanna. It shuns the forest but is a common bird in the bush-covered plains and is often attracted to a grass fire in company with many other insect- and rodent-eating birds. Sometimes it may be flushed from grasslands such as the islands on Lake Chad, where it is by no means uncommon. The call of the male is a two-syllabled *cuk-coo* or *cu-hoo*, the second lower and pigeon-like. The cry of the female is a more subdued raspy screech.

Eggs of this owl have been found in open stick nests made by the owls in the fork of some tree, but often the birds will appropriate the nests of other birds and there are numerous instances of its having done so. Once a turtle-dove's nest was found in the Gold Coast to contain two eggs of the White-faced Owl. A hollow in a tree is probably the most favoured site chosen. Eggs are usually two

in number, white with hardly any gloss, and rather round in shape. Measurements are 36·6–38 × 30·3–32 mm.

Distribution. Two races of this owl are found in Africa, only one of which, the typical subspecies, comes within our limits, ranging as it does from Senegal and Liberia across the French and British Sudan south to northern Kenya and the savannas of the Belgian Congo. In West Africa it is universally distributed except in the forested area. It is found in all our Colonies and occurs from the coastal districts to the far interior, even reaching Aïr in the central Sahara. In British Cameroon it has been found on Manenguba Mountain at 5,000 ft.

South of the Congo forest its place is taken by *P. leucotis granti.*

MANED OWL

Jubula lettii Büttikofer

In size this rare owl may be likened to the European Long-eared Owl. Measured in the flesh, an adult is just over 12 in. in total length and has a wing expanse of close upon 32 in. It has a yellow eye and yellow bill and pale yellow feet, the legs being feathered. Adults vary somewhat in plumage but are always rufous. The soft feathers of the back and scapulars are cinnamon-rufous with whitish tips and faint brownish subterminal bars; the head is paler, but two prominent ear-tufts are white and rufous. The under parts are rufous buff and are streaked, sometimes with dark chestnut, sometimes with black, but the general rufous effect is maintained. The tail is chestnut barred with black; the primaries and secondaries are chestnut with cloudy frecklings and broad diagonal bars. The bill measures 27–30 mm., wing 250–275 mm., tail 152–166 mm., tarsus 34–41 mm. The inner lining of the wing is pale rufous buff heavily barred with black.



This owl was discovered by Lett in the forest country of Liberia, and though it has turned up in far-distant localities in West Africa and the Belgian Congo, it is never found outside the forest, gallery forest or forest clearings. Its food is apparently mainly insectivorous, but vegetable matter resembling squashed green peas has also been

found in the stomach. Nothing has been discovered about its breeding habits.

Distribution. Of wide though very local distribution, the Maned Owl has been found in Liberia in the Kwepsi country, in the Gold Coast in a gallery forest at Ejura, in the Cameroon Mountain district at Bipindi and Victoria, and in southern Cameroon in the River Ja district and at Assobam. In Rio Muni and Rio Benito and through the Upper Congo forest to the Uelle and Ituri it ranges south to the Kasai.

AÏR LITTLE OWL

Carine noctua solitudinis (Hartert)

THIS is the only representative of the Little Owl which comes within our limits. The ground colour of the upper parts is rufous cinnamon, the head spotted with white, the mantle with large white spots and the rest of the upper side covered with obscure white blotches or round spots. The tail is barred brown and white tinged with rufous; the under parts of the body are white streaked and smeared with brown. The eye is pale lemon, the bill whitish grey-green; the feet are grey. The type measures: Bill 19 mm., wing 153 mm., tail 72 mm., tarsus 31 mm. When it flies its white-spotted wings are most conspicuous, but once settled on the ground it is almost impossible to see.

The Little Owl is a bird of stony desert country and may often be seen in the daytime sitting on boulders or on walls of desert wells. It breeds in wells, under heaps of stones, in trees or in banks, and is not particular about the site.

Distribution. Little Owls are found in many countries of Europe, Asia and Africa, but are especially familiar in rocky desert country. The race here described is supposed to be restricted to the arid mountainous country in the central Sahara around the Aïr Massif, but is barely distinct from the Little Owl of the Red Sea Province and Eritrea, *Carine noctua spilogastra* (Heuglin).

PEARL-SPOTTED OWLET

Glaucidium perlatum (Vieillot)

A SMALL squat-looking owl about 8 in. in length, mud-brown in colour, the upper parts are covered with small white spots, and an ill-defined light collar separates the head from the mantle. The under parts are white streaked and smeared heavily with brown; a white eye-stripe is prominent and the eye is yellow. The bill is pale

ochre and the feet are drab-colour. The bill measures 15–16 mm., wing 105–115 mm., tail 64–78 mm., tarsus 22–26 mm.

The usual call is a series of flute-like *pee-uh's* ascending and descending in scale. In flight, which is noiseless, the wings are rapidly beaten, and the bird seldom flies far, preferring to hop behind a branch or pop into its hole. It is extremely hard to locate among the leaves of trees, but it will occasionally perch on bare branches even in the daylight, when it can easily be recognised. Small birds detest it and constantly mob it, which seems to disturb the owlet very little. The bird is to be found almost anywhere where there are leafy trees throughout the savanna belt but is more often to be seen north of the forest, which it shuns, in the thorn scrub. It is not found towards the desert beyond the limit of tree growth.



The Pearl-spotted Owlet breeds in the holes of trees ten or more feet from the ground, in which it lays three or four white eggs which measure 30·5–32 × 23·7–26·5 mm.

Distribution. From Senegal, the Sudan and Abyssinia south to the Transvaal and Orange River. It is found locally in West Africa in Gambia, Portuguese and French Guinea east through the Northern Territories of our Colonies throughout the savanna and thorn scrub to Nigeria and in the French Sudan not north of lat. 15° N.

YELLOW-LEGGED OWLET

Glaucidium tephronotum Sharpe

Two races of this owlet come within our limits. That from the Gold Coast is one of the rarest owls and until 1934, when a specimen was obtained at Mampong, Ashanti, was known only from the type with unknown locality. It is a very small owlet, its total length being about 6¾ in. The head and mantle are slate, separated by a necklace of white spots; the wings are brown, the back is brownish, and the tail is black with very large white spots. The under parts are white, the sides are chestnut, the breast is marked with brown and chestnut, and the belly with drop-shaped streaks of sepia. The eye is yellow and made remarkable by the eyelids, the upper yellow, the lower dark green. The bill is greenish yellow and the feet are orange; the feathers on the legs are buff. The two known examples measure: Bill 12 mm., wing (both) 105 mm., tail 63–67 mm., tarsus 20–21 mm. Long black bristles ornament the facial disc.



Nothing whatever is known about this owlet, which is apparently a forest-frequenting species.

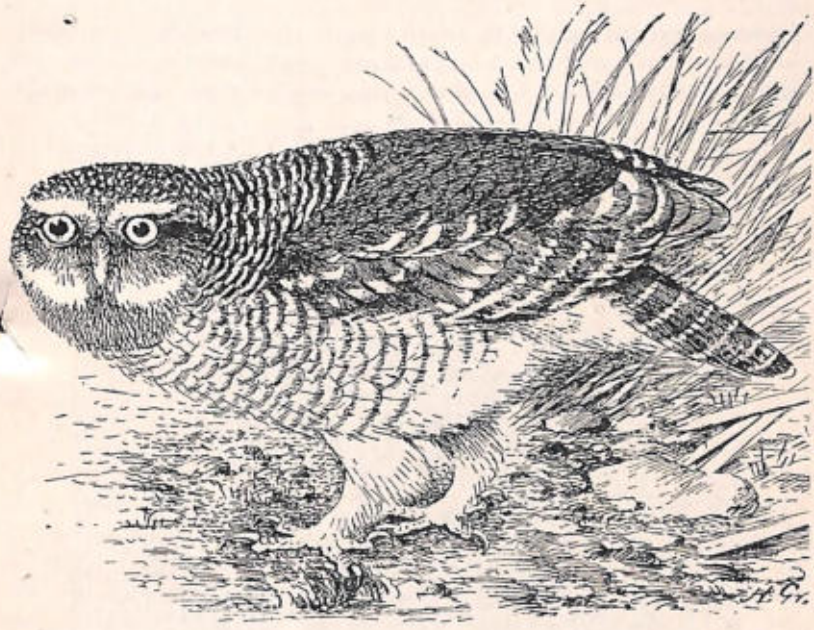
Distribution and Races. Represented in Lower Guinea by another race, *Glaucidium tephronotum pycrafti* Bates, of which we know equally little, which differs from the Gold Coast bird in having the head and mantle chocolate brown, the sides less chestnut and the spots on the under parts blackish. The wing measures 104–109 mm. It is restricted to the forests of southern Cameroon.

Three additional races, *G. t. medje* Chapin from the north-eastern Congo, *G. t. lukolelae* Chapin from the Middle Congo, and *G. t. elgonense* Granvik from the forests of Mount Elgon, extend the range of the species right across Africa.

SJÖSTEDT'S BARRED OWLET

Glaucidium sjöstedti Reichenow

THIS owlet is larger than those we have dealt with so far and measures 11 in. from bill to tail. The head, mantle, flight-feathers and tail are greyish black, barred narrowly with white; the rest of the upper surface is deep chestnut; the under parts are buff with



narrow brown bars. The large eyes are golden and the barred ear-tufts when erected are noticeably longer than the surrounding feathers. Should the bird raise its wings it will be seen to have creamy-buff under wing-coverts. The eye is bright yellow, and the bill and feet are pale yellow. The bill measures 20–22 mm., wing 152–167 mm., tail 80–93 mm., tarsus 26–30 mm.

The Barred Owlet is another forest owl which is not particularly rare in a somewhat restricted area. It keeps to the depths of the forest and avoids villages, preferring perhaps the damper spots where the vine-palm flourishes. It feeds on mice, small snakes, nestling birds, crabs, spiders, grasshoppers and beetles.

A female found on its nest low down in a hollow tree in the forest was sitting on one pure white egg which measured 34 × 28 mm.

The month was August, but I have examined a fully fledged nestling taken on 27th January.

Distribution. From the forests at the base of Cameroon Mountain, south to the forests of southern Cameroon at least to the Ja River and the French Congo.

DESERT EAGLE-OWL

Bubo ascalaphus desertorum Erlanger

A VERY large owl, about 20 in. in length, with prominent ear-tufts which are 2 in. long when erect and are noticeable at a considerable distance. The facial disc is white with a dark border; the rest of the



plumage is pale yellowish-sand colour, marbled on the upper parts with white, and spotted, particularly on the crown and scapulars, with brown. The chest is white, the rest of the under parts white or palest buff barred with narrow wavy brown lines; some feathers on the sides of the breast are streaked with brown. The very large eyes

are golden yellow, the bill is greenish black, and the toes are whitish. The bill measures 37–40 mm., wing 334–360 mm., tail 203–205 mm. tarsus 72–80 mm.

The Desert Eagle-Owl lives in isolated pairs in rocky hills and massifs, spending the day in caverns at the entrance of which a pair may sometimes be seen sunning themselves. If disturbed the birds will settle in the desert, and are then unapproachable. All manner of small rodents such as jerboas and gundies are preyed upon as well as numerous insects, bats and small birds.

Eggs are laid in caverns in the hills and are deposited in a hollow without any nest. Three or four is the normal clutch, the white eggs measuring 53–56·5 × 42–42·5 mm.

Distribution. Only found in true desert, the pale race which inhabits the Sahara ranges from Arabia and the Syrian desert across the Sahara to Timbuktu and south to Aïr and Damergu. Its headquarters are the rocky piles in the desert, where it can find caves in which to breed and from which it can scour the arid plains in search of its prey, creatures as large as a desert hare or fox being captured.

SPOTTED EAGLE-OWL

Bubo africanus cinerascens Guérin

RATHER smaller than the last species discussed, the Spotted Eagle-Owl measures in the flesh about 7 in. from bill to tail. Its plumage is a mixture of brown and grey-brown spotted with white, especially on the mantle. Two erectile tufts are very prominent. The under parts are whitish, finely barred and sometimes blotched or smeared with brown. Dark bars are noticeable on the under side of the tail, less distinctly above. The eye is dark brown, the bill is black, and the toes are grey. The bill measures 37–39 mm., wing 295–325 mm., tail 147–178 mm., tarsus 62–73 mm. A rufous phase occurs in this species which has no connection with the bird's sex or the locality in which it is found.

This widely spread owl occurs in most types of bush but is generally met with in fairly open country. It has been found also in the forest clearings but not in the heavy forest. Large trees such as baobabs or a tumbled mass of rocks are favourite haunts, and steep bush-clad ravines are equally frequented. The bird is not shy like the Desert Owl and can usually be easily approached.

It feeds by night on all manner of small creatures, and lizards, beetles and grasshoppers also feature in its diet. Its note is a short low hoot: *huha huha hoo hoo*, by which it often announces its presence.

It nests sometimes in hollow trees such as the mahogany, or again, on the ground under the shelter of a rock on the broken side of a kopje, no nesting materials being used. The two white eggs measure 49–50·4 × 39–39·9 mm. The breeding season is March to May in Nigeria and the Gold Coast.

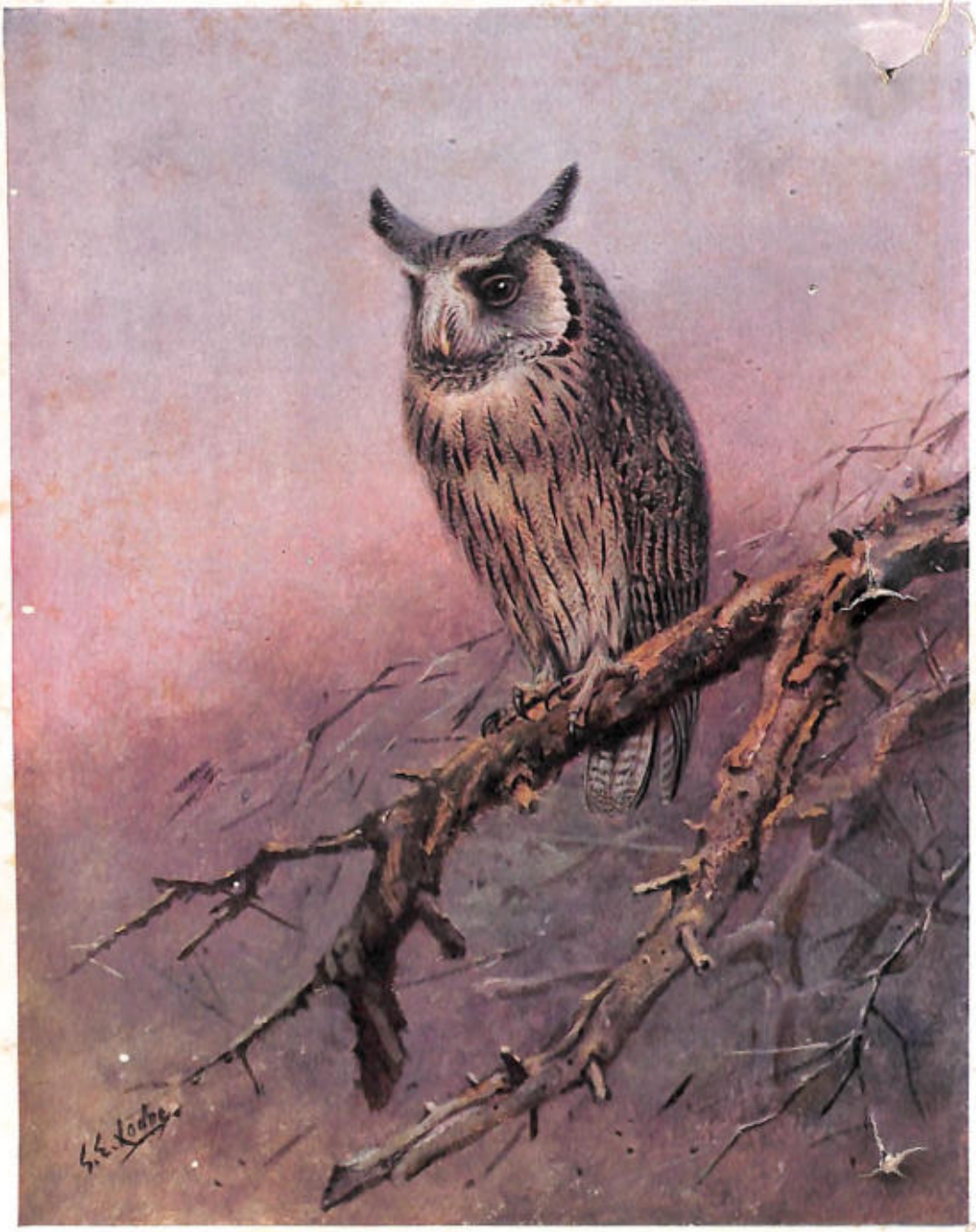


Distribution. The race which is found in West Africa ranges from French Guinea and Abyssinia to the savannas of the northern Belgian Congo and is widely distributed in Upper Guinea. We find it near the sea at Freetown and in the French Sudan to the limit of tree growth in the Mopti-Fiko area. In the Gold Coast and Nigeria it is the commonest of the eagle-owls, especially so in the northern and central provinces of Nigeria. To the north of that country it has occurred at Zinder, and in northern Cameroons it has been taken at Mora and Tibati. It is also the commonest owl in the Uelle savannas.

MILKY EAGLE-OWL

Bubo lacteus (Temminck)

One of the largest of the eagle-owls, the present species measures 22–24 in. from bill to tail. Its colour of grey-brown above, freckled brown and white below, is not distinctive, but its large size and pale bill should distinguish it from the commoner Spotted Eagle-Owl. The facial ruff is tipped with black, thus the black surround to the pale cheeks is a prominent feature, and the large ear-tufts when erect are notable. In flight the banded under side of the wing is a



WHITE-FACED OWL
Otus leucotis leucotis

good field character. The eye is hazel, the bill is whitish horn, and the feet are pale. The bill measures 49–59 mm., wing (male) 412–440 mm., (female) 445–475 mm., tail (male) 205–230 mm., (female) 225–255 mm., tarsus 69–88 mm. The females are considerably larger than the males in all their proportions.

The Milky Eagle-Owl must be sought in the more heavily wooded parts of the semi-arid region, its distribution depending largely on the timber growth. Rain forest it shuns. The call is peculiar: *hu hu, hu-hu-hu-hu-hu, ho ho*, the first low, the others rising in scale to a high pitch.



This owl will often utilise the nests of the vulture, kite or eagle in which to lay its two white eggs (sometimes only one). Occasionally it will make a platform of sticks itself, or again, lay in the hollow of a tree. Eggs vary, measuring 54–60·5 × 44–50 mm. A night-feeding bird, it will spend the daylight hours in the hollow of a large tree or close against the trunk of some shady tree such as a fan-palm.

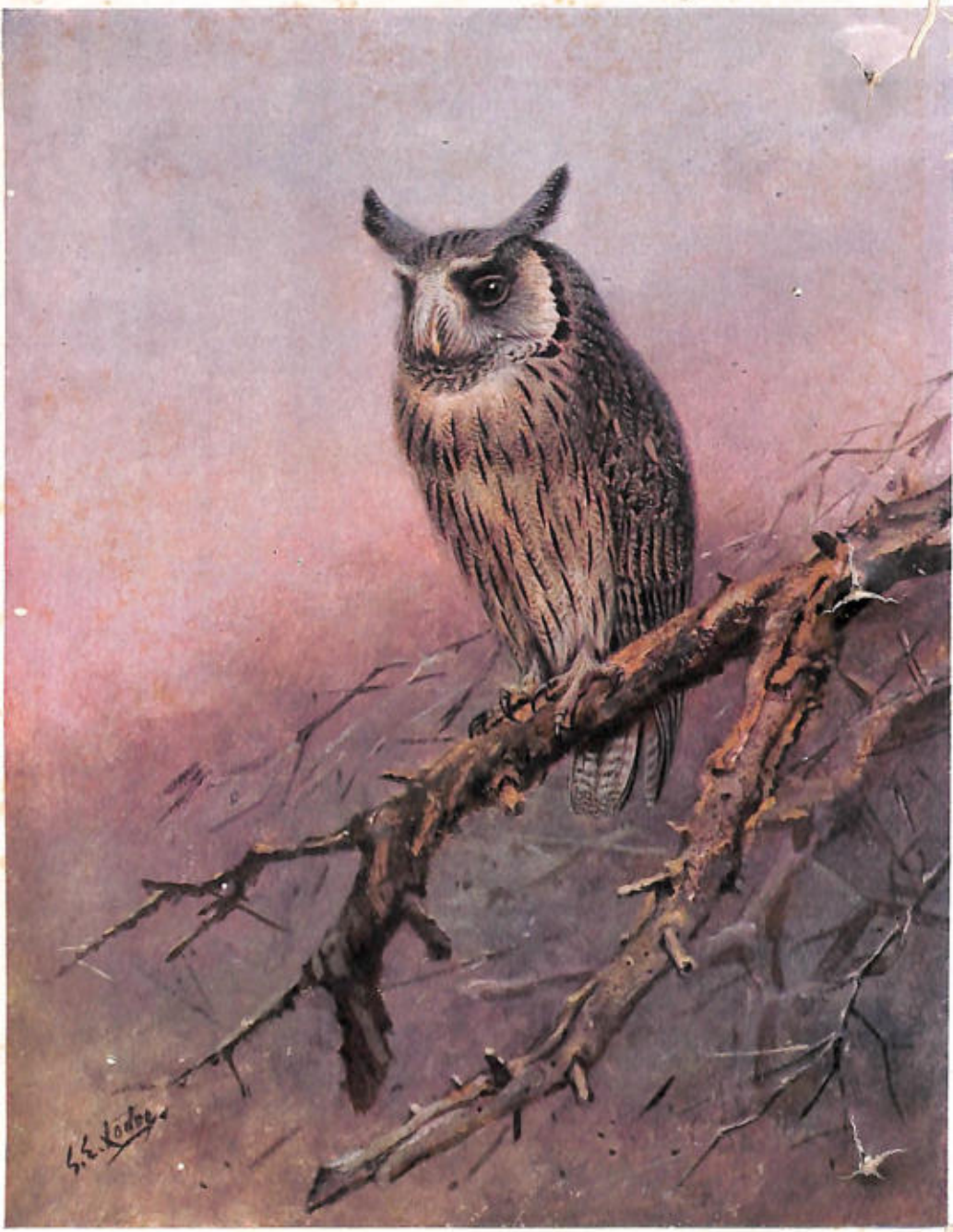
It does not appear to be a common bird anywhere, but the status of these night-flying birds is not easy to gauge.

Distribution. Within our limits this owl, whose range extends from Senegal and Ethiopia to Cape Province, has been recorded from Senegal, Gambia, Portuguese Guinea (all dry countries clothed in bush), French Guinea, the Northern Territories of the Gold Coast (Kwobia) and northern Nigeria (5 miles from Minna, Niger Province, and near Gadau, Bauchi Province).

SHELLEY'S BANDED EAGLE-OWL

Bubo shelleyi Sharpe and Ussher

A VERY large owl with a finely barred face partly surrounded with a black margin, dark eye and pale bill. Blackish brown above (often with barred feathers giving it a patchy appearance), Shelley's Eagle-Owl is readily distinguished by its heavily barred black and white under parts, including the feathered legs. Apart from its great size (about 24 in. from bill to tail), it should be impossible to confuse it



WHITE-FACED OWL
Otus leucotis leucotis

good field character. The eye is hazel, the bill is whitish horn, and the feet are pale. The bill measures 49–59 mm., wing (male) 412–440 mm., (female) 445–475 mm., tail (male) 205–230 mm., (female) 225–255 mm., tarsus 69–88 mm. The females are considerably larger than the males in all their proportions.

The Milky Eagle-Owl must be sought in the more heavily wooded parts of the semi-arid region, its distribution depending largely on the timber growth. Rain forest it shuns. The call is peculiar: *hu hu, hu-hu-hu-hu-hu, ho ho*, the first low, the others rising in scale to a high pitch.



This owl will often utilise the nests of the vulture, kite or eagle in which to lay its two white eggs (sometimes only one). Occasionally it will make a platform of sticks itself, or again, lay in the hollow of a tree. Eggs vary, measuring 54–60·5 × 44–50 mm. A night-feeding bird, it will spend the daylight hours in the hollow of a large tree or close against the trunk of some shady tree such as a fan-palm.

It does not appear to be a common bird anywhere, but the status of these night-flying birds is not easy to gauge.

Distribution. Within our limits this owl, whose range extends from Senegal and Ethiopia to Cape Province, has been recorded from Senegal, Gambia, Portuguese Guinea (all dry countries clothed in bush), French Guinea, the Northern Territories of the Gold Coast (Kwobia) and northern Nigeria (5 miles from Minna, Niger Province, and near Gadau, Bauchi Province).

SHELLEY'S BANDED EAGLE-OWL

Bubo shelleyi Sharpe and Ussher

A VERY large owl with a finely barred face partly surrounded with a black margin, dark eye and pale bill. Blackish brown above (often with barred feathers giving it a patchy appearance), Shelley's Eagle-Owl is readily distinguished by its heavily barred black and white under parts, including the feathered legs. Apart from its great size (about 24 in. from bill to tail), it should be impossible to confuse it

with any other member of its family. Moreover it is an inhabitant of the tropical forest and therefore runs no danger of being mistaken for the Milky Eagle-Owl, which is the only other species (an inhabitant of open woodland) to compare with it in size save the Fishing-Owl. This last, with its bare, unfeathered legs and barred bright sandy rufous plumage, is saved from confusion by its distinctive plumage and watery habitat. The eye is dark, the bill greyish white. The measurements are as follows: Bill 56–58 mm., wing 430–450 mm., tail 233–242 mm., tarsus 71–81 mm.



Shelley's Owl is restricted to the tropical forest, and in consequence few naturalists have ever seen it. It is evidently rare but may occur anywhere where patches of the primeval forest remain.

Distribution. Specimens of this owl have been obtained in Liberia from the vicinity of Monrovia (probably before the forest was destroyed), from the Gold Coast, where it has been collected at Denkera, and from southern Cameroon in the neighbourhood of the Ja River. Recently feathers which unquestionably belong to this owl were obtained from a native headdress in the Ituri district of the Belgian Congo, thus extending its range across the Congo forest.

AKUN EAGLE-OWL

Bubo leucostictus Hartlaub

This is one of the smaller eagle-owls, measuring about 18 in. in length, which is remarkable for its weak bill and feet in comparison with others of the same group. Its general colour is very dark brown—almost blackish in some examples—with faint barring and vermiculations in a paler shade. The under parts show a great deal of white, with large brown blotches on the lower breast, the upper part of the breast being mostly brown. The ear-tufts are particularly noticeable, as the inner border is white, the rest blackish. The tail is alternately barred dark and pale brown—about seven bars of

each colour. The eye is light yellow, the bill is greenish yellow and the feet are dull yellow. As in most of the eagle-owls, the facial disc exhibits a black streak at the side. The bill measures 31–38 mm., wing 290–335 mm., tail 178–205 mm., tarsus 42–45 mm.



A forest owl which feeds almost entirely upon orthoptera, which it catches on the wing, cockroaches being much favoured. The remains of rodents have never been found in its stomach. The day is spent high up in the branches of heavily leaved trees such as the silk-cotton. Its eggs have never been taken.

Distribution. Nowhere numerous, but known to range from Sierra Leone (Mano on the Taia River and Daru on the Moa River) through the forests of Liberia to the Gold Coast (Denkera, Dabocrom, Mampong and Ejura) and Nigeria (Iju, near Lagos) through the southern Cameroon forest to Gaboon and the Lower Congo, extending across the Congo forest to the Ituri forest. Despite this wide distribution it has only been collected in a few localities, always in heavy forest.

FRASER'S EAGLE-OWL

Bubo poensis poensis Fraser

THIS is another of the smaller eagle-owls, being 17–18½ in. in length. Its general colour is rufous or orange-tawny; in some examples the scapulars are almost golden buff. The upper parts and the wings are closely but narrowly banded with black, the feathers with dusky or blackish tips. The ear-tufts are large, black terminally, with the bases rufous. The under parts are much paler than the back, the belly and thighs being almost white but likewise narrowly banded with sepia and washed with rufous. The legs are

barred to the base of the toes. The eye is dark, almost black; the bill and toes are greyish white. The bill measures 38–42 mm., wing 276–321 mm., tail 133–155 mm., tarsus 49–55 mm.



This forest-haunting owl spends its days hiding in leafy trees, where its presence is given away by the small birds which come to serenade it. Its prey is the normal prey of the larger eagle-owls, rodents and locusts, tree hyraxes and squirrels, large orthoptera, small birds and frogs—a varied menu which can be varied still more.

The normal call of this owl has not been described, but if alarmed it has been heard to make a startling noise like the crack of a carter's whip. Its nest has never been found.

Distribution. The forests of the Gold Coast, ranging north to Kumasi. It has been found at Mampong, Goaso, Cape Coast and several other localities, but not yet recorded from between the Volta and Niger Rivers. Further east it has been taken at Victoria and Bonny, whence we find it in the Cameroon Montane forest, ranging south to Gaboon and east to the Ubangi and the Ituri districts of the Congo. It was first discovered in Fernando Po.

SUB-FAMILY KETUPINAE

PEL'S FISHING-OWL

Scotopelia peli Bonaparte

This fine owl is a large bird about 2 ft. in length with a considerable wing-spread. In colour it is entirely rufous bay, barred on the body, wings and tail with black. The under parts are more fulvous and appear to be more spotted than barred. The most noticeable feature about this and the other fishing-owls is the bare, unfeathered talons, the toes and tarsus being covered with scales very rough to the touch. The feet and claws are powerful, while the under surface of the foot is spiny, resembling the foot of an osprey. The eye is dark brown, the bill dark horn, the tarsus dirty white; the toes are pale yellow. The bill measures 54–57 mm., wing 395–440 mm., tail 216–236 mm., tarsus 68–73 mm.



RED-TIPPED CRESTED TOURACO
Turacus verreauxi

It would be difficult to find three birds concerning which we know less about their habits than the three fishing-owls of West Africa. Fish this species certainly does capture, but in what manner has never been recorded, and whether it varies its diet by capturing



rats and squirrels, as has been suggested, requires further proof, although it would certainly be capable of the feat.

It has been found along the larger rivers in forested countries but seems to occur equally, or perhaps more commonly, in savanna areas where the streams are fringed with trees. Evidently it spends the day in retreat, hunting for its food at night. The only sound it has been known to utter is a single deep and resonant *hmmm*.

The nest has never been found in West Africa, but in Southern Rhodesia four white eggs believed to belong to this owl were found in a large stick nest like an eagle's, in a high tree along a river bank. The eggs measured 54 × 44 mm.

Distribution. Widely distributed from Senegal and Eritrea south to Cape Province. Recorded from most forested and savanna countries within our limits south to the Coanza River in Angola and found sparingly in all British Colonies. It occurs in the Great Congo forest and along the gallery forests of Ubangi-Shari and the northern Belgian Congo.

USSHER'S RUFOUS FISHING-OWL

Scotopelia ussheri Sharpe

This bird is smaller than Pel's Fishing-Owl and probably measures about 20 in. from bill to tail. It may be distinguished by the bright rufous colour (reddish chestnut) of the upper parts, which are neither barred (as in Pel's Fishing-Owl) nor vermiculated (as in

Bouvier's Fishing-Owl). It will be remembered that the larger Pel's Owl has spots on the under surface; the under parts of Ussher's Fishing-Owl are cream washed with rufous and rufous tips to the feathers. The wings and tail are pale rufous with black cross-bands viewed from both above and below. As with all fishing-owls, the



naked tarsus distinguishes it from all the other members of the order with feathered legs. The eye is yellow, the bill and cere are yellow, the former being tipped with black; the legs and feet are yellowish. The bill measures 40–45·5 mm., wing 330–335 mm., tail 166–178 mm., tarsus 66–67 mm.

This very rare species is only known from three adult specimens and one young bird. It was discovered at Denkera in the interior of Fanti, and nothing is known concerning its mode of life.

Distribution. The localities where this bird has been collected—Denkera in the Gold Coast, Gallilee Mountain in Liberia and Kumrabai-Mamila in Sierra Leone—may give some indication of the habitat of this fishing-owl, which is sure to be found in the vicinity of streams with forested banks. It must be much more widely spread than these three specimens indicate.

VERMICULATED FISHING-OWL

Scotopelia bouvieri Sharpe

SIMILAR in size to the Rufous Fishing-Owl, i.e. about 20 in. in length, it may be distinguished by the whole upper parts being sandy rufous closely vermiculated with brown, the colouring being more grey-brown than rufous. The wings and tail are barred blackish and

pale brown and the under parts whitish, the latter being strikingly streaked with black, heavily on the breast. The eye is dark, almost black, the bill yellow with tip and edges blackish; the legs and feet are yellow. The bill measures 33–42 mm., wing 302–320 mm., tail 167–190 mm., tarsus 60–63 mm.

The weakness of the foot of this fishing-owl in comparison with that of *S. peli* is very striking and points to a somewhat different food supply. In fact, examination of stomach contents has proved this owl to eat small fishes, prawns and small birds.

It does not occur in the unbroken lowland forest of the Congo but only along its edges and in gallery forests, so we may conclude that it lives in a similar habitat in Upper Guinea as it does in the forested area of Lower Guinea. The note is described as *hu* repeated a dozen times in quick succession, or a protracted wavering hoot. The nesting habits are unknown.

Distribution. Chiefly confined to the forested country of southern Cameroon and through the Upper Uelle district of the Belgian Congo, it ranges south to the Loango Coast. Its occurrence in Upper Guinea rests on two specimens, one obtained in Liberia on the Junk River, the other hundreds of miles to the east at Okitipupa, southern Nigeria. It may therefore be expected to occur anywhere in the intervening country.

ORDER MUSOPHAGIFORMES

FAMILY MUSOPHAGIDAE

Key to the genera of the Musophagidae

1. With red in primaries 2
   With no red in primaries 4
2. Large frontal shield present .. .. *Musophaga*, p. **557**
   No frontal shield present 3
3. Nostrils round and hidden by feathers; crest green or white; upper parts mainly blue or purple *Turacus*, p. **552**
   Nostrils slit-shaped and plainly visible; crest red; upper parts shining green .. .. .. *Proturacus*, p. **556**
4. Size large (wing over 11½ in.); crest plumed, upper parts cerulean blue .. .. *Corythaeola*, p. **559**
   Size smaller (wing under 11 in.); crest lanceolate; upper parts grey or grey edged with brown .. .. *Crinifer*, p. **561**

Key to the species of adult Touracos and Plantain-Eaters in West Africa

1. Without any red in primaries 2
   With red in primaries 4
2. General colour above verditer or peacock blue, breast green, crest black .. .. *Corytheola cristata*, p. 559
   General colour above grey; head and breast dark brown 3
3. Broad white band across middle tail-feathers; belly plain whitish .. .. *Crinifer zonurus*, p. 562
   No white band across tail; belly conspicuously striped *Crinifer piscator piscator*, p. 561
4. Bill very large, extending on to forehead in form of shield or small casque 5
   Bill smaller, not extending on to forehead in form of shield 6
5. Crimson feathers on crown very short; white streak extending behind base of eye .. *Musophaga violacea*, p. 557
   Crimson feathers on crown lengthened into short crest; no white streak behind eye *Musophaga rossae* and subsp., p. 559
6. Upper parts glossy violet 7
   Upper parts not glossy violet 9
7. Crest and cheeks white .. .. *Turacus leucolophus*, p. 556
   Crest and cheeks not white 8
8. Crest tipped with white .. *Turacus schuetti schuetti*, p. 553
   Crest not tipped with white *Turacus persa* and subsp., p. 552
9. Crest red 10
   Crest not red 11
10. Crest tipped with white .. .. *Turacus erythrolophus*, p. 555
    Crest not tipped with white .. *Proturacus bannermani*, p. 556
11. Crest tipped with red .. .. *Turacus verreauxi*, p. 554
    Crest tipped with black and white *Turacus macrorhynchus*, p. 554

GOLD COAST TOURACO

Turacus persa (Linnæus)

THERE are three races of *T. persa* in West Africa whose range and distinctions will be given hereafter. The typical subspecies ranges from the Ivory Coast to British Cameroons and is a strikingly coloured bird of the forests. Its body is about the size of a domestic pigeon, which it resembles in its compact figure. Its total length, including a long tail, is 16–17 in. The head, crest and breast are green; the back and tail are glossy violet, and the belly is black. When the bird opens its wings the wonderful crimson flight feathers

are displayed. All three races have a black mark under the eye and a white patch in front of it, the typical subspecies having the white stripe below the eye prolonged backwards towards the nape. The bill is brownish red, the eye is brown and the eyelids are scarlet. Legs and feet are black. The bill measures 22–27 mm., wing 172–182 mm., tail 180–200 mm., tarsus 38–44 mm.

In the forest trees the touraco may be seen running along the branches like a squirrel, constantly raising and depressing its crest (which in this species is not tipped with black or red) and fanning its broad tail. It glides rather than flies from one tree to another and in all its movements is peculiarly graceful. The noise which these birds make is considerable, one bird uttering a loud *qua-qua-qua*, which continually becomes more rapid as it is repeated, to be answered by all the touracos in the neighbourhood.

This is a bird of the forests, of the small and large forest clearings, the gallery forests and the savanna where the trees are not too far apart, as in the thicker kurimis. As a rule it keeps to the tree-tops, where it finds the fruits and seeds upon which it subsists. At certain times of the year it may be observed in parties, but usually two or three are seen together, moving from tree to tree in short flights or hopping from bough to bough. It comes to the ground in search of water, of which it is very fond.

The nest is roughly constructed of sticks. Two eggs only are laid, creamy white without gloss. Eggs of the Cameroon race measure 34·5–37 × 32–34·5 mm.

Distribution and Races. *T. persa persa* ranges from the Ivory Coast to Cameroon Mountain; *T. persa buffoni* Shelley from Gambia to western Liberia, in which the black patch below the eye is broader and the white stripe below it almost imperceptible (wing 163–188 mm.). *T. persa zenkeri* Reichenow ranges from French Cameroon to northern Angola and differs from *T. p. persa* in having the white stripe below the eye reduced to a narrow line and not prolonged backwards (wing 173–183 mm.). Rather fuller distinctions are given in my larger work, but those set out above should suffice to enable the three races of *T. persa* to be distinguished with the help of the text figures.

Another species, the Black-billed Touraco (*Turacus schuetti schuetti* (Cabanis)), barely comes within our limits and may be dismissed briefly. It resembles *T. persa persa* in general colouring, the chief distinction being in the crest, which in the Black-billed Touraco is much shorter, more rounded and tipped with white; the tail, too, is more purplish blue and the eye is crimson. This bird inhabits the gallery forests of the Lower Congo and Upper Congo and the Aruwimi River. It ranges south to northern Angola, the species being represented by other forms in East Africa.

BLACK-TIPPED CRESTED TOURACO

Turacus macrorhynchus (Fraser)

WHEN in the hand this touraco can be distinguished easily from the last (*T. persa*) by having the crest tipped with black and white and the plumage being glossy blue instead of violet, but such distinctions are not of much value in the field. Better field characters are the larger beak, which is yellow, and the obviously shorter crest. As this bird is figured in colour, further description is unnecessary. In size it resembles *T. persa*, being about 17 in. in the flesh, with an expanse of 20½ in. The bill measures 25 mm., wing 161–183 mm., tail 173–201 mm., tarsus 36–38 mm.

In the high forest of Sierra Leone Peninsula these Crested Touracos are especially numerous, their deep caws making the forest ring with their cries. They are more strictly confined to high forest trees than is *T. persa* and never wander far into the secondary forest on the edge of the reserves.

Playful birds, they frequently chase each other through the tree-tops, flapping their wings, when they exhibit the lovely crimson of their primaries. They drink out of holes in trees and feed on berries, fruits and shoots. During the noonday heat several will huddle together on a branch and sleep.

The nest of this bird has not been found but is likely to resemble the nest of the next bird discussed.

Distribution. Ranges from Sierra Leone to the Gold Coast. In the former it is very common in the Peninsula at York Pass but is not so numerous in the forest reserves of the Protectorate. It seems to be less common in the Gold Coast forests of Ashanti. Many have been recorded from Liberia, where it is obviously plentifully distributed.

RED-TIPPED CRESTED TOURACO

Turacus verreauxi Schlegel

(see Plate 29, facing page 548)

IN size and general appearance this touraco resembles the Black-tipped Crested Touraco, but the crest is tipped with red with a narrow subterminal band of black; the white streak below the eye is broader, and those parts which in *T. macrorhynchus* are deep violet-blue are in *T. verreauxi* strongly washed with green; the tail especially is much greener. The "soft parts" are alike in both species. The bill measures 24–26 mm., wing 155–178 mm., tail 160–187 mm., tarsus 35–43 mm.

The crimson flight feathers are, of course, the same as in all the members of the genus. The touraco with a black tip to the crest, with which this species has been compared, is not found in the same area, but in the same forests of southern Nigeria, Benin and British Cameroon we find the Gold Coast Touraco (*T. persa persa*). It can be recognised by its cry, that of *T. verreauxi* being louder and harsher and almost ending in a shriek. Another note is a gruff *kŭh-k-k-kŭh* repeated rapidly.

In habits it resembles the last species and is said to be especially fond of the umbrella tree (*Musanga*). The nest is made of small dry twigs laid loosely together. One discovered in the thick top of a low tree contained two white eggs. Measurements of two clutches are 37–38 × 29–30 mm.

Distribution. This bird's range extends from the Benin Province of southern Nigeria eastwards through Cameroon, Rio Muni and Gaboon to the Congo, and it is found in the Congo forest at Stanley Pool and in the Mayombe forest. It also occurs on Fernando Po. It may, of course, be found west of the River Ologbo on the Sapele-Benin road, which is, at the time of writing, the most westerly locality from which it has been obtained on the mainland.

RED-CRESTED TOURACO

Turacus erythrolophus (Vieillot)

This very beautiful touraco may be distinguished from all others except *Proturacus bannermani* by its blood-red top of the head with similarly coloured crest tipped with white, white cheeks, shining green wings with the crimson quills and shining blue tail; the yellow bill is likewise a notable feature, but the green breast is shared in common with many other species. The eye is brown, the rim of the eyelids is carmine, the bill is gamboge, green at base, and the legs and feet are purplish black. The wing measures 160–175 mm., tail 177–192 mm.

Distribution. Ranges from Benguella northwards to the south bank of the Lower Congo River and thus only just fringes on our limits.

WHITE-CRESTED TOURACO

Turacus leucolophus (Heuglin)

(see Plate 30, facing page 557)

THE pure white crest and neck of this touraco are very distinctive, contrasting with the dark violet forehead and sides of the face to the level of the eye. The back is glossy violet, the breast grass-green, the wings are purple and crimson and the tail is dark blue. This handsome bird has a yellow and green bill, and the skin round the eye is scarlet. The wing measures 163–185 mm., the tail 165–180 mm., and the tarsus 34–42 mm.

This is a shy bird which keeps much to the higher forest, preferring trees which are overgrown with parasitic creepers in which it can hide. The croaking call-notes are varied, but are not unlike those uttered by *Turacus persa*. Parties of four or five may sometimes be seen together.

In Nigeria, where it seems to have a restricted range, the country which it frequents is hilly; the foothills of the great plateau of the Cameroons rise from the plains of the Benue with ravines running up into the hills, the steep slopes are covered with open woodland, and there the White-crested Touraco has been found breeding.

A nest found on 18th August was 8 ft. from the ground close to the bole of a small tree and was built of intertwined dead sticks and twigs—a flimsy structure which contained two eggs. The latter, white with a faint grey tinge, measured 37·9 × 34·4 and 38·1 × 34·4 mm.

Distribution. Within our limits this touraco has been found in the Benue Province of Nigeria between Takum and Ibi and also at Lissam, lat. 7° 15′ N., long. 10° E., where it was breeding. In northern Cameroon it occurs in the Tibati-Genderu area and then ranges eastwards through the Upper Uelle River valley to northern Uganda and western Kenya, extending in East Africa northwards to the Bahr el Ghazal and Lado Enclave, but not ranging beyond lat. 10° N.

BANNERMAN'S TOURACO

Proturacus bannermani Bates

THIS is one of the most beautiful of the touracos. Its plumage is golden green; the top of the head and long crest are blood-red; the cheeks and chin are grey. The wings are golden green, with the primaries crimson tipped with black; the tail is brilliant glossy purplish blue, the central rectrices with narrow green fringes. The



WHITE-CRESTED TOURACO *Turacus leucolophus*

VIOLET PLANTAIN-EATER *Musophaga violacea*



breast is the same golden green as the back, and the ventral region is greyish black. The bill is powerful, the culmen dark red, the rest yellow; the eye is hazel. The wing measures 160–172 mm., tail 176–183 mm., tarsus 34–38 mm.



Bannerman's Touraco is placed in a distinct genus on account of the shape of the nostrils, which are slit-shaped and not round. In its plumage it is remarkably similar to the Red-crested Touraco, from which it may be distinguished, among other small differences, by the lack of the white tips to the crest feathers and by the grey, instead of white, cheeks.

In the dark woods which fill the ravines and border the crater lakes in the Banso Mountains of the Cameroons Bannerman's Touraco lives an isolated existence, often bathed in the mists which envelop the altitudes 6,000 ft. and upwards in which it has its home.

Its cry is loud and penetrating and is described as higher pitched than *T. persa*.

The nest of this bird has not yet been discovered.

Distribution. Restricted, so far as we know, to the highlands of the Cameroon Mountains. Discovered in the Banso Mountains (6,000 ft.) north of Kumbo, it has since been secured at Oku (7,000 ft.), the Bambulue Lake and Santa, and above Bamenda (6,000–8,000 ft.).

VIOLET PLANTAIN-EATER

Musophaga violacea Isert

(see Plate 30, facing page 557)

THIS magnificent bird, with a wing-span of 17 in., is larger than the touracos we have been discussing, having a decidedly longer wing and tail. It shares with the touracos the crimson wings which are so conspicuous a feature but differs from all these smaller touracos in having a huge bill which is scarlet terminally and extends far back on to the forehead to form a casque or helmet, the latter being

bright yellow. It has no crest, the dark crimson feathers on the hind crown being short and almost fur-like. Behind the eye a white streak separates the red crown from the violet-blue plumage of the neck, the whole of the rest of the plumage appearing shining dark blue in life. The black legs are mostly bare of feathers on the tarsus. The bill measures 38–46 mm., wing 192–217 mm., tail 190–210 mm. and tarsus 40–44 mm.

The favourite habitat of this bird is the fringing forest along the banks of streams, shady trees and wooded valleys, but its haunts are varied and it may be encountered in clumps of thicket or on the coastal plains, though everywhere it prefers riverside kurimis. Usually it will be seen in pairs, and in some localities, such as the Minna Division of the Niger Province in Nigeria, it is described as being abundant.

The principal food of this plantain-eater is not plantains, as one might suppose, but the berries and fruit of *Ficus* and other trees. The cries which it utters are loud, and towards evening, when a number of the birds are gathered in the vicinity, a tremendous gabbling and croaking take place.

Despite its large size and bright plumage it is very difficult to see in the foliage so long as its crimson wings remain closed. It progresses along the boughs of trees by a series of long jumps, alternating with a graceful swoop from one bough to another. When running along the branches the tail is often used as a rudder to enable it to retain a perfect balance. At times a curious gentle "cough" may be heard, which is quite unlike any note made by other birds of this group. In localities where it is found it seems to be resident, only moving from place to place as the fruit and berries upon which it lives come into season.

Nests of this plantain-eater have been found at 20–25 ft. from the ground—fragile stick platforms built in not very high leafy trees, so transparent and flimsy that the two white eggs tinged with grey can be seen through the nest. Eggs measure 41·3 × 36·9 and 42·3 × 35·4 mm. They were taken in June.

Distribution. This plantain-eater ranges from Gambia to Nigeria and French Cameroon, in the latter country meeting, in the neighbourhood of Galim (sixty miles north-west of Tibati), the very similarly plumaged Adamawan Plantain-eater (*M. rossae savannicola*). It seems to be fairly generally distributed, particularly along the rivers and streams of Upper Guinea. In Nigeria, at any rate, it ranges further north than other touracos, reaching about lat. 12° 30′ N. In many parts of the coast it reaches the maritime area, as at Cape Coast, but has seldom been reported from Sierra Leone and not yet from Liberia. It is restricted to West Africa.

LADY ROSS'S VIOLET PLANTAIN-EATER

Musophaga rossae rossae Gould

Two races come within our limits. The description given of the last species, *M. violacea*, is applicable to this bird also, with the important exception that *M. rossae* has a short hair-like crimson crest. In size the bird is rather larger and the plumage more violet than blue when seen in a bright light. The yellow bill, which fades into reddish at the hind part of the shield, is about the same size in both species, but is less arched in *M. rossae*. The tail is very long and broad and the wings have the usual crimson flight feathers of the group to which it belongs. The crest is often held erect and thus gives the head a very different appearance from that of *M. violacea*, which has no crest at all. Measurements are: Bill 41–45 mm., wing 225–240 mm., tail 230–254 mm., tarsus 39–49 mm.

We know very little about this plantain-eater's life-history. It is entirely a bird of forest patches and forest borders, restricted to lowland country below 6,000 ft. and is absent from the dense Congo forest. It has an extremely loud call, which betrays its presence.

The nest found in Uganda was a shallow platform of twigs. Two white eggs are laid which have smooth shells and measure 42 × 40 mm.

Distribution. The typical race of this plantain-eater ranges from the northern border regions of the Congo forest eastwards via the Uelle district to the gallery forests of Uganda, the Bahr el Ghazal and Kenya Colony, extending south to northern Rhodesia and northern Angola. It comes within our limits in French Congo.

In the savanna country and grasslands of northern French Cameroon lives another slightly different race, *Musophaga rossae savannicola* Grote, which differs from the typical race in having a rather brighter and lighter crimson crest. It has been found at Buala, Buar, Banyo and Uam near the headwaters of the Sanga River.

GIANT OR BLUE PLANTAIN-EATER

Corythaeola cristata (Vieillot)

(see Plate 31, facing page 560)

EASILY distinguished by its large size (28–30 in. in length, of which the tail measures half the total). In the dull light in which this bird is often seen it appears greyish, but in a good light the verditer-blue plumage is easily seen, the crown surmounted by a plumed black crest. The lower part of the body shows three distinct colours: from

chin to upper breast blue like the back, the lower breast to the belly green, the belly and thighs chestnut. In flight the pale yellow three outer tail-feathers with a broad black subterminal band show conspicuously at whatever angle they are seen. The rest of the tail is verditer-blue, becoming bluish-black terminally. The Blue Plantain-eater has a crimson eye, a yellow bill with a red tip, and black legs and feet. As already noted, it is a very large bird with wing measuring 303–360 mm., tail 330–370 mm. and tarsus 45–57 mm.

This bird is commonly called "the Peacock" in West Africa and "Faisan bleu" in the Congo. It is a most conspicuous bird, characteristic of the high forest and the heavy gallery forests. Five or six generally go about together, and great is the clamour which they succeed in making. Its calls are more varied than those of the Violet Plantain-eater and are discussed at more length in my larger work: a rapidly repeated *cow-cow-cow-cow*, a rolling *coo-o-o-o-o* and a slower *kuluk, kuluk, kuluk* are the most frequently heard.

It spends its time roaming about in small parties, sometimes as many as ten together, which move in a leisurely fashion from tree to tree, running along the outer branches to search for the berries and seeds upon which it principally lives. It is not shy and can be easily approached, but it is not easy to detect in the leafy tree-tops which it loves to frequent. Its flight is easy and graceful, the bird often sailing a considerable distance without wing-beat. Umbrella-trees (*Musanga*) are special favourites of this bird, the fruit of which it greatly esteems.

Nests are usually built in large trees, sometimes at 100 ft. from the ground; dry sticks are used in its construction and two eggs are laid, light bluish green in colour. Measurements are 46·9–50 × 39·3–43·5 mm. See also *Ibis*, 1950, p. 357, for additional nesting notes.

Distribution. Widely distributed throughout the whole of the forest region of West Africa from the Casamance River eastwards through Upper Guinea, including Fernando Po, extending to the forest patches of northern Angola. Thence it extends along the gallery forests of the Ubangi-Shari, the wooded ravines of the Cameroon highlands to nearly 6,000 ft., the borders of the equatorial forest, eastwards to Mount Elgon, the Kavirondo district and the forests east of Lake Kivu. In our West African Possessions it is moderately common but somewhat local in Sierra Leone and in the Southern Provinces of Nigeria. It has decreased in the last hundred years in the Gold Coast, owing probably to the destruction of forests. It does not occur in Gambia but in British Cameroon is very abundant, from the mangroves to the limit of forest on the Mountain.



GIANT OR BLUE PLANTAIN-EATER
Corythaeola cristata

GREY PLANTAIN-EATER

Crinifer piscator piscator (Boddaert)

This is the dullest member of the family and is not at all like the other plantain-eaters which we have discussed. The general colour of the upper parts is brownish grey, and the crown is dark brown like the upper breast with an occipital crest of narrow dark feathers



with pale margins. The tail is very long (about 9½ in.) and is grey at the base, gradually becoming black; the total length of the bird is about 20 in., and its body has a slender appearance. The stumpy arched yellow bill is noticeable, but the most conspicuous feature is the large white patch in the black wings, which in flight catches the eye at a great distance. The wings measure 212–234 mm., the tail 227–245 mm., and the tarsus 38–41 mm.

The loud call note of this plantain-eater can be written as *cow-cow-cow* but without the resonant quality in the note of the Blue Plantain-eater. It is a bird of the thorn-scrub and the tree savanna belt and is fairly generally distributed from Senegal eastwards to the borders of the Congo forest. Wherever there are leafy trees this bird will be found, the open woodland and bush being preferred to the closed forest of the kurimis. It may be seen singly, in pairs, or in small parties, and when several are flying from one point to another the birds usually go in single file. It lives mainly among the tree-tops, where it seeks the fruits, berries, seeds and flowers upon which it lives.

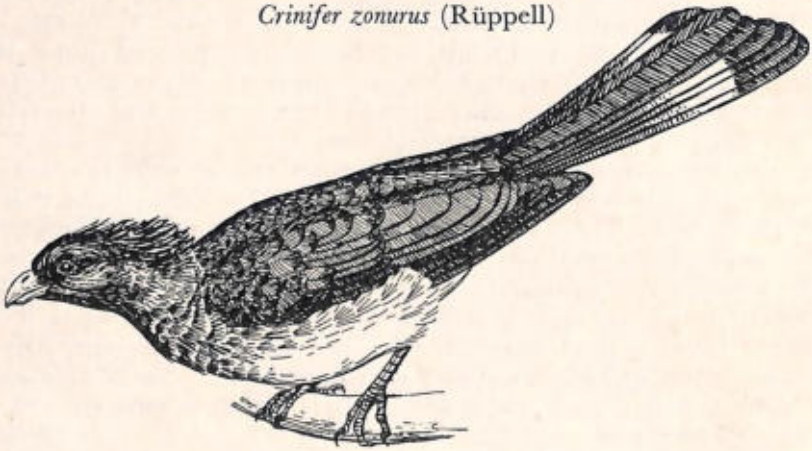
The Grey Plantain-eater is slow on the wing and appears rather clumsy, cocking its tail when landing and pitching forward awkwardly when taking off. It has a characteristic nuptial flight, when it rises vertically from the crown of some small tree, then descends in a tumbling dive, the ascent being accompanied by much clamour.

The nest is a fairly substantial platform of twigs and sticks, bulkier than the nest of *M. violacea*, and is placed in trees such as the Shea butter at a height of 20–50 ft. from the ground. Three eggs appear to be the usual clutch, greyish white and slightly glossed; some eggs have a bluish tinge. Typical measurements are 39–47 × 32–35·5 mm. The breeding season appears to be chiefly in April and May, but young have been taken in the nest in January and fresh eggs in early February.

Distribution. The savanna and semi-arid belt from Senegal to the Chad territory and the Shari, where it meets the range of the next species. It is probably rare to find it in the western part of its range north of lat. 13° N., but it is likely to be found as far north as the species of *Ficus* flourish, upon the fruits of which it feeds whenever it can do so. It does not range almost to the border of the Sahara, as I once believed, but is found in the French Sudan in the Inundation Zone. Where the Niger bends north to Timbuktu the range of the Grey Plantain-eater fades out. It is numerous in Gambia, rare in Sierra Leone, but common in the Northern Territories of the Gold Coast and Nigeria. In the Southern Provinces its distribution is naturally more restricted.

ABYSSINIAN GREY PLANTAIN-EATER

Crinifer zonurus (Rüppell)



This bird, which has only recently been discovered to come within our limits, is very like the last one described, having the same dark brown head and breast, slate-grey upper parts with brown fringes to the feathers, and long blackish wings with a large white wing-patch. Where the two species differ is on the under parts, for while

in *C. piscator* the belly is conspicuously striped with brown, in *C. zonurus* the belly is plain whitish. An even more important difference lies in the tail, for *C. piscator* has no white on the rectrices, whereas *C. zonurus* has a broad white band across all but the middle feathers which only shows when the tail is expanded. The soft parts are as follows: Bill dull green, tinted blue and yellow; legs and feet grey. The wing measures 246–260 mm., the tail 240–264 mm.

In its habits this plantain-eater resembles the last species very closely. It barely comes within our limits and has only been found to do so since 1933.

Distribution. Abyssinia and the Bahr el Ghazal south to Uganda, the eastern Belgian Congo and the western shores of Lake Tanganyika. Westwards it extends to the Chad territory about 225 km. east of Melfi and to Fort Archambault on the Shari River. The range of this and the last species practically overlap in this area.

ORDER CUCULIFORMES

FAMILY CUCULIDAE

Key to the sub-families of the family Cuculidae

1. Wing flat, not curved to fit round body; hind claw short and much curved; nesting habits parasitic
Sub-family Cuculinae, p. 563
2. Wing convex, curved to fit round body, very short in comparison with wing of *Cuculinae*; hind toe elongated and lark-like and only slightly curved (but excluding genus *Ceuthmochares*); nesting habits non-parasitic
Sub-family Centropodinae, p. 583

SUB-FAMILY CUCULINAE

Key to the species of Cuckoos which occur in West Africa

1. Size larger (wing over 5 in.), no metallic sheen on feathers of upper parts 2
Size smaller (wing under 5 in.), feathers of upper parts with strong metallic sheen 17
2. Belly or sides of body barred or mottled 3
Belly or sides of body not barred or mottled 10
3. Throat and/or upper breast uniform rufous 4
Throat and/or upper breast not uniform rufous .. 6

4. Throat grey .. .. .. *Cuculus solitarius*, p. 567
Throat rufous chestnut 5
5. Under tail-coverts heavily barred black and white
Cuculus clamosus jacksoni, p. 571
Under tail-coverts buff and almost uniform
Cuculus clamosus gabonensis, p. 571
6. Throat uniform pale grey 7
Throat not uniform pale grey 8
7. Bars on the lower breast and belly heavy, each about 3 mm. in breadth; bill black *Cuculus canorus canorus*, p. 565
Bars on lower breast and belly very narrow, not exceeding 1½ mm. in breadth; bill yellow, black at tip only
Cuculus gularis, p. 566
8. Upper parts uniform dark blue or bottle-green and very glossy; tail shorter than wing
Cuculus clamosus clamosus (immature), p. 569
Upper parts olive-brown or slaty grey, very little, if any, gloss; tail considerably longer than wing 9
9. Entire throat, breast and belly heavily barred with black; upper parts greyer .. *Cercococcyx mechowi*, p. 572
Throat and sides sparsely and more narrowly barred with blackish; middle of breast and belly unbarred; upper parts browner .. .. *Cercococcyx olivinus*, p. 571
10. Entire body plumage black glossed with blue or bottle-green; browner below 11
Entire body plumage not black glossed with blue or bottle-green 12
11. Broad white bar across primaries, head crested
Clamator serratus, p. 577
No white bar on primaries, head not crested
Cuculus clamosus clamosus, p. 569
and subspecies, p. 571
12. Throat streaked:
(*a*) heavily with black on white or buff ground
Clamator levaillantii (adult), p. 577
(*b*) indistinctly on dirty brownish ground
Clamator levaillantii (immature), p. 577
Throat not streaked 13
13. Broad white wing-bar on primaries *Clamator jacobinus*, p. 576
No white bar on primaries 14
14. Crown and short crest grey *Clamator glandarius* (adult), p. 574
Crown black or black and white 15
15. Primaries rufous chestnut
Clamator glandarius (immature), p. 574
Primaries black, with or without white tips 16

16. Upper parts uniform black *Pachycoccyx validus* (adult), p. **573**
Upper parts black, boldly spotted with white
Pachycoccyx validus (immature), p. **573**
17. Lower breast and belly bright yellow, upper parts covered with brilliant metallic green scale-like feathers
Chrysococcyx cupreus cupreus and subsp. (♂ adult), p. **579**
No yellow on breast and belly 18
18. Throat barred 19
Throat unbarred 20
19. Bars on throat and entire under surface very close and narrow, and not brilliant metallic green
Lampromorpha flavigularis (♀ adult and ♂ immature), p. **583**
Bars on under surface heavy and brilliant metallic green
Chrysococcyx cupreus cupreus and subsp. (♀ adult and ♂ immature), p. **579**
20. Throat bright yellow
Lampromorpha flavigularis (♂ adult), p. **583**
Throat washed with rufous *Lampromorpha caprius* (♀), p. **580**
Throat white 21
21. Outermost tail-feathers black spotted with white
Lampromorpha caprius (♂ adult), p. **580**
Outermost tail-feathers white with a few metallic spots or bars .. .. *Lampromorpha klaasi* (♂, ♀ adult), p. **582**

EUROPEAN CUCKOO

Cuculus canorus canorus Linnæus

The cuckoo is familiar to most Europeans and will be readily recognised in its winter quarters, though in West Africa there is the danger of confusing it with the resident Yellow-billed Cuckoo, to be described next.

C. c. canorus is about 15 in. in total length, with a long tail (about 7½ in.) and long pointed wings. Its general colour above is dull leaden grey; the wings are the same colour, but the primaries and secondaries are brown, the former heavily notched with white on the inner web. The tail is black, with four or more diamond-shaped white spots down the centre of each feather. The cheeks, neck and upper breast are grey; the rest of the under parts is white, heavily barred with blackish. The eye is bright yellow, the eyelid chrome; the bill is blackish horn, greenish at the base; the legs and feet are chrome yellow. The measurements are as follows: Bill 24–28 mm., wing 200–228 mm., tail 165–180 mm., tarsus 18–24 mm.

Young cuckoos may be distinguished by the white patch on the nape and by having the crown, throat and upper parts more or less barred and the throat washed with rufous buff.

In Africa this cuckoo is unlikely to utter its well-known *cuck-coo* note, and any cuckoo heard calling is more likely to be the Yellow-billed Cuckoo (*C. gularis*), whose cry is not exactly the same.

The status of the European bird within our limits is uncertain. It is very likely to occur more commonly than the few records would indicate, but that it does so on occasions is proved by the young cuckoo ringed at Windsor in June 1928 and recovered in French Cameroon, the story of which is related in the third volume of my larger work. Many European cuckoos spend the winter in eastern tropical Africa, arriving in Kenya and Uganda in November and leaving again in April. The majority pass south of the Equator and probably proceed south by way of the Rift Valley.

Distribution. The greater part of Europe and Asia, migrating south and east in winter, some reaching Cape Province. To West Africa it is known only as a casual winter visitor; there has been much confusion between this and the next bird discussed.

AFRICAN YELLOW-BILLED CUCKOO

Cuculus gularis Stephens

THE distinctions between this bird and the European Cuckoo are sufficiently well marked to enable the African bird to be classed as a full species, as I have already stated in volume viii of my larger work. In plumage it is sufficiently close to the European bird to make for confusion. The points of difference are as follows. *C. gularis* has the bars on the under surface much narrower; the outer tail-feathers have complete transverse bars of white, or with large spots on both webs almost, if not quite, meeting. (In *C. canorus* the tail has small white diamond-shaped spots only.) The under tail-coverts are plain or faintly barred, not decidedly barred; the bill is yellow, the upper mandible broadly tipped with black, the under mandible only narrowly. The wing measures 215–230 mm., the tail 145–165 mm.

Unless seen together (by no means an impossible event in East Africa, though less likely in the west) it is not easy to discriminate between the African and European Cuckoo in the field. The distinguishing points mentioned above are not easily seen in life unless a very close view is secured; but the call-notes are quite different, and that is the best way of identification. *C. gularis* has a soft unaccented *coo-coo*, which has been likened to the call of the hoopoe. Some naturalists have suggested that the African species

reverses the call of the European bird and cries *croo-ku*. Once learned, its note should be easily remembered.

The European Cuckoo never lays its eggs in tropical Africa, so that any juvenile cuckoos seen are sure to be natives. Their plumage is decidedly greyer than that of the young *C. canorus*.

Although the Yellow-billed Cuckoo is a native of Africa—it was described from Cape Province—and does not range north of Gambia and the Anglo-Egyptian Sudan, it is strongly migratory within those limits. In the south of our area (Cameroon, the Congo savanna and the Upper Uelle district) it arrives in the autumn and spends the winter, departing in May. Records from Upper Guinea coastal area (Sierra Leone to Nigeria) are all between October and May, whereas summer records are from Bornu (July) and Ansongo (August). African Cuckoos have been observed in March and April moving northwards in the Niger Province and in those months are reported to arrive in Gambia. There appears then to be a general movement northward for the rains, but it is difficult to correlate the movements north of the Equator with those in the south.

The food consists almost entirely of green caterpillars. It is a bird of the savanna which does not enter the closed forest.

Our lack of knowledge of its breeding habits in Africa is very strange, considering how carefully the nidification of the European bird has been studied. Foster-parents must be many, but only the scrub-robin and a drongo have been actually cited. It is likely to resemble the European bird in its parasitic habits and the manner in which it deposits its eggs in the nest of its victims.

Distribution. Restricted to Africa from the Gambia and Egyptian Sudan south to Natal and Namaqualand, but not in the forest region. Fairly generally distributed within our limits in savanna country and thorn scrub from the coast to Lake Chad and the Gambia River, exceptionally occurring as far north as between the 15th and 16th parallel. It is subject to local migratory movements within our area.

SOLITARY OR RED-CHESTED CUCKOO

Cuculus solitarius Stephens

This is a smaller cuckoo than the Yellow-billed Cuckoo (*gularis*) (12 in. from bill to tail and with considerably shorter wings and tail). In colour it is uniformly darker slate above and may be distinguished from its larger relative by the rufous-chestnut breast and by the under parts being yellowish buff (instead of white) and more heavily banded with black. Measurements are: Bill 17·5–20 mm., wing 165–177 mm., tail 124–154 mm., tarsus 18–20 mm.

Juvenile examples of *C. solitarius* are always barred on the lower breast; the unbarred adult plumage is not acquired until the third year. It may be noted that the juvenile stage of other allied cuckoos (*C. gabonensis*, *C. jacksoni*, *C. clamosus*) are always wholly black without any barring.

The Solitary Cuckoo is an inhabitant of forest and savanna and is said to prefer gallery forests to a closed canopy and will ascend the



forested mountains to 8,000 ft. or more. In the centre of its range, in Equatorial Africa, it is believed to be stationary, but in the extreme north and extreme south of its range it is a migratory bird. We have still much to learn about its movements. It is believed to go north after the breeding season is over; those which have bred in the forests of Upper Guinea may possibly range north to lat. 12° N., but there are not enough data to decide to what extent it is really a migrant in western Africa. Being a shy bird, it is far more frequently heard than seen, but is reported to be quite common in the forested area of the Benin Division. In a large series examined, specimens from the Sudan, Abyssinia, Nigeria and Portuguese Guinea all bear dates between March and July.

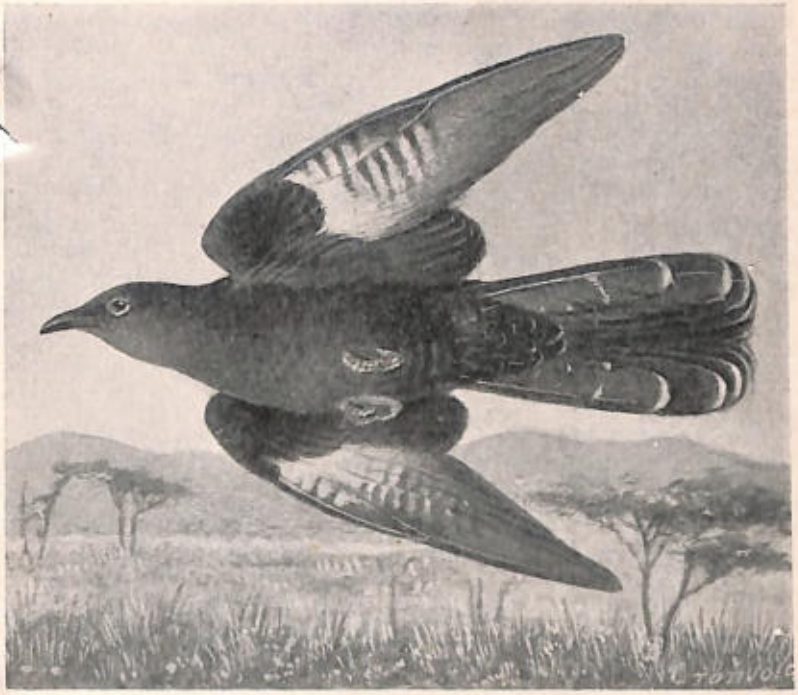
The young are fed on insects by their foster-parents but the adults prefer caterpillars, even the large hairy ones being devoured with relish. The Solitary Cuckoo is almost wholly arboreal, but has been known to descend to the ground to feed.

In East Africa there are two types of eggs laid—some are plain chocolate brown, others plain blue; more rarely a spotted egg will be found. Measurements are 21·5–22 × 16·5–19 mm. About twenty different species, belonging to widely different genera, are known to act as host to this cuckoo; a list of these is given in my larger work.

Distribution. Spread over the greater part of Africa from Ethiopia, the Sudan and Gambia south to Cape Province, the species is represented in the British Museum collection from within our area from most political divisions from Gambia to the Congo and from all British Possessions except Sierra Leone, where it is no doubt to be found also. It has also been recorded from Fernando Po.

BLACK CUCKOO

Cuculus clamosus clamosus Latham



In the fully adult plumage this cuckoo appears entirely black with a glossy blue or green sheen on the feathers of the head, breast and upper parts; the under side of the wing shows some white. The flight feathers are brown, and the tail feathers have narrow white

tips. Birds with brown, indistinctly barred under parts are not fully adult. In size it resembles the Solitary Cuckoo but is easily recognised from that bird by its all-black body plumage, the Solitary Cuckoo having buff under parts barred with black. Around the brown eye of this cuckoo is a narrow bare ring of slate-colour; the bill is blackish, the legs and feet are pinkish brown. The wing measures 168–183 mm., the tail 140–150 mm.

Immature birds are dusky brown, irregularly and faintly barred from chin to vent with grey and rufous. Nestlings are fuscous black and show no signs of barring, as in the nestling of the Solitary Cuckoo. The picture which is reproduced portrays the bird seen from below, when the barring on the wings should be noticeable.

The Black Cuckoo is a bird of the open thorn-scrub savanna. It is more often heard than seen, for its voice is quite unmistakable—low and plaintive, the melancholy quality somewhat destroyed by the peculiar lisping. The whole song is weak for a bird of the size of the Black Cuckoo.

Even more shy than the Solitary Cuckoo, it is hopeless to try to find the bird unless its note is familiar. The forest is apparently shunned by the Black Cuckoo, which is a migratory species in East Africa. Birds which reach Abyssinia are believed to be migrants from South Africa, but in western Africa the Congo forest forms a barrier across which no migration takes place.

In the south of its range the bird lays its glossy white egg between the months of November and January, utilising various species such as *Andropadus Laniarius* and *Prinia* as foster-parents. Birds which live in acacia bush and mimosa thickets are most likely to be victimised. Egg measurements are 27–28 × 21·5–22 mm.

Distribution and Races. Resident in the whole of South Africa from October to March, apparently migrating north to spend the months of March to September in Kenya, Uganda, Eritrea, Abyssinia and the southern Sudan. It has been found in West Africa in all four of our Colonies in April, May, June and July and once in September in Gambia. In the Ibadan Division of Nigeria it is said to arrive in April and to remain until September as a summer visitor, but there is not a single record of its having been found breeding north of the Equator.

Two other cuckoos which are considered to be races of the Black Cuckoo have occurred within our limits. One is the Gaboon Cuckoo, the other Jackson's Cuckoo. For many years these cuckoos were considered to be full species, and much controversy has taken place concerning them. In this work I prefer to treat them as subspecies, but deal with each under a separate heading as follows.

THE GABOON CUCKOO

Cuculus clamosus gabonensis Lafresnaye

RESEMBLES in size and appearance the Solitary Cuckoo very closely but has the upper parts shiny blue-black and the throat and upper breast dark chestnut, the rest of the under parts being banded black and buff. The long graduated tail is tipped with white.

Distribution. This is the Common Cuckoo of the South Cameroon forests which extends east to the Uelle River and south to the Loango coast. In British Cameroon it is common from March to September. In Upper Guinea it has now been found at Ibadan and in the Owerri Province of Nigeria, at Kumasi in the Gold Coast and in Togoland. It lives in the tall forest trees in the same places as the Solitary Cuckoo but is less common. In its habits it resembles that species closely.

The other subspecies to mention is:

JACKSON'S CUCKOO

Cuculus clamosus jacksoni Sharpe

APPARENTLY adult examples of this cuckoo have the upper parts glossy blue-black as in *C. clamosus clamosus* and the wings and tail similar to that species. The breast, however, is dark chestnut, the sides of the throat are greyish and the rest of the under side from the chest to, and including, the under tail-coverts is strikingly banded with black and white. Compared with *C. clamosus gabonensis*, the under parts are more closely barred, and the under tail-coverts always barred heavily; the ground colour of the breast and belly is also more white than creamy buff.

Distribution. Jackson's Cuckoo ranges from northern Angola and north-western Cameroon through the Uelle district and the southern Bahr el Ghazal to southern Abyssinia, Kenya and Uganda. It is found in the savannas and forest edges of the eastern and southern Congo but not in the heavy equatorial forest itself. The only example to have been obtained in West Africa was shot at Yoko in north-western Cameroon.

OLIVE LONG-TAILED CUCKOO

Cercococcyx olivinus Sassi

THIS small-bodied cuckoo, measuring from bill to tail about 12½ in., of which the tail takes up 7 in., is a wary inhabitant of thick forest, perching high and keeping hidden. The upper parts are olive-brown, the under parts alternately banded with black and whitish

or buff. The under tail-coverts are buff and noticeably long, either plain or having an odd bar or two. The long tail when expanded exhibits white and pale rufous spots on an olive-brown ground. The rectrices are graduated in length, and all are tipped with white. The wings, which are noticeably short, are rounded in shape, as becomes a bird which seldom leaves the cover of thick trees. The wing measures 136–156 mm., the tail 160–195 mm. The bill is greenish black, the lower mandible olive; the feet are cadmium-yellow.

All the members of this genus are exceedingly wary, and were it not for its loud voice this species would be difficult to locate 30–60 ft. above the ground. When they perch, the males give a three-syllabled call, not unlike that of *C. solitarius*, *whi-whow-whow*, the first barely audible; at other times a protracted series of whistles, low in tone, changing little in pitch but increasing in vigour, may last for ten to fifteen seconds.

Our knowledge of its breeding habits is fragmentary, but it is almost certainly parasitic, a young bird of this species having been seen being fed by a Brown Babbler. An egg taken from the oviduct at the end of September in the Congo forest was pure white.

Distribution. Ranges from the Gold Coast and southern Nigeria (Owerri) to northern Angola and across the Congo forest to the Semliki valley. It does *not* extend to the Uluguru Mountains in Tanganyika, as I inadvertently stated in my larger work, confusion having taken place between this species and *C. montanus*, which does occur there. *C. olivinus* has a range which approximates closely to that of *C. mechowi*.

VON MECHOW'S LONG-TAILED CUCKOO

Cercococcyx mechowi Cabanis

This cuckoo resembles the last species very closely, but the upper parts are strongly washed with slate-grey, the remiges are more heavily spotted or barred along the margin with rufous, and the under parts have the blackish bars broader, giving that part a heavier banded appearance. The under tail-coverts are rich buff, several shades darker than in *C. olivinus*. The soft parts are as described under the latter species. The wing measures 130–146 mm., tail 170–206 mm.

The plumage distinctions between these two Long-tailed Cuckoos are not such as to enable either to be identified in the field unless the note is heard. That is the only sure guide. This bird, like the preceding one, indulges in two very different notes, one a triple high-pitched whistle, *wheet-wheet-wheet*, often reiterated during many

minutes; the other a descending series of many silvery notes lasting three seconds and seldom repeated.

In its habits this true denizen of the untouched forest is like the Olive Cuckoo in many ways. Its food is almost exclusively caterpillars and it is equally shy, only on very rare occasions leaving the shade and shelter of the primeval forest to visit second-growth woods.



Nothing is known of its nesting habits other than what we can guess with some certainty.

Distribution. Von Mechow's Cuckoo has been found in Sierra Leone, the Gold Coast, Nigeria (Benin and Owerri Provinces), and in many places in Cameroon, not only in the south (Bitye), but in the more mountainous north-west in the Fumban and Banyo area. It inhabits Angola, from which country it was first described, and ranges east to Uganda across the Congo forest. Throughout much of its range it occurs alongside *C. olivinus*. Primarily a bird of the lowland forest, it ranges out into the gallery forests of the Uelle and ascends to 5,200 ft.

THICK-BILLED CUCKOO

Pachycoccyx validus validus (Reichenow)

THE Thick-billed Cuckoo, which is about 14 in. in length, is a conspicuous bird in its piebald black and white immature dress, and care must be taken not to confuse it with the Great Spotted Cuckoo. The adult is less easily distinguished, being very dark glossy brown above and plain white below, with a long tail. The bill, which is decidedly curved, is black above, yellow below, and this is perhaps the surest guide to identification, combined with the body colouring, the white unbarred under parts saving it from confusion with all but the Great Spotted Cuckoo (see under that bird for distinctions, p. 574). Unlike that species, the Thick-billed Cuckoo has no rufous in the wings at any stage. The bare skin of the eyelids is yellow like

the feet, while those of the Great Spotted Cuckoo are lead-colour. The wing measures 213–230 mm. and the tail 165–175 mm.

This is an arboreal species which is found sparingly throughout the rain forest and especially the gallery forests of tropical Africa, but it is everywhere a rare bird. Naturalists who have seen this bird in life remark on its strangely hawk-like appearance on the wing. It has been observed flying high in the air, uttering shrill whistled calls and alighting in the tops of tall trees. Insects of many kinds have been found in the stomach, and though it devours caterpillars sometimes, insects form its staple food.

An adult female shot in southern Cameroon on 6th March would shortly have laid. An egg taken from the oviduct of another bird is described as pale greenish blue with small scattered spots of brown and grey-brown.

Distribution. Extends from the southern Sudan to Nyasaland, thence across Africa in the gallery forests north and south of the equatorial forest. Within our limits it has been obtained in southern Cameroon, Gaboon, Togoland and French Guinea. It may turn up anywhere in lightly wooded country or in gallery forests of the main forest belt.

GREAT SPOTTED CUCKOO

Clamator glandarius (Linnæus)

THE Great Spotted Cuckoo, which measures 15–16 in. from bill to tail and has a wing expanse of 23 in., may be recognised by its plain white under parts (the immature with buff throats) and white spots on the wings in both young and old birds. The general colour of the back in adults is ashy and of the immature, brown, the adult with a grey crest and crown, the immature with these parts black. An additional feature of the immature is the rufous quills with brown tips which are conspicuous in flight. This cuckoo has an exceptionally long tail (8–9 in.), and the wings are also long and pointed. When at rest the white-feathered legs are a noticeable feature. The immature Thick-billed Cuckoo is the only other member of the family which has white spots on the wings and body, but in that bird the spots are treble the size and stand out much more conspicuously on an almost black ground. Measurements are: Bill 21–28 mm., wing 184–209 mm., tail 189–226 mm., tarsus 30–37 mm.

The Great Spotted Cuckoo is usually met with singly or in couples. When on the ground it progresses by hops or a run. The call-note is loud; it also utters a harsh chatter and sometimes screeches noisily. The spring call (in Europe) is said to be a wailing *kee-oowa* or *kee-oo*.

The status of this cuckoo in West Africa is not easily ascertained, for it is not only a migrant from southern Europe and northern Africa, but it is also a resident breeding bird. Moreover, those birds which have bred in Upper Guinea probably migrate to spend the off-season somewhere further north, for a marked summer movement from the south has been observed in May and July in Darfur.



It is principally a bird of the thorn-scrub belt and, to a lesser extent, of the grass woodland. Pairs are usually encountered, but when on passage the cuckoos move in little parties of five or six rarely in flocks. It is evidently resident in West Africa all the year round, subject to local movements and subject also to influx from the north. To what extent European birds visit West Africa is not properly known, but there is certainly a migration into Gambia in the winter months, though not on a wide scale.

It feeds largely on caterpillars, both smooth and hairy, and insects and grasshoppers are also devoured.

The Great Spotted Cuckoo is parasitic on many other species, laying its eggs in the nests of ravens, starlings, magpies and crows. In Sokoto the Pied Crow is invariably the victim chosen, and in May and June, when the crow is nesting, the cuckoo is extremely numerous in the Province. As many as ten Great Spotted Cuckoo's eggs have been found in the nest of a single crow, and there are few crows' nests in the area which do not contain one or more cuckoo's eggs in addition to those of the rightful owner. The adaptation to the crow's eggs is remarkable, but the former are more elliptical in shape and noticeably smaller. Eggs have a pale bluish ground, blotched with different shades of brown and with pale lilac undermarkings. Twenty-three eggs taken in Sokoto show variation of 29·1–35·2 × 22·6–26·5 mm.

Distribution. Resident and common throughout the whole of

tropical Africa. Many migrants arrive from southern Europe in winter. The only definite breeding records are from Darfur, Somaliland, Tanganyika, Southern Rhodesia, southern Africa, Sierra Leone and Nigeria. It is generally absent from forested country.

PIED CUCKOO

Clamator jacobinus (Boddaert)

The Black and White Cuckoo, as it is sometimes named, is glossy black above and white below and has a prominent black crest. The black wing has a broad white patch at the base and the long black tail is broadly tipped with white. In size it measures about 13 in.



from the bill to the tail-tip. When in flight the white wing-patch is very obvious, but this character does not distinguish the Pied Cuckoo from Levaillant's Cuckoo, with which the present species may easily be confused. Apart from the larger size of Levaillant's Cuckoo (it is 3 in. longer), heavier arched bill and *heavily black-streaked throat*, there is nothing to distinguish the two cuckoos from each other in the field. The Pied Cuckoo has a black bill and grey feet; the wing measures 148–165 mm., and the tail 163–195 mm.

The call-note of this cuckoo is harsh and loud, usually a single note rapidly repeated. It has been described as a kind of laugh, followed by a rich guttural trill or ripple.

C. jacobinus is an inhabitant of mimosa and acacia savannas and thickets and certainly breeds sparingly in the semi-arid belt. The breeding season is likely to be between April and July in the French

Sudan and French Niger, corresponding approximately to the months of March to June, when it lays its eggs in Ethiopia. We have still much to learn of its migrations; it has been suggested that the Indian-breeding birds pass the off-season in Africa, migrating by way of Arabia. Its local movements in Africa require much more study before we can write of them with any certainty.

The Pied Cuckoo is parasitic upon babblers (*Argya*), in the nests of which its blue or greenish-blue eggs have been found.

Distribution. Ceylon, India and Africa. In the last-named continent the species occurs from Senegal and Gambia very sparingly through the whole of the dry belt to Bornu and across Chad and Darfur to Ethiopia, occurring again south of the equatorial forest region in Angola and the Gaboon coast south to the Transvaal and possibly Benguella. In West Africa it has been obtained in Senegal, Gambia, the Upper Volta, the Inundation Zone, French Sudan, southern Sahara (Aïr), northern Nigeria and at Lagos; also in Cameroon, and at Cape Lopez and at Landana.

A black-breasted colour phase which has been named *C. serratus* (Sparrman) has been reported from southern Ethiopia, French Equatorial Africa and from the Gold Coast, Nigeria and near Lake Chad, but is now considered to be a mutation of *C. jacobinus*. In my larger work it was given specific rank in volume iii on page 110.

LEVAILLANT'S CUCKOO

Clamator levaillantii (Swainson)

(formerly *Clamator cafer* Lichtenstein)

A LARGER cuckoo than the Pied Cuckoo (*C. jacobinus*), measuring some 16 in. in the flesh, Levaillant's Cuckoo appears shiny black above, with a conspicuous crest, and whitish below, with the throat heavily streaked with black and the long graduated tail with broad white tips. The large white patch in the wing, noticeable when the bird is at rest, is a very conspicuous feature when the wings are spread. Apart from its larger size, black-streaked throat and heavier arched bill, there is nothing to distinguish the present species from the Pied Cuckoo in the field. Levaillant's Cuckoo is, however, a comparatively silent species, whereas the Pied Cuckoo is generally considered to be a noisy bird. As a field character this is of little value, as, when it does utter a note, it resembles one of the calls made by the Pied Cuckoo. The bill of this cuckoo is greenish black; the feet are slate-blue. The wing measures 165–181 mm., and the tail 210–230 mm.

Young birds are brown above, including the crest, which is short; the

under parts are buffish white and the streaks on the throat indistinct or absent. The tail lacks the white tips at this stage of immaturity.

Of the various notes uttered by this cuckoo, one is a hollow-toned *kur kur kur*, repeated about a dozen times, then the bird changes abruptly to a rapid series of short notes like *kwi* repeated about twenty times; another cry resembling the semi-whistled note of the Pied Cuckoo; another querulous *crik-et*.

A bird of scrubby places, frequenting bush and thickets, this species is less addicted to hiding in dense cover than some and is



often to be seen perched in the open. It flies with rapid wing-beats which give place to a sail or glide just before it alights. It subsists mainly on caterpillars, of which vast numbers are consumed.

Some of these cuckoos appear to be resident in Upper Guinea all the year round, but it is a species with a strong migratory instinct, those birds which live in South Africa being absent from south of the Zambesi from April to September and evidently spending those months in Equatorial Africa. A similar movement takes place in West Africa north of the equatorial forest. In the dry season it is common in the savanna and forest clearings and moves into the semi-arid belt during the rains in June. It is usually found singly or in couples. Its local movements are likely to be governed by the times when the caterpillars are hatching. In Nigeria there is a marked seasonal movement southwards during the dry season.

Eggs believed to be of this species have been taken at Kafanchan (Nigeria) in May and June and show a remarkable adaptation to those of the foster-parent, *Turdoides plebeja*. In this instance the eggs are pink in colour and measure 25 × 20·1 mm. and 24·7 × 20 mm. respectively. In southern Africa, where this species victimises a *Turdoides*, which lays greenish-blue eggs, the cuckoo's eggs are similarly coloured.

Distribution. Widely spread in tropical Africa from Abyssinia, the Sudan and Senegal south to Cape Province. South of the Zambesi it is migratory. Within our limits it is recorded from every political division from Senegal to the Congo. It occurs both in open tree savanna and more rarely in second-growth forest, moving north to the dry belt during the rains. It is absent from the closed rain forest.

EMERALD CUCKOO

Chrysococcyx cupreus cupreus Shaw

(see Plate 34, facing page 672)

Two races of the Emerald Cuckoo occur in West Africa. The male of this brilliant golden-green cuckoo, with yellow belly, long tail (the outer feathers spotted with white) and pointed wings cannot easily be confused with any other species. It is a small bird measuring in the flesh about 9½ in. in length, with a wing expanse of 13 in. The metallic-green feathers of the breast, wings and entire upper parts are scale-like in appearance and quite indescribably brilliant. The female is much duller, copper and green above, barred closely, white and metallic green below, the wings appearing brown and the tail with the outer feathers showing much white. The flight of this little cuckoo is rapid and somewhat undulating in a vertical plane; it has more the appearance of a small dove than a cuckoo when on the wing.

The note is distinctive, described by Friedmann as clear, modulated, musical whistled phrases of four syllables—the first two syllables run together, the last two distinct, the fourth longer and slightly higher than the third, and may be written *wheeyu whee whee.* It is peculiarly mellow in tone.

Around the eye of this little cuckoo is a ring of light green; the bill is olive and the feet are pale lead-blue. The wing measures 101–117 mm. and the tail 101–131 mm. in males, 72–82 mm. in females.

This is undoubtedly one of the most beautiful birds in the whole of Africa and in consequence has suffered much persecution, especially in French Colonial possessions, where its skin has been much sought after by plumage hunters. Fortunately the females are very difficult to see, and even the brilliant males live most of their lives in the tree-tops in densely forested areas. Only rarely is it seen low down. In savanna country it occurs in the gallery forests. During flight from one patch of the forest to another the bird remains silent, but immediately upon alighting it will utter its call once or twice.

To what extent this cuckoo is migratory within our limits it is difficult to say. In South Africa the species is definitely migratory,

but in Equatorial Africa it is resident, and I suspect the same applies to the birds inhabiting the forests of West Africa. Some northward movement may occur in the rains to account for the bird's presence in such northern latitudes as those in which Gambia, Casamance and Futa Jalon are situated.

We know extremely little about the breeding habits of *C. cupreus*. It is believed to be monogamous, and the birds have a very definite breeding territory in which to deposit their eggs, just as is the case with the common cuckoo in England. An egg found in the nest of a coly believed to be that of *C. cupreus* is white and rather pointed in shape, but its identity has been disputed. Young Emerald Cuckoos have been found in the nest of *Tchitrea viridis* and a nestling has been seen being fed by an Olive Sunbird (*Cyanomitra olivacea*).

Distribution and Races. Recent investigation has shown that all the populations on the mainland of Tropical Africa north of the Zambesi are best united under the name of the typical subspecies *C. cupreus cupreus* Shaw, which necessitates sinking the name *intermedius* Hartlaub which I had employed in my third volume (*The Birds of Tropical West Africa*) for birds from Lower Guinea, the Belgian Congo, Kenya and Uganda. These will now be united with the populations inhabiting the whole of the Upper Guinea area from Gambia to Nigeria ranging east to southern Abyssinia.

Two other races must also be recognised. The São Thomé and Principe Emerald Cuckoos have more green on the outer tail-feathers than birds from South Africa, which they resemble in having equally short tails. These island birds have been named *C. cupreus insularum* Chapin and Moreau, who point out that examples from Fernando Po are intermediate between *C. cupreus cupreus* and *C. c. intermedius*. South of the Zambesi occur birds with short tails.

WHITE-BELLIED OR DIDRIC CUCKOO

Lampromorpha caprius (Boddaert)

(see Plate 34, facing page 672)

This small cuckoo, 8 in. from bill to tail in the flesh and having a wing expanse of 13 in., metallic green and copper above, white below, with heavily barred flanks and conspicuous white spots on the wing and outer tail-feathers, can easily be confused with one other species, i.e. Klaas's Cuckoo. From that bird, if a clear view is obtained, its white eyebrow-streak, larger size and heavily banded sides and the lack of a green patch on the side of the throat should distinguish it. Moreover, Klaas's Cuckoo has the three outer tail-feathers almost entirely white (not black with round white spots, as in the male Didric Cuckoo).

The call-notes of the Didric Cuckoo are (*a*) a clear petulant whistle, (*b*) a series of clear, mellow, rapidly successive, flute-like notes which may be crudely written *de de de de diderick*, or *o-dee-dee-deea-deea*, mournfully repeated. The flight is not very direct but in a fairly straight line, and the wing-beats are irregular. When flying in bright sunlight the Didric has a pied appearance. Both in flight and when perched it has a resemblance to a tiny hawk. Its measurements are: Wing 106–118 mm., tail 77–83 mm. The eyelid is red, the bill and feet are bluish black.

The Didric Cuckoo is to be found in all types of country except in the heavy forest. It frequents the clearings in forested areas but is most frequently observed in sayanna open woodland, abandoned farms, cassava plantations and on swampy ground. At the other extreme we find it on the very borders of the Sahara.

There is a marked migration northwards about May and June, the cuckoos arriving in these northern areas such as the Inundation Zone of the Niger and in Timbuktu at the time when the weaver birds are nesting. At the beginning of the rains males can be seen chasing one another from tree to tree, uttering their whistling calls. Like the rest of its family, its food consists mainly of hairy caterpillars, varied to some extent with insects of various kinds.

The Didric is a species which is very easy to observe, and thus we have learned more about it than of some of its close relatives. It is faithful to a particular tree from which to sing and has a closed territory in which it breeds; the former is often a high perch in a tall tree. The hen is much more silent and less forthcoming than the male.

The breeding season in the north of its range is during the rains from May to August, but in Lower Guinea breeding begins in March. A display flight takes place, when one follows another without hurry, on shivering wings, calling *phea, phea, phea, phea.* No fewer than twenty-eight species are known to have been the hosts of this cuckoo, the victims usually being weaver birds and, to a less extent, finches. The eggs are variable, some pure white, others bluish or greenish white. Some are almost unmarked, others are spotted and/or blotched with all shades of grey, brown and mauve. As a rule, only one egg is laid in a nest. Eggs measure 21–24·8 × 14·2–16 mm. and average 21·7 × 14·9 mm.

Distribution. The whole of Africa south of the Sahara. Within our limits it is found in every political area from the Senegal to the Congo and from the coast to the arid belt and border of the Sahara, penetrating even to Aïr. It is by far the most numerous of the small metallic-plumaged cuckoos, occurring in forest, savanna and thorn scrub, but is subject to seasonal movements within our limits.

KLAAS' CUCKOO

Lampromorpha klaasi Stephens

(see Plate 34, facing page 672)

THIS bird is smaller than the Didric Cuckoo, about 7 in. in the flesh, with wing expanse of 10 in. Metallic green above, all white below, with a green patch on each side of the throat. The females have more coppery upper parts, and the under parts, especially the flanks, have narrow brown bars, in some cases almost meeting across the belly. The middle tail-feathers of Klaas' Cuckoo are green like the back, contrasting with the three outermost, which are white, showing, when spread, a penultimate blackish spot near the tip. The wing measures 93–102 mm. and the tail 68–80 mm.

In the field this cuckoo may be recognised from the Didric by the green patches on each side of the throat and the three almost entirely white outer rectrices, which in the Didric are mostly black with some white spots and/or bars. The flight is undulating. The song and call-note are distinctive, the latter three rhythmical notes, the middle one very faint, *whee-e-chew*, repeated twice, interpreted by another observer as *phay-it-it*.

Klaas' Cuckoo inhabits the same places and type of country as the Didric, but is everywhere much less common. To some extent they are complementary to each other, at any rate in part of their range. It is absent for months together from some localities—Kumasi may be instanced in this connection—and then it turns up again. Many have been found in forest country, but the bush is its preference, judging by the records I have received. When found in heavy forest it keeps to the edge of clearings, and gallery forests attract it in savanna country. On the whole it is a shy bird, less easily observed than the Didric Cuckoo. Caterpillars, as is usual with these small cuckoos, are the main source of food.

There is a long list of species which have been victimised by Klaas' Cuckoo, and these are noted in my larger work. Sunbirds, bulbuls, cisticolas, flycatchers, sparrows and the warbler family are all represented, as well as the *Ploceidae*, but it does not appear to be so given to laying in the nests of weaver birds as does the Didric. The eggs are pale sky-blue, sparsely and finely dotted with reddish brown, and are more slender than those of the Didric Cuckoo, averaging 23 × 14·3 mm.

Distribution. Almost as widely spread throughout Africa as *L. caprius*, but generally much more rare. It has not penetrated to Aïr and evidently does not extend into the desert beyond the thorn scrub belt. Within our limits it is found in all our Colonies and is perhaps most often to be seen in the Gold Coast. It is certainly rare in southern Nigeria. On Cameroon Mountain it ascends to 4,000 ft.

YELLOW-THROATED CUCKOO

Lampromorpha flavigularis (Shelley)

(see Plate 34, facing page 672)

THIS bird is about the size of Klaas' Cuckoo but has not the brilliance in the plumage of the other Golden Cuckoos, the upper side appearing in both sexes more of a purplish bronze. The under parts of the female are finely barred buff and brown all over, but the male, which has a barred belly, may be distinguished by its bright yellow throat, the sides of which are green. The almost white outer tail-feathers with brown tips contrast with the dark central pair. It is evidently a very rare bird, concerning which practically nothing is known. The male is said to have a clear call or whistle. The measurements of this cuckoo are as follows: Wing 91–98 mm., tail 62–65 mm. The adult female differs from the male in being duller on the upper side. The bill is apparently yellow, becoming dusky towards the base.

The Yellow-throated Cuckoo is an exceedingly difficult bird to see, even when heard calling. It is mainly an inhabitant of tall trees in virgin forest—where any virgin forest still occurs—but it ranges out into heavy gallery forests in the Uelle and Kasai districts of the Congo and doubtless has the same habit in Upper Guinea and the Cameroons.

Its voice is described as a series of short sweet whistles, descending the scale slightly and plainly audible for several hundred yards. Its food is known to be caterpillars and insects. Nothing is known about the nidification of this cuckoo.

Distribution. In Lower Guinea the range of this bird extends from southern Cameroon eastward to the Uelle and Semliki valley and southward to the Kasai. It is found along the gallery forests of the northern Belgian Congo and of the Lower Congo. In Upper Guinea it has been seldom obtained, but is recorded from three localities in former south-western Togoland, in the vicinity of Elmina on the Gold Coast and, more recently, on the Upper Rokell River, Sierra Leone.

SUB-FAMILY CENTROPODINAE

Key to the species of Coucals and Yellowbills

1. Under parts grey; bill bright yellow; wing under 5 in. in length 2
   Under parts not grey; bill not bright yellow; wing over 5 in. in length 3

2. Plumage of upper parts and tail glossy violet-blue
Ceuthmochares aereus flavirostris, p. 593
Plumage of upper parts glossy steel-blue or green
Ceuthmochares aereus aereus, p. 593
3. Entire under surface of body black
Centropus grillii grillii ♂ ♀ (adult), p. 584
Entire under surface not black 4
4. Throat black 5
Throat not black 7
5. Size large (wing over 7 in.) 6
Size smaller (wing under 7 in.) .. *Centropus epomidis*, p. 588
6. Inner secondaries rufous chestnut
Centropus leucogaster leucogaster, p. 586
Inner secondaries dark brown
Centropus leucogaster efulenensis, p. 588
7. Hind neck streaked 8
Hind neck unstreaked 9
8. Entire crown covered with glistening shaft-streaks like mantle .. .. *Centropus grillii grillii* (immature), p. 584
Crown of head uniform dark brown, not streaked like mantle .. .. .. *Centropus superciliosus loandae*, p. 592
9. Size smaller (wing under 173 mm.), under parts whitish, inner secondaries chestnut, not contrasting with rest of wing .. .. *Centropus senegalensis senegalensis*, p. 591
Size larger (wing over 170 mm.), under parts deep buff or pale rufous, inner secondaries dark brown contrasting with chestnut primaries 10
10. Rump and upper tail-coverts barred *Centropus anselli*, p. 589
Rump and upper tail-coverts uniform unbarred
Centropus monachus occidentalis, p. 589

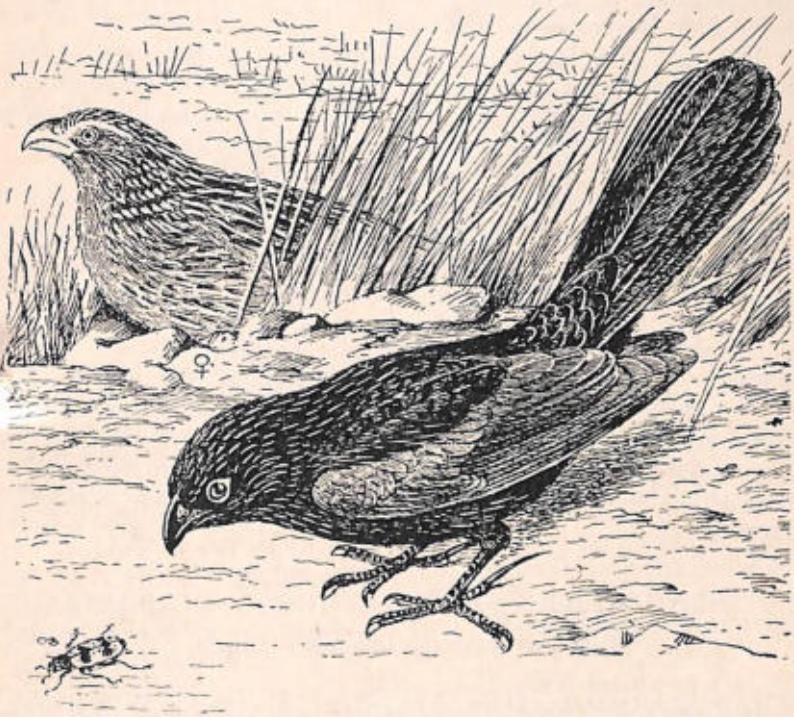
BLACK-BELLIED COUCAL

Centropus grillii grillii Hartlaub

This is one of the smallest coucals, measuring in the flesh about 14½ in. from bill to tail. In size it resembles the common Senegal Coucal which is well known throughout West Africa, but from that species it may at once be distinguished, when adult, by having the head, neck and entire under parts black, the last character not being found in any other species. The outer half of the wings when spread is rufous, the inner part dark brown, like the mantle. The broad tail is also black both above and below. There is only one other species of coucal in our area at all comparable in size which

has a black head and breast, and that has the whole of the wings and under parts, except for the breast, bright rufous, i.e. the Rufous-bellied Coucal. Another species with a black head—the Black-throated Coucal—is double the size of these, approaching 2 ft. in length, and cannot be confused.

The sexes are alike in plumage, but the females are larger than the males. The immature birds, which are often mistaken for



females, have the upper parts mostly rufous, the feathers of the head and mantle margined with black and with shining white shafts; the secondaries and tail are black closely banded with rufous; the entire under parts are pale rufous buff, the chest marked with blackish brown spots.

The adult coucal has a black bill and slate-black legs and feet; the wing measures 164–175 mm. and the tail 165–180 mm.

The cries uttered by this coucal are variable; some naturalists consider they are distinguishable from the calls of the Senegal Coucal, others that they closely resemble them. One call may be described as *kuk*, *kutuk* or *quoick-quoick*; another as *huk-ku-ku-ku-ku-ku-ku*, richer and more vigorous in quality.

Long grass is essential for the habitat of this bird—treeless waterlogged plains covered with tall rank grasses and sedges, or plains covered with esong grass and a few low bushes. Marshy land is much frequented, and when the country dries up and the grass withers the coucals scatter. Most records in my possession are between May and November. To some extent it may be migratory, for it turns up in Portuguese Guinea during the rains and is then very plentiful. It is not uncommon on the grassy islands of Lake Chad from November to February.

The bird lives largely upon grasshoppers, crickets and other insects which it catches on the ground. It is extremely difficult to flush and creeps through the grass beds with great facility. It has the same uncertain flight as the Senegal Coucal and the same habit of "flopping" into a bush.

C. grillii chooses the thickest grass in which to breed, concealing the nest perfectly, in the construction of which the living reeds are utilised. The nest is placed on the ground and four eggs appear to be the complement, white, and measuring (on an average of seven) 29·1 × 23·7 mm.

Distribution. Locally distributed, but in some districts quite numerous. Its range extends in Upper Guinea from Portuguese Guinea to the Owerri Province of southern Nigeria, beyond which it has not yet been recorded. It has a wide range over the greater part of Africa and is found throughout the savannas of the Congo to Kenya, Uganda and Rhodesia and from southern Cameroon and Gaboon.

BLACK-THROATED OR GREAT COUCAL

Centropus leucogaster leucogaster (Leach)

This is the largest coucal found anywhere between the Senegal and the Niger and can be compared in size with *C. anselli*, which latter is restricted to Lower Guinea. From the tip of the bill to the tip of the tail it measures anything from 18 to 23 in. Its principal features are the heavy black arched bill, glossy dark blue head, neck and breast, rich chestnut wings, white or buff under parts of the body and long broad black tail. At close quarters the red eye is noticeable. In flight the wings appear very rounded and the finely barred rump becomes visible. There is another coucal in the Gold Coast and southern Nigeria with much the same style of colouring, i.e. *C. epomidis*, which is dealt with next, but it is half the size of the species we are discussing and may always be distinguished by its much shorter tail and rufous belly, for even when quite young *C. l. leucogaster* has a strikingly long tail. The bill of this bird is black, the legs

and feet are lead-colour. The females are like the males in plumage but run larger in size, as the measurements show: Wing (male) 183–185 mm., (female) 182–198 mm.; tail (male) 253–260 mm., (female) 255–295 mm. A specimen without sex determined has a wing of 213 mm. and tail of 310 mm.

Despite its large size the Great Coucal rarely permits itself to be seen, slinking about in dense second-growth thickets and in secondary forest. It seems to be a solitary bird but is far from uncommon, its loud hooting call frequently drawing attention to its presence. It



may sometimes be heard to utter its deep-toned, powerful cry *hu-tu-tu-tu-tu-tu-tu-tu* in the middle of the night. In British Cameroon it may occasionally be found in the undergrowth of old rubber plantations. It does not appear to be addicted to swampy ground to the same extent as the last species, though it has been found in swampy bush near Lagos. Its food consists of beetles, hemiptera, spiders, grasshoppers, mantis and caterpillars, while of larger prey it will eat frogs and snails.

In comparison with the grass-loving *C. grillii*, the Great Coucal must be considered a forest dweller which rarely leaves the second growth unless to frequent heavy gallery forest or penetrate thick bush. It is believed to avoid old virgin forest.

Like the rest of its genus, this bird builds its own nest, probably in a bush rather than on the ground, "a large ball of green leaves and a little grass, lined with green leaves, about a foot through," is the description of one taken in the Belgian Congo belonging to *C. leucogaster neumanni*, containing two dirty white eggs. Two appears to be the usual complement, for two young were taken from a nest in Liberia, placed in high grass in brushwood about a foot above the ground. Eggs have never been measured.

Distribution and Races. Three races of this coucal have been described, two of which come within our limits.

Centropus leucogaster leucogaster is the form which ranges from Sierra Leone and French Guinea throughout the forested area to Cameroon Mountain.

Centropus leucogaster efulenensis Sharpe inhabits the coastal regions of Cameroon (Lolodorf to the Ja River) and Gaboon and is distinguished from the typical race by having the chestnut of the back and scapulars darker and by having the innermost secondaries blackish with a deep chestnut gloss, the quills being prominently tipped with the same colour.

Centropus leucogaster neumanni Bannerman is extra-limital, being found in the northern half of the Upper Congo forest along the Ituri and Uelle River systems.

RUFOUS-BELLIED COUCAL

Centropus epomidis Bonaparte

This is one of the smaller coucals, like *C. senegalensis* in size, 15–16½ in. in length. At first sight it closely resembles the Black-bellied Coucal, but is easily distinguished from that bird by having a rufous instead of a black belly. The entire head, neck, breast, upper tail-coverts and tail are dark brown strongly glossed with green, the feathers of the head and breast with stiff shiny shafts. The rest of the plumage, including the wings, is uniform chestnut, rather browner on the mantle and secondaries; the tips of the primaries are brown. The under tail-coverts are brown; the under wing-coverts and the inner lining of the wing are chestnut. The eye is red; the bill black; the feet are dark plumbeous. The wing measures 158–164 mm., the tail 179–202 mm.

The status of this somewhat local species is not quite clear. It inhabits plantations, clearings, open grassland, gardens and compounds and fringing forest. Where it occurs it is found side by side with the common Senegal Coucal but is much less numerous in comparison. The two birds associate together, and it has been confidently suggested that *C. epomidis* is nothing but a plumage variety of *C. senegalensis*. On the other hand, one careful observer at any rate believes he can distinguish between the cries made by these two birds and also by the mannerisms of the rufous-bellied bird, but that again has been disputed. I should not care to unite the two under one name until actual proof has been obtained that the birds in each plumage mate together and that young representatives of each are found in the same nest. In its actions it is a clumsy bird, jumping and flapping from twig to twig or hopping through the undergrowth. As with *C. senegalensis*, the call-notes are frequently uttered in close duet.

Although quite numerous in certain places, such as in the Yoruba country, its nest has never been discovered. It is probably the commoner bird on Lagos island, so that it should not be difficult for a naturalist resident in that area to settle the issue.

Distribution. Recorded only from the Gold Coast (Fanti, Boutry and the Central Province) and Nigeria (Lagos, Iju, Epe, Badagry, Ibadan and Abeokuta). If the Rufous-bellied Coucal is indeed only a colour phase of the Senegal Coucal, as has been mooted, it is remarkable that it has only turned up in a very small area of the Senegal Coucal's vast range, which extends far beyond the limits of the Gold Coast and Nigeria.

GABOON COUCAL

Centropus anselli Sharpe

This is one of the large coucals, the females measuring nearly 2 ft. in length, with very long broad blackish tails. The crown, cheeks, neck and mantle are black, glossed, except on the crown, with bluish green. The back is rufous buff narrowly barred with black; the wings are chestnut, the inner secondaries brown and the quills tipped with the same colour. The long, disintegrated upper tail-coverts are black barred with buff; the tail is black glossed with green. The eye is red, the bill and feet are black. The wing in the male measures 170–192 mm., in the female 185–210 mm.; the tail is 245–285 mm. in the male, 275–318 mm. in the female. In flight the red primaries are noticeable.

Distribution and Habitat. Ansell's Coucal is found in dense forest and gallery forest, its range extending from southern Cameroon south to the Loango coast, the Mayombe forest and the vicinity of Leopoldville. Eastward in the Congo it extends at least to the Lomami River. This species replaces *C. leucogaster efulenensis* in the southern half of the equatorial forest of the Congo, but no intergradation takes place.

The lack of any black on the throat or breast of the Gaboon Coucal distinguishes it from the Black-throated Coucal, which otherwise so closely resembles it.

BLUE-HEADED COUCAL

Centropus monachus occidentalis Neumann

The Blue-headed Coucal is one of the larger members of the genus, about 18 in. in total length. The wing measures in males 175–188 mm. and in the females 180–203 mm., while the tails are (male)

195–227 mm., (female) 208–231 mm. in length. The crown, lores and ear-coverts are black, slightly glossed with green, becoming deep glossy blue on the hind neck and upper mantle. The back is rufous brown, the wings and coverts are bright rufous; the tail is black glossed with green, and the entire under parts are buff. A dark red eye, black bill and lead-coloured feet complete the colour scheme.

It is in fact simply a large edition of the common Senegal Coucal, which is discussed next, the Blue-headed Coucal being some 3 in. longer in the flesh with a correspondingly longer tail and wing-spread. The larger bird has a dark blue mantle, while in the smaller bird it is blacker, but such small distinctions in colour, as well as relative size, are valueless in the field unless both birds are seen together. The call is like the Senegal Coucal's but slower, and is a doleful sound.

The Blue-headed Coucal is not a forest bird, although it inhabits the forest belt, but is an inhabitant of forest clearings and grassy or sedgy places along streams, and of old clearings near villages. It ascends in the Cameroon Mountain district to some 4,000–6,000 ft. altitude. On the Kivu volcanoes in East Africa it ascends to 7,800 ft. and is found on old clearings on Ruwenzori to 7,000 ft. It is really a savanna bird, which consequently extends over a wide area north of the Upper Congo forest.

The food of this coucal consists mainly of grasshoppers and beetles, but it will raid other birds' nests for their eggs and nestlings and preys on mice, snakes and molluscs. It has been known to kill a cobra 4 ft. in length. It is held in some superstition by natives, possibly on account of the weird notes it utters. The usual call, a descending series of toots, rising at the end, is barely separable from the cry of *C. senegalensis*, but it has other gruffer cries as well.

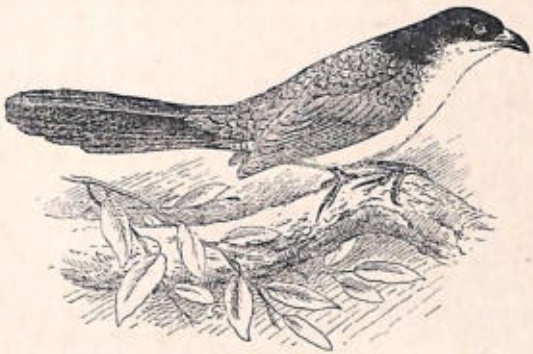
The nests, constructed by the bird itself, are made of coarse grass and sedges growing in marshy places bent over on the ground. Other nests are constructed on dry sedges lined with green leaves with a lateral entrance, the whole an oval mass effectively concealed amid the sedges and small bushes in a marsh only a foot above the ground. The eggs are white and glossless and measure 35–37·5 × 26–29·5 mm. The bird breeds in both dry and wet seasons, apparently.

Distribution. From the Lower Congo eastwards along the north Congo savannas to Uganda and the Sudan north to the Congo-Nile watershed. Westwards it extends through Gaboon, Cameroon and southern Nigeria to the Gold Coast, in the last named occurring at Pong, Akwapim, Accra and in Ashanti at Mampong.

SENEGAL COUCAL

Centropus senegalensis senegalensis (Linnæus)

This is one of the smaller coucals, measuring some 15 in. from bill to tail and with a wing expanse of 18 in. The crown and back of the neck appear black with a greenish gloss, the back and rump brown, the wings chestnut with dark tips. A broad tail (7½ in. long) appears black in life; the under parts in contrast are buffish white from the chin downwards as well as the feathered thighs. The red eye is noticeable at close quarters, the bill black with curved upper mandible. The bubbling call is a familiar sound in the bush, and



the bird can be approached quite close by easy stages. The measurements of this bird are as follows: Wing (male) 153–167 mm., (female) 155–173 mm.; tail (male) 170–195 mm., (female) 180–208 mm.

Young birds may be distinguished by having the entire chestnut wings and upper parts barred with black, the blackish hind neck without any greenish gloss and the throat and breast pale rufous buff; the thighs, flanks and coverts are all barred with black.

The call of this coucal is a well-known sound in all low-lying bush or grass country, especially in damp places. It is variously interpreted as *noo-noo* (then diminuendo in a descending scale), *hu-hu-hu-hu-hu-hu-hu*, or again a clucking *tock-tock*, *toc-toc-toc-toc-toc-toc*. The full performance runs to some twenty notes, the "toots" dropping at first and rising towards the end of the scale. Duets are sometimes indulged in.

The Senegal Coucal is ubiquitous, being found in every political area and throughout a wide variety of country. It is quite difficult, in fact, to get away from it when travelling in the bush. It seems to be resident all the year round in localities which it inhabits and is equally common from the maritime zone to the very borders of the

desert. It shuns the actual forest but lives in the dense grass patches bordering the forest, and, of course, enters the clearings wherever there is grass in which to hide.

It builds its own nest in low bushes or euphorbias—a globular structure of coarse grass lined with leaves with a lateral opening, usually well hidden in the fork of a low bush. Four or five eggs are laid which measure 29·2–36 × 22·6–26 mm. (forty-seven measured). They are white and slightly chalky.

Distribution. From Senegal to Somaliland and northern Uganda and the forest borders of the eastern Congo. It is found in every political division included within our limits, equally in the dry bush of Senegal and Gambia, and in the clearings in the West African and Congo forest. In savanna country it is ubiquitous and on the border of the Sahara has been found as far north as Tazza Well in French Niger territory, and even reaches Aïr in the central Sahara. In the west it ranges south to northern Angola. On Cameroon Mountain it does not ascend above Buea (*circa* 3,160 ft.) and is not to be found on high ground.

WHITE-BROWED COUCAL

Centropus superciliosus loandae C. Grant

THE same size and general colouring as the Senegal Coucal, but may be distinguished by the streaked black and white hind neck and mantle and by the barred rump. The Senegal Coucal has much more black on the head. Immature birds of the Black-bellied Coucal (*C. grillii*) have much the same streaked appearance on the mantle, but in that bird the white streaks are continued down the back. Measurements of this bird are: Wing (male) 148–170 mm., (female) 165–177 mm.; tail (male) 182–195 mm., (female) 202–220 mm.

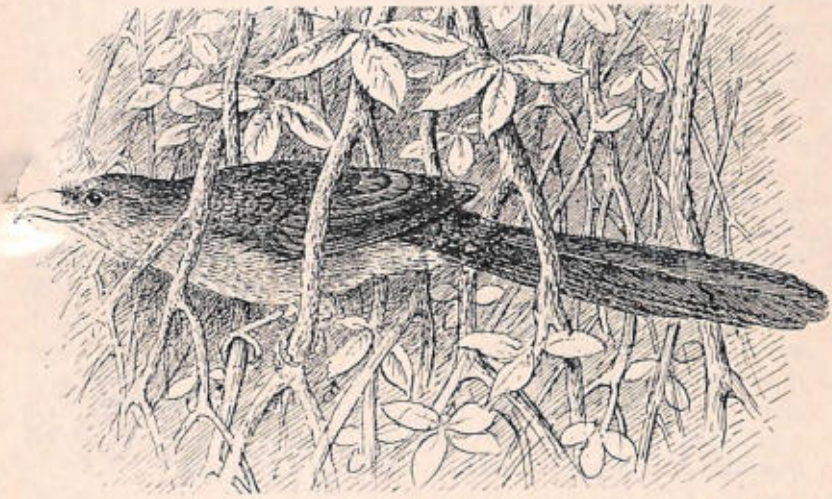
In haunts and habits the White-browed Coucal differs little from the Blue-headed Coucal, but it is more fond of high grass and less apt to ascend mountains. It has also been compared closely with the Senegal Coucal as regards its nidification. From both these species its "tooting" is said to differ, the notes running together more rapidly and being softer and lower in tone. No more may be said about it, as it barely comes within our limits.

Distribution. Ranges from Angola to the Middle Zambesi and Lake Victoria. It reaches the mouth of the Congo. Its place is taken by the paler typical subspecies in Kenya and by another race in South Africa. An even paler race inhabits Sokotra. There is no representative of this species in western Africa north of the Congo valley.

YELLOWBILL

Ceuthmochares aereus (Vieillot)

Two races of the Yellowbill come within our limits whose respective ranges will be given in the final paragraph. The Yellowbill differs from the coucals in being a considerably smaller, more slender bird, with an entirely different scheme of colouring, but like the coucals has a very short convex wing and a long graduated tail. It does not possess the characteristic long hind claw of the coucals, however. In total length the Yellowbill measures in the flesh from bill to tail 12–14 in., of which the tail is about 8 in. In wing expanse it measures about 14 in. Both sexes are smoke-grey on the under parts



and on the crown; the rest of the plumage in *C. aereus aereus* is glossed with green on the back and blue-green on the tail; wing measurements are 108–127 mm., tail 175–205 mm. In *C. aereus flavirostris* the back is a lovely deep glossy blue and the tail is intensely blue and purplish, distinctions which are very noticeable when the two races are compared. The measurements of this race are: Wing 110–121 mm., tail 173–205 mm.

There is barely any difference in the size of the sexes, which are also alike in plumage, nor is there any difference of note in measurements between the two races.

In its habits the Yellowbill is extremely secretive, climbing about the thickets like a little mouse. The more densely covered with creepers its habitat, the better is the Yellowbill pleased. It is found in thick bush as well as in the second growth of forests, and though

it avoids the virgin forest it follows the gallery forests which extend out from it. Dense secondary thickets it loves most of all, and there a glimpse of a pair may be had as they thread their way through the maze of creepers.

Its call is said to be midway between a whistle and a whine, but it has a varied vocabulary, including a series of notes in a descending scale, commencing slowly and gradually becoming rapid. Still another cry may be likened to a prolonged clicking chatter. Its food consists of locusts, insects, caterpillars, beetles and even slugs. In flight it is reputed to be rather clumsy, the short wings and long tail giving it a peculiar silhouette.

For a forest bird it is believed to have a short breeding season, at any rate in equatorial Africa, laying in July. The nest is built by the Yellowbill itself. One found at Kumasi was made of small twigs and dead leaves placed in the fork of a sapling about 8 ft. from the ground, appearing exactly like debris caught up in the branch. The long glossy tail-feathers of the sitting bird gave away the site. Two white eggs appear to be the full complement, which measure 27 × 21·5–22·75 mm. The date was not recorded.

Distribution and Races. The range of *C. aereus aereus* (Vieillot) extends from the forests of Benin Province, southern Nigeria, through Cameroon and Gaboon south to the Cuanza River in northern Angola. It is this race which we find in the western Belgian Congo and in the Ubangi River area, and also in Fernando Po. Its place is taken throughout most of Upper Guinea by *C. aereus flavirostris* (Swainson), which ranges from the vicinity of Lagos in southern Nigeria westwards to Senegal. Its distinctions have been given above. From between Lagos and Benin no specimens have been taken to determine the meeting ground of the two races; birds from this area we may expect to show intergradation.

ORDER COLIIFORMES

FAMILY COLIIDAE

Key to the Colies or Mousebirds

1. Patch of pale blue on either side of nape
*Colius macrourus macrourus,** p. 596

No blue patch on either side of nape 2

* In immature birds the blue nape-patch is absent. This species may be distinguished at a very early age by the very narrow tail-feathers. The lack of any black on the face is also a character to note.

2. Breast faintly barred, rump brown
Colius striatus nigricollis, p. 595
Breast not barred, rump dark chestnut *Colius castanotus**

BAR-BREASTED MOUSEBIRD

Colius striatus nigricollis Vieillot

A SLENDERLY built bird with a short crest whose body from bill to vent measures about 4½ in., with a very long graduated tail, the longest feathers of which vary from 6½ to 8½ in. in length. In colour the upper side is brown, the under side more rusty-coloured with a greyish, imperceptibly barred breast and a black face which is easily seen through field-glasses, as is also a blue patch behind the eye. The black and white bill is short and curved; the legs and rather strong feet are coral red. In wing and tail measurements the sexes are much alike, wings measuring 91–99 mm. and tails 170–220 mm.



Owing to the extremely short wing, the mousebird never flies far at a time but shares the habit of our British Long-tailed Tit in the game of follow-my-leader, the little birds straggling behind one another from shrub to shrub, uttering as they fly a reedy chatter. In other ways they resemble tits in their manner of hanging or clinging to twigs. The little cry they utter has been likened to the words *tsee-tsip*. They move in and out and along the twigs like mice; when proceeding to another bush the flight is undulating, a sail and then a series of quick flaps. Small parties often consort together in tit-like fashion.

* This bird has been omitted from the text, as there is considerable doubt whether the type ever came from Gaboon as stated by Verreaux. It was more likely to have been obtained in Angola, which lies beyond the limits of this book. The bird closely resembles *Colius striatus nigricollis*, from which it differs mainly in having a dark chestnut back and rump, and the black of the forehead extends on to the crown and is spotted with white. The species is discussed in my vol. iii, p. 145.

In the wooded patches and thickets of orchard bush and in shrubberies in open country the mousebird is a familiar sight, and it may be met with on native farms and in second growth, ascending on Cameroon Mountain to 6,000 ft. It is absent everywhere from thick forest. The food of this coly consists of soft wild fruits and of the seeds and small flowers of trees and shrubs.

It builds its nest of assorted materials in a bush or in elephant grass; grass and twigs are the main components, to which newspaper, bright string, wool and leaves may be added to form a compact structure with a fairly shallow cup. It breeds during the rains, laying two or three fragile white eggs which measure 21–22 × 17–18·5 mm.

Distribution. Several races of this coly occur in Africa; the form here described ranges from Nigeria (both north and south), east to Ubangi-Shari and south through the Cameroon savanna belt to Portuguese Congo and the Kwango district. It has been reported from Nigeria from the Plateau and Niger Provinces and more recently from the Owerri Province in the neighbourhood of Okigwi and the Afikpo plain. On Cameroon Mountain it occurs up to 6,000 ft. It is especially common in British Cameroon on the borders of the mountain forests of Bamenda, Oku and Manenguba.

BLUE-NAPED MOUSEBIRD

Colius macrourus macrourus (Linnæus)

ENTIRELY grey in colouring with a slight pinkish wash on the plumage, this coly has a fairly long crest of the same colour, below which is a turquoise-blue patch on the hind neck. The bill is red and black, and the feet are purplish. In size and build it resembles the last species but has an even longer graduated tail (8½–11 in.), which is remarkable for the narrowness of the feathers, with very stiff shafts. There is practically no difference in the size of the sexes except in the length of the tail. The wing measures 84–93 mm. and the tail 220–277 mm. in males, 215–246 mm. in females.

This coly inhabits the thorn-trees of the semi-arid belt and is a familiar object to travellers in the dry bush country of the Northern Territories. Its long narrow tail attracts attention as it flits from tree to tree, uttering little soft whistling cries. It prefers the very open bush, consisting of scattered thickets and small trees such as acacias and desert dates (*Balanites*) which grow on sandy soil and desert wastes. In such places little parties, three to seven in number, may be seen clustering in the bushes, often hanging rather than perching, and then moving on with a lot of subdued noise to another tree, uttering their plaintive cries as they go. The

flight of this mousebird between bushes is fast and direct, and, as likely as not, one bird will set the pace and the others follow one by one. On other occasions the whole party will set off at once. The wings are beaten rapidly but are occasionally held rigid as the bird elects to glide. On alighting its poise is very upright.



Its food consists almost entirely of soft fruit, especially the berries of *Salvadora persica*, which seem to ripen at all seasons. The distribution of the Blue-naped Coly is to a large extent governed by the distribution of the *Salvadora*, at any rate in the extreme north of its range.

This species breeds in the spring months—April, May and June—building a very frail structure of small sticks with an equally slight grass lining, through which the eggs can be seen. The usual complement is two, more rarely three. Eggs have a white ground and are spotted and scrolled with rufous or sepia markings. Egg measurements of the West African bird are not available; those of the Uganda subspecies are reported to be 20·3 × 14·5 mm.

Distribution and Races. From Senegal, Gambia, Casamance and Portuguese Guinea eastwards through the French Sudan, the territories of the Upper Volta and northern Nigeria to Lake Chad, extending east by way of Damergu and Aïr to northern Abyssinia and Somaliland. From southern Abyssinia to Tanganyika a darker race, *C. m. pulcher*, is found, while another form, *C. m. griseogularis*, occupies the eastern border of the Congo. The typical subspecies ranges as far north as Timbuktu, where it has been reported on several occasions both in winter and midsummer.

ORDER CAPRIMULGIFORMES

FAMILY CAPRIMULGIDAE

Key to the species of Nightjars in West Africa

1. With white or pale patch or patches on throat 2
   Without white patch or patches on throat:
   (*a*) General colour brownish grey or cinnamon-rufous
   Caprimulgus inornatus inornatus, p. 604
   (*b*) General colour vinaceous brown
   Caprimulgus inornatus vinacea-brunneus, p. 605
2. Crown of head heavily streaked with black in contrast to paler edges; feathers of neck usually separated from mantle by either well-defined or intermittent necklace or collar of rufous or buff 3
   Crown of head not heavily streaked with black; feathers of neck uniform with mantle and back, never separated by collar or necklace 12
3. Wing over 170 mm. 4
   Wing under 170 mm. 7
4. Broad, well-defined collar present on hind neck 5
   Collar on hind neck ill-defined or practically absent .. 6
5. General colour of upper parts grey and golden buff upon which black streaks on crown and mantle contrast strongly; pale collar of golden rufous
   Caprimulgus ruficollis desertorum, p. 600
   General colour of upper parts dark brown vermiculated with black and buff, black markings more general and not in direct contrast to ground colour; dark collar of deep rufous; 9th primary of male greatly elongated in breeding season .. .. *Cosmetornis vexillarius*, p. 613
6. General colour of upper parts greyish; tips of wings strongly washed with grey:
   (*a*) Wing over 190 mm. *Caprimulgus europaeus europaeus*, p. 600
   (*b*) Wing under 190 mm. *Caprimulgus europaeus meridionalis*, p. 600
   General colour of upper parts blackish (in males) or dark rufous brown (in females); no grey wash on tips of primaries .. .. *Caprimulgus batesi*, p. 608
7. Central tail-feathers considerably longer than the next pair; tail markedly graduated
   Scotornis climacurus and subsp., p. 615
   Central tail-feathers not considerably longer than the next pair; tail square or rounded, not graduated .. 8

8. Breast conspicuously spotted with white or buff round spots; black triangular marks with pale borders on scapulars and inner secondaries stand out in strong contrast to ground colour
Caprimulgus natalensis and subsp., p. 605
Breast not conspicuously spotted with round spots; marks on scapulars less apparent and not extending to inner secondaries 9

9. Whole of outer web of outermost tail-feather white (in males) or buff (in females), no white on remaining rectrices in males.. .. *Caprimulgus fossii fossii*, p. 607
Outer web of outer tail-feather not wholly white (in males) or buff (in females) 10

10. General tone of plumage of upper parts grey, particularly on sides of crown; large spot on inner web of outermost primary white in males, buff in females
Caprimulgus rufigena rufigena, p. 601
General tone of plumage of upper parts not grey; no large white or buff spot on inner web of outermost primary (very small spot sometimes present) 11

11. Outer primaries boldly barred black and rufous, no white or buff mirror on wings, shaft of 9th primary enormously elongated and ending in pennants in male during breeding season .. *Macrodipteryx longipennis*, p. 611
Outer primaries black with white or buffish spots on inner web forming mirror; 9th primary never elongated
Caprimulgus nigriscapularis, p. 601

12. General colour of upper parts blackish or very dark brown 13
General colour of upper parts pale golden rufous or greyish sand-colour 14

13. General colour of upper parts blackish, finely freckled with buffish white; primaries with white spot on inner web .. .. .. *Caprimulgus tristigma sharpei*, p. 603
General colour of upper parts blackish, finely barred and freckled with chestnut; no white spot on inner web of primaries .. .. *Caprimulgus binotatus*, p. 610

14. General colour of upper parts pale golden rufous, crossed with black-speckled white bars
Caprimulgus eximius simplicior, p. 609
General colour of upper parts greyish sand-colour uniformly and finely freckled *Caprimulgus aegyptius saharae*, p. 607
C. aegyptius aegyptius, p. 608

EUROPEAN NIGHTJAR

Caprimulgus europaeus

Two races of this nightjar have been found within our limits, both the North and South European forms having been procured during the winter months.

The bird is about 11 in. in total length, the crown and general colouring of the whole upper side is grey, and the feathers are finely vermiculated with black and rufous. The pattern on the wing of the male is figured in my larger work (vol. 3, p. 150); the female has no white mirrors Chin and throat are rufous finely barred with black, and a patch of cream or white appears on the lower throat. The breast is grey-brown, barred and vermiculated with black and tipped with buff; the rest of the under parts is buff narrowly barred with greyish black. The male has the two outermost tail-feathers broadly tipped with white; in the female the white tips are lacking.

It is important to note the measurements of this bird, which in *C. europaeus europaeus* are: Wing 183–206, tail 129–140 mm. In *C. europaeus meridionalis* the wing measures 172–190 mm. (rarely over 186 mm.).

Distribution and Races. Both of these nightjars are European birds which visit tropical Africa in winter. The typical subspecies, *C. e. europaeus* Linnæus, occurs throughout the whole of Europe south of about lat. 63° N. and reaches Cape Province on its migrations. It has been shot within our limits only once, in Sierra Leone, on 22nd March, 1930.

The smaller South European Nightjar, *C. e. meridionalis* Hartert, breeds in the Mediterranean countries of Europe and northern Africa and also migrates south in winter. It has been recorded in eastern Africa as far south as Mozambique and within our area reaches Cameroon. It has also been recorded from Keta, Gold Coast, and from Gambia, as well as from the Bilma oasis in the central Sahara.

Still another form, *C. europaeus unwini*, which is still greyer in plumage, has once (doubtfully, I consider) been recorded from Zinder. It is a central Asian bird which has been shot in the Sudan.

NORTH AFRICAN RED-NECKED NIGHTJAR

Caprimulgus ruficollis desertorum Erlanger

This large nightjar measures 12 in. in total length. Its general colour is grey, vermiculated on the upper parts with black and buff, the scapulars with black middles and streaks, which is also a

feature of the crown. The golden-brown (or tawny-yellow) collar round the neck is a distinctive feature of this bird. Both sexes have white patches on the quills and outer tail-feathers, those in the male being larger than in the female. This nightjar's wing measures 196–210 mm. and the tail 165–169 mm.

Distribution. The race (*desertorum*) which has occurred within our limits is a pale representative of the typical South European bird. This form breeds in Algeria and Tunisia and doubtless in Morocco and winters south of the Sahara. The only specimen from within our limits was shot at Gambaga, Gold Coast, on 28th March, 1901. Its winter quarters are as yet undiscovered.

RUFOUS-CHEEKED NIGHTJAR

Caprimulgus rufigena rufigena Smith

In its general grey colouring this species very closely resembles the European Nightjar, the plumage being similarly mottled and streaked with black and rufous, the scapulars with heavy black middles and buff outer margins. The rufous cheeks, ill-defined rufous collar and much broader rufous bars on the wings are characters to observe when the bird is handled, but there is no means of distinguishing it in the field. The wing measures 154–173 mm., the tail 104–125 mm.

The adult female differs from the male in lacking the white tips to the tail-feathers, which are freckled buff and brown, and in the mirrors on the primaries being orange-buff instead of white. The wing pattern of the male is illustrated in my larger work (vol. 3, p. 154) and is compared with the illustration of the wing of the European Nightjar.

Distribution. This is a resident nightjar south of the Zambesi and Cunene Rivers and appears to migrate northwards after the breeding season to the countries north of the equatorial forest. It has been obtained in May, June and July in Darfur, southern Cameroon (Ja River) and northern Nigeria (Yola).

BLACK-SHOULDERED NIGHTJAR

Caprimulgus nigriscapularis Reichenow

A very beautiful nightjar but rather small in size, about 9 in. in total length. The general colour is rich chocolate-brown, heavily blotched on the scapulars and wing-coverts with black and closely vermiculated with various shades of blackish and pinkish buff. The head is grey-brown tinged with russet, heavily streaked down the middle with black. An irregular collar of rufous, the feathers of

which are finely barred, almost surrounds the neck, becoming more golden buff on the sides of the neck. On either side of the throat is a patch of white feathers which are tipped with buff and black. The primaries are black, the third and fourth (rarely the second) with a white patch. The tail is rufous, barred and speckled with black; the two outer feathers are black with white terminal portions. The wing measures 147–159 mm. and the tail 110–126 mm. The adult female resembles the male, but the amount of white in the wing and tail is reduced.



This nightjar has a remarkable call which begins with shrill whistling notes and ends in a soft musical trill. The cry is often uttered from a tree at dusk and has been syllabled as *t-wip, turr-r-r-r*, trilled in a very sweet voice.

It is a bird which is very rare in collections owing to its habit of seeking thick cover during the daytime, when it is only betrayed by its attractive notes. It has a preference for the borderland of lowland forest and in the North Belgian Congo extends its habitat along the gallery forests. A call-note is reported to resemble three husky "chucks" in rapid succession.

The eggs have not been described, but chicks have been discovered in the Belgian Congo. It is believed to breed in the Uelle district about May.

Distribution. Kenya and Uganda south to Baraka on Lake Tanganyika, then across the northern Congo and Bahr el Ghazal to French Ubangi-Shari and the Lower Congo (Matadi). Westwards its range extends, perhaps uninterruptedly, to Portuguese Guinea (Gunnai), as specimens have since been collected in the Benin Province of Nigeria and in the Port Loko district of Sierra Leone.

FRECKLED NIGHTJAR

Caprimulgus tristigma sharpei Alexander

THE general colour of the whole upper parts, including the crown, is uniform brownish black, the whole surface closely freckled with very pale buff. Primaries are black, freckled at the tips, the outermost with buff marginal spots. The four outer primaries have a white spot on the inner web. The central tail-feathers are like the



back; the remaining rectrices are dark brown with rufous-buff markings on the outer webs, the outer rectrices with broad white tips freckled on the margin with brown. The throat is barred blackish and white, with two broad white patches on either side. The breast is freckled like the upper parts, and the belly is barred rufous buff and blackish. The wing measures 164–176 mm. and the tail 111–120 mm.

The adult female resembles the male but has smaller white spots on the wing-feathers and lacks the white tips to the outer tail-feathers; the latter are freckled to the tips and resemble the inner rectrices.

This is a resident nightjar, widely spread in our area but not commonly seen. It has been found on the tree-grown kopjes in the vicinity of Gambaga but usually frequents rocky outcrops in savanna country. A big expanse of bare rock is essential to its habitat. By day this Goatsucker rests in the shade of the rocks and in caves, where it has been found in French Sudan in the cliffs of Kulikoro. Unless flushed by chance in the daytime it is almost impossible to locate, so exactly does its plumage resemble the weathered rocks upon which it lies.

The eggs of this race have not been discovered. Those of the typical subspecies are laid on the bare rock in the early part of the

rainy season or in a spot where some pebbles and earth have accumulated in a slight depression. In some eggs laid by this species the usual protective coloration is not present, the ground colour being whitish spotted irregularly with dull brown clouded by a thin layer of chalk. One clutch of two measured 29·1 × 21·6 mm. and 30·4 × 21·7 mm.

Distribution. The Upper Guinea race extends from the neighbourhood of the Ubangi River westwards to the French Sudan, where it has been taken at Kulikoro, and in French Guinea, where another was shot at Kindia. The type was collected at Gambaga in the Northern Territories of the Gold Coast and another example at Kaga Djerri on the Kimo River by its original discoverer. Though reported to have occurred in South Cameroon, I am not satisfied that this specimen was properly identified. It is, however, to be found on the Ndop plain (4,000 ft.) and near Bamenda (5,000 ft.) in British Cameroon, from which specimens are available.

PLAIN NIGHTJAR

Caprimulgus inornatus Heuglin

Two races of this nightjar come within our limits, but the greater part of our area is inhabited by the typical subspecies.



The Plain Nightjar is about 9 in. in length. The ground colour of the plumage is brownish grey, dark grey or cinnamon-rufous, sometimes a mixture of both. The male has white patches in the

wing, the female dull rufous, the male with exceptionally broad white tips to the outer tail-feathers, about 2 in. deep, the female with the white tips lacking. The wing measures 151–170 mm., the tail 99–115 mm.

A great deal of individualism in plumage takes place in this nightjar which cannot be attributed to geographical variation or to age. It is a bird of the arid belt which apparently migrates in the dry season to the savanna country further south. It probably breeds about May and June near the southern border of the Sahara, great numbers arriving in the dry belt from the south in early April. Very young birds have been recorded from the Inundation Zone of the Niger at the end of May, which is an early date. It spends the winter in the savannas north of the equatorial forest belt from Uganda to southern Nigeria and the Gold Coast, going north again as spring approaches.

Distribution and Races. From Eritrea and the Red Sea Province westwards through the British Sudan, Darfur and Chad territory, the southern Sahara (Aïr and Asben) to the Gold Coast and Nigeria, migrating south to spend the off season north of the equatorial forest. It does not enter the forest country of the Belgian Congo but has been taken in the South Cameroon forest at Bitye. I have no records of this nightjar from west of the Gold Coast to date. The above is the range of *C. inornatus inornatus*.

A distinctive race, with remarkable vinaceous-brown plumage, *C. inornatus vinacea-brunneus* Bannerman, inhabits the French Niger territory (Tawa and Tillia), where newly arrived specimens have been collected in May and June with enlarged sex organs. An example of this race has also been obtained at Sokoto in mid-April.

WHITE-TAILED NIGHTJAR

Caprimulgus natalensis accrae Shelley

THREE races of *C. natalensis* come within our limits; that which is met with between Liberia and Cameroon is the form named above.

It is a short-tailed, rather stumpy-looking nightjar, 8½ in. in length, with the ground colour of the upper parts grey, and distinct black triangular-shaped markings, especially on the scapulars. The greater part of the outer tail-feathers of the male are white, and the usual white wing-patches are present. This nightjar is more distinctly barred on the belly than many which occur within our limits, and the blackish breast is spotted with buff. The female resembles the male, but the outer tail-feather, instead of being white, is bordered and tipped with buff. The white spots on the wings

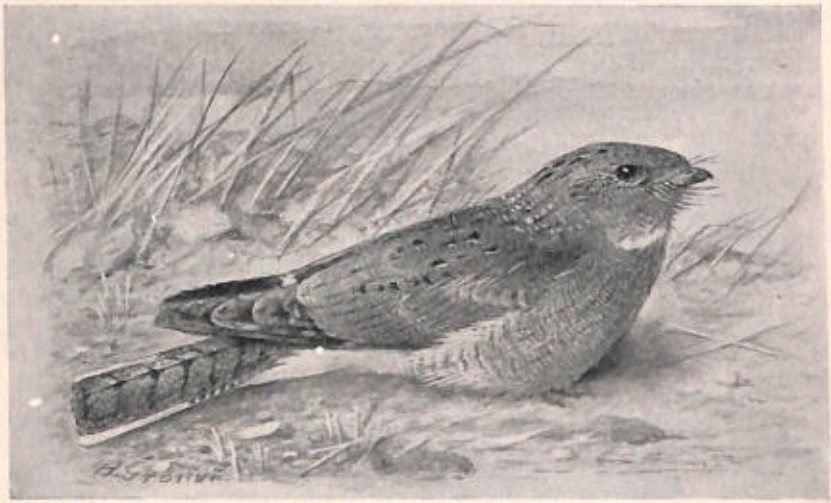
rainy season or in a spot where some pebbles and earth have accumulated in a slight depression. In some eggs laid by this species the usual protective coloration is not present, the ground colour being whitish spotted irregularly with dull brown clouded by a thin layer of chalk. One clutch of two measured 29·1 × 21·6 mm. and 30·4 × 21·7 mm.

Distribution. The Upper Guinea race extends from the neighbourhood of the Ubangi River westwards to the French Sudan, where it has been taken at Kulikoro, and in French Guinea, where another was shot at Kindia. The type was collected at Gambaga in the Northern Territories of the Gold Coast and another example at Kaga Djerri on the Kimo River by its original discoverer. Though reported to have occurred in South Cameroon, I am not satisfied that this specimen was properly identified. It is, however, to be found on the Ndop plain (4,000 ft.) and near Bamenda (5,000 ft.) in British Cameroon, from which specimens are available.

PLAIN NIGHTJAR

Caprimulgus inornatus Heuglin

Two races of this nightjar come within our limits, but the greater part of our area is inhabited by the typical subspecies.



The Plain Nightjar is about 9 in. in length. The ground colour of the plumage is brownish grey, dark grey or cinnamon-rufous, sometimes a mixture of both. The male has white patches in the

wing, the female dull rufous, the male with exceptionally broad white tips to the outer tail-feathers, about 2 in. deep, the female with the white tips lacking. The wing measures 151–170 mm., the tail 99–115 mm.

A great deal of individualism in plumage takes place in this nightjar which cannot be attributed to geographical variation or to age. It is a bird of the arid belt which apparently migrates in the dry season to the savanna country further south. It probably breeds about May and June near the southern border of the Sahara, great numbers arriving in the dry belt from the south in early April. Very young birds have been recorded from the Inundation Zone of the Niger at the end of May, which is an early date. It spends the winter in the savannas north of the equatorial forest belt from Uganda to southern Nigeria and the Gold Coast, going north again as spring approaches.

Distribution and Races. From Eritrea and the Red Sea Province westwards through the British Sudan, Darfur and Chad territory, the southern Sahara (Aïr and Asben) to the Gold Coast and Nigeria, migrating south to spend the off season north of the equatorial forest. It does not enter the forest country of the Belgian Congo but has been taken in the South Cameroon forest at Bitye. I have no records of this nightjar from west of the Gold Coast to date. The above is the range of *C. inornatus inornatus*.

A distinctive race, with remarkable vinaceous-brown plumage, *C. inornatus vinacea-brunneus* Bannerman, inhabits the French Niger territory (Tawa and Tillia), where newly arrived specimens have been collected in May and June with enlarged sex organs. An example of this race has also been obtained at Sokoto in mid-April.

WHITE-TAILED NIGHTJAR

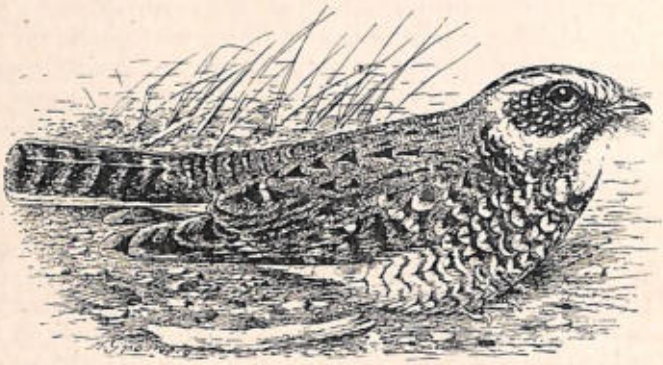
Caprimulgus natalensis accrae Shelley

THREE races of *C. natalensis* come within our limits; that which is met with between Liberia and Cameroon is the form named above.

It is a short-tailed, rather stumpy-looking nightjar, 8½ in. in length, with the ground colour of the upper parts grey, and distinct black triangular-shaped markings, especially on the scapulars. The greater part of the outer tail-feathers of the male are white, and the usual white wing-patches are present. This nightjar is more distinctly barred on the belly than many which occur within our limits, and the blackish breast is spotted with buff. The female resembles the male, but the outer tail-feather, instead of being white, is bordered and tipped with buff. The white spots on the wings

are smaller and incline to yellowish rufous. The wing measures 146–150 mm., the tail 96–101 mm.

Wherever the White-tailed Nightjar occurs, it seems to be uncommon, judging by the few specimens which have ever been collected. It was found on the Kru coast to frequent grassy slopes with patches of dark stony ground, from which latter it was sometimes flushed. Extremely few naturalists have ever met with it, and its eggs have not been discovered.



Distribution and Races

Caprimulgus natalensis accrae has been obtained in several localities in Liberia, generally near the coast; in the Gold Coast, where it has been shot at Accra, Ninqua and Christianborg, and in western Cameroon at Nkongsamba.

The other two races which occur in West Africa are:

Caprimulgus natalensis chadensis Alexander, which has a fulvous or rufous brown ground colour on the upper parts and the under parts darker, more rufous buff; the breast more decidedly marked with buff and black and lacking the grey vermiculations of *C. n. accrae*. The wing measures 147–160 mm. This race is restricted in its breeding range to the country which extends from the shores of Lake Chad to the White Nile and ranges south to the Uelle River district of the northern Belgian Congo and to northern Uganda. It has once been shot near Bamenda (4,000 ft.) in British Cameroon, and once in the Owerri district of southern Nigeria.

Caprimulgus natalensis gabonensis Alexander differs from both of the other races mentioned in its smaller size (wing 137–142 mm., tail 81–84 mm.). It closely resembles *C. n. chadensis* in colour but is more rufous brown, and the markings on the scapulars are smaller. It inhabits the savannas of Gaboon and extends south to the lower Congo.

MOZAMBIQUE NIGHTJAR

Caprimulgus fossii fossii Hartlaub

It is almost impossible to give any characters by which this nightjar can be identified until it is handled and compared with other species. It closely resembles *Caprimulgus rufigena rufigena* described on page 601, but in the present bird the ochraceous markings on the scapulars are more pronounced and the wing-coverts are less heavily spotted. The general colour of the upper parts is grey; a rufous collar across the base of the neck is streaked with black; there are large black spots on the scapulars and broad ochraceous margins. The primaries are dark brown, with a large white patch across the middle of both webs. The tail is brown, vermiculated with grey and crossed with about eight narrow black bars; the outer feathers have a white outer web and tip. At each side of the throat is a white patch; the breast, with spots of pale rufous or buff, is narrowly barred and tipped with black. The rest of the under side is pale rufous buff, closely barred with blackish, including the under tail-coverts. The wing measures 142–154 mm. and the tail 91–123 mm.

The adult female has the spots on the wings buff and the outer tail-feathers margined and tipped with buff instead of with white.

In its habits this nightjar appears to have no special characteristics to distinguish it from the other members of its family.

Distribution. Originally described from Gaboon, this the typical species ranges in East Africa from Katanga to the Orange Free State and has been found in West Africa to range from the Gold Coast (Cape Coast and Accra) to the Lower Congo, through Cameroon as far south as the Cunene River. It has not been recorded from Upper Guinea for many years. Another race, *C. f. clarus*, is found in East Africa from Victoria Nyanza to the coast, and another in southern Abyssinia.

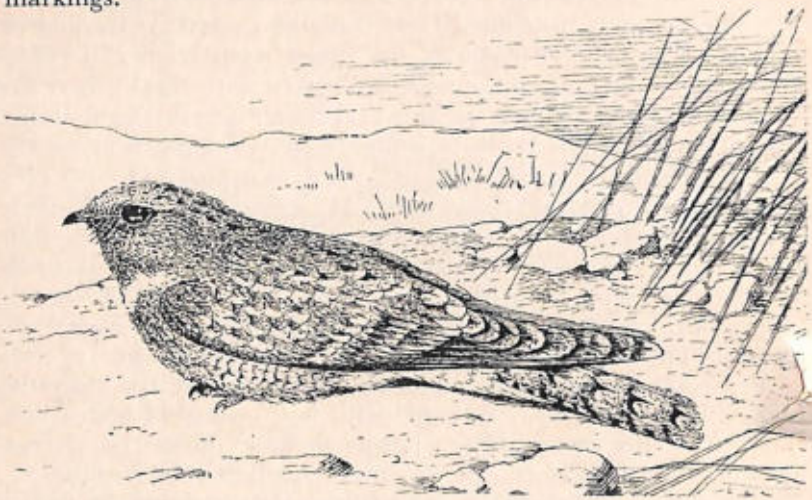
SAHARAN NIGHTJAR

Caprimulgus aegyptius saharae Erlanger

Two races of the Egyptian Nightjar have now been found in West Africa. The race named *saharae* may be distinguished by its uniform warm sandy-grey colouring, finely vermiculated but without any heavy black or other prominent markings which are the feature of so many members of the family. Its whole appearance is uniform. Another distinction is that the sexes are similar and not even in the male is there any white on the tail. From the Egyptian Nightjar the Saharan race differs in being less grey and being generally

paler. Its wing measures 182–200 mm., the tail about 110 mm. The immature of this nightjar is more rufous in its general coloration than the adult.

Whether this nightjar, which inhabits the sandy parts of the desert, breeds within our limits has not yet been proved. It almost certainly does so. Its eggs are very beautiful, blunt at both ends with whitish ground marbled and spotted with ashy and pale lilac markings.



Distribution. The Saharan race inhabits the desert, ranging from southern Algeria and Tunisia and probably southern Morocco south to Lake Chad, where it has been obtained at the mouth of the Yo River.

The typical race, *C. aegyptius aegyptius*, has been discovered recently to come within our limits, a specimen of the Egyptian subspecies having been taken at Fada in eastern Chad territory. This race ranges from Egypt to Baluchistan and Turkestan and probably only comes westwards in the non-breeding season. Its plumage is greyer and less sandy-coloured than *C. aegyptius saharae*.

BATES' FOREST NIGHTJAR

Caprimulgus batesi Sharpe

This large nightjar, about 11½ in. from bill to tail, is chiefly remarkable for its very dark plumage, the general colour being dark brown, boldly blotched with black, particularly on the scapulars, which are marked with bright golden buff. The whole upper parts are vermiculated, barred and streaked. The primaries are black, with a

white spot on the inner web of the two outermost, the white spot enlarged on the third and fourth primaries to form a bar. The middle tail-feathers are like the rump, barred with black and vermiculated with pale rufous; the two outer rectrices are black, with an extensive white blotch at the tip, the remainder of the feathers with narrow interrupted rufous bars. Throat and breast are rufous, finely barred and vermiculated with black. A white patch on the throat is bordered with black, and another dark area is on the lower breast. The rest of the under parts are buff barred with black, including the under tail-coverts. The wing measures 179–200 mm. and the tail 128–150 mm.

This fine bird is a resident species in the forests of southern Cameroon, where it may be seen at dusk hawking for insects, but is more often encountered in the daytime when disturbed from the ground.

It lays its handsome single egg in the two dry seasons, sometimes at the edge of a garden or plantation. The egg is perfectly oval in shape and beautifully marked with brown and lavender-grey blotches on a white ground. Eggs measure 31–35 × 23–25 mm.

Distribution. The forests of southern Cameroon south to the Middle Congo River, ranging eastwards through the Uelle River district of the Belgian Congo to the Semliki valley. Restricted to the rain forests and not found beyond their limits. A true forest nightjar, which perches on trees as well as on the ground.

ZINDER GOLDEN NIGHTJAR

Caprimulgus eximius simplicior Hartert

The Golden Nightjar is the most beautiful of its family in our area. It is not one of the larger species, measuring about 9–10 in. in length, but its colouring is very delicate, the ground of golden buff or palest chestnut, spangled with wavy white lines peppered with black. A white streak extends behind the gape towards the eye, and on the throat is a broad triangular-shaped white patch. The wing-coverts are like the back, the inner primaries pale chestnut barred with dark brown, the four outer primaries with a broad median area of blackish brown, succeeded by a very broad white patch, the terminal portion dark brown, mottled and barred with pale chestnut. The male has very broad white tips to the outer tail-feathers, the female having the tail tipped instead with cream. The white area in the wing is much reduced in the female. The wing of this nightjar measures 160–186 mm., the tail 100–120 mm.

The Golden Nightjar prefers gravelly soil and is restricted to very dry country, desert with dwarf bushes scattered about, sandy soil

and patches of stony desert. It spends the day on the ground and can be almost trodden upon before it will move from the path. It never perches on trees, its plumage harmonising perfectly with the desert upon which it lives. The churr of this nightjar is described as being like that of the Long-tailed Nightjar but of a distinctly lower pitch.



Two eggs are laid on the bare ground, often near a tuft of grass. The ground colour is greyish buff, the shell thickly spotted with liver or greyish-brown patches and underlying mauve spots. Egg measurements are 28·7–29·5 × 20·7–21·5 mm.

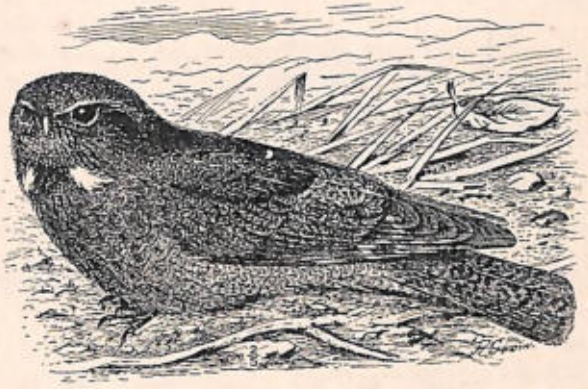
Distribution. Discovered in the neighbourhood of Zinder, this race of the Golden Nightjar extends certainly to Aïr, but may have a much wider range west of Kano than actual specimens would indicate. It may, in fact, occur all along the western borders of the Sahara, as the typical subspecies is widely spread from the Egyptian Sudan to Darfur and perhaps to Chad.

DUSKY NIGHTJAR

Caprimulgus binotatus Bonaparte

A DARK-PLUMAGED and nearly uniformly coloured nightjar of small size, about 9 in. in length. Its general colouring is very dark brown, speckled with pale rufous with a distinct diagonal buff band on the scapulars. The wings are blackish with pale spots on the outer web, six to eight in number. The throat is barred finely with black and

rufous and two white spots are present, one on either side of the lower throat. The entire under parts are freckled brown and rufous buff. The tail, alternately barred rufous and black, is square and, unlike most nightjars, has no white in it, nor is there any white in the wing-feathers, which makes identification of the species easy. The sexes appear to be alike. Only a few examples have been



collected, but these have wings of 143–156 mm. and tails of 92–105 mm., one male bird being considerably smaller than the others, though apparently full grown.

The Dusky Nightjar is, like Bates' Nightjar, a true forest species which has been found clinging to the loops of creepers which hang from the trees. Its eggs are unknown, and nothing has been learned about it save that it inhabits primeval rain forests.

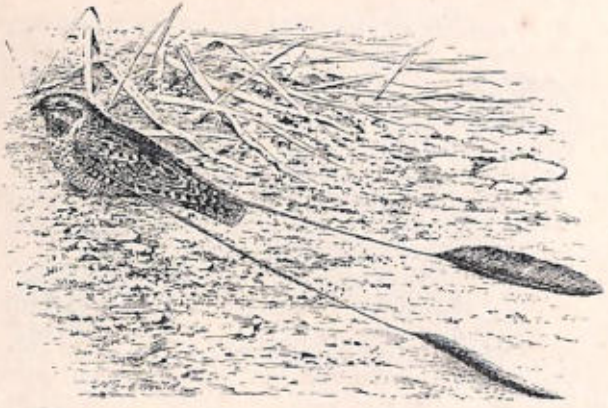
Distribution. Discovered at Dabocrom in the Gold Coast, the species has never been taken since in that Colony, but has turned up in the vicinity of the Ja River in southern Cameroon, where five examples have been collected by natives who caught them asleep in the forests.

STANDARD-WING NIGHTJAR

Macrodipteryx longipennis (Shaw)

This is a small nightjar about 8½ in. in length with dark colouring and an indistinct rufous collar; the black and buff markings on scapulars contrast with one another; barred wings (rufous and black) and a square short tail. In the breeding season the male may at once be distinguished from every other nightjar by the long plumes, one of which (the ninth primary) springs from each wing; for about 11 in. the shaft is bare of any web, but the terminal portion (about

7 in.) is furnished with broad webs. These plumes float out behind when the bird is on the wing, and at such times the intermediate shaft becomes invisible while the terminal portion remains conspicuous, giving the impression in the gloaming that two small bats are chasing the nightjar. On the ground the bird looks very frog-like, with its large bill and hunched-up appearance. The wing of



this nightjar (excluding the ninth remex) measures 162–182 mm. The elongated ninth remex in the breeding season may be anything from 430 to 470 mm. in length. The tail measures 91–111 mm.

It will be seen in the accompanying drawing at what angle the long plumes are normally held when the bird is in repose on the ground. An erroneous idea, held for many years, was that these plumes were held up vertically. It may be that they are brought into play during the courting season, which would account for the popular belief.

The Standard-wing spends the day on bare patches in the bush, beneath a tree or under the shade of small bushes, where it squats on the accumulated dead leaves. Stony ground on hillsides among scattered shrubs is another favourite haunt. When dusk falls the birds begin their hawking, flying to and fro over the grass, fields and open spaces, often on the outskirts of villages or along the roads.

During the season when the standard plumes are developed the male presents a most extraordinary sight on the wing, as already indicated. When the breeding season is over the standards are shed and the male is then similar in appearance to the female and is almost impossible to detect on the ground.

North of lat. 9° the Standard-wing is met with commonly on ground suited to its habits, but south of that it is less often encountered. A grass fire will attract it to share in the feast of escaping insects. From December to June is the period when it is most in

evidence. To what extent regular migration takes place in West Africa it is difficult to say. It is certainly subject to considerable local movement. It breeds in the thorn-scrub and tree savanna belts chiefly from January to June in Upper Guinea, and when breeding is over it apparently migrates further south. The forest area is shunned, but outside the forest it seems to be pretty generally distributed. In the extreme north of its range it is, however, present only during the rains.

The Standard-wing lays its two eggs on the bare ground, often in the vicinity of a clump of small trees. The general colour varies from pale salmon to various shades of chestnut or buff, the shell markings consisting of various blotches of slate with blotches and smears of chestnut superimposed. Some eggs are finely but thickly speckled, but most are boldly and beautifully marked. They measure 23·1–29 × 18·1–21 mm.

Distribution. The range of this bird can only be given in general terms. In East Africa it extends from Eritrea and the Sudan to Uganda, in West Africa from Senegal to southern Cameroon and perhaps to the Congo. Reports from British West African possessions go to prove that it is universally distributed outside the forest area, but more general north of lat. 9°. Subject to seasonal movements, extending further north in the rainy season and further south in the dry season, when it reaches the coastal area of Nigeria and adjoining Colonies.

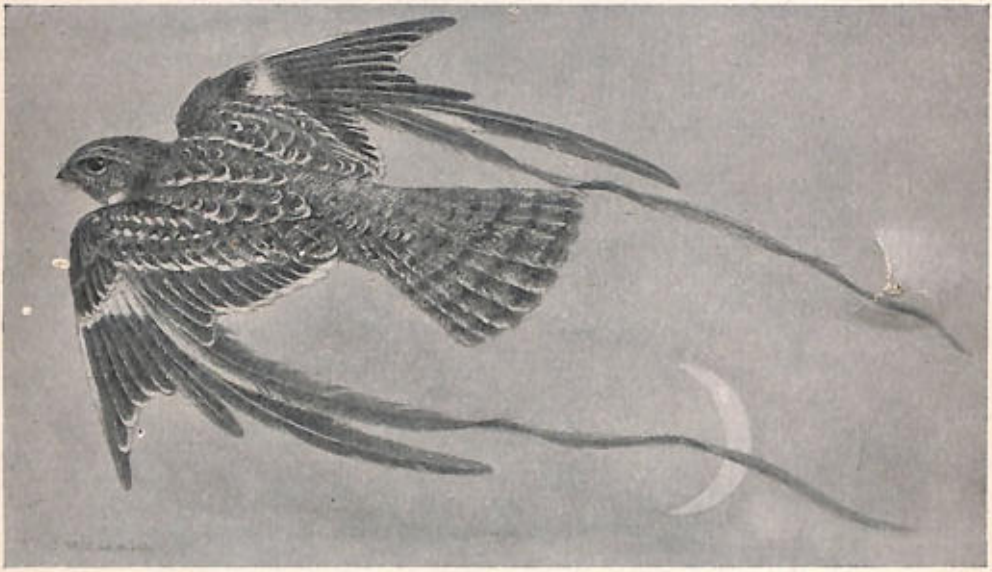
PENNANT-WINGED NIGHTJAR

Cosmetornis vexillarius Gould

The general colour of the upper parts of this nightjar is brown, speckled and vermiculated with grey and rufous. The crown and scapulars have heavy black markings, with tips of buff to the latter. At the base of the neck is a rufous collar narrowly barred with black. The tail is blackish, barred with pale rufous; the bands are freckled and spotted with black. Chin, sides of the face and breast are pale rufous barred with blackish and there is a white patch in the centre of the throat. The rest of the under parts is white or buffish white, barred closely but not heavily with blackish. The under wing-coverts are barred, but the under tail-coverts are mostly uniform white. The wing measures 184–237 mm., the ninth primary in the breeding season 460–720 mm. The tail measures 114–138 mm.

In the breeding season the male of this nightjar may easily be recognised by the ninth primary enormously elongated to form a pennant, the webs of which are fully developed throughout their length; the outer web is brownish, the inner web white. These

pennants vary in length from 18 in. to over 28 in. and are very different in appearance to the racquet-tipped, long wing-feathers of the Standard-wing Nightjar, which, for the greater part of their length, show nothing but the shaft. When these ribbon-like plumes are shed the nightjar is difficult to distinguish in the field; the male has always a very white belly, however. It is larger than most of the other members of the family in West Africa and has a considerable amount of white in the wing. The long plumes are shed early in June and the new plumes grow slowly, but many birds return to their breeding quarters with their pennants already developed.



The regularity with which this nightjar migrates from its breeding areas in the southern savannas which lie south of the great equatorial forest belt, to the grasslands north of the Equator, where it spends the non-breeding season, is the most striking feature in its life-history. The extent of this movement is remarkable. It remains in the south from October until early February, in which latter month the northward passage sets in. The records from the great Congo forest and from the forested area of Cameroon fall within the two periods of migration, and then the Pennant-winged Nightjar may be encountered in the forest clearings.

Winged termites are great favourites of this bird, and when these are swarming as many as thirty Pennant-wings have been observed at the same gathering, feeding on the insects.

The southern movement takes place from July to September. This bird has never been found in Upper Guinea during the breeding season, but at other times of the year it is locally distributed in the grass country which lies chiefly south of lat. 8° N.

The eggs need not be described in detail, as the species has never been found nesting within our limits. Two eggs are laid, of a light reddish-brown ground marbled and spotted with dark brown and purplish under markings. Thirty-five eggs average 30·49 × 21·14 mm.

Distribution. More evenly distributed in the eastern part of the continent than in the west, breeding from Angola and Uganda south to Damaraland and Zululand, migrating across the great equatorial forest to spend the off season north of the forest, when it ranges in Darfur to lat. 13° N., but in West Africa is rare north of lat. 8° N. It is recorded in West Africa as far west as Casamance but has generally been recorded from the savannas of Nigeria and the Gold Coast. The dividing line between the breeding and non-breeding areas is apparently lat. 3° to 5° S. It has once been recorded from Fernando Po.

LONG-TAILED NIGHTJAR

Scotornis climacurus (Vieillot)

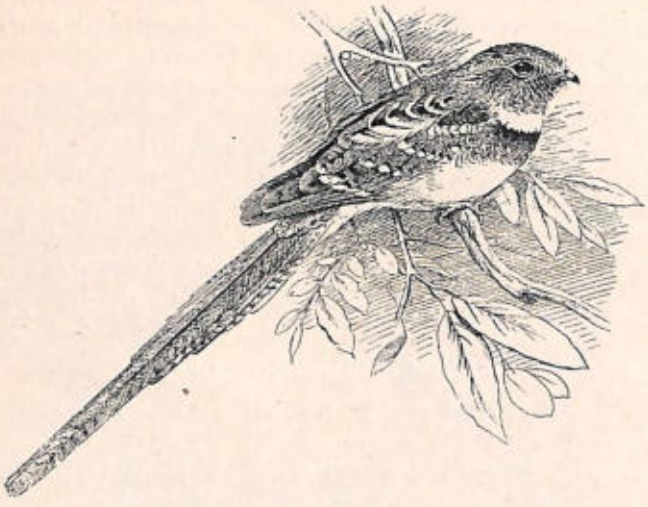
THREE races of the Long-tailed nightjar come within our limits, for the names and distribution of which see the final paragraph.

This is a small nightjar, the body not much more than 4½ in. in length, but with a very long tail in the male, sometimes as long as 11 in. In colour the typical subspecies is grey-brown, with a broad white patch on the throat and another on the wings, as well as pale tips to the lesser coverts and scapulars, forming a pale bar by which the bird may be occasionally spotted on the ground. Black markings on the crown and scapulars give the upper parts a variegated appearance. It is a noisy bird, and attention is first attracted to it by the prolonged *churr* which is heard at dusk or is kept up throughout a moonlit night. The call is not so loud as that of the Standard-wing. Constantly seen at dusk on dusty paths, motor roads and dry patches of ground.

Normally a bird of the thorn scrub belt, this nightjar is one of the commonest members of the family, for when it has finished breeding in the north of its range, which it does during the rains, it migrates south to spend the dry parts of the year in the savanna belt, and may then be observed even in forest clearings. In the course of a year it inhabits very different types of country, from the dry desert to the edges of swamps and wooded plantations, cassava fields,

coffee shambas, clearings in the forest and bush paths. Damp situations are not much favoured by the typical race, but open grassland with scattered clumps of bushes, with here and there stony patches, forms an environment much to its liking.

It is often possible to approach to within a yard or so as it squats on the path, its presence being given away by the white patches on



the wings and throat, which show up conspicuously. Usually it prefers the ground, but when disturbed it may perch on a tree either crosswise or lengthways, its tail being more easily disposed of in the former position.

The two eggs are laid on the bare laterite soil, sometimes partly sheltered by a low thorny scrub. The glossy shell is pale fawn, suffused, marbled, blotched and clouded with pale grey and tawny markings and paler shades of brown. Measurements are 23·2–25·2 × 17·9–19 mm. Dates when eggs have been taken fall between 14th March and 11th August inclusive.

Distribution. The races to which reference has been made are:

Scotornis climacurus climacurus (Vieillot). The general colour is pale greyish brown, wing 138–151 mm., tail (male) 200–280 mm., (female) 152–180 mm. Ranges from Senegal and Gambia eastwards to Chad and the Nile valley throughout the semi-arid belt, migrating in the dry season to the tree and grass savanna belts, even reaching in West Africa the coastal area, where it mingles with the darker coastal race described next. This nightjar ranges further towards the desert than any of its family except *Caprimulgus inornatus*.

Scotornis climacurus leonimus Bannerman, which differs from both the other races in having the plumage very dark blackish brown. Discovered in Sierra Leone, the range of this dark race is not fully known. It is believed to be a breeding resident which does not migrate. It lives in a moister climate than its paler relative.

Scotornis climacurus sclateri Bates differs from the typical race in the darker tone of plumage with a varying amount of rufous in the coloration. Described from the highlands of Cameroon, this race occurs on the Bauchi plateau and the Lower Benue and encroaches into clearings of the forest belt. It migrates to the savannas north of the equatorial forest and has established itself south of the forest from the Middle Congo to the Kasai district. In summer it has been taken in the Cameroon Montane between Bamenda and Banso at 4,000 ft.

Still another race, *S. c. nigricaris* Salvadori, which is very grey, heavily vermiculated with black, has been described from the region of the Bahr el Ghazal and Sobat River. It is extra-limital.

ORDER CYPSELIFORMES

FAMILY MICROPODIDAE

Key to the Swifts in West and Central Africa

1. With shafts of tail-feathers protruding beyond webs and ending in needle-like points 2
   Shafts of tail-feathers not protruding beyond webs .. 6

2. Without any white on belly; under tail-coverts black with faint greenish gloss .. *Chaetura melanopygia*, p. 633
   With white on belly 3

3. White on belly confined to ventral region and tips of flank-feathers; under tail-coverts brown *Chaetura ussheri* and subsp., p. 629
   Belly entirely white, or white with dark shaft-streaks; under tail-coverts white 4

4. Size large (wing over 140 mm. (5½ in.)) tail under 30 mm. in length .. .. .. *Chaetura cassini*, p. 630
   Size smaller (wing under 140 mm. (5½ in.)) tail over 30 mm. in length 5

5. Longest upper tail-coverts much elongated, practically reaching tip of tail .. .. *Chaetura sabini*, p. **632**
Longest upper tail-coverts not reaching beyond middle of tail .. .. *Chaetura thomensis*, p. **633**

6. Tail almost square *Colletoptera affinis* and subsp., p. **626**
Tail forked 7

7. Rump white, contrasting with back 8
Rump not white, but uniform with back 9

8. Tail markedly forked, outermost tail-feather graduated to a fine point extending more than 10 mm. beyond next longest. White throat-patch confined to throat *Micropus caffer* and subsp., p. **624**
Tail evenly graduated, outermost tail-feather not elongated to fine point, extending not more than 5 mm. beyond next longest. White throat-patch extending almost on to breast .. .. .. *Micropus horus*, p. **625**

9. Size very large (wing over 190 mm. (7½ in.)) *Micropus aequatorialis lowei*, p. **622**
Size smaller (wing under 190 mm. (7½ in.)) 10

10. Entire plumage dark glossy blue, including crown *Micropus batesi*, p. **621**
Entire plumage not dark glossy blue 11

11. Size larger (wing over 145 mm.) 12
Size smaller (wing under 145 mm.) 15

12. Mantle blackish or dark blue and distinctly glossy .. 13
Mantle mouse-colour or brown, practically no gloss .. 14

13. Throat whitish, wing under 160 mm. (6¼ in.) *Micropus toulsoni*, p. **620**
Throat dusky, wing over 160 mm. (6¼ in.) *Micropus sladeniae*, p. **620**

14. Plumage dark brown, whitish patch on throat very small .. .. *Micropus apus apus*, p. **619**
Plumage mouse-colour, whitish patch covers entire throat .. .. .. *Micropus pallidus brehmorum*, p. **621**

15. Outer tail-feathers considerably elongated beyond next longest and tapering to fine point *Cypsiurus parvus* and subsp., p. **627**
Outer tail-feathers not considerably elongated beyond next longest but evenly graduated *Micropus unicolor* and subsp., p. **621**

SUB-FAMILY MICROPODINAE

COMMON SWIFT

Micropus apus apus (Linnæus)

SOOTY-BLACK plumage with whitish throat and brown wings, the Swift appears quite black in flight. In size about 6½ in. from bill to tail, the long narrow sickle-shaped wings and sharply forked tail give it a very distinctive appearance on the wing. The flight is extraordinarily rapid. The lack of any white on the rump or belly, together with its comparatively large size and wing expanse, should save the European Swift from confusion with any but the Madeiran Mouse-coloured Swift, which last is also a migrant to West Africa. The European Swift is blacker and has a much smaller amount of white on the throat. The measurements are as follows: Wing 165–179 mm., tail 72–81 mm.

Immature examples may be recognised by the browner coloration, more mouse-brown wings and coverts and the pale margins to the feathers of the breast and under wing-coverts. There is usually more white on the throat than in adults.

This is our European Swift, which passes the winter months in tropical Africa, the majority passing through the country which we deal with in this book to localities south of the Equator. It is an early arrival, having been noted in Sierra Leone in July, and by 10th August the firstcomers have reached the Congo. The movement south continues over a long period, a large passage having been noted in the vicinity of Ansongo on the Niger on 25th September. In southern Nigeria the earliest arrivals may be seen about 25th August, and birds will be noted at irregular intervals through the entire northern winter until the last have returned north towards the end of April.

The appearance of the Common Swift in West Africa has often been observed to coincide with violent storms, the birds appearing from nowhere and disappearing again completely from the locality. When on serious passage the birds fly in columns several hundred yards wide and travel rather slowly at an estimated speed of 15 m.p.h., keeping steadily on their course. Such a migration has been witnessed in the Gold Coast. The latest date when they have been seen on passage in the Cameroons is 14th May. There is evidence, particularly in Darfur, that quite a number remain in Africa throughout the summer, possibly yearling birds not sufficiently vigorous to breed.

The nights are spent roosting in the roofs of buildings or, when available, in crannies in cliffs. Hollow trees are also resorted to for

the purpose, and there is a record of several hundred birds having passed the night in a colony of Weaver Birds' nests, but that was not in West Africa and must be unusual. The greater part of the day is spent hawking in the air and, as already remarked, hundreds may suddenly appear in the neighbourhood where for weeks previously not a swift had been seen.

Distribution. The whole of Palaearctic Europe, breeding north to lat. 70° N. in Scandinavia to Archangel in Russia, migrating during the northern winter to Africa, mostly south of the Equator. On both passages birds are present in West Africa and during the intervening months flocks will turn up at irregular intervals, especially in stormy weather, attracted to the district, perhaps, by flying insects or winged termites. European Swifts are present in our area roughly from the end of July to the end of April.

The Asiatic representative of this swift, *M. apus pekinensis*, also migrates to eastern Africa in winter, where it mingles with the typical European race, but it has not yet been recorded as reaching West Africa on its travels.

FERNANDO PO SWIFT

Micropus sladeniae (Ogilvie-Grant)

This bird is similar to the European Swift but is altogether blacker and has only an indication of white on the chin and upper throat. The wing measures 177–185 mm., tail 69–75 mm.

Whether *M. sladeniae* is confined to Fernando Po seems improbable, as a specimen which closely resembles it has been shot at Bakossi in Cameroon, where it was given the name of *M. melanotus*, but does not appear to be distinguishable from the bird described from the island.

Nothing is known about this swift, and no further specimens have been secured since the type was shot at Fishtown.

LOANDA SWIFT

Micropus toulsoni (Bocage)

The body and wings of the Loanda Swift are black, the head is brown and the throat white. The skin of the only specimen examined measures $5\frac{3}{4}$ in. from bill to tail; the wing measures 151 mm. and the tail 53 mm.

In appearance this bird is very like *M. horus*, but has no white on the rump and the throat is less pure white. Very few examples have ever been collected, and nothing is known concerning it.

Originally described from Loanda, the range of this rare bird extends from Landana, probably to Benguella.

MOUSE-COLOURED SWIFT

Micropus pallidus brehmorum (Hartert)

SIMILAR in general appearance and size to the European Swift, this species can be distinguished from the Palaearctic migrant by its much paler mouse-coloured plumage, the forehead washed with grey and the entire chin and upper throat pure white. This white throat-patch is much more extensive than in *M. apus*. The wing measures 167–175 mm., and the tail 65–74 mm.

The African home of this bird has not really been discovered. The species breeds commonly in the Canary Islands and is to be found there during most of the year, arriving in January and departing in September. During the four months that it is absent from the islands it probably visits the southern Sahara.

This same swift breeds in northern Africa from Morocco to Tunisia and winters in the Sudan. It is almost sure to be found within our limits and is reported to breed in the mountains of Aïr.

ALEXANDER'S PLAIN SWIFT

Micropus unicolor alexandri (Hartert)

A SMALL swift, 5½ in. in length, mouse-brown in colour with a dull whitish throat; the wings are black and the tail is slightly forked. Wing measurements are 131–140 mm., tail 47–60 mm.

Alexander's Swift is restricted to the Cape Verde Islands, where it is especially numerous in Brava, where it frequents the maritime cliffs. The birds are resident and breed in the islands.

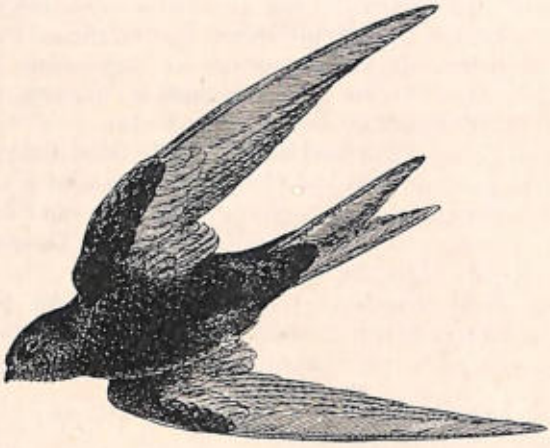
Another race of *M. unicolor*, which is altogether blacker in its plumage than the race in the Cape Verde Islands, inhabits the island of Fernando Po in the Gulf of Guinea and has been named *Micropus unicolor poensis* Alex. It is more fully described in my third volume of *The Birds of Tropical West Africa*, p. 186.

BATES' SWIFT

Micropus batesi (Sharpe)

JUST over 6 in. in length, this little swift is so strikingly black in plumage, both above and below, without even an indication of a white patch on the throat, that it cannot be mistaken for any other member of its family. It is a small bird which flies with rapid wing-beats, and the tail appears rather long and is generally held closed so that the fork is not apparent. The wing measures 131–132 mm., the tail 67–71 mm.

For a long time the type of this rare swift, discovered at Efulen, in southern Cameroon, remained unique, when, oddly enough, a second example was secured in the Semliki valley on the other side of the continent. It has since been reported from the forest road



between Irumu and Beni in the Belgian Congo, where twenty or thirty individuals were on several occasions observed flying high. Now it has turned up again in 1948 in British Cameroon at Kumba and Bamenda (4,500 ft.). The type specimen was captured on its two white eggs, which measured 21 × 14·5 mm.

A small black swift has been seen in western French Guinea near Macenta which, though not obtained, appeared to be indistinguishable from *Micropus batesi*.

WILLOUGHBY LOWE'S MOTTLED SWIFT

Micropus aequatorialis lowei Bannerman

This splendid swift, which measures in the skin about 8 in. from bill to tail-tip, and has enormous wings 204 mm. in length, was discovered by the naturalist in whose honour I named it, on the Rokell River in Sierra Leone in 1920 and has never been obtained since, though it has probably been seen.

Its entire upper parts are blackish brown with a decided gloss on the feathers. The under parts are similarly coloured; the chin and throat are white, with the area clearly defined; the chest, sides of breast and belly, flanks and under tail-coverts are dark brown, the middle of the breast and belly is white, with each feather subterminally

barred with dark brown. The under surface of the wing is uniform brown. The tail, which is markedly forked and 80 mm. in length, is blackish brown.

The large swifts of which this is a subspecies are inhabitants of mountainous country such as Jebel Marra in Darfur, Mount



Kilimanjaro and the high ranges of Abyssinia. Probably the bird shot at Mahera, in the low country of Sierra Leone, was far from its breeding place, perhaps in the mountains of Futa Jalon or possibly the Tingi Mountains in the interior of Sierra Leone.

It is a bird which flies very high and is consequently far from easy to obtain, but its exceptionally large size and wing-spread should draw attention to it if present in one's neighbourhood.

In 1948 a new race of this swift was discovered in the highlands of British Cameroon.

Distribution and Races. *M. aequatorialis lowei* Bannerman is known only from Sierra Leone from a single specimen.

M. aequatorialis bamendae Serle inhabits the escarpment at Bamenda (5,000 ft.), British Cameroon. It is as dark in plumage as the bird

from Sierra Leone but is distinguished from that race and also from *M. ae. furensis* Lynes (the Sudanese race) by the absence of white on the lower breast and belly. The wing measures 197–203 mm. Other races have been described from Kilimanjaro (*M. ae. reichenowi*) and from Ruwenzori (*M. ae. schubotzi*). The typical subspecies ranges from Abyssinia over a wide area reaching Mashonaland and Angola.

WHITE-RUMPED SWIFT

Micropus caffer streubelii (Hartlaub)

Two races of *M. caffer* come within our limits. In my third volume I listed only one race, *M. caffer ansorgei*, but since that date the interesting discovery has been made that the Eritrean subspecies occurs and has even been found nesting in southern Nigeria and the Gold Coast.

The White-rumped Swift is a dark blue bird about 6 in. from bill to tail, with a pure white rump having dark shaft-stripes. A light bar is noticeable on the wing caused by the pale edge to the outer secondaries, and a pale brown stripe is prominent over the eye in contrast to the darker brown head and nape. The upper throat is white and the whole of the rest of the under parts very dark blue. In flight the strongly forked tail is characteristic. The wings are brown and the quills have a greenish gloss. Wing measurements are 130–142 mm.

The White-rumped Swift is evidently a resident species on the Guinea coast, for it has been found breeding at Wenchi in the Gold Coast and also at Abeokuta in southern Nigeria. Its breeding habits are peculiar, as, like the South African typical race, it does not build its own nest or lay its eggs under the eaves of buildings or in cliffs, but appropriates the nests of various species of swallow, decorating the entrance to the nests with feathers taken from the swallows' nests. At Wenchi it has appropriated the nests of *Hirundo semirufa gordoni*. In Uganda the Striped Swallow (*Hirundo abyssinicus unitatis*) is often victimised in this way, and the nests of other swallows are utilised in the Belgian Congo, including both of the above. In south-western Nigeria it was found utilising the mud nests of *H. a. puella* and *H. s. gordoni* built in road and rail culverts.

In East Africa *M. c. streubelii* occurs up to 6,000 ft., but is said not to ascend forested mountains. In the Congo it is found in the savannas of the Uelle and is regularly to be found about rocky hills where the swallows breed whose nests the swifts appropriate. Eggs are described as pure white and measure 21–22·6 × 13–14·5 mm.

Distribution. M. c. streubelii ranges from Eritrea, Abyssinia and the Anglo-Egyptian Sudan south to Tanganyika and across Africa north

of the forest to turn up again in southern Nigeria and the Gold Coast. In the Congo it occurs in the savannas of the Uelle and those about Lake Edward.

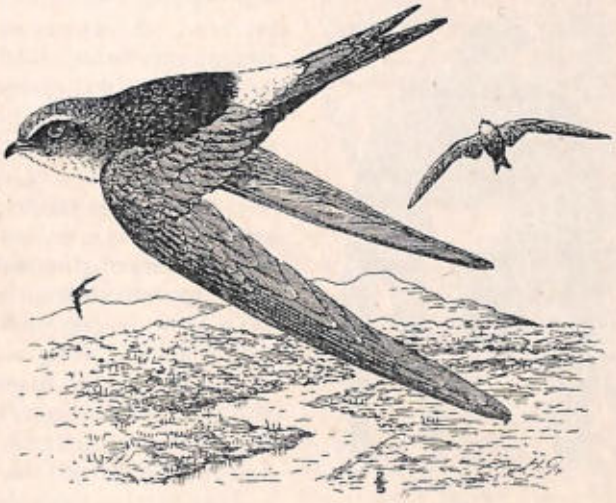
The other race which just comes within our limits is *M. c. ansorgei* Sclater, described fully in my third volume on p. 189. It is darker brown on the crown and more bluish on the back and upper tail-coverts than *M. c. streubelii*. The wing measures 134–146 mm. and the tail 62–69 mm. The range of Ansorge's White-rumped Swift extends from the Portuguese Congo to northern Angola and probably across the savannas of the southern Congo.

A larger race inhabits South Africa south of the Zambesi.

HORUS SWIFT

Micropus horus (Heuglin)

I DOUBT if it is possible to distinguish the Horus Swift in life from the last species where the two occur together. Probably the flight will appear different to a trained observer, but in general appearance



there is little to choose between them. The Horus Swift is about 7½ in. in length and, compared with the White-rumped Swift, differs in having a smaller white area on the throat, a less attenuated tail and the plumage of the mantle and back less blue-black, with a distinct greenish sheen noticeable. The wing measures 142–155 mm. and the tail 52–58 mm.

The Horus Swift appears to be a resident north of the Equator, where it breeds in the western basin of Darfur in midsummer. Its

nesting habits are as characteristic as are those of *M. caffer*, for it invariably lays in tunnels in banks which may have been excavated by Bee-eaters or Bank Swallows. The white eggs are two in number and are deposited on a pad of hair, hay and feathers at the end of the tunnel. Measurements are 21·8–22·7 × 14·5–15 mm.

The range of *M. horus* extends from Abyssinia and Darfur to the Zambesi in eastern Africa and possibly across the savannas of the Congo, as it has been obtained in the Portuguese Congo at Landana. I have included an illustration of this swift, as there is nothing to prevent its turning up in Upper Guinea at some future date.

LITTLE AFRICAN SWIFT

Colletoptera affinis abessynicus (Streubel)

THREE races of this swift come within our limits whose range and characters will be mentioned in the last paragraph. The above is the generally distributed race in West Africa.



C. affinis is a small black swift with square tail, a pure white forehead, throat, rump and thighs, the latter visible from below as the bird dashes overhead. In total length from bill to tail this bird measures about 5¼ in. and has a wing expanse of 11½ in. Its flight is distinctive, and when seen in company with the larger *Micropus murinus* or *M. apus* the difference in the wing-beats is very noticeable. The flight is strong and very steady, the bird gliding at times with motionless wings. The wing measurements are 122–134 mm. and the tail 38–42 mm.

This is a most abundant species in West Africa, large colonies being found in most large towns and in many villages, where it congregates in the breeding season, scattering in small parties over the country when not so engaged. As a rule it flies high and may be seen careering about in company sometimes with the Palm Swift, the latter easily distinguished by its long, strongly forked, tapering tail. It seems to be resident in the whole area, breeding and roosting in all large buildings. Some of the colonies are literally immense,

that at the power house at Sekondi exceeding a thousand birds, while enormous colonies exist at Wa and in many other towns, both on the coast and in the interior, as in Kano City. The numbers do not appear to fluctuate from year to year or from season to season.

Common sites for the nests of the African Swift are the eaves of buildings, thatched roofs of rest-houses, under the steelwork of bridges, sometimes in caves and on the palm-joists against the matting of large native huts and rest-houses. Birds utilise the nests in which to roost, and no fewer than three adults have been found in one nest in addition to two fledglings.

The nests are untidy-looking objects built in groups against one another. The construction varies, but feathers form a large part of most, with grass in others. When built against, instead of upon, a support, such as the steelwork on the Jebba bridge, cementing material has to be used to stick the nests to the framework and also to one another. The nests in such cases are more shapely than usual, with well-defined tubular entrances. The breeding season is most irregular, eggs having been found in almost every month in Nigerian colonies without relation to one another or to the seasons. Two white eggs, exceptionally three, with dull rough surface usually form the clutch. Eggs measure 22·5–23·5 × 13·7–15 mm.

Distribution and Races. The most widely spread race, *C. affinis abessynicus* (Streub), occurs from Gambia to northern Angola, ranging from the coastal area to the border of the desert, thence to the Sudan, Abyssinia and Somaliland and south at any rate to Nyasaland as a breeding species.

The Palestine Little Swift, *C. affinis galilejensis* (Antinori), is paler than *C. a. abessynicus* and has more white on the throat. It ranges from Morocco to Palestine, Syria and Iran and migrates across the Sahara. It has been obtained at Timbuktu, Zinder, Kano and Aïr. Col. Meinertzhagen would unite the Little Swift from West Africa with the typical Indian race (*cf. Bull. B.O.C.*, 1949, p. 105).

Bannerman's Little Swift, *C. affinis bannermani* (Hartert), is very much darker than either of the races described and is, in fact, the blackest of all the subspecies of *C. affinis* recognised. It is restricted to the islands in the Gulf of Guinea: São Thomé, Principe and probably Fernando Po.

PALM SWIFT

Cypsiurus parvus (Lichtenstein)

Two races of the Palm Swift occur in our area. It is a very small swift, about 5½ in. long, with narrow wings of a very pronounced sickle shape. The tail is strongly forked, and the outer feathers are

tapered to a fine point. The typical race is pale mouse-colour, with the throat very pale. Its close association with the Borassus or fan-palm is well established. The bird is seldom encountered in districts where the palm-tree is absent. Its home is in the palms, and after hawking over the neighbouring grasslands the Palm Swift returns to the shelter of the giginya, dum, or oil palms which they make their headquarters. Both races are consequently locally though widely distributed, dependent on the presence of the palms.



As evening approaches the swifts scatter further afield, appearing in places where during the day not one is to be seen. When in flight —and they fly with extraordinary swiftness—the birds often scream in unison. The cry is said to be neither as loud nor as harsh as that of the Little Swift. Wherever they occur they appear to be resident, no migration having been observed to take place.

The nest is made entirely of feathers, stuck together and to the palm leaf by a tenacious viscid substance which hardens when dry. The eggs are stuck to the nest with saliva, and the leaves on which the nests are built can be held at any angle without the eggs falling out. The egg is white without gloss, the clutch consisting of two eggs, which measure 17·7–19·5 × 11·7–12·6 mm.

The favourite palm in which to nest is undoubtedly the fan-palm (*Borassus flabellifer*), and this is especially the case in the south of the bird's range. In more northerly regions the dum-palm (*Hypohoene*

thebaïca) and oil-palm (*Elaeis guineensis*) are utilised, and on the sea-shore coconut-palms are visited. More rarely the royal palm (*Oreodoxa regia*) comes in for attention, as in the forest country around Kumasi. There is great mortality among the young of the Palm Swift occasioned by the voracious crows, which attack the nests before the young have flown.

Distribution and Races. The Sudan Palm Swift, *C. parvus parvus* (Lichtenstein), inhabits the dry belt of Senegal and Gambia and Casamance through the French Sudan and the hinterland of the Gold Coast and Nigeria across Africa to Abyssinia and the dry parts of Kenya and Uganda. Its plumage is mouse-grey. The wing measures 124–138 mm., tail 82–96 mm.

The West African Palm Swift, *C. p. brachypterus* (Reichenow), is distinctly darker brown than the typical race and has a shorter wing (120–135 mm.). The tail measures 79–100 mm. This swift is found in the forested area from Sierra Leone to Gaboon, including Fernando Po and Principe, then across the Upper Congo forest.

SUB-FAMILY CHAETURINAE

GOLD COAST SPINE-TAILED SWIFT

Chaetura ussheri Sharpe

This swift, about 5½ in. in length from bill to tail, is dark brown in colour with a white rump and white band across the under side of the body just above the tail. The throat is mostly white, the brown margins to the feathers giving it a scaly appearance at close quarters. The wings are long and very dark and the tail is short and square, the shafts protruding a very short distance beyond the webs. The typical race has wing measurements 141–152 mm. and tail 33–37 mm. Two races occur within our limits.

The line drawing of this swift gives a good indication of its appearance and should be compared with the figures of the other Spine-tailed Swifts in this volume. It may be easily distinguished in flight from the Little African Swift by its greyer throat.

We do not know much about the life-history of this bird, which is probably resident in the localities in which it appears. It is attracted by hollow trees, in which it roosts and nests, as was discovered by watching a pair disappearing into the hole of a baobab in the Gold Coast and no fewer than twenty flying round a dead hollow tree in British Cameroon, a trait which has been noted also in the forests of southern Cameroon. It has once been found nesting in a room of Fort Victoria near Cape Coast, but that was in the distant past.

tapered to a fine point. The typical race is pale mouse-colour, with the throat very pale. Its close association with the Borassus or fan-palm is well established. The bird is seldom encountered in districts where the palm-tree is absent. Its home is in the palms, and after hawking over the neighbouring grasslands the Palm Swift returns to the shelter of the giginya, dum, or oil palms which they make their headquarters. Both races are consequently locally though widely distributed, dependent on the presence of the palms.



As evening approaches the swifts scatter further afield, appearing in places where during the day not one is to be seen. When in flight —and they fly with extraordinary swiftness—the birds often scream in unison. The cry is said to be neither as loud nor as harsh as that of the Little Swift. Wherever they occur they appear to be resident, no migration having been observed to take place.

The nest is made entirely of feathers, stuck together and to the palm leaf by a tenacious viscid substance which hardens when dry. The eggs are stuck to the nest with saliva, and the leaves on which the nests are built can be held at any angle without the eggs falling out. The egg is white without gloss, the clutch consisting of two eggs, which measure 17·7–19·5 × 11·7–12·6 mm.

The favourite palm in which to nest is undoubtedly the fan-palm (*Borassus flabellifer*), and this is especially the case in the south of the bird's range. In more northerly regions the dum-palm (*Hypohoene*

thebaïca) and oil-palm (*Elaeis guineensis*) are utilised, and on the sea-shore coconut-palms are visited. More rarely the royal palm (*Oreodoxa regia*) comes in for attention, as in the forest country around Kumasi. There is great mortality among the young of the Palm Swift occasioned by the voracious crows, which attack the nests before the young have flown.

Distribution and Races. The Sudan Palm Swift, *C. parvus parvus* (Lichtenstein), inhabits the dry belt of Senegal and Gambia and Casamance through the French Sudan and the hinterland of the Gold Coast and Nigeria across Africa to Abyssinia and the dry parts of Kenya and Uganda. Its plumage is mouse-grey. The wing measures 124–138 mm., tail 82–96 mm.

The West African Palm Swift, *C. p. brachypterus* (Reichenow), is distinctly darker brown than the typical race and has a shorter wing (120–135 mm.). The tail measures 79–100 mm. This swift is found in the forested area from Sierra Leone to Gaboon, including Fernando Po and Principe, then across the Upper Congo forest.

SUB-FAMILY CHAETURINAE

GOLD COAST SPINE-TAILED SWIFT

Chaetura ussheri Sharpe

This swift, about 5½ in. in length from bill to tail, is dark brown in colour with a white rump and white band across the under side of the body just above the tail. The throat is mostly white, the brown margins to the feathers giving it a scaly appearance at close quarters. The wings are long and very dark and the tail is short and square, the shafts protruding a very short distance beyond the webs. The typical race has wing measurements 141–152 mm. and tail 33–37 mm. Two races occur within our limits.

The line drawing of this swift gives a good indication of its appearance and should be compared with the figures of the other Spine-tailed Swifts in this volume. It may be easily distinguished in flight from the Little African Swift by its greyer throat.

We do not know much about the life-history of this bird, which is probably resident in the localities in which it appears. It is attracted by hollow trees, in which it roosts and nests, as was discovered by watching a pair disappearing into the hole of a baobab in the Gold Coast and no fewer than twenty flying round a dead hollow tree in British Cameroon, a trait which has been noted also in the forests of southern Cameroon. It has once been found nesting in a room of Fort Victoria near Cape Coast, but that was in the distant past.

Distribution and Races. *C. u. ussheri*, which was named in honour of an early Governor of the Gold Coast, has been found to range from Senegal to northern Nigeria. It seems to be very local, for there are wide areas where it has not been obtained. It may be found both in the coastal and inland districts.



Another race, *C. ussheri sharpei* Neumann, takes the place of the typical bird in western Cameroon. Its colouring is much blacker brown throughout and the throat is more heavily mottled (wing 146–150 mm.). In the forest country of Kumba Division, British Cameroon, nearly every large village clearing supports a pair or two.

CASSIN'S SPINE-TAILED SWIFT

Chaetura cassini P. L. Sclater

This swift is about the same general size as *C. ussheri*; the wing measures 143–164 mm. and the tail 22–27 mm. in length. The tail being so short, the name "Stumpy-tailed Swift" is sometimes applied to it. It has a considerable amount of white on the belly and under tail-coverts, a character which it shares with Sabine's Swift, found in the same area, but Sabine's Swift has a very long tail in comparison and, moreover, is a much smaller bird. Cassin's Swift has a black tail which appears to have a white band across the base when the bird is seen in flight, whereas Sabine's Swift appears to

have an entirely white tail owing to the very long white upper tail-coverts reaching to the tip of the rectrices. Cassin's Swift, by reason of its extraordinarily short tail, is unmistakable in flight.

It seems from what little we know concerning it to be more of a strictly forest species than Ussher's or Sabine's Swifts, and it may be seen, occasionally in company with the last named, flying over thickly forested country. Its food consists mainly of flying ants and termites, occasionally also small blackbeetles.



No nest has actually been found, but evidence strongly points to its breeding in the hollows of trees, and it has been reported on reliable native evidence to build a cluster of mud nests inside a hollow tree, where as many as eleven birds have been captured at once. The egg is believed, from broken fragments, to be white.

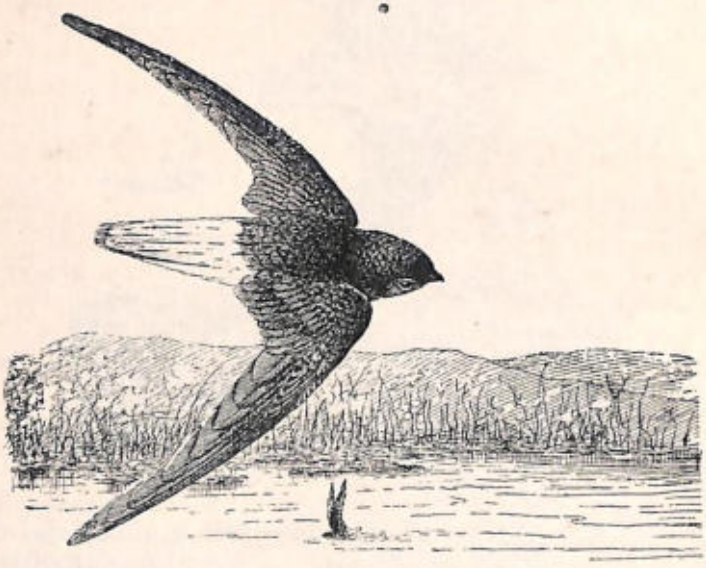
Its flight is extremely fast, and it is a matter for astonishment that a bird of this species has been found in the crop of a peregrine.

Distribution. From southern Nigeria, where it has been identified in Owerri Province, western and southern Cameroon, south to Portuguese Congo and across the Congo forest to the Bomakandi River and the neighbourhood of Beni. This swift is reported to occur on Fernando Po, from which island I have not seen specimens.

SABINE'S SPINE-TAILED SWIFT

Chaetura sabini Gray

THIS small swift—it measures only 4½ in. in length and has abnormally long rectrices for a Spine-tail—is blue-black on the head, back and wings; the rump is white, as are also the upper tail-coverts, which latter reach to the tip of the tail, entirely covering the blue-black rectrices. It appears in flight as if it has a white tail, which is not really the case. The belly and under tail-coverts are white; the throat and breast are sooty grey. At close quarters it will be seen



that each of the ten tail-feathers has a needle-like point at the tip, extending as much as 5 mm. beyond the feather. The wing measures 116–132 mm. and the tail 37–41 mm.

Although not quite so much a denizen of heavy forest as Cassin's Swift, the present species is often seen associating with that bird. It is not an uncommon bird and in southern Cameroon is reported to frequent old pits in the forest and hollow trees, in the latter of which the swifts build their nests of bits of twigs stuck together in the shape of a half-cup which is then glued to the wall of a hollow tree. Eggs, which number two in a clutch, are pure white and measure 17–18 × 12–12·5 mm.

Distribution. Although examples from Lower Guinea have been separated on account of their supposedly smaller dimensions from

those which occur in Sierra Leone, the difference is negligible, and I therefore only recognise one race ranging from Sierra Leone to Portuguese Congo, throughout the whole forest area, extending eastwards to the eastern margin of the Congo forest in the neighbourhood of the Semliki valley. It also occurs on Fernando Po.

In British Colonies this swift has been seldom recognised. It has been shot at Freetown and the type also came from Sierra Leone, in which Protectorate it has been reported from Banda Kerafaya and from the Tingi mountains.

In the Gold Coast it has been identified in Ashanti at Goaso and Mampong.

In British Cameroon it has been obtained at Kumba and has been seen frequently flying over Barombi lake in company with Cassin's Swift.

SÃO THOMÉ SPINE-TAILED SWIFT

Chaetura thomensis Hartert

This Spine-tail, which is closely allied to Sabine's Swift, is best retained as a species. It is smaller than the bird mentioned and has less white on the under parts. From bill to tail it measures about 4 in., the wing 109–115 mm. and the tail 35–42 mm. Very fine spines protrude from the tip of the tail-feathers. The belly and rump are white, the upper part of the body and wings are glossy blue-black; cheeks, throat, sides of neck and breast are dark smoke-grey, the under tail-coverts white marginally with broad blackish shaft-streaks.

This island bird is restricted to São Thomé in the Gulf of Guinea and is apparently fairly plentiful in the higher altitudes.

CHAPIN'S SPINE-TAILED SWIFT

Chaetura melanopygia Chapin

Chapin's Swift, as this fine bird may appropriately be named, is closely related to *C. ussheri* and has a similar scaly pattern on the foreneck and chest, though even more extensive, and no white on either the rump or abdomen. It is a large bird, measuring 5½ in. in total length, with wing measuring 164–165 mm. and tail 49·5–50 mm. Its plumage is very dark; the upper parts are brownish black, with black wings and tail with faint glossy reflections; the throat-feathers are pale smoke-grey margined with fuscous, and those of the upper breast are similar but more heavily bordered, giving the

breast a very scaly appearance. The belly is fuscous black, and the under tail-coverts are black. The fine line drawing of this bird which Dr. Chapin presented to me for inclusion in my larger work gives an excellent representation of the subject and should be compared with the drawing of *C. ussheri*.



Distribution. First discovered at Avakubi in the Congo and later at Simbo, also in the Ituri region, Chapin's Swift has, as its discoverer predicted, turned up far from the locality where it was first seen, having been obtained in French Cameroon at Sangmelima. Its range would seem to embrace the whole of the Upper Congo forest, and it may extend further west to bring it even more closely within the limits of West Africa.

ORDER CORACIIFORMES

Key to the sub-orders of the Coraciiformes made on visible external characters

1. Bill straight, terminating in sharp point, no hook on upper mandible, colour brilliant Sub-order *Alcedines*, p. **652**
   Bill either fine, long and gradually decurved, or if stouter and straight upper mandible ending in a sharp hook 2
2. Third and fourth toes fused to last joint, the second and third toes united to less extent Sub-order *Meropes*, p. **671**
   Third and fourth toes not fused to last joint; forwardly directed toes much more separated Sub-order *Coracii*, p. **634**
   (*a*) Bill straight, heavy and furnished with hook at tip Family *Coraciidae*, p. **635**
   (*b*) Bill fine, long and gradually decurved, no hook at tip .. .. Families *Upupidae*, p. **642**
   Phoeniculidae, p. **645**

SUB-ORDER CORACII

This sub-order comprises within our limits three families: (1) Rollers (*Coraciidae*), (2) Hoopoes (*Upupidae*), and (3) Wood-Hoopoes (*Phoeniculidae*), which we shall discuss separately hereafter.

The following is a key to the three families contained in the *Coracii*.

1. Bill comparatively short, straight and heavy, upper mandible ending in hook which overhangs the lower mandible .. .. *Coraciidae*, p. **635**
   Bill comparatively long and slender, either gradually decurved or nearly straight, no hook at tip 2
2. Head furnished with crest .. .. *Upupidae*, p. **642**
   Head without crest .. .. .. *Phoeniculidae*, p. **645**

FAMILY CORACIIDAE

Key to the Rollers

1. Crown of head uniform in colour with back; bill entirely bright yellow in adults, at base only in immature .. 2
   Crown of head not uniform in colour with back but contrasting; bill black 3
2. Under tail-coverts pale blue:
   (*a*) Belly lilac like throat and breast
   Eurystomus afer afer (adult), p. **639**
   (*b*) Belly blue .. *Eurystomus afer afer* (immature), p. **639**
   Under tail-coverts cinnamon-brown:
   (*a*) Upper tail-coverts black *Eurystomus gularis gularis*, p. **641**
   (*b*) Upper tail-coverts tipped with deep violet-blue
   Eurystomus gularis neglectus, p. **642**
3. Crown and under parts light blue 4
   Crown and under parts not light blue 5
4. Outer tail-feathers greatly elongated, ending in narrow streamers .. .. .. *Coracias abyssinica*, p. **636**
   Outer tail-feathers not elongated
   Coracias garrulus garrulus, p. **635**
5. Under parts unicoloured cinnamon-brown, boldly streaked with white .. *Coracias naevius naevius*, p. **637**
   Under parts parti-coloured, throat and breast pale pinkish fawn, belly ultramarine blue
   Coracias cyanogaster, p. **638**

EUROPEAN ROLLER

Coracias garrulus garrulus Linnæus

In size the European Roller measures 12–13 in. in total length, the wing 183–205 mm. and the tail 112–128 mm. It may be recognised by its somewhat crow-like appearance, azure-blue head, breast and tail, and brown back, the flight feathers appearing black and the

rump purple. It is a rather heavily built bird with a bullet-shaped head and heavy, straight bill, the extreme tip ending in a hook. The cry is harsh and described as *rack-kack, kacker*. The extraordinary tumbling flight is unmistakably that of a roller.

This is a regular winter visitor to West Africa but in much smaller numbers than occur in East Africa. A few appear to remain in the tropics throughout the summer.

The roller is a bird of the open country (avoiding the forest) which may be expected to arrive during the late autumn. Being largely insectivorous, the bird must be considered an entirely beneficial species, devouring great numbers of coleoptera, orthoptera and diptera. The birds which have wintered in our area leave about the end of April for their breeding quarters in southern Europe and northern Africa. Many doubtless pass unrecognised, as their plumage is so like that of the next species to be described.

Distribution. The greater part of middle and southern Europe and northern Africa, its range extending into Asia. In winter it migrates south, covering the whole of eastern Africa to Cape Province. Migrants also reach the west, from which there are records from Gambia, Lagos, Cameroon, both British and French territory, Portuguese Congo and the island of São Thomé.

ABYSSINIAN ROLLER

Coracias abyssinica Hermann

(see Plate 32, facing page 636)

THE total length of the Abyssinian Roller from bill to tail, but excluding the long streamers of the outer feathers, is about 13 in. The plumage is brilliant. Apart from the white forehead, lores and chin, the head, cheeks, mantle and entire under parts are light greenish blue, the back pale chestnut, the shoulders, primaries and secondaries brilliant purple, the greater coverts Cambridge blue. The central pair of tail-feathers are darkish green, the rest of the feathers Cambridge blue, becoming dark blue at the base. The long filaments of the outer rectrices, which extend 6½ in. beyond the next pair, are almost black. Add to this colouring a black bill, pinkish-brown feet and a brown eye, and it will be seen what a handsome bird is this resident African species. The wing measures 151–165 mm., the middle tail-feathers 115–142 mm., the outer tail-feathers 200–285 mm., the streamers being considerably longer in the male than in the female, which seldom exceed 270 mm.

When compared with the European Roller it is seen to be a smaller bird, the bill not so heavy and the wings shorter and brilliant deep purple instead of black. When expanded, the tail of the

(Top Left)

WEST AFRICAN
BROAD-BILLED ROLLER.
Eurystomus afer afer.

(Top Right)

ABYSSINIAN
ROLLER.
Coracias abyssinica.

(Bottom Left)

BLUE-BELLIED
ROLLER
Coracias cyanogaster.

(Bottom Right)

RUFOUS-CROWNED
ROLLER
Coracias naevius naevius.



Abyssinian Roller shows more pale blue than the European Roller. From the latter bird the Abyssinian Roller can always be distinguished by the long, narrow outer tail-feathers reaching far beyond the next pair.

Throughout the open country of West Africa the Abyssinian Roller is a familiar bird, constantly to be seen sitting on the telegraph wires. It haunts the cultivated areas around villages but usually shuns habitations. Thick forest it avoids, but it may be seen in the clearings and is to be noted in fadammas and in marshlands which have dried up. Usually it chooses a commanding position from which to pounce upon insects which it may spy on the ground. Grass fires always attract it, when the antics of the birds, as they dodge in and out of the flames in pursuit of fleeing insects, provide a sight worth watching. Bold in its manner, this Roller will at times delight in darting among flocks of Weavers for the joy of breaking them up. Its note is a harsh squawk or loud scream.

The nest is in a natural hole of a large tree, usually one about 10–25 ft. from the ground; occasionally cotton-grass, vegetable fibre and bits of bark are found in the nest, but more often the hole is bare of nesting material other than possibly a debris of chips, etc. Four to six plain white eggs are laid; usually four complete the clutch. These measure 23·5–31·5 × 18·5–26 mm. A good average is 30·32 × 25·11 mm.

Distribution. The whole of the grass woodland and thorn savanna, extending into the semi-arid belt to lat. 18° N., i.e. to the limit of tree growth. The range is universal except for the closed forest, extending as it does from Senegal to northern Cameroon and across the entire continent to Arabia, Abyssinia and Eritrea, then south to the dry parts of Uganda and the country north of the equatorial forest.

RUFOUS-CROWNED ROLLER

Coracias naevius naevius Daudin

(see Plate 32, facing page 636)

This very distinct species is similar in size to the European Roller but may be easily distinguished from its congeners by its unique colouring. In the bright sunlight the general tone of the body appears purplish pink, although when handled the plumage cannot be so described. The reddish-brown under parts from the throat to the belly are plentifully streaked with white, while a white frontal band and streak over the eye are both conspicuous features. The white patch on the back of the head is often concealed by feathers. In flight the wing is seen to be of two colours, the outer half appearing black (with a flash of bright blue along the margins), the inner

half, nearest the body, a sort of olive-brown; across the middle of the flight feathers there is a broad light patch. The tail in flight appears black, as is the heavy bill with its very abrupt hook at the tip. Measurements are: Bill 30–39 mm., wing 166–193 mm., tail 125–148 mm.

In its habits and haunts there is not much difference between this and the last species, though it never ranges so far north as the Abyssinian Roller and probably not beyond lat. 13° N. It is a much rarer bird, subject to some extent to seasonal movements. Usually to be encountered singly, it frequents especially clearings and the more open parts of the bush, a favourite haunt being among the trees at the foot of some rocky outcrop where food is easily obtained on the surrounding fields. Its method is to take up a prominent position from which it can survey the ground and swoop upon its victim from above. In comparison with the commoner Abyssinian Roller it is less aggressive and less noisy. Its call-notes resemble the other rollers' but are not so harsh.

It breeds in the late spring months, probably May to July, in the Sudan, at which period it indulges in much screaming and "rolling," the roll being more from side to side and less acrobatic than that of the European Roller. A hollow in a tree is used in which to deposit the eggs, sometimes a woodpecker's hole being appropriated. The eggs are white, and published measurements are 34 × 28 mm.

Distribution. From Senegal and Gambia across the Sudan to Abyssinia and Somaliland, ranging south on the eastern side of the continent to the north of Uganda and Tanganyika, but in West Africa not south of the Ubangi-Shari. It is fairly generally but sparsely spread from Senegal to Nigeria (Bornu) in the grass woodland, but not north of lat. 13° N.

Its place is taken south of the equatorial forest from Angola and Rhodesia to Cape Province by *C. naevius mosambicus*.

BLUE-BELLIED ROLLER

Coracias cyanogaster Cuvier

(see Plate 32, facing page 636)

This very beautiful roller is very much the size and build of the European Roller and measures from the heavy black bill to the tip of its elongated tail-feathers some 14 in. It has a noticeably thickset appearance. It is very easily distinguished from all the other members of its family by the combination of colours—the head and breast pale pinkish fawn, back blackish, belly deep blue. The wings are brilliant ultramarine with a wide patch of cobalt or Cambridge

blue across the middle. The greenish-blue tail is forked (swallow-tailed). The wing measures 170–188 mm., the outer tail-feathers (male) 150–185 mm., (female) 145–148 mm., the central feathers (male) 96–105 mm., (female) 90–100 mm.

Widely, though locally, distributed, the Blue-bellied Roller resembles the other species already described in many of its ways, though it prefers clearings in the forest to more open country. It is not so solitary in its disposition as some of the rollers, and may be encountered sometimes several together, especially when roosting. At mating time these rollers are very noisy, calling on the wing or from a tree-top a loud *ah-ah-ah-ah.*

Often birds may be encountered in little kurimis by streams. Aerial acrobatics are most in evidence during the breeding season, when the characteristic tumbling roll may be witnessed. It seems, from all accounts, to be particularly shy.

It breeds during the rains, and in parts of its northern range, as in Gambia, additional birds arrive about May for the purpose of nesting, though it is partly resident all the year round. We know very little about its breeding habits, for the purpose of which it is believed to resort to hollow palm-trees, but the holes in other trees are also utilised. Its eggs, which are no doubt white, like other rollers', have not been measured.

Range and Local Distribution. More restricted in its African range, this species does not occur much beyond our limits. We find it locally distributed from Senegal and Portuguese Guinea to the Benue River, the Ubangi-Shari and the savannas north of the Belgian Congo, extending across Africa to the Bahr el Jebel. It is reported from all four British Colonies and in Nigeria from such widely separated places as Kainoma in Sokoto Province and the Ondo and Benin Provinces, but is evidently rare in the southern provinces. It is often encountered along the Middle Niger. Except perhaps in the dry thorn belt, very little, if any, seasonal movement takes place.

BROAD-BILLED ROLLER

Eurystomus afer afer (Latham)

(see Plate 32, facing page 636)

A SMALL roller in comparison with the majority of its family, this bird measures about 10½ in. to the tip of its square tail and has a superficial resemblance to a large-bodied swallow, with a broad triangular yellow bill and an enormous gape. The wing of this roller measures 168–181 mm., and the tail 81–95 mm. The entire head and upper parts are cinnamon-brown; the wing-coverts are

similar, but the primaries and outer secondaries are ultramarine blue. The under side of the body is lilac. A point to note is that in this race the under tail-coverts are bright light blue.

In flight the tail appears light blue with dark tips. Seen from below it appears lilac-brown except for the blue tail. It sits hunched up on a branch in characteristic poise, preferably choosing a bare bough. Of all its family it is the noisiest, uttering harsh notes from the tree-top or screaming *crik-crik-crik-crik* as it swoops through the air.

Much of its time is spent in the tree-tops 30–60 ft. from the ground, and on its first arrival in a locality a number may be seen together chasing one another. Flocks of twenty or more are no uncommon sight, and gatherings of a hundred birds have been witnessed floating and wheeling round the summit of large trees in the cool of the sunset hour. Large trees in which they can nest are an essential to them; thus they are most often observed where the baobab, locust-bean and mahogany are a feature of the landscape.

The Roller is a bird of the savanna belt and does not extend anything like so far towards the desert as the Abyssinian Roller. To the southern provinces of the Guinea coast it is a migrant in the winter months. Throughout its range it is subject to strong seasonal movements, the birds travelling north at the beginning of the rains about May and returning to the middle and coastal belts towards the end of October. In some areas such as around Lagos it puts in appearance much later. Even where migration is fairly regular there are always some exceptions, as some birds appear to remain in the coastal provinces all the year round, pairs having been seen near Lagos and Owerri throughout the year. Observation bearing this out has been made in Owerri. In British Cameroon coastal districts it has only been reported between September and February. In Nigeria its northern limit appears to be lat. 12° 35′ N., some way south of the limit reached by *C. naevius* and *C. abyssinica*. In the middle of its range in West Africa it appears to be fairly sedentary.

It nests in the holes of large trees, and no nesting material is used. A clutch taken from the hole of a baobab on 22nd June in Kano Province consisted of three glossy white eggs, 32–38 × 27–28 mm., oval in shape.

Distribution and Races. Widely and generally spread throughout the whole of the area south to the Lower Congo and from Senegal across the savanna belt as far east as Darfur. It is common in all our British Colonies and Protectorates. An adaptable species, it nevertheless avoids closed forest, though found along the edges and in clearings. No fewer than six races have been recognised from tropical Africa, but we are only concerned with the typical subspecies. In Uganda *E. afer rufobuccalis* occurs and from Kenya to

Rhodesia *E. afer suahelicus*. In the Sudan *E. afer aethiopicus* is the recognised subspecies of the area and in northern Angola *E. a. pulcherrimus*. Another race is found in the Abyssinian highlands, *E. a. praedi*.

BLUE-THROATED ROLLER

Eurystomus gularis Vieillot

Two races of this bird come within our limits. This species is the same size and build as the Broad-billed Roller (*E. afer afer*), which it resembles closely in colouring, but the cinnamon-brown is darker and richer in tone. The colour pattern and colour of the wings and tail are also very similar in the two species, but in the present species these parts are blacker. The very obvious patch of cobalt blue on the throat in the Blue-throated Roller, contrasting with the dark reddish-brown under parts, is the main distinction between these species, for the Broad-billed Roller has the entire throat and under surface uniform lilac. Should the bird be viewed from beneath, the under tail-coverts will be seen to be brown like the rest of the under side, while in the Broad-billed Roller they are bright blue. The Blue-throated Roller has a bright yellow bill, and the legs and feet are brown. The wing measures in the typical subspecies 148–162 mm., and the tail 89–96 mm.

In its haunts and habits it differs considerably from the other rollers we have been discussing. It is much more of a forest-frequenting species and is never seen very far from forest country. When found in grasslands, it is only when these are heavily clothed with woodland. It seems to be a stationary species, as would be inferred from its habitat, for if it migrated northwards at the time of the rains it would soon leave the narrow belt of West African forest far behind. Thus it remains where it breeds, year in and year out.

It is generally to be seen perched in solitude upon some naked bough from which it can sally forth to snap up insects, flies, beetles, ants and dragonflies, upon which it chiefly subsists. In flight the narrowed appearance of the wing at its base, caused by the abnormal shortness of the secondaries, gives the bird a peculiar silhouette. Its movements at times resemble those of a Hawk; at others of a huge Flycatcher. It seems to take its food entirely on the wing. Pairs or family parties are the rule, if not seen singly. Its note is characteristic—a shrill *kwi kwi kwi*.

In some respects this bird and *E. afer* are not true rollers. Neither of them rolls or tumbles in the air like the larger species described, but their flight is none the less remarkable. Both make long swooping flights, and the present species has been seen to hold its wings

rigid and speed obliquely downwards. This roller has been observed in Sierra Leone to be a member of a "bird army" working through the forest, driving the insects before them, in the pursuit of which the Blue-throated Roller showed to graceful advantage.

Holes in trees are the usual nesting place, forest clearings being favoured for the purpose. A nest found at Kumasi contained three brightly glossy white eggs, ovate in shape, measuring 32 × 26 mm. Breeding takes place in the Gold Coast from February to April.

Distribution and Races. Throughout the greater part of the forested area of Upper Guinea from Sierra Leone to the Province of Benin in southern Nigeria we find the typical race, *E. gularis gularis* Vieillot, holding sway. Somewhere in the Benin forest country it meets the range of the Lower Guinea race, *E. gularis neglectus* Neumann, which is distinguished by having (1) the cobalt of the throat patch brighter and more extensive, (2) the whole under side darker and strongly washed with violet and the upper tail-coverts deep violet-blue instead of black. The wing measures 150–161 mm. in this race. *E. g. neglectus* ranges from the neighbourhood of Ubiaja, Benin Province, through the forest country of Lower Guinea from Cameroon Mountain to Angola across the great equatorial forest of the Belgian Congo to the Ituri district.

FAMILY UPUPIDAE

EUROPEAN HOOPOE

Upupa epops epops Linnæus

THE line drawing of the head of this hoopoe on p. 38 will assist the observer to recognise this bird, which in size is about that of a starling. It can lay the crest flat, and only on occasions will it be seen as in the accompanying illustration. Particularly note the white area on the crest which separates the cinnamon-coloured basal portion of the anterior crest-feathers from the black tips, as this is a character which helps to distinguish this visiting hoopoe from the resident Senegal Hoopoe to be described next.

Compared with the Senegal Hoopoe, the present species differs in its duller, more cinnamon-brown (less rufous) colouring of mantle and breast, as well as much more white on the crest proximal to the black tip. The main distinction is in the wing, the secondaries of *U. epops epops* being banded with four white and four black bars of almost equal breadth, the same feathers in *U. senegalensis* being white on the basal two-thirds. When the wings are spread, the European Hoopoe shows much less white in the wing than the

Senegal Hoopoe. The long, fine bill is a feature to note, being brown in colour, blacker terminally and measuring 50–60 mm. The wing, which is prettily patterned, measures 136–154 mm. and the tail 98–109 mm.

The characteristic note, *Ta-bo-bo*, *ta-bo-bo*, can be imitated easily and may be likened to a child tooting quietly on a toy whistle. The flight is jerky.

The European Hoopoe is, as its name implies, a visitor only to tropical Africa from its home in Mediterranean countries and Central Europe. It is a bird which is most likely to be met with in the semi-arid belt, consorting with the Senegal Hoopoe. Its main line of migration is certainly to eastern Africa, and the extent to which it visits West Africa is far from certain. The main body passes south in September and north in March and April.

Distribution. The greater part of Europe and western Asia, Mediterranean countries and islands and the Canaries, in all of which it breeds, visiting Africa in winter from the Saharan oases south in the east to Kenya and Uganda and in the west to Senegal, Gambia, Dahomey, French Sudan (Timbuktu) and Kano.

SENEGAL HOOPOE

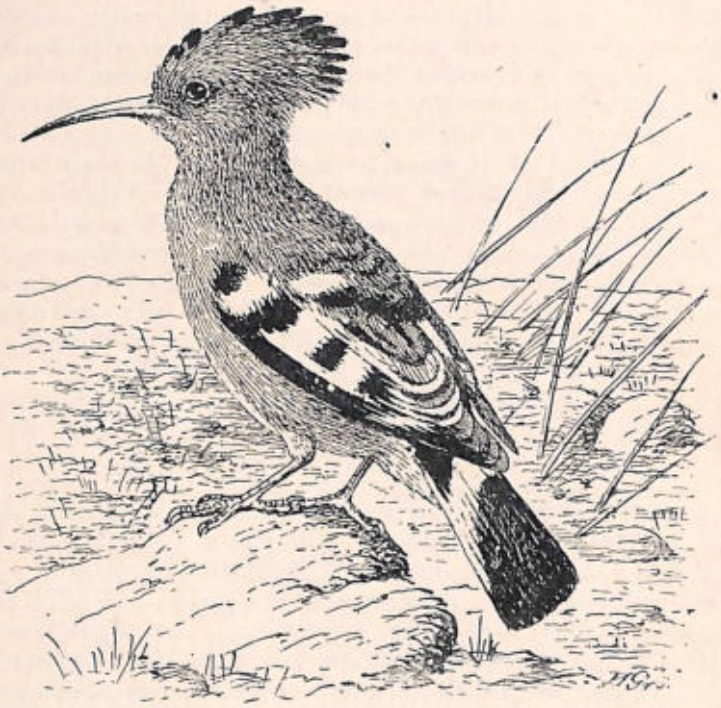
Upupa senegalensis Swainson

At once recognised by its cinnamon-rufous colouring, long crest tipped with black which it can open and shut at will, conspicuously banded black and white wings, and black tail with a white band across the middle and a white patch on the rump. The bill is fine, delicate and long (about 2 in. (45–52 mm.)) and gently curves downwards. It flies with rather leisurely flight, the wing-pattern then being very noticeable, with considerable amount of white, and walks with a graceful carriage. The bird is usually very silent. When at rest it is not by any means easy to observe until it moves, especially when on ground or among rocks, as its banded coloration camouflages it successfully. In flight, however, it is very conspicuous. For distinction between this and the European and African Hoopoes, see under those species. The wing of the Senegal Hoopoe measures 128–143 mm., the tail 88–98 mm. It stands fairly high on its greyish legs, the tarsus measuring 19–22 mm.

Although this hoopoe has an extensive distribution in West Africa it can never be termed numerous. A bird of the semi-arid countries and the grass woodland belt, it is not uncommonly met with on farmlands. It is subject to migratory movements which are not clearly understood and may only be local. Certain it is that when the rains are on the hoopoes wander far into the desert and

have then been encountered both a little way north of Timbuktu and at Tillia grove in French Niger.

It breeds in May in the vicinity of Lake Chad but may do so irregularly, as in Gambia a bird has been shot with an egg in the oviduct in mid-January. A hole in a bank or in a tree is utilised, and the six to nine eggs are deposited on the bare sand or wood as the



case may be. The eggs range in colour from pale blue and light sage-green to olive-brown and measure 23–26 × 17–18 mm.

Distribution. Resident in West Africa south of the Sahara and north of the forest belt, seldom appearing as far south as Ibadan in Nigeria, from which it is recorded. It ranges right across the African thorn belt and savannas from Senegal and Gambia to Ethiopia and Somaliland. In East Africa it ranges south to northern Uganda and Kenya, rarely to northern Tanganyika, and in West Africa to northern Cameroon and the Lake Chad district. Its range is bounded in the south by the equatorial forest country, which it does not enter.

SOUTH AFRICAN HOOPOE

Upupa africana Bechstein

In general appearance resembles the Senegal Hoopoe but is so much more rufous in colouring that it should be distinguishable by anyone familiar with the former. This, of course, applies even more when comparison is made with the European migrant. The black tips to the crest are even more noticeable, being heavier and broader. There is no white in the primaries, which are entirely black, a feature which may be noticed in flight. The white band across the tail is close to the rump in the African Hoopoe and in both the other species about midway down the tail. The size is similar to the species already described. The bill measures 41–54 mm., wing 128–144 mm.

This hoopoe barely comes within our limits, as it is not recorded from north of the Lower and Middle Congo in West Africa, though it is reported to have reached southern Abyssinia and Kenya on the east coast. It is a South African species which is separated from the range of *U. senegalensis* by the equatorial forest.

FAMILY PHOENICULIDAE

Key to the Wood-Hoopoes

1. Colour of head uniform with mantle and back .. 2
   Colour of head contrasting with mantle and back .. 5
2. Size larger (wing over 4½ in. (115 mm.)) 3
   Size smaller (wing under 4½ in. (115 mm.)) 4
3. General colour metallic bluish green (very glossy), bill red .. *Phoeniculus erythrorhynchus guineensis* (adult), p. **646**
   General colour purplish blue (duller), bill mainly black *Phoeniculus senegalensis senegalensis*, p. **647**
4. Plumage glossed with green *Scoptelus brunneiceps* (adult ♂), p. **652**
   Plumage glossed with purple *Scoptelus aterrimus aterrimus*, p. **649**
5. Crown and throat whitish 6
   Crown and throat not whitish 7
6. Size larger (wing over 110 mm.), bill red *Phoeniculus bollei bollei* (adult), p. **648**
   Size smaller (wing under 110 mm.), bill blackish *Scoptelus brunneiceps* (immature), p. **652**
7. Head and throat chestnut .. *Scoptelus castaneiceps*, p. **651**
   Head pale umber-brown *Scoptelus brunneiceps* (adult ♀), p. **652**

GUINEA WOOD-HOOPOE OR KAKELAAR

Phoeniculus erythrorhynchus guineensis (Reichenow)

A LONG-TAILED, glossy bluish-black bird which in some reflections appears purplish blue. The bill is long, 40–53 mm. in length (about 2 in.), in adults bright red but black in young birds; the tip black. The wings, which are short (128–157 mm.), appear rounded and when spread show conspicuous white patches. The tail is long and graduated, the middle rectrices measuring 180–268 mm., which shows considerable variation in the male alone, the longest tails being 9½ in. in length. As depicted in the drawing, each feather except the purple central pair has a subterminal band or patch of



white. Seen from below, the tail appears banded with white. It is a noisy bird which draws attention by its oft-repeated cry *aq*.

The Wood-Hoopoe is usually met with in small parties of four to eight, working their noisy way through the bush. Like magpies at home, they often fly one behind the other at appreciable intervals. The birds seem equally at home in open park savanna, palm groves, wooded hill slopes and, in fact, any type of woodland even in quite thick forest. Running along the boughs or exploring the tree-trunks, the birds search every crevice for the insects which form their staple food supply. Farmland is often visited, and the Kakelaar may then be observed clinging to a stalk of guinea corn, working its way up to the head. The grain is not harmed, as the little bird is merely hunting for insects.

To some extent this Wood-Hoopoe is migratory, for it puts in appearance in some coastal districts such as near Accra and Lagos island in the dry season, but is not present on the coast during the rains. In May it has been found as far north as Tillia Grove in the French Sahara.

It breeds in the holes of trees, apparently in the dry season, as four pale blue eggs were taken at Yegi, Gold Coast, in January and others at Abeokuta in February. Accounts of its nesting are very scarce. Eggs are laid on a pile of wood chips in a natural hole of a tree 15–20 ft. from the ground. Each of the two nests found at Abeokuta contained, in addition to the immaculate blue eggs of the Wood-Hoopoe, a white egg believed to be that of the Honey-Guide. The eggs of the former, two or three in each clutch, measured 24·2–25·7 × 17·1–18·2 mm.

Distribution. West of the Ivory Coast this Wood-Hoopoe has not been recorded. It ranges from that Colony eastwards to the Western Provinces of Nigeria, Lake Chad, the Damergu country, northwards to the Upper Volta and French Niger territory. It has been reported from the vicinity of the Ubangi River, but exactly where it meets the range of the eastern race, *niloticus*, seems to be uncertain. The Guinea Kakelaar is by no means uncommon in the Northern and Central Provinces of the Gold Coast and Nigeria, extending south of the forest in the dry season, where it is, however, seldom observed.

SENEGAL WOOD-HOOPOE

Phoeniculus senegalensis senegalensis (Vieillot)

Closely resembles the last species, from which it differs in its duller, darker plumage, the metallic green of the head and mantle inclining to purplish blue, the whole under surface duller metallic green, and the belly blackish. The bill is never entirely red, as in *P. e. guineensis*; in most examples it is more black than red even when fully adult, but immature birds have a black bill and in their first plumage are impossible to distinguish from the Guinea Wood-Hoopoe. Fortunately their distribution barely, if at all, overlaps. The bill of the Senegal Wood-Hoopoe measures 44–58 mm., the wing 136–155 mm. and the tail 178–253 mm. A long-tailed male is as much as 18 in. from the tip of the bill to the tip of the longest tail-feather.

This is a bird of dry country and is very common in Gambia, being found everywhere from the gardens of Bathurst to the most inland territory. They move about the bush in scattered parties of a dozen or so, flitting from tree to tree with rather feeble flight, tapping and pecking the bark with their long bills in their ceaseless hunt for insects. The birds can cling to the tree-trunks like creepers.

Nesting takes place in Gambia in May, apparently, a clutch of four eggs having been taken in that month from a hole in a dead palm believed to have been the nest of a Senegal Wood-Hoopoe, though

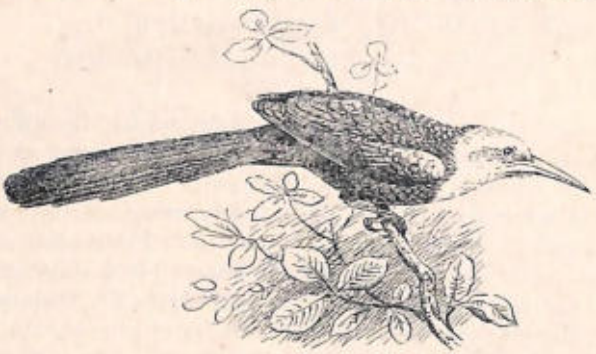
the bird was not actually secured. The eggs are described as deep clear blue, unmarked, and measuring 24·6–26 × 17·5–18·4 mm.

Distribution. Ranges from Senegal and Gambia through Casamance to Portuguese Guinea and perhaps to the Northern Provinces of Sierra Leone. No adults have yet been obtained from the Ivory or Gold Coast. Lat. 10° N. appears to be the southernmost latitude reached by this species. Its range extends north to the Inundation Zone of the Niger in French Sudan and probably as close to the desert as Timbuktu, where wood-hoopoes believed to be of this species have been reported.

BUFF-HEADED WOOD-HOOPOE

Phoeniculus bollei (Hartlaub)

This is a smaller bird than either of the last species, measuring about 13 in. in length. It is a gaudily coloured bird, conspicuous by means of its buffish-white head and throat and bright red long bill. The back and breast are metallic green, the wings are blue and the tail is purple. In certain lights a patch of copper is visible at the bend



of the wing, but, as in many metallic-plumaged birds, these colours appear black in certain lights. The bill of this species measures 37–50 mm., the wing 118–136 mm., the tail 186–228 mm. Immature birds have the head and throat dusky blackish in first plumage, the dark feathers being gradually replaced by the buff ones, so that some examples have parti-coloured heads.

It is rather a shy bird which keeps to the leafy tree-tops but betrays its presence by a frequently uttered call. It is probably much more numerous than actual records would indicate, for it is an inhabitant of thick forest and is consequently seldom observed. Insects form its chief food supply; ants, spiders, hairless caterpillars, beetles, bugs and earwigs have been found in the stomach of a

closely allied race. It will also eat fruit seeds and small berries. It travels in small parties through the forest trees, keeping far above the ground.

It nests in holes in trees in May and June. One nest found in the Gold Coast was 120 ft. from the ground. The eggs are blue, spotted and blotched with chocolate. One egg measures 30 × 20 mm.

Distribution and Races. Phoeniculus bollei bollei (Hartl.) is restricted to the forests and thick savanna of the Gold Coast (probably also the Ivory Coast) eastward through southern Nigeria to the edge of the lowland forests of Cameroon (Lolodorf) and the Ubangi River. A specimen from French Congo appears to belong to this race, but the Belgian Congo examples are usually assigned to the barely distinguishable subspecies *P. bollei jacksoni* (Sharpe).

Phoeniculus bollei okuensis Serle is distinguished from both the races mentioned by having the white on the head restricted to the forehead and forepart of the crown and below to the chin and forepart of the throat; other minor differences exist. This race is restricted to the montane forest of Lake Oku (around 7,000 ft.), Bamenda Division, British Cameroon.

LESSER WOOD-HOOPOE

Scoptelus aterrimus aterrimus (Stephens)

THE appearance of this bird may be gathered from the accompanying line drawing. It is a small bird, in total length not more than 9 or 10 in., of which the tail takes up about 4½ in. The wings are short and rounded and the bird looks like a small edition of the Guinea Wood-Hoopoe, but with a black bill. There is no white in the tail, which is steel-blue glossed with violet, but a white bar is present in the wing, which is conspicuous during flight but reduced to a small white patch on the edge. The general colour of this bird is blackish glossed with violet and steel-blue. The bill measures 26–35 mm., wing 91–108 mm. and tail 102–121 mm.

Adult females are rather browner than the males and have pale sub-apical markings on the primaries like the immature birds. Young of both sexes may be distinguished by their brown under parts, browner than the females. The bill of the adult is brown or dusky olive, and the feet are blackish.

The Lesser Wood-Hoopoe is an inhabitant of dry bush country, extending towards the desert just as far as there are any little trees. In winter it moves south into the grass woodland belt, but it seems not to mind how dry the country may be, for it has been obtained between Aïr and Lake Chad in desolate surroundings. Its range to the south does not extend so far as that of the Guinea Kakelaar. It

searches the trees for insects in the same manner as that species and has the latter's trick of falling vertically to a lower position on the tree-trunk. It has a habit of zooming down from one bush to shoot up to another with a sudden opening and shutting of its wings.

Usually it is seen singly or in couples and, unlike its larger relations, does not move about in little bands. On the whole it is rather silent, but when it does utter a sound its note is distinctive, sounding as if its voice is cracked: *wha wha wha wha.* The Lesser Wood-Hoopoe



is nothing like so common a bird as the Guinea Kakelaar; fairly open forest where the trees are small seems to be its favourite habitat.

The breeding season is believed to extend over much of the rainy season, but its nest—almost certainly in the hole of a tree—has not been discovered.

Distribution. Although a race of this bird has been described from the Nile (*S. a. emini*), I cannot see that the distinction is of much value. The typical race, which is that recognised in the semi-arid belt of our area, ranges from Senegal, Gambia and Portuguese Guinea, through the French Sudan and French Niger to the Ubangi River. In winter we find it in the grass savanna country, and it then occurs north of the forest in the Ivory and Gold Coast and in northern Nigeria eastwards to Aïr. If united with *S. a. emini*, it covers the entire Sudanese arid belt.

CHESTNUT-HEADED WOOD-HOOPOE

Scoptelus castaneiceps (Sharpe)

About 11¼ in. in total length, this Wood-Hoopoe may be distinguished from its nearest relatives by its all-chestnut head and neck. The bill is almost straight, about 30 mm. in length and dull horn in colour. Metallic-green back, blue wings and long (5⅜ in.) purple tail complete the colour scheme, but the bird probably looks all



black with a contrasting chestnut head in life. The bill measures 27–32 mm., wing 99–107 mm. and tail 134–170 mm.

This is a forest bird which in the area it inhabits is evidently rarely encountered. It hides itself away in the tops of forest trees or high palms and seldom allows itself to be seen. Small parties keep together, and their note is said to be like that of *S. aterrimus*, *whă whă whă whă*, repeated over and over rather slowly.

Insect remains and tiny fruits have been found in specimens obtained. We know next to nothing about its life in the tree-tops, for, as remarked already, it does not lend itself to close inspection.

searches the trees for insects in the same manner as that species and has the latter's trick of falling vertically to a lower position on the tree-trunk. It has a habit of zooming down from one bush to shoot up to another with a sudden opening and shutting of its wings.

Usually it is seen singly or in couples and, unlike its larger relations, does not move about in little bands. On the whole it is rather silent, but when it does utter a sound its note is distinctive, sounding as if its voice is cracked: *wha wha wha wha.* The Lesser Wood-Hoopoe



is nothing like so common a bird as the Guinea Kakelaar; fairly open forest where the trees are small seems to be its favourite habitat.

The breeding season is believed to extend over much of the rainy season, but its nest—almost certainly in the hole of a tree—has not been discovered.

Distribution. Although a race of this bird has been described from the Nile (*S. a. emini*), I cannot see that the distinction is of much value. The typical race, which is that recognised in the semi-arid belt of our area, ranges from Senegal, Gambia and Portuguese Guinea, through the French Sudan and French Niger to the Ubangi River. In winter we find it in the grass savanna country, and it then occurs north of the forest in the Ivory and Gold Coast and in northern Nigeria eastwards to Aïr. If united with *S. a. emini*, it covers the entire Sudanese arid belt.

CHESTNUT-HEADED WOOD-HOOPOE

Scoptelus castaneiceps (Sharpe)

About 11¼ in. in total length, this Wood-Hoopoe may be distinguished from its nearest relatives by its all-chestnut head and neck. The bill is almost straight, about 30 mm. in length and dull horn in colour. Metallic-green back, blue wings and long (5¾ in.) purple tail complete the colour scheme, but the bird probably looks all



black with a contrasting chestnut head in life. The bill measures 27–32 mm., wing 99–107 mm. and tail 154–170 mm.

This is a forest bird which in the area it inhabits is evidently rarely encountered. It hides itself away in the tops of forest trees or high palms and seldom allows itself to be seen. Small parties keep together, and their note is said to be like that of *S. aterrimus*, *whă whă whă whă*, repeated over and over rather slowly.

Insect remains and tiny fruits have been found in specimens obtained. We know next to nothing about its life in the tree-tops, for, as remarked already, it does not lend itself to close inspection.

Distribution. Known only from the forests of the Gold Coast and Nigeria. A bird with a similar note to this species has been heard in French Guinea north of the Liberian boundary.

FOREST WOOD-HOOPOE

Scoptelus brunneiceps Sharpe

RECENT opinion tends to consider this bird a race of the last species, but I am not convinced that that is so.

The adult male has the whole upper side of the body metallic steel-green, the primaries and secondaries deep glossy blue, the wing-coverts similar but edged with metallic green. The tail is purple, and the whole under surface is black glossed with green. The bill measures 25–30 mm., wing 95–105 mm., tail 145–164 mm.

The adult female differs only by having the crown, cheeks and throat pale umber brown. Immature birds have the head, cheeks and throat whitish.

The Forest Wood-Hoopoe is much more of a forest species than the Lesser Wood-Hoopoe and does not enter the semi-arid belt. It visits old cleared land and has similar habits to *S. castaneiceps*, living much in the tree-tops.

Distribution. Known chiefly from the forests of southern Cameroon and the Belgian Congo, ranging east to the Ituri River.

SUB-ORDER ALCEDINES

FAMILY ALCEDINIDAE

Key to the Kingfishers

1. Size very large (wing over 7 in. (177 mm.)), bill over $2\frac{3}{4}$ in. (70 mm.) 2
   Size medium (wing over $2\frac{3}{4}$ in. (70 mm.), and under 6 in. (152 mm.)) 3
   Size very small (wing under 2·6 in. (65 mm.)) 11
2. Mantle slate-colour, thickly spotted with white:
   (*a*) Breast chestnut, belly black and white (♂);
   (*b*) Breast black and white, belly chestnut (♀)
   Megaceryle maxima maxima, p. **656**
   Mantle slate-colour not spotted with white:
   (*a*) Breast chestnut, belly black and white (♂);
   (*b*) Breast slate and white, belly chestnut (♀)
   Megaceryle maxima sharpii, p. **657**

3. Entire plumage black and white .. *Ceryle rudis rudis*, p. **654**
Entire plumage not black and white 4

4. Bill entirely black, under parts of body orange-chestnut
Alcedo quadribrachys and subsp., p. **657**
Bill not entirely black 5

5. Bill parti-coloured, upper mandible red, lower black .. 6
Bill entirely red, orange or brownish red, sometimes dusky towards tip 7

6. Breast bright blue or greenish blue; scapulars black
Halcyon malimbicus and subsp., p. **665**
Breast whitish or grey finely freckled; scapulars blue
Halcyon senegalensis and subsp., p. **663**

7. Belly chestnut 8
Belly not chestnut 9

8. Crown smoke-grey or smoke-brown; breast with pale brownish wash .. *Halcyon leucocephala leucocephala*, p. **667**
Crown white washed with greyish; breast white or almost white .. .. *Halcyon leucocephala acteon*, p. **668**

9. Crown and mantle deep chestnut-maroon; no white collar surrounding neck *Halcyon badius* and subsp., p. **668**
Crown streaked brown or blackish; white collar surrounding neck 10

10. Size larger (wing over 86 mm.), bill over 35 mm.:
(*a*) Mantle and scapulars black (♂);
(*b*) Mantle and scapulars brown (♀)
Halcyon albiventris orientalis, p. **666**
Size smaller (wing under 86 mm.), bill under 35 mm.
Halcyon chelicuti and subsp., p. **669**

11. Middle of breast and belly pure white, sides and flanks flaming rufous:
(*a*) Bill red (dusky at base only) (adult);
(*b*) Bill black (immature)
Corythornis leucogaster and subsp., p. **659**
Middle of breast and belly not white 12

12. Ear-coverts strongly washed with violet 13
Ear-coverts not violet 14

13. Culmen with perceptibly raised keel; middle of crown black, barred with blue, no definite black frontal band:
(*a*) Bill red (adult);
(*b*) Bill black (immature) .. *Ispidina picta picta*, p. **660**
Culmen flattened without perceptibly raised keel; crown chestnut, frontal band black
Myioceyx lecontei (adult), p. **662**

14. Culmen flattened without perceptibly raised keel; crown and nape black, the latter spotted with blue; crest very short .. .. *Myioceyx lecontei* (immature), p. **662**
Culmen with perceptibly raised keel; crown and nape not black; crest long 15

15. Crest barred with deep blue without any greenish tinge *Corythornis cristata nais*, p. **659**
Crest barred with green or bluish green 16

16. Size usually larger (wing 58–61 mm.):
(*a*) Breast chestnut; bill red (adult);
(*b*) Breast smoky black; bill black (immature) *Corythornis cristata thomensis*, p. **659**
Size usually smaller (wing 53–60 mm.):
(*a*) Back and wing-coverts uniform purplish; bill red (adult);
(*b*) Back and wing-coverts spotted light blue; bill black (immature) .. *Corythornis cristata cristata*, p. **658**

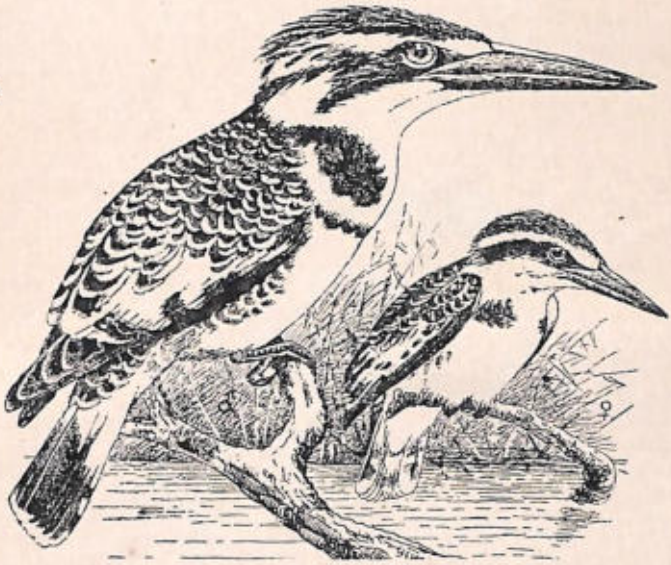
PIED KINGFISHER

Ceryle rudis rudis (Linnæus)

The striking black and white plumage of the Pied Kingfisher enables it to be easily recognised. It is one of the larger species in our area, having a total length in the flesh of about 10–11 in., with a wing expanse of 18 in. The detailed measurements are as follows: Bill 52–63 mm., wing 130–140 mm., tail 70–80 mm. On the upper parts there is rather more black than white; in flight the wings show the greater part nearest the body white and the tips black, while the tail is mostly black terminally, black and white basally. At rest the sexes may be distinguished by the males having two distinct black bands across the breast, one above the other, while in the female the bands are reduced to a black patch on either side of the breast, the lower band being absent. The bill and feet are all black.

The Pied Kingfisher is a very common bird on the large rivers, lakes and tidal creeks of the whole of West Africa, but it does not penetrate the forests, and in heavily timbered country, as in Liberia, we find it mainly along the coastal belt. It is a familiar sight poised above the water watching for its prey, which it captures by diving like a stone and seizing the fish in its bill, which is then carried off in its beak. In the rainy season it is to be found sometimes far from rivers or lakes and then may be found not only on the larger fadamas, which are dried up in the winter months, but even on tiny pools and by roadside ditches.

Between fishing it may constantly be seen sitting on a post or fish-trap or maybe on a rock or bush. Its flight is straight and fast—a few quick wing-beats, then a sail. This is a noisy bird which utters shrill chattering cries during flight, but is usually silent while fishing. In some localities gatherings of these kingfishers have been observed towards evening, but no communal roost has been found.



Nesting takes place soon after the rivers begin to fall, the nest tunnels running into the banks for 4–5 ft. The tunnels end in a spacious nest chamber which is quite unlined, the eggs, three to six in number (usually 5), being laid on the bare earth, sand or clay. November to January is the breeding season on the Lower Niger and Benue Rivers; when breeding by lagoons, excavation has been observed in progress in August. The eggs are pure white. Ten from Nigeria measure 27·6–30·0 × 22–23·3 mm.

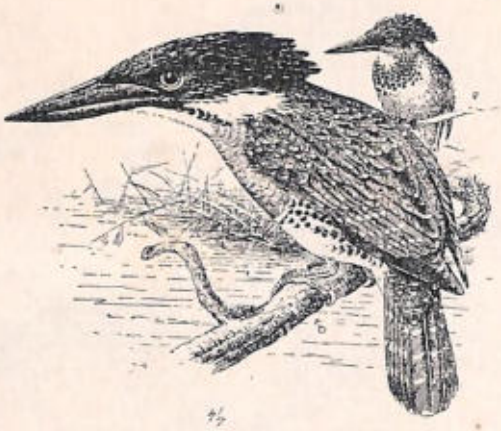
Distribution. The whole of Africa south of the Sahara. In West Africa universally distributed from the borders of the Sahara to the coastal mangrove belt. Common throughout the whole length of the Niger and on the other large rivers and lagoons of West Africa, including those of all British Colonies. It breeds from the coastal area to about lat. 16° N. There are no races recognised in Africa, but the Indian bird is a race of the one here listed.

GIANT KINGFISHER

Megaceryle maxima (Pallas)

Two races of this bird occur within our limits, that which is found in all our British Colonies west of the Benue River being the typical subspecies.

This is far the largest kingfisher in Africa, a third as large again as the Pied Kingfisher. It measures some 18 in. in the flesh from bill to tail, with a wing expanse of 28 in. Its powerful black bill is about 3 in. in length. The upper surface is mostly slate-colour, the



head streaked, the body speckled; the wings and tail are spotted with white, most apparent during flight. The males have a white throat, rufous breast and barred black and white belly; the females a white throat, slate-black breast and rufous belly, the colour scheme simply being reversed in the sexes. The bill of the typical race measures 72–87 mm., wing 190–205 mm. and tail 110–115 mm.

This is another fish-eating kingfisher which is to be found only in the vicinity of water, its favourite haunts being the overhanging bushes of river banks or the mangroves in the coastal area. Single birds or a pair are usually seen in a stretch of river, perched on post, rock or bough from which the water can be surveyed and the movement of fish instantly discerned. They have not been seen to hover over their prey. A secluded pool is often chosen, and there the birds will sit patiently awaiting an opportunity to plunge into the water.

Throughout the whole of our area it can only be considered local. Wooded banks seem to be an essential of its habitat, and thus where the banks are unclothed this bird will not occur, unless it be seen speeding up or down the river.



GUINEA SHINING-BLUE KINGFISHER
Alcedo quadribrachys quadribrachys

CAMEROON SHINING-BLUE KINGFISHER
Alcedo quadribrachys guentheri

CONGO BLUE-BREASTED KINGFISHER
Halcyon malimbicus malimbicus

NIGERIAN BLUE-BREASTED KINGFISHER
Halcyon malimbicus forbesi



As the breeding season approaches, these large kingfishers indulge in display flights during which they emit loud cackling calls: *kek-kek-kek-kek*, uttered by both sexes. This call is habitually heard at other times also. It nests during the dry season when the banks are exposed and fishing is easy. The nest holes are excavated by the birds themselves to a distance of at least 4 ft. One excavated in the Congo sloped downwards at an angle of 45 degrees. The eggs are glossy white, finely pitted. Three to five are laid, measuring 44–46 × 34·5–37·3 mm.

Distribution and Races

M. maxima maxima (Pallas) has already been described. It ranges over the whole of Upper Guinea as far east as Nigeria, where it meets the next race in the vicinity of the Benue River and in the Southern Province of Benin east of the Osse River. In general the birds from the more open country may be assigned to this race. It occurs in all our Colonies but is distinctly local.

M. maxima sharpii (Gould) differs from the typical race in having the mantle, scapulars and back almost unspotted with white and the spots on wings smaller, the crown with only a few white spots, the sides and belly more heavily barred with black, the white area between breast and belly either much reduced or entirely wanting, the middle of the belly less white. The bill measures 74–83 mm., wing 183–198 mm. and tail 102–110 mm.

This race is more restricted to streams running through forest country. The most westerly locality from which it is recorded is on the Benue River. It extends through the Calabar area, the whole of Cameroon and Gaboon and the equatorial forest region of the Congo east to the Ituri. It is not restricted to heavy forest but occurs on the Upper Uelle and beyond the southern edge of the forest belt.

SHINING-BLUE KINGFISHER

Alcedo quadribrachys (Bonaparte)

(see Plate 33, facing this page)

Two races occur, for the range and distinctions of which see the last paragraph.

This kingfisher reminds one of our British Kingfisher, in both size and colour pattern. It measures 7½ in. in length in the flesh and has a wing expanse rather over 10 in. The under parts are rich rufous, the throat is whitish, the general colour of the upper surface bright ultramarine, with a brilliant blue back which glints in the sunlight. The wings appear black, and the bill, which is longer and heavier than in the British species, is also black. The feet are

vermilion. Measurements are: Bill 40–47 mm., wing 71–81 mm., tail 33–40 mm. Immature birds have the breast-feathers tipped with violet-blue and the blue on the crown paler.

The Shining-blue Kingfisher must be sought along the rivers and streams with banks overhung with thick vegetation, or those which meander through forests. Usually a bird of fresh water, it is also to be seen in the mangrove belt, but is nowhere numerous. It avoids open water, lagoons and wide rivers; the smaller and more overhung the stream the more likely will it be found. In Nigeria, the Cameroons and Sierra Leone it has often been seen among the mangroves.

Its flight is fast and direct, and when it perches it is apt to choose an inconspicuous position close above the water line. Its diet consists almost, if not entirely, of small fish, which it captures by plunging and returning to its perch to devour them.

The Shining-blue Kingfisher excavates a hole in the bank of a stream in which to deposit its eggs. Eggs have not been discovered, but one nest examined in Cameroon contained five young.

Distribution and Races

A. quadribrachys quadribrachys occurs in the more wooded parts of Upper Guinea from Portuguese Guinea and Sierra Leone, where it is not uncommon, through the Gold Coast to northern Nigeria, examples of this race having been obtained in Niger Province. The back and upper tail-coverts in this bird are violet-blue.

In southern Nigeria from Lagos eastwards the Lower Guinea subspecies *A. quadribrachys guentheri* ranges through the Upper Uelle district to Uganda and Lake Edward. Originally described from Cameroon Mountain, it is numerous in southern Cameroon and ranges south to the Kwango River in Angola. In southern Nigeria it is somewhat local. This race is distinguished by having the back and upper tail-coverts shining cobalt-blue and the under parts rather deeper rufous. The wing measures 72–80 mm.

MALACHITE KINGFISHER

Corythornis cristata (Pallas)

Two insular races of this kingfisher are found in our area, but the typical form is the only one occurring on the mainland.

This very small bird measures little more than 5 in. from bill to tail. The back and scapulars are brilliant ultramarine, the upper throat and sides of neck white, and the breast is rufous. Very noticeable is the barred black and greenish-blue crest on the head. The bill and feet in adults are scarlet-vermilion; in immature birds these are black. The bill measures 27–32 mm., wing 53–60 mm. and tail 23–28 mm.

From the Shining-blue Kingfisher the much smaller size of the Malachite and (in adults) the red bill should distinguish it.

The Malachite is the smallest of all the fish-eating kingfishers in Africa and is well known to most people, being extremely common and widespread. We find it all over Africa from south of the Sahara to Cape Province, but it is mostly absent from forest streams, preferring more open water or pools and streams in savanna and bush country. Swamps and mangroves are much frequented and even tiny pools, but it is equally numerous on the large rivers. It is never seen far from water. In addition to small fish and crustaceans, which form the principal food supply, it feeds also upon water insects. When engaged in fishing it will dive about every one and a half minutes from a twig or perch over the stream, completely disappearing below the surface.

The nest tunnels penetrate straight into a bank for about 18–24 in. and then expand to form a small nest chamber. The eggs, which are pure white and glossy, are deposited on the bare earth, no other material being introduced. The clutch consists of four to six. The breeding season (in Gold Coast and Nigeria) extends from early June to mid-October. Eggs measure 16·0–18·1 × 14·4–16 mm.

Distribution and Races

C. cristata cristata, the mainland race, is found locally distributed in every political division between Senegal and the Congo; it is common in the mangrove swamps but is also met with elsewhere. In Upper Guinea its range extends from the coast to the Inundation Zone of the Niger and in Nigeria north to Lake Chad. It is rather common along the forested section of the Congo River.

Two island races occur, *C. cristata thomensis* Salvadori, restricted to São Thomé, and *C. cristata nais* Hartlaub, restricted to Principe. The distinctions of these two well-differentiated races are given in my larger work. The Principe race, among other points, has the crest banded with blue instead of green.

WHITE-BELLIED KINGFISHER

Corythornis leucogaster (Fraser)

THREE races of this kingfisher come within our boundaries, to be mentioned hereafter.

The white under parts of this bird distinguish it from the other small kingfishers. The forehead, cheeks, patches on each side of the breast and flanks are bright rufous, while a band of white on the sides of the neck is noticeable in flight. The upper parts are ultramarine, and the bill is red in adults, black in immature. In length it measures 5¼ in., i.e. about the same size as the Malachite Kingfisher.

In its habitat on the forest streams and in its feeding manners it closely resembles the Shining-blue Kingfisher, from which bird its much smaller size and the bright rufous on forehead and cheeks (blue in *A. quadribrachys*) distinguish it.

White-bellied Kingfishers haunt both the large and small waterways and the pools which lie hidden in the clearings. Near the coast it frequents the tidal streams and may be seen flashing by the dark mangroves, the intense blue of the back being singularly beautiful in such surroundings. It may also be seen on the clear streams of the interior. Like the other fish-eating species, it plunges into the water after its prey, but it is more often in pursuit of frogs and aquatic insects than small fish.

In none of the races in West Africa have the eggs been discovered. The birds excavate nesting holes in the banks of streams, but those examined have been empty.

Distribution and Races

C. leucogaster leucogaster (Fraser) is restricted to the island of Fernando Po. The bill measures 32–34·5 mm., wing 59–63 mm. The crown and forehead are black, each feather being tipped violet-ultramarine.

C. leucogaster batesi Chapin differs only in having a smaller and more slender bill than the typical race (26·5–31·2 mm.). The wing measures 53–59·5 mm. It ranges from the Warri Province of southern Nigeria through the forests of Cameroon to northern Angola, another race, *C. l. leopoldi*, taking its place in the Congo forest.

C. leucogaster bowdleri Neumann has a small bill (29–30 mm.) like *C. l. batesi*, but differs from that race and also from the island race in having the forehead and sides of the head reddish rufous. The wing measures 54–55 mm. This race occurs in all our Colonies except Gambia, ranging from Portuguese Guinea and Sierra Leone to the Niger. Specimens from the Warri Province, southern Nigeria, incline more to *C. l. batesi*. A rare bird and distinctly local, restricted as it is to forest waterways.

PYGMY KINGFISHER

Ispidina picta picta (Boddaert)

This is truly named a pygmy, as it hardly exceeds 4 in. from bill to tail, of which the bill often measures an inch. Thus it shares with the forest-frequenting Dwarf Kingfisher (*M. lecontei*) the honour of being the baby of the family. Ultramarine above, orange-rufous below and on each side of the crown, the adult has a bright red bill of the well-known kingfisher shape but more flattened than in many

kingfishers with which we deal, though distinctly pointed at the tip, not cut off square, as is the forest species mentioned above. The bill measures 22–26 mm., the wing 49–54 mm. Young birds have a black bill.

This is one of the insect-eating kingfishers; fish play no part in its menu. Small frogs and aquatic insects are occasionally consumed, but grasshoppers, spiders, moths, beetles, flies and such insects as are to be found in dry places constitute its chief food supply. It is often to be found miles from any water, but it avoids the bare arid belt. Forest clearings, gardens, compounds fringing



forest, grass woodland and bush attract it, and its habitat is a wide one in consequence. It may often be encountered in farmlands, and in the high forest of Sierra Leone it has been seen to join the ant-birds around driver ants.

Nearly always seen in pairs, the impression is gained that it has no special breeding season. It is a familiar sight on the telegraph poles, from which vantage point it can pounce upon its insect prey, diving into the grass much as the fish-eating kingfishers dive into a pool. The only time it has ever been seen to dive into water it was believed to be bathing. The cry is a thin squeak.

The Pygmy Kingfisher nests in holes in banks and pits which it excavates for itself. Sometimes a number of these tunnels may be found in the side of a dry watercourse. They penetrate for about 2 ft., ascend slightly upwards, and then descend to a terminal

chamber. These tunnels have a very small circumference, just big enough to permit the body. Three or four white eggs measure 16·2–19 × 14·3–15·5 mm.

Distribution. From Senegal and the Egyptian Sudan this, the typical subspecies, ranges south to Angola in the west and to Kenya and Uganda in the south. It is found in every political division from the Senegal to the Quanza River and is widely spread in West Africa both north and south of the forest. Its range embraces much of the Ubangi Shari and the northern Belgian Congo. South of the equatorial forest *I. picta natalensis* takes its place.

RED-HEADED DWARF KINGFISHER

Myioceyx lecontei lecontei (Cassin)

This minute kingfisher is the smallest of all and measures little more than 4 in., of which the bill accounts for an inch. In adult garb it is easily recognised from all other kingfishers by its orange-rufous head and neck. At rest a broad black band across the forehead may be noticeable. In the rest of its plumage, ultramarine back, with orange-rufous under parts, it is indistinguishable from *Ispidina picta*. The red bill is strongly depressed and appears as if the tip has been cut off leaving a blunt square end, not apparent when viewed from the side. It is a bird of the forest which lives on insects and eschews water.

The peculiar shorn-off appearance of the flattened bill proclaims that this species does not catch fish. Its food is entirely insectivorous. Very little is known concerning its life-history. It has usually been seen in forest clearings, avoiding the virgin forest and always well away from water. It keeps close to the ground and may be seen sitting on the dry branches of fallen trees from which it can pounce upon its insect food.

Although it is apt to be mistaken for *Ispidina picta*, it frequents far more shady places than does that equally small bird, but the colouring of the head, with the black forehead and the lack of a sharp point to the bill, should enable one to distinguish it without much difficulty. The legs and bill are red in the adult. The bill measures 24–27 mm., the wing 46–49 mm.

A nest hole about 6 in. in length, which contained three white eggs, was discovered in the side of a pit in Cameroon.

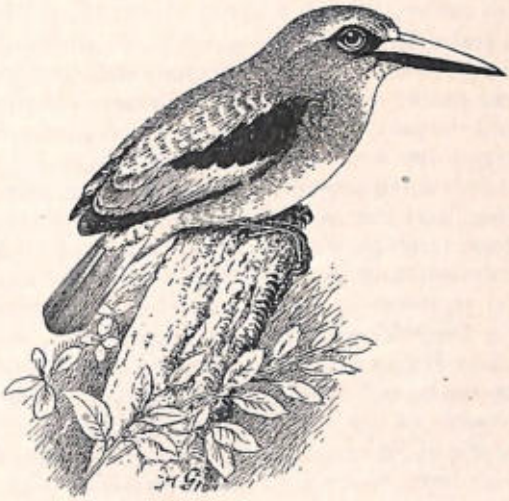
Distribution. From the Gold Coast to Gaboon and eastward across the equatorial lowland forest to Ituri and Uganda is the accepted range of this dwarf kingfisher. In the only British West African Colony where it has been found to date it was collected in "Fanti" many years ago, but is evidently very rare. It must surely occur in

southern Nigeria, as it is by no means uncommon in the Ja River district of forested Cameroon. A race *M. l. ugandae* has been separated from the Uganda forests, but its validity has been disputed. It is claimed that it has a bluer crown than West African examples.

SENEGAL KINGFISHER

Halcyon senegalensis (Linnæus)

This widely spread species is separated in our area into two races whose range is not easily defined; roughly one resident in the forest area and the other in the rest of the country.



The one which is met with in open country is a bush and garden-frequenting, non-fish-eating kingfisher, a medium-sized species measuring from bill to tail about 9½ in., with an expanse of 10 in. It has a grey head with black spot in front of the eye, light blue back and tail, black and blue patterned wings, greyish-white under parts, and a heavy, pointed, straight bill about 1¾ in. in length, the upper mandible of which is bright red, the lower mandible jet-black. This last is an important character to note, as it is a very conspicuous feature and distinguishes this kingfisher from all others with the single exception of the Blue-breasted Kingfisher (*H. malimbicus*). That bird, besides being larger than the species we are discussing, and having a blue breast, has much more black on the back caused by the black scapulars. The black lower mandible also serves to

distinguish *H. senegalensis* from the Grey-headed Kingfisher (*H. leucocephala*), which has an all-red bill and is chestnut on the breast. These two last species are easily confused unless these points are borne in mind. The bill measures (in type race) 35–43 mm., the wing 98–113 mm.

The typical race of the Senegal Kingfisher is found everywhere from the coast to where the savanna gives way to the desert, wherever, in fact, there are shady trees. It is extremely numerous in the dry belt from Gambia to northern Nigeria, but perhaps prefers cultivated land to all else. Trees in which it can perch and find shade and an abundance of insects and grasshoppers upon which to feed are the main essentials for its existence. It has a loud arresting cry—a high-pitched trill in descending scale which begins with a single note in advance of the others.

As noted above, there is a darker bird which lives in the forest clearings, and as in the dry season the paler birds from the savannas and more arid country are apt to move south, they come within the range of the darker race, especially in damp countries such as Sierra Leone and Liberia. That accounts for both dark and light examples being taken in the same area.

Water is not a requirement of this kingfisher except for drinking and bathing, and fish normally form no part in its diet,* though lizards, frogs, large grasshoppers and locusts, blindworms and even crabs are devoured at times. There is no doubt that in part of its range it is migratory, though no definite movements have been observed in West Africa as they have in Darfur.

As the breeding season approaches, display flights may be witnessed, the birds cruising round at a height, calling as they fly. It is an aggressive species which suffers little interference once it has chosen the site for its nest. This may be in the natural hole of a tree such as a baobab, or equally likely the appropriated nest of a swift under the eaves of a veranda or a hole excavated by a barbet or perhaps a woodpecker. It has also been found breeding in Nigeria in a bank of a dry watercourse, and in the Gold Coast in a hole excavated apparently by the birds themselves in a tree-termites' nest. Eggs have seldom been taken, but three or four is the size of the clutch. Eggs are almost round, white and glossy, 29·1 × 25·5 mm. and 30·5 × 25·3 mm.

Distribution and Races. H. s. senegalensis (Linn.) ranges from Senegal and Gambia to northern Cameroon eastwards to Abyssinia, western Kenya, and occurs everywhere outside the forested area,

* Mr. P. I. R. Maclaren of the Nigerian Fisheries Development Office, Lagos, has several times seen this kingfisher swoop down and pick up small fish from the drainage channels at the Fisheries Station and it has been observed to capture fish 1½–2 in. long in water 3–6 in. deep. Once it was seen to eat the fish (*Tilapia heudeloti*) itself and also to take it to fully fledged young. This is most unusual.

where its place is taken by *H. s. fuscopileus* Reichenow, differing from the typical race in having the crown earth-brown, contrasting with the paler cheeks and neck. Other small differences exist. (Wing 95–104 mm.) The forest race ranges from Sierra Leone to the Congo in the forest country and along the damper coastal area and across the Congo to the Semliki valley. A third subspecies inhabits southern Africa.

BLUE-BREASTED KINGFISHER

Halcyon malimbicus (Shaw)

(see Plate 33, facing page 657)

No fewer than five races come within our limits, for which see final paragraph.

This is a larger bird than the Senegal Kingfisher, measuring about 11½ in. from bill to tail with an expanse of 15 in. The crown is ashy washed with green towards the nape, and a black patch runs through the eye. The back and rump are turquoise-blue, the wing-coverts are mostly black, the throat and belly are white and the breast is blue; the tail also is blue, of a deeper shade. The bill is a striking feature, the upper mandible being red, the lower black. The feet are red. Measurements of *H. m. forbesi* (the race described) are as follows: Bill 45–53 mm., wing 103–125 mm., tail 70–85 mm. and tarsus 16–17 mm.

There is much variation in the call of this kingfisher; it gives forth a variety of loud ringing whistles, beginning rapidly with pauses and a quick series in the middle. It is not a fish-eating species and is often found a long way from water.

Its food consists mainly of insects, but it will kill crabs, blind-worms, frogs, caterpillars, beetles, prawns and other items which come its way, eschewing fish, though it may often be encountered perched in a leafy tree in the vicinity of streams. Its favourite haunts are perhaps thick jungles or dense palm forests, apart from the mangroves, which always seem to attract it. Its voice can be heard from the decks of steamers anchored in the mouths of the Niger and Oil Rivers. West of the forest belt, as in Gambia, it is restricted to the mangroves and the thick waterside vegetation.

The Blue-breasted Kingfisher will often nest within the structure made by termites, excavating a chamber in which to lay its eggs. The termites' nests may be in the fork of a tree 30 ft. or more from the ground. A burrow in the side of a drain is another situation, but usually this bird prefers to breed in trees. The eggs, which number three or four, are white with a smooth glossy surface. Measurements are 28·5–30·5 × 25·3–27·01 mm.

Distribution and Racial Forms

H. malimbicus forbesi Sharpe, which is the race described above, ranges through the mangrove belt and westward extension of the forest from Cameroon Mountain to Sierra Leone.

H. m. torquatus Swainson differs from *H. m. forbesi* in having the blue of the plumage paler and greener. The bill measures 48–52 mm., wing 108–121 mm. It inhabits Gambia, Casamance and Portuguese Guinea.

H. m. fortis Reichenow resembles the last, but is larger. The bill measures 56–65 mm., wing 124–125 mm. It is restricted to Senegal, perhaps to the environs of the Senegal River.

H. m. malimbicus (Shaw) differs from *H. m. forbesi* in having the blue plumage more hyacinth in tone, the blue extending well on to the crown. The breast is much more intense blue than in any other race. The bill measures 46–52 mm., wing 107–116 mm. It is restricted to the forests of Lower Guinea from southern Cameroon to southern Angola and to the gallery forests of the northern Belgian Congo.

H. m. dryas Hartlaub closely resembles *H. m. forbesi*, but the crown is darker brown and barely washed with green; the belly is greyer. In size it is considerably larger, with bill 53–58 mm., wing 122–126 mm. It is an island race found in Principe, São Thomé and Fernando Po.

EAST AFRICAN BROWN-HEADED KINGFISHER

Halcyon albiventris orientalis

From the other members of its family which occur within the Congo area this kingfisher may be distinguished by the broad whitish collar. When at rest the cobalt-blue back is concealed by the scapulars, and below the collar all but the blue rump and tail appears black in the male (dark brown in the female). In flight about half the wing shows light blue, the rest black. The bill is entirely red. The under side is whitish or pale buff. In size this kingfisher resembles the Senegal Kingfisher and measures about 9½ in. in the flesh. The feet are crimson or scarlet. The bill measures 36–43 mm., wing 90–109 mm. The sexes are not alike in this species, the whole of the head and back being brown in the female, the head more faintly streaked than in the male; the blue of the back, wings and tail is paler and greener, not cobalt as in the male.

This is one of the insectivorous kingfishers and consequently it is not dependent on water for its habitat. It is found in the acacia savannas, often far from water, but also occurs on the coastal belt.

It lays its four white eggs in burrows. As it barely comes within the limits of this book, it may be dismissed briefly.

Distribution. Ranges from Kenya south to Portuguese East Africa, extending westwards to Angola and the Lower Congo and the coast of southern Gaboon.

GREY-HEADED KINGFISHER

Halcyon leucocephala leucocephala (Müller)

This is a trifle smaller in size than the Senegal Kingfisher, measuring about 8 in. from bill to tail. The colour scheme is as follows: grey head and breast, cobalt-blue back and tail (the former concealed when at rest by the black scapulars), patterned blue and black wings and chestnut belly, bill all red. When perched, the back appears black, but in flight the brilliant blue back becomes visible. The adult female resembles the male, but the head, instead of being clear grey, is tinged with brown. The bill is dark red, blackish at the base; the feet are light red. The bill measures 36–43 mm., wing 96–109 mm.

The cry of this kingfisher is a shrill, rapid chatter which has been described as twittering. It is another of the insect-eating kingfishers, locusts, flies of all kinds, moths, grasshoppers, beetles and caterpillars constituting its food supply, and though it may be found on the banks of tree-lined streams or on the coast, it captures neither fish or frogs, living entirely upon such creatures as can be obtained in the bush.

The Grey-headed Kingfisher inhabits all kinds of country, but its true habitat is the thorn scrub, whence it wanders south in the dry season (October to March) into the tree savanna and grass woodland, occurring then regularly in forest clearings. In the dry season it may be found in the coastal area, but when the rains come on in April the kingfisher migrates north, and is then found nearer to the desert than any other *Halcyon*.

Its breeding season, if season it can be termed, is prolonged. In Nigeria eggs have been found from mid-March to the third week of May and again in January. The birds excavate tunnels in banks 3–4 ft. in length with the eggs at the extremity. The clutch is normally four, but clutches of three and five have been found. Two broods are sometimes reared in succession. It is remarkable how seldom this kingfisher is ever found in its nest hole. Of fifty nest holes examined, only once was a bird seen to come out of a hole containing eggs. The eggs are white and almost round, measuring 22·2–25·4 × 19·5–22·2 mm.

Distribution and Races

H. l. leucocephala (Müller) ranges from Senegal south to Cameroon and across Africa to Ethiopia, Somaliland and Kenya Colony. In West Africa it is found commonly in all our British Colonies, occurring in the rainy season as far north as lat. 15° N., moving south in the dry season, when it may be encountered in coastal districts from November to March. Widely distributed as it is, it is nowhere so common as the Senegal Kingfisher in our area.

Another race, *H. leucocephala acteon* Lesson, comes within our limits and is restricted to the Cape Verde Islands. It differs from the typical subspecies by having the head and mantle considerably paler, in some males whitish stone-colour, the blue of the wings deeper and more hyacinth in tone, and the chestnut belly usually paler. The wing of this island race measures 98–107 mm. and the bill 38–45 mm.

CHOCOLATE-BACKED KINGFISHER

Halcyon badius badius Verreaux

An easy bird to recognise, the Chocolate-backed Kingfisher is distinctly coloured—reddish chocolate on the head, neck, mantle and scapulars and most of the wing-coverts. The back and rump are cobalt blue, the tail is light blue, tipped blackish; the wings are dusky black, with a light blue bar across the secondaries. The whole under parts are white; the bill is dark red, and the feet are red and blackish. Measurements are: Bill 36–42 mm., wing 92–102 mm. In size it is 8¼ in. in total length.

The forest belt of West Africa is the home of this kingfisher, which proclaims its presence by its loud cry, uttered in distinct syllables and not run together in a trill or rattle. It is an insect-eating species; brilliantly coloured glittering beetles especially attract it, but apart from fish, which it does not touch, it devours dragonflies, winged termites, mantises and lizards. One recently obtained had a 6½ in. smooth-scaled lizard in its crop, the tail protruding from its beak.

Considering that it is not a fish-eater, it is curious how often it is observed by streams and reservoirs. It is, in fact, closely associated with water, but is strictly a forest bird. It seems, from all accounts, to be one of the rarer kingfishers, and though widely distributed, it is seldom seen by the casual observer. It will sit motionless for hours, often perched 30 ft. or more above the ground, occasionally uttering its rather slurred whistled notes, rising and falling and then dying away—rather a melancholy cry.

Nests of this kingfisher have been found in hollowed-out termites'

nests hanging in trees and again in an earthen ants' nest in which the kingfishers had appropriated a hole perhaps excavated by a woodpecker, ignoring the presence of the large biting black ants. Two eggs have been found in the nests, white and glossy and nearly round, measuring 26–29 × 24–26 mm.

Distribution and Races. H. badius badius inhabits the forest area of Upper and Lower Guinea from Sierra Leone to the Loango Coast, lat. 5° S., then across the equatorial forest of the Congo to the Ituri and Semliki valley. It has now been found in three British Colonies. In Sierra Leone it keeps to the high forest such as that clothing the Nimimini Mountains. In the Gold Coast it is sparingly distributed in Ashanti. In Nigeria it has been reported from Benin since I prepared my larger work.

Another race of this kingfisher, *H. badius lopezi* Alexander, is restricted to the island of Fernando Po. It differs by having the blue on the secondaries less extensive and greenish blue like the rump. The wing measures 102·5 mm.

In Uganda we find a larger race, *H. b. budongoensis* Van Someren.

STRIPED KINGFISHER.

Halcyon chelicuti (Stanley)

Two continental races of the Striped Kingfisher come within our limits. That which occurs south of the arid zone bordering the desert is the typical subspecies, though both races are inhabitants of dry country, shunning water more than any other member of its family and living entirely on an insect diet.

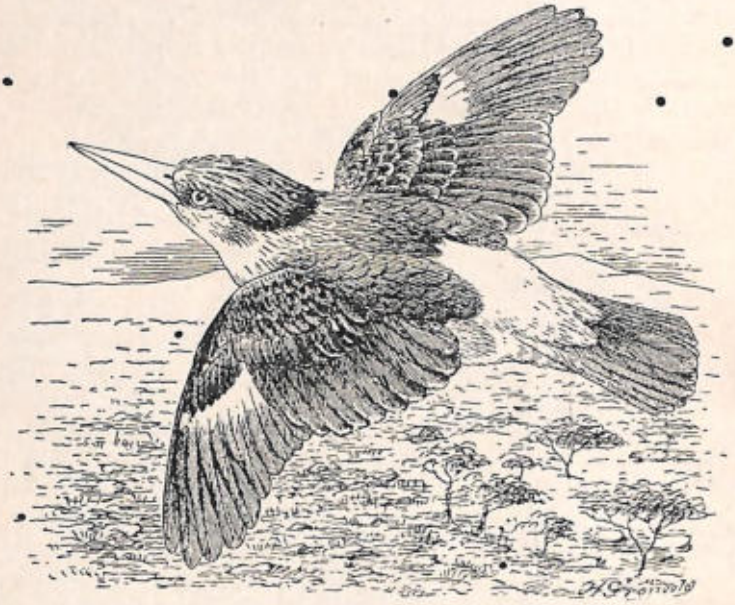
The Striped Kingfisher is comparatively small in size, about 6 in. from bill to tail, and dully plumaged, mostly brown on the head, which is heavily striped. Mantle, scapulars and wing-coverts are brown, and a broad whitish or buff collar extends below the nape. The back, rump and upper tail-coverts are bright cobalt, and the tail is light blue shaded with green. When the dark brown primaries, externally washed with blue, are expanded, a broad white mirror is visible at the base of the quills. The under parts are whitish, the breast and sides streaked with brown. The bill has the upper mandible purplish brown, the lower salmon-red; the feet are brick-red. The typical race measures: Bill 26–33 mm., wing 74–83 mm.

The adult female resembles the male except that the tail and wings are more of a greenish blue.

A bird of unobtrusive habits and not gaudily coloured, it may easily escape notice, but fortunately it is the possessor of some pleasing notes. Its musical *pee-hee* is a familiar sound in the bush, and if the

bird can be seen with raised bill and quivering wings it makes a charming picture when so engaged. Its cries have been mistaken by more than one naturalist for those of a shrike.

It loves an open woodland country and appears to be generally distributed throughout the tree savanna belt, visiting the forest clearings in the dry season. It seems, from the many notes in my possession covering all months of the year, to be a resident bird, little given to local movements or wandering.



The Striped Kingfisher nests in natural holes in trees. A nest found recently in Niger Province on 16th April was in a locust bean growing in orchard bush country. Three white eggs measured 21·7–23 × 19·4–20 mm.

Distribution and Races. *H. chelicuti chelicuti* (Stanley) inhabits the tree savanna and semi-arid belt of West Africa. It is probably most numerous between lats. 9° and 12° N., but in dry areas such as the Accra plains it reaches the seaboard. Its range extends from Senegal, Gambia and Sierra Leone to Middle Cameroon, and again south of the equatorial forest we find it on the Loango coast. Eastwards we find it across the whole of Africa north of the forest reaching to Abyssinia and the Sudan. Although several races have been proposed, I unite all birds from the Nile to Mozambique with this race.

One other form occurs within our limits—*H. chelicuti eremogiton* Hartert, decidedly paler in colour and restricted to the desert country which extends from Timbuktu to Zinder and is found in Sokoto, northern Bornu and the Chad district.

In South Africa the larger race, *H. c. damarensis*, ranges south of Damaraland and Mozambique.

SUB-ORDER MEROPES

FAMILY MEROPIDAE

Key to the adult Bee-eaters

1. Breast and belly red or pink 2
   Breast and belly not red or pink 4
2. Crown slate-coloured, uniform with back and rump, *Merops malimbicus*, p. 676
   Crown bluish green, contrasting with red back; rump blue 3
3. Throat rose-pink like breast .. *Merops nubicoides*, p. 678
   Throat greenish blue washed with black in contrast to the rose-pink breast .. .. .. *Merops nubicus*, p. 677
4. Size larger (wing over 4½ in. (115 mm.)) 5
   Size smaller (wing under 4½ in. (115 mm.)) 6
5. Breast and belly grass-green *Merops persicus persicus*, p. 674
   Merops persicus chrysocercus, p. 673
   Breast and belly blue .. .. *Merops apiaster*, p. 672
   Breast and belly chestnut and fawn-colour, head and neck black .. .. *Bombylonax breweri*, p. 679
6. Upper parts chiefly green 7
   Upper parts without any green 13
7. Throat white .. .. *Aërops albicollis albicollis*, p. 679
   Throat not white 8
8. Throat red .. .. *Melittophagus bullocki bullocki*, p. 683
   Throat not red 9
9. Tail strongly forked, outer rectrices considerably longer than inner (swallow-tailed) *Dicrocercus hirundineus chrysolaimus*, p. 686
   Tail not strongly forked 10
10. Throat green, central tail-feathers greatly elongated *Merops orientalis viridissimus*, p. 674
    Throat yellow, central tail-feathers not elongated .. 11

11. Under tail-coverts blue, no black or blue band below yellow throat .. *Melittophagus bullocki bullocki*, p. 683
(Aberrant form with yellow instead of normal red throat, see p. 684)
Under tail-coverts not blue 12

12. Band of blue below yellow throat
Melittophagus variegatus variegatus, p. 682
Patch of black below yellow throat
Melittophagus pusillus pusillus, p. 681

13. Breast bright blue, without streaks or spots 14
Breast black, streaked or spotted with blue 15

14. Forehead deep bright blue almost uniform with the crown .. .. *Melittophagus muelleri mentalis*, p. 685
Forehead whitish or cobalt contrasting with deep blue of crown .. .. *Melittophagus muelleri muelleri*, p. 686

15. Pale blue band on forehead very pronounced and extending in conspicuous stripe over eye
Melittophagus gularis gularis, p. 684
Pale blue band on forehead very faint and stripe over eye either wanting or but faintly indicated
Melittophagus gularis australis, p. 685

EUROPEAN BEE-EATER

Merops apiaster Linnæus

THE main colour features, difficult to distinguish unless the bird is at rest, are chestnut head, white forehead, black band running from the base of the bill below and beyond the eye, bright yellow throat separated by a black band from the green-blue under parts, bluish wings with black tips and green tail. Distinctions between it and the Persian Bee-eater will be given under the latter species. The gently curved narrow black bill (about 1½ in. long), the long narrow wings, which appear to have two points, and the square tail with the two middle feathers protruding about ¾ in. beyond the remainder are the best guide to identification of the European Bee-eater during flight, when the colours cannot be seen. The flight is graceful, several birds together rising and falling. Telegraph wires are a favourite perch. The note is frequently uttered and is described as a rather monotonous liquid dissyllabic *turruk-turruk*. The eye is crimson; the bill black and the feet are purplish brown. Measurements are: Bill 33–37 mm., wing 143–156 mm., tail 86–94 mm., the middle pair 108–122 mm.



YELLOW-THROATED CUCKOO
KLAAS' CUCKOO

EMERALD CUCKOO
WHITE-BELLIED or DIDRIC CUCKOO

BLACK BEE-EATER

CARMINE BEE-EATER
RED-THROATED BEE-EATER

SWALLOW-TAILED BEE-EATER
BLUE-HEADED BEE-EATER



The sexes are almost similar, but in life the male appears slightly larger and the female usually has more green on the scapulars and mantle.

This is a migrant to tropical Africa from its breeding quarters in Europe and Africa north of the Sahara. It arrives first in West Africa in mid-September and begins to leave again in mid-March. The passage is an extended one, and as many birds proceed as far south as Cape Province it is widely spread in the winter months in the tropical and subtropical zones. Many are in immature dress on their first arrival, much paler and duller than the adults, the head browner and the chestnut mantle washed with green. Few birds remain in West Africa, where it is mainly observed as a passage migrant.

Distribution. Southern Europe and northern Africa, ranging in winter to southern Asia and Afghanistan and throughout the whole of Africa on its passage to latitudes south of the Equator. It frequents mainly open country and is to be seen on dead trees or on the telegraph wires. Sometimes flocks of a hundred or more have been noted, as in the Benue Province in October, swooping and soaring over the grassy plains.

BLUE-CHEEKED BEE-EATER

Merops persicus chrysocercus Cabanis and Heine

Two races of the Blue-cheeked Bee-eater have been reported from within our limits. The impossibility of distinguishing between the two subspecies of this Bee-eater unless handled makes it useless to attempt to assess the relative distribution in West Africa of the typical Persian race, if, indeed, it occurs at all. The only difference between them is in the length of the central tail-feathers, and all those personally examined are not of the typical subspecies.



The Persian Bee-eater which occurs most commonly in winter is the long-tailed North African race, *M. p. chrysocercus*. In size it resembles the European Bee-eater, but its plumage is almost entirely green save for a yellow chin, chestnut throat and a jet-black streak through the eye extending well on to the cheeks. The lack of a

black crop-band immediately distinguishes it from *M. apiaster* with its sulphur throat. It has a crimson eye, black bill and brownish-pink feet frosted with white. The bill of *M. p. chrysocercus* measures 37–40 mm., the wing 136–151 mm. and the central tail-feathers in the male 145–187 mm., compared with 127–159 mm. in the male of *M. p. persicus*.

There seems to be no doubt that *M. p. chrysocercus* nests in West Africa further south than was realised, for it was found breeding in lat. 17° in southern Mauretania in holes in buildings and in mud walls and sandpits. The tunnel was very long in one instance, ending in a cool chamber in which were five well-incubated white eggs (on 5th October).

The birds are bold and easily approached, perching in conspicuous spots frequenting the semi-arid and grass woodland belts.

Distribution and Races

M. persicus chrysocercus Cabanis and Heine breeds chiefly in northern Africa from Morocco to Tunisia, visiting tropical West Africa in winter, when it is recorded from most areas between Senegal and the northern Belgian Congo, and has occurred on São Thomé. It is frequently seen in Gambia and in the Northern and Central Provinces of the Gold Coast and Nigeria, but is more rare in Sierra Leone.

M. persicus persicus, which breeds in Persia and around the shores of the Caspian and Palestine, winters in East Africa and has been reported from Liberia and a few other localities in Upper Guinea, but I am doubtful if it has not been confused with the African breeding bird and have never handled a specimen from West Africa which I could definitely assert is the Persian race.

LITTLE GREEN BEE-EATER

Merops orientalis viridissimus Swainson

This little bee-eater, which (excluding the lengthened middle tail-feathers) measures about 7 in., is entirely yellowish grass-green in colour with a black band through the eye and another across the chest. The middle tail-feathers are lengthened into narrow streamers (sometimes as much as 3½ in. beyond the others) and are a good character to distinguish this species from the Swallow-tailed Bee-eater (*Dicrocercus*), which is about the same size and also has a green back, though a blue rump and yellow throat. The bill is black, the eye crimson and the feet are black frosted with white. The bill measures 22–29 mm., wing 84–93 mm. Middle tail-feathers (male) 122–160 mm., (female) 110–132 mm., the next longest 60–70 mm.

The Green Bee-eater moults in early summer, and examples may

be seen in June and July which have lost the central long tail-feathers. It is the commonest of all the bee-eaters in the dry parts of West Africa and is found all along the southern borders of the Sahara wherever there are little trees on which it can perch. It does not enter the desert, however.

It seems to be resident in the greater part of its range, but local movements take place to some extent, notably in Senegal and Gambia, when birds turn up from December to March, appearing travel-weary on their first arrival.



The birds are usually encountered in small parties settled on trees or bushes, from which they sally forth in pursuit of their insect food. On the whole it is a silent species but will at times utter a low note of a peculiar buzzing tone which may be easily recognised.

It has not yet been discovered breeding, but is believed to nest in holes in the Inundation Zone of the Niger; many young birds were seen in the French Sudan in October.

Distribution. Resident in the thorn scrub savanna from the edge of the desert to about lat. 10° N., seldom south of that latitude. It ranges from Senegal and Gambia through the French Sudan,

French Niger and the northernmost provinces of Nigeria (Bornu, Sokoto) to Lake Chad, Aïr, Damergu, northern Cameroon, thence across the whole Sudanese arid belt to Darfur and Eritrea.

ROSY BEE-EATER

Merops malimbicus Shaw

About the size of the European Bee-eater, the present species is uniquely coloured, the entire under surface being rose-pink, the upper parts dark grey, including the crown. A black band extends from the lores to the ear-coverts passing through the eye, below which is a conspicuous white stripe. In flight the long pointed wings appear black and the tail has a fine point, the central feathers extending about 1½ in. beyond the others. The bill is curved, black in colour and measures 35–40 mm., the wing 133–141 mm.; the middle tail-feathers in the male are 108–117 mm., the next longest 77–82 mm.

Only one other bee-eater, *Merops nubicus*, has rose-red under parts, and that bird has mostly red upper parts and red wings and no white stripe on the face. The Carmine Bee-eater has a much longer tail, which betrays it on the wing.

The Rosy Bee-eater has a single note, which is quickly learned but difficult to describe. It may be transcribed as *chick-k* and is unusually hoarse for a bee-eater's note.

Though usually stationary in the neighbourhood of its breeding colonies, it seems that flocks move about locally, but no regular migration has been noted. Movements of large flocks have been recorded from the Benue in May and from Lagos in August. It has also been remarked that it is absent from the Southern Territories of the Gold Coast during the rains, though parties may be seen in the dry season.

Normally a bird of savanna country, it is especially attracted by the large rivers over the wide waters of which it can hawk for its prey. It has frequently been observed near the coast, especially in southern Nigeria. The birds circle high in the air or over water in the manner of swallows, frequently calling as they fly. When resting, a dead branch will often be chosen, the whole flock alighting to face the same direction. The birds are very regular in their movements, feeding as regularly as clockwork morning and evening and generally resting during the hottest hours.

The Rosy Bee-eater breeds in large colonies, boring a nest hole in the shelving sandbanks of the larger rivers at an angle of 30 degrees. Such colonies were found on the Niger in May consisting of hundreds of holes and on the Simanka River in April. Near the mouth of the Congo they arrive in May and nest shortly afterwards.

Distribution. Apparently restricted in Upper Guinea to the Gold Coast and Nigeria, the species is found again in Gaboon and Portuguese Congo, on the Upper Congo and in the Kwango and Kasai districts of Belgian territory. In the British Colonies mentioned it is very local but may be seen on the Niger and Benue as well as on some of the smaller rivers. It seems to be resident in Owerri Province. Various localities in the Gold Coast from which I have seen examples are situated south of the forest or along the coast. It may, of course, be present in the less-known Ivory Coast.

CARMINE BEE-EATER

Merops nubicus Gmelin

(see Plate 34, facing page 672)

THIS exceptionally long-tailed bee-eater, with its carmine plumage above and below, contrasting greenish-blue head (sharply defined like a hood from the carmine neck) and light blue rump and vent, is not easily confused with any other bird. Both wings and tail are crimson and the tail ends in a long narrow dark point, the central rectrices tapering some 3 in. beyond the others. The eye of this bee-eater is crimson, the bill is black and the feet are dark brown. The bill measures 34–48 mm., the wing 143–163 mm., the central tail-feather (male) 168–190 mm., (female) 163–170 mm., the next longest 92–107 mm.

The Nubian Bee-eater, as it is often termed, is one of the most familiar birds to travellers on or near the great rivers flowing through the semi-arid belt of West Africa. A swarm of these brilliantly plumaged birds over the river at sunset is a sight which is never forgotten. Incredible numbers of insects are captured by these birds, and their destruction for their beautiful feathers is nothing short of a crime. In its pursuit of insects it will follow man, cattle, antelopes and even certain birds to catch the orthoptera disturbed by their passage through the grass. There are numerous instances recounted of its perching on the backs of moving animals and of their attendance upon a pair of Saddle-billed Storks for the same purpose. It has even been known to perch on the back of a moving Sudan Bustard from which it made frequent sallies.

Open country is essential to this species, which does not enter the forest. A bush fire attracts it from afar and the birds exhibit the utmost fearlessness, entering the flames and smoke to capture the escaping insects. In French and Belgian territory they are known as oiseaux de feu.

Breeding colonies are enormous; some ten thousand birds have been seen at one place, digging their sloping holes in an almost flat

French Niger and the northernmost provinces of Nigeria (Bornu, Sokoto) to Lake Chad, Aïr, Damergu, northern Cameroon, thence across the whole Sudanese arid belt to Darfur and Eritrea.

ROSY BEE-EATER

Merops malimbicus Shaw

About the size of the European Bee-eater, the present species is uniquely coloured, the entire under surface being rose-pink, the upper parts dark grey, including the crown. A black band extends from the lores to the ear-coverts passing through the eye, below which is a conspicuous white stripe. In flight the long pointed wings appear black and the tail has a fine point, the central feathers extending about 1½ in. beyond the others. The bill is curved, black in colour and measures 35–40 mm., the wing 133–141 mm.; the middle tail-feathers in the male are 108–117 mm., the next longest 77–82 mm.

Only one other bee-eater, *Merops nubicus*, has rose-red under parts, and that bird has mostly red upper parts and red wings and no white stripe on the face. The Carmine Bee-eater has a much longer tail, which betrays it on the wing.

The Rosy Bee-eater has a single note, which is quickly learned but difficult to describe. It may be transcribed as *chick-k* and is unusually hoarse for a bee-eater's note.

Though usually stationary in the neighbourhood of its breeding colonies, it seems that flocks move about locally, but no regular migration has been noted. Movements of large flocks have been recorded from the Benue in May and from Lagos in August. It has also been remarked that it is absent from the Southern Territories of the Gold Coast during the rains, though parties may be seen in the dry season.

Normally a bird of savanna country, it is especially attracted by the large rivers over the wide waters of which it can hawk for its prey. It has frequently been observed near the coast, especially in southern Nigeria. The birds circle high in the air or over water in the manner of swallows, frequently calling as they fly. When resting, a dead branch will often be chosen, the whole flock alighting to face the same direction. The birds are very regular in their movements, feeding as regularly as clockwork morning and evening and generally resting during the hottest hours.

The Rosy Bee-eater breeds in large colonies, boring a nest hole in the shelving sandbanks of the larger rivers at an angle of 30 degrees. Such colonies were found on the Niger in May consisting of hundreds of holes and on the Simanka River in April. Near the mouth of the Congo they arrive in May and nest shortly afterwards.

Distribution. Apparently restricted in Upper Guinea to the Gold Coast and Nigeria, the species is found again in Gaboon and Portuguese Congo, on the Upper Congo and in the Kwango and Kasai districts of Belgian territory. In the British Colonies mentioned it is very local but may be seen on the Niger and Benue as well as on some of the smaller rivers. It seems to be resident in Owerri Province. Various localities in the Gold Coast from which I have seen examples are situated south of the forest or along the coast. It may, of course, be present in the less-known Ivory Coast.

CARMINE BEE-EATER

Merops nubicus Gmelin

(see Plate 34, facing page 672)

THIS exceptionally long-tailed bee-eater, with its carmine plumage above and below, contrasting greenish-blue head (sharply defined like a hood from the carmine neck) and light blue rump and vent, is not easily confused with any other bird. Both wings and tail are crimson and the tail ends in a long narrow dark point, the central rectrices tapering some 3 in. beyond the others. The eye of this bee-eater is crimson, the bill is black and the feet are dark brown. The bill measures 34–48 mm., the wing 143–163 mm., the central tail-feather (male) 168–190 mm., (female) 163–170 mm., the next longest 92–107 mm.

The Nubian Bee-eater, as it is often termed, is one of the most familiar birds to travellers on or near the great rivers flowing through the semi-arid belt of West Africa. A swarm of these brilliantly plumaged birds over the river at sunset is a sight which is never forgotten. Incredible numbers of insects are captured by these birds, and their destruction for their beautiful feathers is nothing short of a crime. In its pursuit of insects it will follow man, cattle, antelopes and even certain birds to catch the orthoptera disturbed by their passage through the grass. There are numerous instances recounted of its perching on the backs of moving animals and of their attendance upon a pair of Saddle-billed Storks for the same purpose. It has even been known to perch on the back of a moving Sudan Bustard from which it made frequent sallies.

Open country is essential to this species, which does not enter the forest. A bush fire attracts it from afar and the birds exhibit the utmost fearlessness, entering the flames and smoke to capture the escaping insects. In French and Belgian territory they are known as oiseaux de feu.

Breeding colonies are enormous; some ten thousand birds have been seen at one place, digging their sloping holes in an almost flat

sandbank of the Upper Niger. Another colony of about a thousand birds had chosen a hard sandy vertical face 4–8 ft. high in which to excavate their nests. The area (a bank of the Niger near Yelwa) was riddled with tunnels with the entrances closely packed together. On 12th May all but a few of the nests contained young. Eggs are white and smooth in texture and glossy. Measurements are 23·3–25 × 20·3–21·5 mm. After breeding, when the young are full grown the flocks wander about, and there is then a definite movement in a southerly direction and the Carmine Bee-eater appears in the country fringing the Belgian Congo and arrives in the Uelle district in October to spend the months of the dry season. At the same time it appears in the Gold Coast, even reaching the Keta district. To the savanna of Nigeria it also comes in winter and has been recorded as far south as Owerri.

Distribution. Breeds in the Sudanese belt from Senegal to Abyssinia, in winter scattering over much of the savanna area from Sierra Leone to Nigeria. Its southern winter range brings it almost to the edge of the equatorial forest, but it breeds in summer in the dry belt which stretches right across Africa to Somaliland and Eritrea. In East Africa it has extended its range southwards to the Rufigi River. The presence of water is essential to its habitat.

GREEN-HEADED ROSY BEE-EATER

Merops nubicoides Des Murs & Pucheran

This bird is similar in colour to *Merops nubicus*, but the chin, throat and cheeks below the black lores and ear-coverts are bright rose-pink; the rest of the under parts are brighter and more inclining to vermilion than in *M. nubicus*, which is pinker. The back is similarly brighter. In other respects these two species are alike. The bill is black and the eye crimson; the feet are blackish brown. The bill measures 36–39 mm., the wing 147–158 mm., middle tail-feathers (male) 192–215 mm., (female) 180–200 mm. In general size and colour pattern there is nothing to distinguish these two Bee-eaters from each other.

The Green-headed Rosy Bee-eater is a species which is found south of the Equator, ranging from Tanganyika to Natal and on the west from the Orange river nearly to the Congo, thus it barely comes within the limits of this work. It is essentially a river-frequenting species but in its general habits resembles the Nubian Bee-eater. It nests in holes in river banks.

BLACK-HEADED BEE-EATER

Bombylonax breweri (Cassin)

This bee-eater has unique coloration. The whole head is black, including the throat and sides of the neck and nape; the mantle and entire upper parts, including the wings, are deep green. The tail appears green when closed, but when opened all but the middle feathers are chestnut margined with green; the middle pair are entirely green on both webs, and protrude for about 1½ in. beyond the others. The under parts from the breast to the vent are fawn-colour, gradually paling from dark chestnut on the upper breast to pale fawn. On each side of the breast is a patch of green. The under wing-coverts, axillaries and quill-lining are fawn. The bill is black, the iris blood-red; legs and feet are grey. The measurements are: Bill 42–43 mm., wing 118–126 mm.; middle tail-feathers (male) 150 mm., (female) 145 mm.; next longest 105–109 mm., tarsus 12 mm.

This is a very rare bird of restricted habitat, an inhabitant of forested rivers and clearings in the Great Equatorial Forest. It has been found in the country immediately north of the Congo river mouth, ranging thence to the Ogobai river in Gaboon; thence we can trace its range eastwards by way of the Ubangi and Uelle rivers and through the waterways of the northern Belgian Congo. On 6th May, 1952, one was shot on the Afram river, Gold Coast. Its southern range extends to the country immediately south of the Great Congo Forest. Its breeding habits remain undescribed.

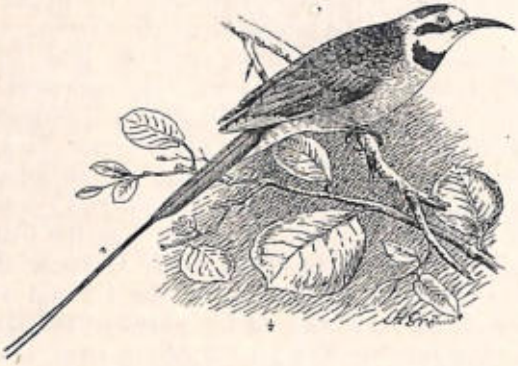
WHITE-THROATED OR BLACK-CROWNED BEE-EATER

Aërops albicollis albicollis (Vieillot)

This bee-eater is smaller than most of those we have dealt with and measures in the flesh about 8½ in., excluding the elongated tapering central tail-feathers, which are reduced to narrow filaments and, when fully grown, extend about 4 in. beyond the others. It is best distinguished in the field by its white throat and broad black band below it, white forehead and eye-stripe and black crown, with the rest of the plumage pale blue and green. The base and sides of the neck are rufous buff, gradually merging into the apple-green of the mantle, back and scapulars; the rump is blue, and the breast below the black crop-band is whitish washed more or less heavily with pale green. The under tail-coverts are pale blue and the under wing-coverts and quill lining pale rufous buff. The eye is red, the bill is black and the feet are yellowish brown. Measurements are: Bill

25–30 mm., wing 91–104 mm., middle tail-feather (male) 133–191 mm., (female) 84–150 mm.

One of the best-known bee-eaters in West Africa, this bird breeds in the summer months (May to September) in the arid northern belt, after which it migrates southwards towards the coastal areas, where it turns up about October. It spends the period of the northern winter scattered widely throughout the savanna and forest clearings but avoids the closed forest. Extremely gregarious, even when settled down in their winter quarters, these bee-eaters may be seen in flocks and may be observed even in coastal localities.



For a long time its breeding place was not discovered, but we now know that it repairs to the edge of the Sahara to rear its young, excavating holes in the sides of rain gullies well within the area of the desert. It probably breeds in May, June and July and the young are on the wing in September, making ready for their migration to the savannas of the northern Belgian Congo and the coasts of Upper Guinea. As it nests in such inaccessible spots which are seldom visited by Europeans, its white eggs have never actually been taken in West Africa. Like all the bee-eaters, its food is entirely insectivorous.

Distribution. The whole of the semi-arid belt of West Africa from Senegal to Lake Chad, spending the off-season in the coastal countries of Upper Guinea, when it occurs in all four of our British Colonies from October to May and then even extends as far south as the forested country of the Cameroons. In addition to its regular migrations, flocks turn up at times in areas where it would not normally be expected, and no explanation of this can be offered unless the flock consists of first-year birds which do not intend to breed and move about in search of food over a wide area.

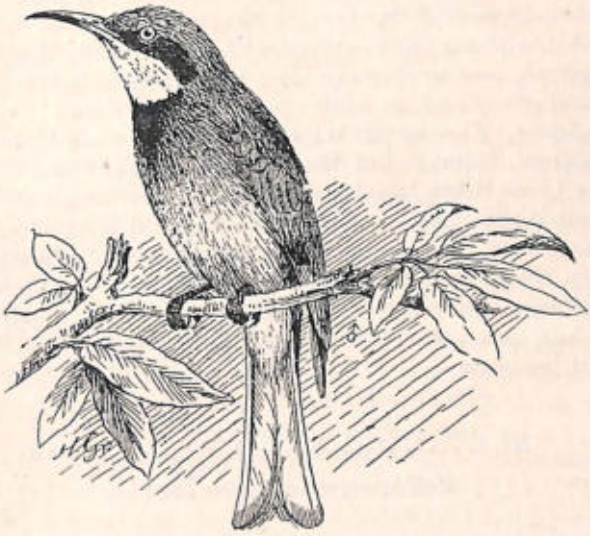
In eastern Africa a larger race, *A. a. major* Parrot, is recognised

by some authorities which extends from Ethiopia and south-western Arabia to Dar-es-Salaam, but may equally well be merged with the typical subspecies.

LEAST BEE-EATER

Melittophagus pusillus pusillus (Müller)

THE diminutive size of the Least Bee-eater (in the flesh it measures 6¼ in.) is the best guide to its recognition. The upper parts are all green. Passing through the eye a black streak sets off the brilliant yellow throat, at the base of which is a black band surrounded with chestnut. The general colour of the under parts is fawn-coloured



like the wings and tail, which (save for the central green feathers) have black tips. Sometimes a bird will be observed stretching its wing or spreading its tail when the black tips appear like a sequence of dots at the extremity of the feathers. It may often be seen in the same haunts as the Red-throated Bee-eater (*M. bullocki*), whose larger size, brilliant red throat and blue under the tail readily distinguish it, though both are green above. The Least Bee-eater has a bright carmine eye, a black bill and dark red feet, "frosted" with purple. The bill measures 20–25 mm., the wing 71–81 mm. and the tail 53–60 mm.

This widely distributed species is especially fond of water and during the dry season haunts the river beds, wandering further

afield in the wet season to open bush country, cultivated land and forest clearings. In the winter months it occurs more frequently in the coastal area, i.e. from September to April. There are, however, records from Benin and Ubiaja (southern Nigeria) in May, June and July, so that is does not altogether desert the coast and in parts of its range seems more or less stationary.

In the Gold Coast it has been found nesting in earth cuttings not far north of Sekondi in mid-March, and it was remarked that the bird was as common in the coastal Keta district as it was in the Northern Territories. In the arid belt it is more liable to seasonal fluctuations in its numbers than further south. In the Sokoto area of Nigeria it appears to breed later than near the coast, for eggs have been found there between 8th June and 8th July.

The usual nesting place is in sandy roadside banks or sand pits; tunnels run in for 450–650 mm., ending in a flattened oval chamber, the floor of which is often covered with insect debris. Eggs or young varying from four to six have been found in a chamber. Eggs are white and glossy and measure 17–19 × 14·3–16 mm.

Distribution. The whole West African region of Upper Guinea from Senegal, Gambia and Sierra Leone to Lake Chad in the north and the Cross River in southern Nigeria, reaching the Cameroon Mountain district and the edge of the lowland Congo forest.

Another race, *M. p. ocularis*, with a narrow blue superciliary line, occurs in the eastern Sudan and Uelle district and others again in the southern and eastern parts of Africa. It is a wide-ranging species but does not penetrate into the desert as does the White-throated Bee-eater.

BLUE-COLLARED BEE-EATER

Melittophagus variegatus variegatus

This bird is rather larger in size than the Least Bee-eater, and, like that bird, has the upper parts grass-green. A well-developed white band passes below the black ear-coverts and a blue superciliary stripe extends over the eye. The throat is yellow and the whole area below it bright blue, extending right across the throat, divided from the yellow by a narrow white line. The breast is dark chestnut and the belly yellowish fawn, suffused with green. When the wings are spread, the primaries are seen to be dusky fawn-coloured washed with green; the inner secondaries are bright green. The eye is red, the bill is black and the feet are blackish. The measurements are as follows: Bill 24–29 mm., wing 84–90 mm., tail 57–68 mm. The tail is not forked, it is green and fawn in colour and has the terminal portion black.

In its mode of life the Blue-collared Bee-eater resembles the Least Bee-eater. It frequents the grass savannas north of the equatorial forest and extends its range to the highlands of northern Cameroon up to 7,000 ft. Grassy plains or valleys with forest near at hand seem to be its favourite terrain. It is rare in the area of heavy forest but occurs in large clearings, preferring the savannas bordering the forest area. It has been found breeding on Manenguba Mountain in a tunnel excavated in the hillside.

Range. From northern Cameroon and the Cameroon highlands to northern Angola and across the equatorial savannas to Lake Albert, not in the closed forest. A race has been described from Northern Rhodesia.

RED-THROATED BEE-EATER

Melittophagus bullocki bullocki (Vieillot)

(see Plate 34, facing page 672)

This gaudily coloured little bird, measuring about 8½ in. from bill to tail, is a conspicuous object. It is the only green bee-eater with a red throat, and with its ruddy buff breast and neck, green cap and wings (the latter with a broad black terminal band) and bright blue beneath the tail it should quickly be recognised. The two other species with red throats, the Black Bee-eater (*M. g. gularis*) with its blue-bespangled breast, and the Blue-headed Bee-eater (*M. m. muelleri*), which is entirely brilliant blue below save for the throat, are too distinctly coloured to be confused with the bird we are here discussing, and, moreover, are, generally speaking, birds of the forest, while *M. bullocki* is found in savanna country, both in the semi-arid and grass-woodland belts. The Red-throated Bee-eater has a dark brown eye, black bill and dark brown feet. The bill measures 28–34 mm., the wing 96–104 mm. and the tail 84–92 mm.

The edges of kurimis and forest glades surrounded by tall trees are favourite haunts of this bee-eater, which is a common and widely spread bird throughout our area. It is usually to be seen in small parties, hawking over the tree-tops by day and roosting in them at night. The tallest trees are nearly always selected as perches. It may be encountered in farmlands, compounds and grasslands as well as in the more arid bush.

It seems to be resident throughout much of its range in West Africa but is reported to be migratory in the dry belt, arriving in Gambia, for instance, for the rains, at which season it is numerous. Many may be seen then, lining the river banks, especially on the upper river.

The birds breed from December to March in the Gold Coast and

Nigeria, nesting in large colonies. The nest holes are excavated in river banks and in road and rail cuttings, old pits and disused mine workings. In Casamance it has been found breeding in April and May, and if it breeds in Gambia it is likely to do so at the same time of year. The nest holes, which are about 2 ft. in length, end in a large roomy chamber, the floor of which is covered with insect remains. Two to four pure white eggs are laid, which measure 19·4–23·5 × 16·1–18·4 mm.

Distribution. Locally but generally distributed from Senegal to the Shari River and northern Cameroon throughout the grass savanna and southern portion of the thorn scrub belt, eastwards to the highland grass country of the Cameroons. It has not been recorded yet from Sierra Leone. Neither the typical race nor the eastern representative, *M. b. frenatus*, with a blue line under the black eye-stripe, quite reach the edge of the closed equatorial forest. In the Gold Coast and Nigeria *M. b. bullocki* is commonest just north of the forest belt but ranges to Sokoto and the Upper Volta as well as to the French Sudan between lat. 12° and 13° N.

An aberrant variety having a golden-yellow throat has occurred in Casamance and been named *M. boleslavski* Pelz. It may turn up elsewhere.

BLACK BEE-EATER

Melittophagus gularis (Shaw and Nodder)

(see Plate 34, facing page 672)

Two races of this bee-eater occur within our limits. The adult is a very striking bird in its livery of shining black, scarlet throat and breast plentifully streaked with cobalt blue. The upper parts are all black save for the cobalt rump. In flight the wings appear chestnut with a black outer margin, and the tail, too, is black. Like the other Red-throated Bee-eaters, this species has a slightly forked tail but no elongated feathers. The eye is red, and the bill and feet are black. The bill measures 28–32 mm., the wing 86–93 mm. and the tail 68–75 mm.

The Black Bee-eater is a bird of the forest and also of the wooded savanna country. Its association with the White-throated Bee-eater has been remarked in many parts of its range, but it is a quieter bird than *Aërops albicollis* and does not make the spectacular evolutions of that species. It will sit for long periods on some dead tree in a clearing, from which it makes circular flights after dragonflies and other winged insects.

On the whole it seems to be a sedentary species but is naturally more scattered after the breeding season. It is tolerably common,

and when not nesting, may be seen in small flocks chasing flies and mosquitoes over water. Pairs may also be encountered. It has a marked preference for water in some form or other.

In the extreme west of its range, Sierra Leone and Liberia, its numbers fluctuate, and there it may be subject to more than local movements, though no marked migration has been recorded.

The Black Bee-eater builds in colonies, excavating its tunnels in roadside banks where these are sandy and especially in the banks of rivers. It begins nesting operations in the Gold Coast and Nigeria in January, but eggs are not laid before mid-March and fresh eggs have been found on 16th May in Benin Province. Two white eggs are laid at the end of the 18 in. tunnel, which measure 21–23 × 19 mm. Few clutches have been taken. The Lower Guinea race lays larger eggs, 24–26 × 20–21 mm.

Distribution and Characters of the Races. M. gularis gularis (Shaw and Nodder) ranges throughout the forest region of Upper Guinea from Sierra Leone to southern Nigeria, its place being taken in Lower Guinea by *M. gularis australis* Reichenow, which occurs from British Cameroon to northern Angola and across the northern Belgian Congo to the Semliki valley and Uganda. It is a fairly common bird in the forests of the Lower and Upper Congo and extends out further in the gallery forests on the south than on the north. It does not live in the depths of the equatorial forest, and the same applies to the northern race, which in forest country prefers partially cleared land.

M. g. australis differs from *M. g. gularis* in having less blue on the forehead, often more inclining to greenish. The eyebrow-streak is either faintly indicated or wanting, and the cobalt-blue markings on the upper breast are usually streaked or tipped with red.

BLUE-HEADED BEE-EATER

Melittophagus muelleri mentalis (Cabanis)

(see Plate 34, facing page 672)

Although two races of this bird occur within our area, the above is the only race in Upper Guinea; the other—the typical form—will be mentioned hereafter.

This brilliantly coloured bee-eater with scarlet patch on the black throat, bright blue head, under parts and tail, and reddish-chestnut back and wings, is not liable to confusion with any other species. The Black Bee-eater (with black breast streaked with cobalt) also has a red throat, but that bird is all black above except for the light blue rump. The two birds are the same size and both occur in

forest country. Of the two species the Blue-headed Bee-eater is the least often seen. It has a carmine eye, black bill and blackish-brown feet. Measurements are: Bill 31–32 mm., wing 85–89 mm. and tail 73–76 mm.

Even though it is fairly widespread in the forested areas, this dark-plumaged bee-eater is not commonly seen. It is said to resemble in its habits the more numerous *M. gularis* and is usually seen in pairs or two or three together. It is not found in flocks like the savanna-frequenting members of the *Meropidae*. It prefers the edges of small openings in the forest, along roads or at the borders of old clearings, selecting the lower branches of trees upon which to perch for preference. At times it will hawk from bushes close to the ground. The note is weak, described as a waxbill-like *zee-tzee*. When perched it is most inconspicuous.

The nest of the Upper Guinea race has not been found, but the Lower Guinea bird has been discovered breeding in a two-foot-long tunnel in a bank in which two nestlings were lying. It probably breeds in that latitude in February or March.

Distribution and Races. The two races and their distinctions are as follows:

M. muelleri mentalis (Cabanis) extends from Sierra Leone and French Guinea eastwards through the forest belt of the Ivory and Gold Coasts and southern Nigeria to the foot of Cameroon Mountain and its vicinity, where it occurs on the Tiko plain and at Bibundi and in the Kumba Division. It probably ranges to the Mungo River and is the race which is found also on Fernando Po.

The typical race, *M. muelleri muelleri* (Cassin), ranges from southern Cameroon and Gaboon to the Muni River and the Rio Benito, thence across the Upper Congo to the eastern margin of the Congo forest, extending south to the Kasai.

M. muelleri mentalis differs from *M. muelleri muelleri* in having the forehead blue, not whitish, the chestnut of the back brighter, not so maroon, the blue of the belly paler showing more contrast with the ultramarine breast, and the middle tail-feathers more elongated than in the typical race.

SWALLOW-TAILED BEE-EATER

Dicrocercus hirundineus chrysolaimus (Jardine and Selby)

(see Plate 34, facing page 672)

In total length this bee-eater measures about 9 in., but about half of this is taken up by the swallow-shaped tail, the latter being the best guide to the bird's identification, as no other bee-eater has a

tail of that shape. The upper parts, from crown to rump, are bright golden green, the crown wearing brown when abraded. A narrow band of cobalt blue extends over the eye, meeting on the forehead. Lores, ear-coverts and a stripe below the eye are black. The throat is bright yellow, below which is a band of bright blue; the breast and sides are bright green. The primaries and secondaries are chestnut, the tips of the former blackish and a subterminal black band on the secondaries, some of the feathers washed with pale blue. The upper tail-coverts are bright blue and the middle tail-feathers greenish blue, the remainder green, all but the elongated outer pair tipped with white and having a subterminal band of black. The eye is crimson, the bill is black and the feet are reddish brown. Measurements are: Bill 28–32 mm., wing 88–98 mm., middle tail-feathers 57–63 mm., outer feathers 91–101 mm.

Young birds have the whole throat greenish and lack the chest-band. Confusion of this species with the Least Bee-eater (*M. pusillus*) should be avoided, as the former has a square tail and is a smaller bird. Look also for the bright blue patch at the base of the swallow-tail of *D. hirundineus*.

This is a bird of the grass woodland and dry savanna further north, where it may be seen in small parties, perching on the small trees. It is evidently extremely local and, being a silent species, is not very often observed. It is also very shy and easily takes alarm. We know very little about it on the whole, but as specimens have been secured in the well-wooded country of Ashanti and southern Nigeria in the dry season, it probably migrates towards the more wooded coastal areas and forest clearings after the rains.

The West African race has not been discovered breeding, but probably does so in the early summer at the end of the dry season. The nesting period is of short duration. The typical race nests in soft earthen banks, excavating horizontal tunnels about 3 ft. long, in which it lays three or four eggs, white and glossy and nearly spherical.

Distribution. D. h. chrysolaimus inhabits the tree savanna belt from Senegal to Lake Chad and northern Cameroon, moving in the dry season to localities around and south of the Upper Guinea forest. Thus in July it has been found on the Senegal coast and at this season is not uncommon in Gambia. I have records of it from Ejura, Gold Coast, in February and from the near vicinity of high forest in Benin and Ondo (southern Nigeria) in December and January, but it is rare south of the forest.

In East Africa from the Upper White Nile to Uganda we find another race, *D. h. heuglini*, with darker blue chest band and upper tail-coverts. The typical race is confined to Africa south of the equatorial forest.

ORDER BUCEROTIFORMES

FAMILY BUCEROTIDAE

Key to the Hornbills

1. Primaries entirely white, rest of plumage black. Size very large (wing over 18 in. (457 mm.))
Bucorvus abyssinicus, p. 708
Primaries are not entirely white. Size smaller (wing under 18 in. (457 mm.)) 2
2. Size large (wing over 11½ in. (292 mm.)) 3
Size smaller (wing under 11½ in. (292 mm.)) 7
3. Belly and under tail-coverts black 4
Belly and under tail-coverts white 5
4. Four outermost tail-feathers entirely white:
(*a*) Crest black .. .. .. *Ceratogymna elata* ♂, p. 706
(*b*) Crest rufous .. .. .. *Ceratogymna elata* ♀, p. 706
Four outermost tail-feathers black, broadly tipped with white:
(*a*) Crest black .. .. .. *Ceratogymna atrata* ♂, p. 707
(*b*) Crest rufous .. .. .. *Ceratogymna atrata* ♀, p. 707
5. Middle pair of tail-feathers entirely black, feathers of sides of face tipped with grey:
(*a*) Casque pointed at tip, white area of casque restricted to a small patch at base
Bycanistes subcylindricus subcylindricus, p. 695
(*b*) Casque cut off square, not protruding to a point at tip; white area of casque extensive, covering quite half basal area of casque
Bycanistes subcylindricus subquadratus, p. 696
Middle pair of tail-feathers broadly tipped with white like the other rectrices, feathers of sides of face not tipped with grey 6
6. Thighs entirely white .. .. *Bycanistes albotibialis*, p. 693
Thighs black externally .. .. *Bycanistes cylindricus*, p. 694
7. Crown and crest white
Tropicranus albocristatus albocristatus and subsp., p. 704
Crown and crest not white 8
8. General colour of upper parts black, slightly glossed with green or purplish 9
General colour of upper parts brown or blackish brown without any gloss; wing-coverts sometimes spotted or margined with white 13



BROWN-CHEEKED HORNBILL
Bycanistes cylindricus

9. Upper tail-coverts white 10
Upper tail-coverts not white 11
10. Four outer tail-feathers almost entirely white from base to tip .. *Lycanistes sharpii sharpii* and subsp., p. **691**
Four outermost tail-feathers black, broadly tipped with white .. .. *Bycanistes fistulator*, p. **689**
11. Size larger (wing over 8 in.); bill mainly cream-colour .. 12
Size smaller (wing under 7 in.); grey streak on either side of crown; bill black or black and red
Lophoceros hartlaubi hartlaubi, p. **701**
12. 2nd and 3rd tail-feathers (i.e. those next the outermost feather) entirely white .. .. *Lophoceros fasciatus*, p. **699**
2nd and 3rd tail-feathers black broadly tipped with white
Lophoceros semifasciatus, p. **700**
13. Entire under parts from chin to under tail-coverts pure white; wings with large amount of white on coverts and secondaries
Lophoceros erythrorhynchus erythrorhynchus, p. **697**
Entire under parts from chin to under tail-coverts not pure white 14
14. General colour above light brown; size larger (wing over 7 in.); broad whitish streak on either side of crown
Lophoceros nasutus nasutus, p. **696**
General colour above dark brown; size smaller (wing under 7 in.); no whitish streak on either side of crown; bill red .. .. *Lophoceros camurus* and subsp., p. **703**

SUB-FAMILY BUCEROTINAE

PIPING HORNBILL

Bycanistes fistulator (Cassin)

THE general colour above is black with white on the rump and at the tips of the wings and tail. The under parts are more white than black, the black being confined to the throat, breast and sides of body, while the belly and thighs are white. In flight much more white shows on the wings and tail. The tail is broadly tipped with white 2½ in. from the tip except for the central pair, which are all black. The bill is compressed, that of the female being heavily furrowed on the lower mandible. The eye is brown; the bill has the upper mandible black with yellowish-horn tip and the lower transversely furrowed in cream, black and white.

There is considerable difference in the size of the sexes, as the following measurements show: Bill (male) 96–103 mm., (female) 76–82 mm.; wing (male) 236–257 mm., (female) 217–227 mm.; tail (male) 178–198 mm., (female) 167–187 mm.

A resident bird in the forest area of West Africa, its local movements being governed by the ripening of the fruits upon which it lives. Flocks of as many as 25–30 birds may be seen at times on the



outskirts of the forest. It is probably more common in the clearings and second growth than in virgin forest but is known to visit the latter when special fruit which it loves is ripe. Considering how widespread it is, surprisingly little is known concerning its life-history. It is reported to be an extremely noisy bird.

Distribution. I doubt if this bird occurs today west of Portuguese Guinea. Its range extends through Sierra Leone, Liberia, the Ivory and Gold Coast to the Niger Delta, but it has not been found east of the river, though it may well occur. In Sierra Leone it has been found on the Moa River and on islands in the Sierra Leone River. In the Gold Coast it is reported to be not uncommon in Ashanti around Ejura and in the Sekondi district. In Nigeria records come from Loko and Idda.

WHITE-TAILED OR LAUGHING HORNBILL

Bycanistes sharpii (Elliot)

Two races of *B. sharpii* come within our limits.

This hornbill, with its shaggy, mane-like greenish-black crest, may be recognised by the pattern of its steel-black and white



plumage, particularly by the large amount of white in the wings and the white outer tail-feathers, visible even when the bird is at rest. The white patch above the tail, white belly and white patch on the shoulders are also conspicuous marks contrasting with the black head, back and breast, but the last three are shared in common with the Piping Hornbill. The range of the two species is not likely to overlap unless it be in western Nigeria, so that in the greater part of the area it frequents the White-tailed Hornbill should be recognised without difficulty. In flight (which is in a wavy line) the wings appear half black and half white, and the spread tail is then seen to be mostly white divided down the middle by the black central pair of feathers. The call is a loud laugh, its cries being rapidly repeated. In the flesh it measures about 22½ in. in length

from tail to bill. The bill is blackish, with pale horn culmen and tip and a cream stripe at the base of the mandibles. The male has an elevated casque; the female lacks the casque, the upper mandible being regularly curved and the lower furrowed transversely. The bill measures (male) 95–118 mm., (female) 83–93 mm.; wing 235–265 mm.; tail (male) 190–206 mm., (female) 168–188 mm.

In Nigeria—it has not been reported west of Lagos—the Laughing Hornbill is a common inhabitant of the kurimis and forest tracts, in which it is usually met with in parties of three to a dozen or more. The fringing belts by forest streams are a favourite haunt of this bird, and its shrill cries—a harsh *ar-ar-ar* and laughter like *ke-ke-ke-ke*—may be heard, especially in the early morning, when they move off from some kurimi to their feeding grounds.

Except when high up in a tall tree the birds are very shy and must be approached with caution. When it flies it progresses with long undulations—a series of wing-beats during which the bird rises noticeably, then a glide of equal length. It appears to fly slowly, but in point of fact easily outstrips the Grey Hornbills with their faster wing-beats. Wherever farmland adjoins the forest this hornbill is commonly seen south of lat. 9° 30′ N.

The nest of *B. s. sharpii* has not been described, but that of the subspecies, *B. s. duboisi* Scl., has been found in the Congo forest. The entrance was a knot-hole, some 28 ft. up a live forest tree, which had been walled up. Two white eggs measured 50 × 35 mm.

Distribution and Races. *B. s. sharpii* (Elliot) ranges from the Afram River, Gold Coast, through southern Nigeria and western Cameroon to the Lower Congo and northern Nigeria. Its northern range in Nigeria is to about lat. 9° 30′ N., while in Cameroon it occurs from the coastal plains to the Tibati plateaux.

Another race, *B. s. duboisi* W. L. Sclater, is found in southern Cameroon and ranges to the Middle Congo and in the Uelle district along the gallery forests to the borders of the Sudan, reaching the Ituri forest. It differs from *B. s. sharpii* in that the second to seventh primaries have the terminal half or terminal third of each quill white on the inner web, the outer web being mostly black to the sixth primary. In addition the males of *B. s. duboisi* have a larger casque, raised higher and abruptly cut off about 35 mm. from the tip. The wing measures 242–266 mm.

Where these two races meet they intergrade. A specimen recently examined from New Calabar is typical *B. s. sharpii*, and no doubt the birds in British Cameroon are also of this race.

WHITE-THIGHED HORNBILL

Bycanistes albotibialis

This is one of the larger members of the family, an adult male measuring from bill to tail about 30 in. The huge "dirty white" casque ends in a second point above the bill, the point almost reaching to the tip of the mandibles. The head, neck, mantle, back and wing-coverts, as well as the throat and breast, are black glossed with green. The terminal half of the wings, the rump, belly and thighs are white, and the tail also is white with a broad black central band. The bill from the lower base of the casque measures in the male 150–174 mm., in the female 125–136 mm. The female lacks the elevated casque. The wing measures (male) 325–344 mm., (female) 295–310 mm.; tail (male) 244–264 mm., (female) 234–242 mm.



The colour pattern of this hornbill is very similar to that of the Brown-cheeked Hornbill (*B. cylindricus*), but that bird has brown cheeks and the front of the thighs black. The casque, too, is of a different shape and does not end in a point.

The White-thighed Hornbill is found in the tropical forest and in the grass woodland along stream-fringed high forest. It is conspicuous by reason of its huge size rather than for its numbers. Two or three are usually seen together, but, being very shy, it is not easy to approach. It may be seen frequenting the kurimis and is fond of perching in oil-palms. The flight is slow and weak, the great bird flapping its wings and sailing alternately. It gives the impression of extreme lightness.

Fruit and the seeds of trees form its food supply; the birds seek the highest trees which bear their favourite fruits and attract attention by their raucous cries, *Rack, kack-kak-kak-kak*, given frequently, or a single *kack*. Flocks of five or six are common. Whether this hornbill is held in southern Nigeria in the same reverence which protects it from harm in the Congo I have been unable to ascertain.

The White-thighed Hornbill breeds in a hole in a hollow tree, and

when the female has entered, the knot hole or other entrance is closed by dung to a size just large enough to permit the male bird to insert its beak and so pass food to the sitting female. While so imprisoned the female undergoes a gradual moult.

Distribution. From Lagos, southern Nigeria, this bird ranges through Cameroon and Gaboon to the Loango, extending east to the Upper Congo, its distribution coinciding with the area of heavy forest in the Congo, i.e. north to the Bomokandi River, south to the Kasai and east to the Semliki valley. In British West African territory it has been reported from Okeodan and from the Niger Province in Nigeria; but is doubtless more widely spread. In the Cameroons it has recently been found near Kumba and Lake Barombi as well as at the foot of Cameroon Mountain.

BROWN-CHEEKED HORNBILL

Bycanistes cylindricus (Temminck)

(see Plate 35, facing page 639)

THIS is a very large bird between 25 and 30 in. in length with huge wing-spread. The high cylinder-shaped ivory-coloured casque (see Plate 35) is a very conspicuous feature in the male. The under side of the body is black except for the patch on the shoulders, and the belly and lower part of the thighs, which are white. In flight the outer part of the wings appears white and the rump and tail are white, the latter crossed with a very wide black band; the rest of the plumage above is black. A distinctive feature in this bird is the brown cheeks and throat, which, however, are only noticeable at close quarters, when the large red patch of bare skin round the eye can also be observed. The casque of the male is very high and abruptly truncated; it is yellowish white in colour like the bill and in the males is cylindrical in shape. This hornbill has a crimson eye, and the naked skin surrounding it and on the throat is red; legs and feet are dusky. The bill measures about 170 mm., the wing 315–323 mm. and the tail 235–239 mm., but only two have been measured.

On account of its shyness and the difficulty of seeing it high in the forest trees we know very little about this magnificent bird, which is reported to be not uncommon in the Central Province of the Gold Coast. It is said that in Liberia it lives more quietly than the other members of its family and spends much of its time hiding in the thickest crowns of trees. When calling, it throws back its head and points its huge bill skywards, uttering a shrill cry which it repeats half a dozen times. Its nesting habits have never been described.

Distribution. Specimens of this hornbill have been obtained in Sierra Leone, Liberia, Togoland, Dahomey and the Gold Coast, but east of Dahomey it has not been seen and its place is probably taken in Nigeria by the White-thighed Hornbill. It ascends the gallery forests along streams, and has thus been reported from lat. 9° N. in Dahomey.

GREY-CHEEKED HORNBILL

Bycanistes subcylindricus (P. L. Sclater)

Two races of this hornbill come within our limits, that which is figured on p. 327 of my larger work being the Lower Guinea representative (*subquadratus*), which has a differently shaped casque from the Upper Guinea race.

In its general appearance this bird closely resembles the White-thighed Hornbill (*B. albotibialis*), of which a figure has been given on p. 693, but the cheeks are grey and the casque is differently coloured, the forepart with the bill blackish, and the area next to the crown white, Another distinction is that in *B. subcylindricus* the central pair of tail-feathers is entirely black glossed with green, and when at rest these feathers almost obscure the other tail-feathers, which are white with only the middle part black. The male bird measures about 700 mm. in total length, the bill 160–176 mm. in the male, 140–152 mm. in the female. Males have wings 350–364 mm., females 328–340 mm. The tail is 255–290 mm.

In the forests of Ashanti this is one of the commonest hornbills. Sometimes a pair, but even as many as a dozen, may be seen in the tall forest trees, feeding or playing with each other. They fly quietly as compared with the *Ceratogymna* species but make quite enough noise to draw attention to themselves. Both sexes utter a loud mournful note, slowly repeated, in addition to which they have a shorter, hoarser cry. This bird lives entirely upon fruit, as indeed do most of the large hornbills.

Nests have been found in hollow trees with the entrances walled in with mud or some similar material, the opening being almost closed. A single egg is laid and the female moults while in the confined space of the nest hole. It must be rare to find a nest between two rocks with a protecting partition of mud, but such a nest has been recorded for *B. s. subquadratus*.

Distribution and Races. For a comparison of the ranges of the two races in detail I must refer the reader to volume viii of my larger work. In volume iii the range given applies only to *B. s. subquadratus*, as it was not then realised that more than one subspecies occurred. The discovery has been made since.

B. s. subcylindricus (P. L. Sclater) is known only to occur in the forests of the Gold Coast, specimens being obtained at Ejura and Goaso in Ashanti. To which race birds from the Cameroon Mountain area belong has not yet been determined, but should it be found in the forests of southern Nigeria the typical race will most likely be the subspecies represented.

B. s. subquadratus Cabanis ranges through the forest country of southern Cameroon to northern Angola and along the northern border of the Congo forest, locally through the Uelle district to Uganda and Mount Elgon, occurring in the eastern Congo in the Semliki valley and the mountains west of Lake Kivu and north-west of Lake Tanganyika.

GREY HORNBILL

Lophoceros nasutus nasutus(Linnæus)

This grey and brown bird measures about 20 in. in length and is rather untidy in its appearance. The dark grey crown ends in a crest, the sides of which are bordered with white. The general colour of the wings and upper parts is brown, with a pale stripe down the middle of the back, the wing-coverts being broadly edged with whitish. The primaries are dark brown tipped with white, and part of the outer web is white. The tail appears blackish, with a broad white tip to all but the central pair of feathers. The breast is light brown and the rest of the under parts white washed with smoke-brown. The eye is red, the bill black, with a white patch before the eye in the male, but in the female the whole basal half of the upper mandible is white and the tip dark red. Measurements are: Bill (male) 86–113 mm., (female) 56–76 mm.; wing (male) 215–248 mm., (female) 190–215 mm.; tail (male) 194–216 mm., (female) 174–185 mm.



Fairly open bush country is the favoured habitat of this hornbill, which in the dry season scatters over a wide area both north and south of the forest, but during the rains the birds trek northwards and have then been found well within the confines of the desert. The

seasonal movement is a regular one but seems to be undertaken in a leisurely manner.

Forest of the park-savanna type and the edges of clearings and farmlands are likely places in which to encounter the Grey Hornbill, which is usually met with singly or in couples, though parties consisting of eight to twenty birds have been seen together. From information sent to me, it seems that this hornbill begins to trek north in February and by the end of June it has disappeared from most of its winter haunts, the migration being a slow one, covering several months. The birds begin to come south again in October.

Nests have been found in Niger Province in May, at Offa in mid-March and at Ilorin on 16th February—an unusually early date, apparently. The hollow in a tree is the normal site, the entrance to which is artificially sealed up by the male parent bird, allowing just enough room for the insertion of food through a crack. In birds of this genus it is now known that, unlike the hornbills in the genus *Bycanistes*, which remain walled in until the young can fly, the parent *Lophoceros* breaks its way out of its prison before the young can fly and assists the male to feed the offspring. The hole through which the female has broken out may be plastered up again from the inside *by the young bird*. Two to four white eggs are laid, measuring about 37 × 25·5 mm.

Distribution. The semi-arid belt stretching from Senegal to Lake Chad and northern Cameroon and eastward to the Anglo-Egyptian Sudan, Ethiopia, south to the central provinces of Kenya and Uganda. In the rains it penetrates the Sahara. In the dry season it ranges south in West Africa to the grass woodlands, reaching the coastal area. Its range is given in detail in my third volume. It is commonly and widely distributed over most of the Northern Territories. It is naturally most numerous in Gambia, unrecorded from Sierra Leone and well distributed in the Gold Coast, chiefly north of the forest but reaching the maritime plains of Accra. Common in northern Nigeria, it is a rare bird in the Southern Provinces, though it does occur.

Races of this hornbill occur in South Africa and in Arabia.

RED-BEAKED HORNBILL

Lophoceros erythrorhynchus erythrorhynchus (Temminck)

This bird is rather smaller than the last species, measuring about 17½ in. from bill to tail; the bright red bill, without any sign of a casque, is the surest guide to identification. The under parts are all white, the upper parts blackish, with a white streak on each side of the head and another down the middle of the back, a great deal

of white on the wings and the long fan-shaped tail black in the middle, white on the outside. The adult female resembles the male in colour, but the bill is smaller, more vinous red and yellowish at the base. The measurements of adults are as follows: Bill (male) 75–85 mm., (female) 62–79 mm.; wing (male) 170–184 mm., (female) 160–176 mm.; tail 177–207 mm.

Although the range of the Red-billed Hornbill coincides closely with that of the last species, it is evident from recent field investigation that it does not (as I once thought) range so far into the desert



country as the Grey Hornbill. It does not seem to be found in the true tree-savanna country to which the Grey Hornbill migrates in the dry season. In the more barren parts of the thorn scrub it is equally at home. About lat. 18° N. is evidently the northern limit of this hornbill. In Senegal and Gambia it is extremely common, frequenting both the bush-covered and cultivated country. South of lat. 11° N. it is less common, at any rate in Nigeria and the Gold Coast.

The cry is monotonous—a high-pitched tooting—and it has a kind of song, when it runs the notes into one another. The Red-billed Hornbill may often be seen on the ground advancing by a series of awkward hops, but in the branches of trees it is remarkably active and far from clumsy. Its food consists of berries and insects, fruits and groundnuts, but especially it loves grasshoppers.

It nests commonly in the Northern Provinces, in all our Colonies except Sierra Leone, from which it has not been reported. It chooses a natural hole in a tree, at almost any height from the ground, in which to lay its three or four white eggs, walling up the entrance in the manner of all hornbills after the female has entered to hatch the eggs and undergo a complete moult. Fresh eggs have been taken in Nigeria between 8th September and 14th October.

Distribution. I doubt whether there is much to choose between the northern range of this and the last species (*L. nasutus*), but certainly *L. erythrorhynchus* does not extend its range so far south as the Grey Hornbill and is practically confined to the country north of the forest. We find it extending throughout the thorn scrub belt from Senegal to Lake Chad and across the Sudan to Ethiopia and Somaliland, ranging south to Tanganyika territory. In western Africa it ranges in July as far as Agadés and is a common species at Zinder. It is found in all our Colonies except (apparently) Sierra Leone and British Cameroon, where the country is not sufficiently dry to attract it. Other races are found in south and south-west Africa.

BLACK-AND-WHITE-TAILED HORNBILL

Lophoceros fasciatus (Shaw)

About 21 in. in total length, the male of this hornbill has the upper parts and wings black as well as the throat, but the breast and belly are white, as is a white area on the fore-edge of the wing. In body plumage it is like the Allied Hornbill except that the tail is, in the present species, very distinctive. The third and fourth tail-feathers, i.e. those next to the outermost, are entirely white throughout their length. The remaining tail-feathers are black without any white at the extremity. The bill is cream-colour, the upper mandible tipped and streaked with red, the under surface of the lower mandible also dark red. The eye is brown; the feet and legs are black. The bill measures (male) 90–109 mm., (female) 75–90 mm.; wing (male) 253–280 mm., (female) 233–256 mm. The colour of the naked skin at the base of the lower mandible is black in the male, orange in the female. The plumage of the sexes is alike.

Fortunately the range of this bird does not appear to overlap that of the Allied Hornbill, the present species not having been found west of Owerri Province in Nigeria. It may eventually be found to do so, as, when I wrote the third volume of my larger work, it was not known to occur west of Cameroon. Its habits are the same as the next species described. It lives partly on fruit and partly on insects.

of white on the wings and the long fan-shaped tail black in the middle, white on the outside. The adult female resembles the male in colour, but the bill is smaller, more vinous red and yellowish at the base. The measurements of adults are as follows: Bill (male) 75–85 mm., (female) 62–75 mm.; wing (male) 170–184 mm., (female) 160–176 mm.; tail 177–207 mm.

Although the range of the Red-billed Hornbill coincides closely with that of the last species, it is evident from recent field investigation that it does not (as I once thought) range so far into the desert



country as the Grey Hornbill. It does not seem to be found in the true tree-savanna country to which the Grey Hornbill migrates in the dry season. In the more barren parts of the thorn scrub it is equally at home. About lat. 18° N. is evidently the northern limit of this hornbill. In Senegal and Gambia it is extremely common, frequenting both the bush-covered and cultivated country. South of lat. 11° N. it is less common, at any rate in Nigeria and the Gold Coast.

The cry is monotonous—a high-pitched tooting—and it has a kind of song, when it runs the notes into one another. The Red-billed Hornbill may often be seen on the ground advancing by a series of awkward hops, but in the branches of trees it is remarkably active and far from clumsy. Its food consists of berries and insects, fruits and groundnuts, but especially it loves grasshoppers.

It nests commonly in the Northern Provinces, in all our Colonies except Sierra Leone, from which it has not been reported. It chooses a natural hole in a tree, at almost any height from the ground, in which to lay its three or four white eggs, walling up the entrance in the manner of all hornbills after the female has entered to hatch the eggs and undergo a complete moult. Fresh eggs have been taken in Nigeria between 8th September and 14th October.

Distribution. I doubt whether there is much to choose between the northern range of this and the last species (*L. nasutus*), but certainly *L. erythrorhynchus* does not extend its range so far south as the Grey Hornbill and is practically confined to the country north of the forest. We find it extending throughout the thorn scrub belt from Senegal to Lake Chad and across the Sudan to Ethiopia and Somaliland, ranging south to Tanganyika territory. In western Africa it ranges in July as far as Agadés and is a common species at Zinder. It is found in all our Colonies except (apparently) Sierra Leone and British Cameroon, where the country is not sufficiently dry to attract it. Other races are found in south and south-west Africa.

BLACK-AND-WHITE-TAILED HORNBILL

Lophoceros fasciatus (Shaw)

About 21 in. in total length, the male of this hornbill has the upper parts and wings black as well as the throat, but the breast and belly are white, as is a white area on the fore-edge of the wing. In body plumage it is like the Allied Hornbill except that the tail is, in the present species, very distinctive. The third and fourth tail-feathers, i.e. those next to the outermost, are entirely white throughout their length. The remaining tail-feathers are black without any white at the extremity. The bill is cream-colour, the upper mandible tipped and streaked with red, the under surface of the lower mandible also dark red. The eye is brown; the feet and legs are black. The bill measures (male) 90–109 mm., (female) 75–90 mm.; wing (male) 253–280 mm., (female) 233–256 mm. The colour of the naked skin at the base of the lower mandible is black in the male, orange in the female. The plumage of the sexes is alike.

Fortunately the range of this bird does not appear to overlap that of the Allied Hornbill, the present species not having been found west of Owerri Province in Nigeria. It may eventually be found to do so, as, when I wrote the third volume of my larger work, it was not known to occur west of Cameroon. Its habits are the same as the next species described. It lives partly on fruit and partly on insects.

Distribution. From northern Angola this bird ranges through the forest country of Gaboon and Cameroon westwards through British Cameroon to the Owerri Province of southern Nigeria. Its eastern range is across the Congo, where the birds frequent the second growth and clearings, avoiding the virgin forest on the borders of its range and keeping to the gallery forests. It ranges along the Uelle eastwards as far as Uganda.

ALLIED HORNBILL

Lophoceros semifasciatus (Hartlaub)

THE male Allied Hornbill is about 21 in. in total length, the female slightly smaller. The upper parts are black, also the wings, and the tail is almost entirely black except for the terminal portion of the third and fourth tail-feathers, which is white. The outermost and middle feathers are black from base to tip. In shape the tail is strongly graduated. The throat-feathers are black, but the breast and belly are white, as are two spots on the forepart of the wing. The cream-coloured bill is marked with blackish streaks and tip. The bill measures (male) 95–110 mm., (female) 88–98 mm.; wing (male) 246–265 mm., (female) 220–250 mm.; tail (male) 222–250 mm., (female) 193–216 mm. The bare skin at the base of the lower mandible is blue in the male, yellow or mustard-colour in the female. The eye is brown and the bare skin around the eye black. Legs and feet are black.

One of the commonest of the hornbills in Upper Guinea, it may be seen in small parties, advertising its presence by its loud, shrill cries. When uttering these it throws its head back and points its bill skywards. Generally it keeps to the tree-tops in the high forest but will raid fruit plantations when opportunity offers. Often it may be encountered in the gallery forests which fringe the rivers for miles into the savanna country. Small patches of forest will often hold it. In the closed forest which is still remaining in the Gold Coast and in parts of Sierra Leone this hornbill keeps to the tree-tops, from which it makes excursions into the cultivated areas. It must be classed as a bold and fearless bird, but it is not elegant either in flight or at rest. It has a preference for roosting in palm plantations. Highly gregarious, flocks of forty to fifty birds are not uncommonly seen.

Its food consists mainly of fruit and seeds, and it is particularly fond of the kernels of the oil-palm. Insects form much of its diet—beetles, ants and winged prey—which it attempts clumsily to capture in flight.

Several nest holes of this hornbill have now been found in the trunks of slender trees 12–15 in. in diameter, the height varying from 30 to 80 ft. from the ground. Although no account of its breeding habits has been received, it is unlikely to differ in this respect from other members of the genus *Lophoceros*. Its eggs were found in the Gold Coast, the season lasting from January until April. Two odd eggs measured 33·5 × 25·5 mm. and 35 × 25 mm. The number in the clutch has not been recorded.

Distribution. Although recorded from Senegal and Gambia just prior to the rains, this hornbill is not really common west of Sierra Leone, but in that Protectorate it is ubiquitous, especially in the southern parts. In the Gold Coast it is extremely common and ranges into Nigeria, where it is reported from many provinces extending to lat. 9° 30′ N., where, however, it is rare. It is absent from most of the coastal area but is recorded from Lagos island. It is found in Owerri Province, but east of the Niger its place seems to be taken by *Lophoceros fasciatus*.

♂

BLACK DWARF HORNBILL

Lophoceros hartlaubi hartlaubi (Gould)

This is a very small hornbill about 15 in. in total length and sombrely coloured, appearing all black above except for a greyish-white streak on each side of the crown and narrow white tips to all but the central pairs of tail-feathers, which are not apparent when the tail is closed. Sometimes a white spot is visible on the edge of the wing below the bend. Seen from below, the under parts are grey becoming whiter on the belly, and the white tips to the tail are then more obvious. The bill (2¼ in.) is black (with a red tip in the males), and this is the best guide to identification. Care must be taken not to confuse it with the Red-billed Dwarf Hornbill with its bright red bill and brown plumage but similar size. The measurements are as follows: Bill (male) 59–65 mm., (female) 48–52 mm.; wing (male) 146–166 mm., (female) 138–148 mm.; tail (male) 153–167 mm., (female) 138–151 mm. The adult female resembles the male in plumage but has an entirely black smaller bill.

A strictly forest-frequenting species which does not appear to leave the shelter of the virgin forest. Consequently it is seldom seen by Europeans. It has been observed in little parties of three to six, frequenting the high trees bordering streams which run through the forest. In specimens procured, large grasshoppers, caterpillars and insects of many varieties have been found in the stomach. It is seldom seen near the ground and is remarkably silent. In Liberia

it has a reputation for following the monkeys, but it does not appear that it is much of a fruit-eater and probably follows the apes for the insects they disturb.

The nest of the typical race has never been described, but in the Congo forest, where lives a subspecies *L. hartlaubi granti*, a nest was found during the rains, high up in a knot hole in a limb of a tree in heavy forest.



Distribution. *L. h. hartlaubi* (Gould) inhabits the forest country which stretches intermittently from Sierra Leone (such as the Kambui Reserve) and French Guinea (Macenta district) through the forests of Liberia, the Ivory and Gold Coasts and the forests of Benin to southern Cameroon and Portuguese Congo, another race, as mentioned, inhabiting the Upper Congo forest. This race, *L. h. granti*, was described by Hartert from the Aruwimi River.

RED-BILLED DWARF HORNBILL

Lophoceros camurus pulchrirostris (Schlegel)

Two races of this bird occur, one in Upper, the other in Lower Guinea.

An equally small hornbill as the last species, the plumage is



brown instead of black. The wings are ornamented with broad white spots on the coverts, and the belly is pure white. All but the central tail-feathers are tipped with white, but the tail is square, the outer feathers being almost equal to the central in length instead of being so much shorter, as in the Black Dwarf Hornbill. The most conspicuous feature is the high arched bill, which is bright red, the female alone having a little black at the tip. In length the bill measures (male) 57–67 mm., (female) 56–61 mm.; wing (male) 148–158 mm., (female) 140–156 mm.; tail (male) 143–165 mm., (female) 145–150 mm. The adult female resembles the male but has the tips of both mandibles black.

The race named above is that which we find in thick forest in

Upper Guinea, that is, in much the same environment as the Black Hornbill frequents, but the red-billed bird has a distinct preference for swampy forest and may be seen in second-growth woods and near the borders of clearings, but never in the open. It is evidently much more numerous than the Black Hornbill, and as it has a very loud voice, audible for a quarter of a mile, and a conspicuously red bill, attention is more likely to be drawn to it than to its silent black-billed relative. In the Gold Coast it is considered to be a rare bird in the thick forest and is exceedingly difficult to find.

It appears from investigation of stomach contents to live entirely upon insects, for no trace of fruit or seeds has been found, which is very surprising. It will follow the armies of driver ants, in the trail of which it doubtless reaps a rich harvest.

The nest of the Upper Guinea race has never been found, but it is sure to breed in holes in trees. Breeding birds have been collected in Lower Guinea at the beginning of the rains.

Distribution and Races

L. camurus pulchrirostris (Schl.) is known from the virgin forests of Liberia, the Gold Coast (Kumasi forest and Mampong in Ashanti) and southern Nigeria (Iju near Lagos, near Badagry, near Ikorodu, and the forests of the Ishan Division of Benin Province).

L. camurus camurus (Cassin) takes the place of the Upper Guinea race in the forests of Cameroon, Gaboon and the Congo south to the Mayombe forest and east to the Uelle district, the Niam-Niam and the Semliki valley. It is distinguished from *L. c. pulchrirostris* by having the plumage paler brown, especially on the crown.

WHITE-CRESTED HORNBILL

Tropicranus albocristatus (Cassin)

THREE distinct races of this long-tailed bird come within the area discussed in this handbook whose respective ranges and distinctions will be given in the last paragraph. The typical race is that which occurs in Sierra Leone; in the Gold Coast we find *T. a. macrourus* and in Nigeria *T. a. cassini*. All three are well-marked races.

Of all the hornbills in West Africa this species is the most easily recognised. The white crown is flecked with black and can be raised at will to form a significant crest; the ear-coverts and lores are jet-black in contrast, the cheeks streaked black and white. The rest of the body plumage is black, including the wings and tail. The latter is very long and very strongly graduated, and each feather is tipped with white. In this race there is no white on the wing. The total length of the male is about 30 in., of which the tail is 18 in., rather shorter in the female. When the wings are spread, a small



YELLOW-CASQUED HORNBILL
Ceratogymna elata

white patch on the shoulder may be visible. Measurements of the typical subspecies are: Bill 68–70 mm., wing 206–209 mm., tail 360–370 mm., tarsus 34–35 mm.

The White-crested Hornbill is essentially a forest bird which never ventures far from close cover and has a working arrangement with the monkeys, upon which it is in constant attendance. It is also seen in association with a large squirrel in the Congo forests. The reason for this comradeship can probably be attributed to the assistance given to the birds in procuring fruit which the monkeys



let drop and the insects which they disturb in their passage through the trees, the hornbills remaining at a lower level of the forest and often flying close to the ground.

Despite the astonishingly long tail this fine hornbill can climb with agility through the branches, and when it flies it literally floats through the air and is much more graceful than any of its family. Observers have noted it following an army of driver ants to feed on the insects as they fly up. Its habit of travelling under the boughs of trees, but always shunning the open, has impressed itself on naturalists familiar with it. It probably lives mainly on insects, often caught on the wing, as very little fruit has been found in its stomach. Small birds and mice form a small proportion of its food supply. Strange squawking noises are made by the birds, one of which has been expressed as *u u u u-ah*. Another sound is a plaintive wail. Usually this hornbill is to be seen in pairs or in little family parties. Never in large flocks, it is reputed to be easily approached.

A nest found in the Congo was about 35 ft. from the ground in the hollow trunk of a fair-sized tree; some dung-like material had been attached to the sides of the entrance hole, leaving a miniature aperture through which food could be passed. No nest hole has been discovered as yet in Upper Guinea and its eggs have never yet been taken. Two appears to be the complement, judging by nests which have contained that number of young.

Distribution of Races and Characters

T. a. albocristatus (Cassin), already described, ranges from Sierra Leone to the Ivory Coast. For measurements see above.

T. a. macrourus (Bonaparte), differing from the above in having the chin white and the black throat-feathers freely mixed with white, is apparently confined to the forests of the Gold Coast. The wing measures (male) 225–243 mm., (female) 197–230 mm.; tail 380–440 mm.

T. a. cassini (Finsch) resembles the typical subspecies in having a black throat and chin but differs from that race and from the Gold Coast form by having conspicuous white tips to the primaries, secondaries and primary coverts. The wing measures (male) 240–268 mm., (female) 194–212 mm.; tail 350–470 mm. It has been found in southern Nigeria, near Lagos, at Ibadan and on the Omo River, extending through Cameroon to the Lower Congo and eastward to the Upper Uelle and Semliki valley, inhabiting the large gallery forests north and south of the equatorial forest as well as the solid forest.

YELLOW-CASQUED HORNBILL

Ceratogymna elata (Temminck)

(see Plate 36, facing page 704)

THE huge size of this black bird together with the enormous helmet-like casque of the male (white above and blackish below) is the best guide to identification. The male has a black head and crest, the female rufous with a much smaller casque and light blue skin on the face. The male has some black and white feathers on the neck, but in other respects the plumage of the body and wings is all black. The tail is white (in both sexes) except for the black central pair of feathers, and seen from below appears entirely white. The greater amount of white on the tail is an important distinction between this and the Black-casqued Hornbill, discussed next. A large male measures nearly 3 ft. from bill to tail. For call and flight, see under Habits. The measurements are as follows: Bill, from base of upper mandible, (male) 159–179 mm., (female) 132–138 mm.; wing (male) 380–410 mm, (female) 347–354 mm.; tail (male) 285–325 mm., (female) 265–280 mm. The eye is crimson.

This is a common bird of the high forest which lives largely on the fruits of the forest trees. It has an amazing cry, which is unmistakable but difficult to put on paper. When a party of these hornbills are present, the noise which they make with their huge wings is very loud. Perhaps six to twelve may make up a gathering, but as they keep usually to the forest canopy it is very difficult to



BLACK-CASQUED HORNBILL

Ceratogymna atrata

glimpse even one bird unless fortune favours the observer. The fruits of the oil-palm are much relished by this bird. Should it leave the dense cover the flight appears laboured—several powerful strokes followed by a long glide with wings set on a slightly downward course. The neck is carried stretched out in front, and as the wings are flapped the tail opens and shuts in a most grotesque manner. At such times the male bird is easily recognised by its larger casque, particularly if followed by the female. Sometimes when the fruit is ripe in a certain area as many as fifty of these great birds have been seen together, but that is an exceptional occurrence. More often it is encountered in pairs or a few together.

Although no one has described the nesting habits of this bird it is believed to utilise the hollows of high trees for the purpose, as does the Black-casqued Hornbill, whose nest will be described. The eggs of *C. elata* have never been taken, so far as I am aware.

Distribution. A resident species over a wide area from Portuguese Guinea to western Cameroon, frequenting both the high forest and the gallery forests. In British Cameroon it occurs in second-growth bush and plantations, its distribution to some extent being governed by the presence of the oil-palm. It is found commonly enough in all our Colonies except Gambia, from which last it is doubtfully reported.

BLACK-CASQUED HORNBILL

Ceratogymna atrata (Temminck)

(see Plate 37, facing this page)

The adult male of this large hornbill is similar to the male of the Yellow-casqued Hornbill, but its plumage is entirely black except for the white in the tail. The tail has the central pair of feathers black and all the remainder black with the terminal third white. The casque is not so high as in *C. elata* and is more cylindrical in shape and brownish black in colour, like the bill. The eye is red and the naked skin surrounding it as well as the gular pouch and wattle bright cobalt blue. Legs and feet are brownish black. The female has the feathers of the crest, nape and neck rufous. The tail is similar to that described for the male. In measurements there is little to choose between this and the last species. Measurements are: Bill from base, (male) 135–150 mm., (female) 109–130 mm.; wing (male) 368–405 mm., (female) 325–385 mm.; tail (male) 290–330 mm., (female) 260–290 mm.

Although over much of their range this and the last species are to be found in the same area, in its habits and food it resembles closely *C. elata*, but is more a bird of the dense forest and does not visit the

second-growth bush or palm groves to the same extent as that bird. It may be seen occasionally passing high overhead from the jungle to the mangroves. It utters a broken-voiced *kawa-kawa* and also a curious prolonged whistling toot. Their squawks are familiar sounds of the forest, but they are not so noisy as the Yellow-casqued Hornbill. Like that bird, the wings make a terrific noise as they are beaten—a noise which usually proclaims the bird's presence before it is seen.

It nests in hollow trees at 70 ft. or more from the ground, entering by way of a large knot hole or similar aperture, which is plastered up by the male when the female has entered. She moults during her confinement in the tree and is fed by her mate through a small aperture left when the hole is sealed up. A single egg is believed to be the full complement, and it is probable that the female is walled in for three months.

Distribution. Ranging over the greater part of the forested area of Upper Guinea from Liberia to Nigeria, this hornbill's range does not terminate (as does that of its close relative *C. elata*) in western Cameroon, but it is, if anything, more common between British Cameroon and the Quanza River in Angola. In Lower Guinea it practically takes the place of *C. elata* and extends its range eastwards across the heavy forest of the Congo and ranges both north and south into the gallery forests. Usually a lowland bird, we find it ranging as far as the Semliki valley. Unknown in the bush country of Gambia, it has not yet been reported from the remaining forest reserves of Sierra Leone, but as it is found in Liberia it may extend further west. It occurs sparingly in the forests of Ashanti and in southern Nigeria and is found on Fernando Po.

SUB-FAMILY BUCORACINAE

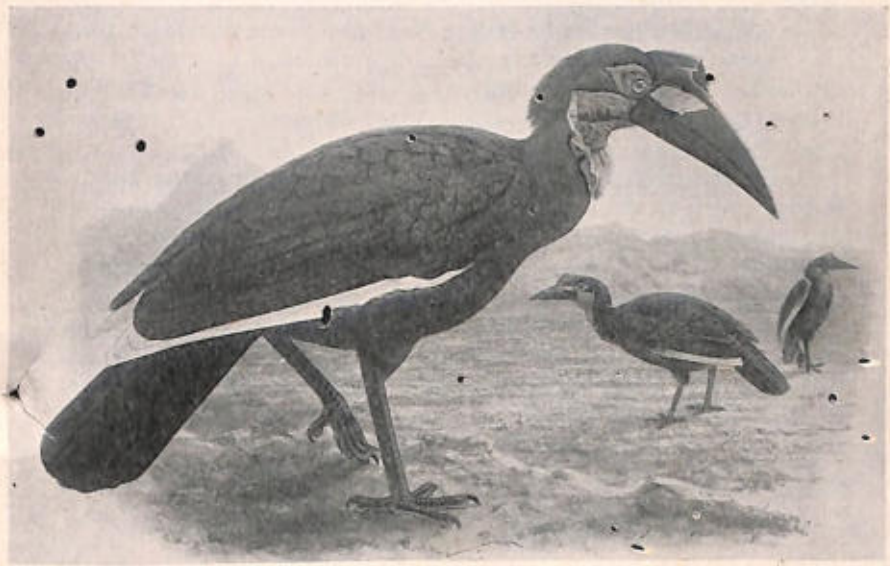
GROUND HORNBILL

Bucorvus abyssinicus (Boddaert)

THIS is a very large bird, 43 in. in total length with an expanse of 60 in., i.e. 5 ft., as large as a turkey or pelican, which is quite impossible to mistake for any other species. On the ground it appears all black with a huge beak surmounted by a short, high, black, truncated casque, hollow in the front. At the base of the maxilla on either side is a dark red patch. The iris is brown. Black eyelashes are very prominent. The bare skin round the eye and on the chin is leaden blue and the wattle chiefly blue, with (in the male) usually some red in the centre, but not invariably. In the

female there is never any red in the wattle apparently or on the throat. Apart from this the sexes are alike in colour in the Ground Hornbill, but the female is slightly smaller.

When it spreads its wings it is seen to have white primaries, and the wings in flight look half black and half white. The legs are rather short but very stout, black in colour, with the shanks bare of



feathers below the tibio-tarsal joint. The cry is a deep grunt, very unlike that of a bird. Being a ground feeder, it must be sought in open bush. Some idea of its size may be gathered from the following measurements: Bill (male) 208–247 mm., (female) 197–232 mm.; wing (male) 520–575 mm., (female) 530–535 mm.; tail (male) 325–355 mm., (female) 330–345 mm.; tarsus 141–171 mm.

Being an inhabitant of well-wooded bush country, the Ground Hornbill is a familiar species in Gambia and in the grass woodland belt which extends to northern Cameroon. It is unfortunately often to be seen in captivity, when its life cannot be described as a happy one. Parties of twenty or more may sometimes be encountered in the north of its range, but in Nigeria and the Gold Coast it has become more rare and is now seldom seen in any numbers. It is a species which does an enormous amount of good, which should be remembered to its credit and set against its partiality for groundnuts. Hoppers form no small part of its diet, and it must kill a great number annually in addition to other harmful creatures.

The bird takes slight notice of human beings, and a pair may often be seen walking about near a native village. If followed, they will break into a run and finally take wing, to pitch about 200 yards away. The white primaries are then very conspicuous. Although normally to be seen on the ground, it will perch on trees, usually choosing a limb fairly low down. Hausa hunters place much value on the head of this bird, which they use as an aid to stalking larger game.

This huge bird makes its nest in the holes of medium-size trees at no great height from the ground. The nest itself is scanty, a few dry and fresh leaves being introduced into the cavity upon which the two pure white eggs are laid. These measure 61–72 × 47–51·5 mm. Eggs are laid in April.

Distribution. Extends from Senegal, Gambia and Sierra Leone, through the orchard bush country and grass woodland to northern Cameroon and the Ubangi-Shari, ranging thence across Africa north of the forest to the Sudan, Ethiopia and Eritrea, reaching Uganda in the south but not beyond. In Nigeria and the Gold Coast it must be sought north of lat. 10° N. and its range dies out with the elimination of the better-wooded area of bush towards the desert. It has been recorded in Nigeria from as far south as lat. 8° 40′ N. in Benue Province.

ORDER TROGONIFORMES

FAMILY TROGONIDAE

Key to the Trogons

1. White area on three outermost tail-feathers conspicuously barred with black *Heterotrogon vittatum camerunense*, p. 713
   White area on three outermost tail-feathers plain, not barred with black 2

2. Freckling on wing-coverts coarse, equally black and white; white area on three outer tail-feathers reduced by dusky area extending further towards tip
   (*a*) Bare skin on cheeks yellow *Apaloderma aequatoriale*, p. 711
   (*b*) Bare skin on cheeks green *A. narina brachyurum*, p. 712
   Freckling on wing-coverts fine, more white than black; white area on three outer tail-feathers extensive, dusky area restricted to basal half
   Apaloderma narina constantia, p. 711

YELLOW-CHEEKED TROGON

Apaloderma aequatoriale Sharpe

HEAD, neck and entire upper surface of the body, throat and breast shining green with golden and blue reflections. On the cheeks a patch of bare yellow skin is divided by a narrow line of green feathers. The lower breast and belly vary from pinkish red to blood-red. Three central pairs of tail-feathers are violet-blue; the middle pair is fringed with green, the three outer pairs have the terminal portion pure white, with the basal portion dark brown and freckled. In size this trogon is about 12½ in. in length; the bill 15–19 mm., wing 110–126 mm., and tail 122–147 mm. The bill is yellow and green.

It betrays itself by its very peculiar note—a quavering cry repeated again and again until it finally dies away. It inhabits forest and thick growth near villages in Lower Guinea. Its food consists mainly of caterpillars, and it does not eat fruit.

This bird breeds in hollow stumps of forest trees, laying two pinkish-buff eggs 26·5 × 23·5 mm.

Distribution. Southern Cameroon, extending across the great equatorial forest to the Ituri district. Unknown in Upper Guinea or British Cameroon.

GOLD COAST NARINA TROGON

Apaloderma narina constantia Sharpe

THE Narina Trogon has four representative races north of the Equator, two of which come within our limits, one in Upper Guinea, another (*A. narina brachyurum*) in Lower Guinea. Their respective ranges will be discussed hereafter. That which occurs in our British Colonies is listed above.

It is a very beautiful bird, brilliantly coloured, with a wonderful sheen on the plumage. From the forehead to the upper tail-coverts the feathers are metallic green; the wing-coverts and secondaries are white closely freckled all over with black, the result being that the base of the wing appears grey and the quills brown. The throat and upper part of the breast are green, like the back, below which the under parts are bright pinkish red. The six middle tail-feathers are glossy purplish blue, the three outer ones white, freckled on the basal half with brown. Seen from above, the closed tail appears blue; seen from below, pure white. The bare patch behind the eye is bright yellow, on the chin blue. The eye is brown and the eyelid green-yellow. In size *A. n. constantia* measures: Wing 126–130 mm., tail 140–150 mm. The heavy bill is bright yellow, with the upper

mandible shaded with green. In total length it measures (including the longish tail) about 11½ in.

This is a quiet bird of the tree-tops and the middle zone in forested country, and its presence would often be unsuspected were it not for the gently cooing notes, *hoo-hoo*, *hoo-hooé*, which it utters.



It will sit motionless except for a slight movement of the head as it scans the surrounding foliage, every now and again making a swoop at a caterpillar or insect on some nearby leaf. It seldom flies far at a time, but when it does, its flight is fast and direct, with rapidly beaten wings. Plant bugs, caterpillars, mantises and beetles form its prey. Fruit it does not touch.

Only those who are intimate with the forest birds are likely to encounter the Narina Trogon, which, for all its bright colours, can usually manage to remain concealed from view. It sticks to the thicker growth of trees and does not venture into the savanna, though its representative in Cameroon and the Congo will extend into the gallery forests. It seems to shun forest clearings.

The race found in Upper Guinea has not been discovered breeding, but from our meagre knowledge of the Cameroon-Congo race it appears that it nests in hollow trees, laying two glossy white eggs.

Distribution and Races. The range of *A. narina constantia* extends evidently throughout the whole extent of forest-clad country from Sierra Leone to Calabar. It may be more common than records indicate, for it is known only from Sierra Leone, Liberia, the Gold Coast, Togoland and southern Nigeria. There is an area from Cameroon Mountain to the coast of southern Cameroon from which no specimens have been seen, but in the southern Cameroon forests, Spanish Guinea and Gaboon, ranging across the Congo forest to the Ituri and Uganda, there lives another race, *Apaloderma narina brachyurum* Chapin, with the bare skin of the face more green than yellow and the black and white freckling on the wings less marked. (Wing 122–136 mm., tail 146–166 mm.) *A. narina narina* (Steph.) is found in eastern Africa from Abyssinia to Cape Province.

BAR-TAILED TROGON

Heterotrogon vittatum camerunense Reichenow

This is a rather smaller bird than the Gold Coast or Cameroon Narina Trogons, and measures about 9½–10 in. from bill to tail, with a correspondingly smaller wing-spread. The male is the most strikingly coloured of its family in West Africa, the red of the under



parts being more brilliant and separated from the green throat by a band of bright purplish blue. Both the wings and tail are barred with black and white, the outer tail-feathers showing very conspicuous black and white barring, a character which is also shared by the brown-breasted female, and distinguishes this trogon at a glance from the other species without black bars on the white outer tail-feathers, should these feathers be seen. Like its relatives, this Trogon has shining green upper parts except for the wings and tail. Its general appearance is well shown in the text figure. The eye is claret, the bill pale yellow; the bare skin below the eye is orange. Wings measure 111–121 mm., the tail 142–150 mm. Its bill is smaller and more depressed than in the Narina Trogon.

We can claim this as a resident in British territory on the strength of its living on Cameroon Mountain and neighbouring Montane area, but it has not so far been found further west. Only in the Sierra Leone highlands might it possibly turn up some day. It is a bird which is confined to mountain forest, so that its range is bound to be discontinuous, inhabiting as it does the higher ranges of the African mountains. From 4,000 ft. upwards to 7,500 ft. where suitable forest covers the mountain it may be sought.

It is said to have a call very different from the Narina Trogon, which is described as a mournful far-reaching *wheeee-oh*, slightly prolonged and slowly repeated. It loves to perch high in some great forest tree or at a lower elevation among the tree ferns. In its mode of life there is little to choose between this and the Narina Trogon and, like that species, it lives mainly on caterpillars of the hairless variety.

Nothing is known about its breeding habits.

Distribution. Within our West African limits this Trogon has been found on Cameroon Mountain in British Cameroon, on the Manenguba Mountain, Kupé Mountain, at Oku and Bambulue; and on Mount St. Isabel on Fernando Po. There are no grounds for separating these West African examples from those collected in the eastern Belgian Congo and Uganda, though a name was bestowed on the island bird. The typical race, with longer wing, is found in the mountains of Tanganyika, Nyasaland and Portuguese East Africa.

ORDER PICIFORMES

SUB-ORDER CAPITONI

FAMILY CAPITONIDAE

Key to the Barbets

1. Upper mandible with indentations: grooves, notches or "teeth" on cutting edge 2
   Upper mandible almost straight on cutting edge, not grooved, notched or "toothed" 10
2. Breast white 3
   Breast not white 4

3. Forehead white, belly blackish brown
Lybius leucocephalus adamauae, p. 721
Forehead scarlet, belly washed with vermilion
Lybius levaillanti levaillanti, p. 722

4. With red on breast and/or belly 5
Without any red on breast and/or belly, which are yellowish green streaked and spotted respectively with black 9

5. Upper parts mostly glossy blue-black, large white patch on rump 6
Upper parts not glossy blue-black, no white patch on rump 8

6. Crown of head streaked with crimson
Pogonornis bidentatus bidentatus and subsp., p. 718
Crown of head not streaked with crimson 7

7. Throat crimson .. .. .. *Pogonornis dubius*, p. 716
Throat glossy blue-black like breast *Pogonornis rolleti*, p. 718

8. Broad black band across breast separates scarlet throat from greenish-yellow belly *Lybius torquatus congicus**
No black band across breast, throat and centre line of breast and belly splashed with scarlet
Lybius vieilloti rubescens and subsp., p. 720

9. Throat entirely black .. .. *Tricholaema hirsutum*, p. 722
Throat white or greyish white streaked with black
Tricholaema flavipunctata flavipunctata and subsp., p. 723

10. Whole plumage brown or brown and grey 11
Whole plumage not brown or brown and grey 13

11. Head feathered normally
Gymnobucco bonapartei bonapartei, p. 726
Head naked 12

12. Thick tuft of brush-shaped, straw-coloured bristles springing from each nostril .. *Gymnobusco peli*, p. 726
No thick tuft of bristles on nostrils, but tufts on chin and either side of gape
Gymnobucco calvus calvus and subsp., p. 724

13. Size very small (wing under 65 mm.) 14
Size larger (wing over 70 mm.) 19

14. Crown and mantle uniform dark glossy blue or greenish black, not marked with yellow or white excepting superciliary stripe 15
Crown and mantle marked, streaked or tipped with yellow or white 17

* Omitted intentionally from the main text, as it is doubtful if it comes within our limits. Described from "the Congo region," it ranges from Angola eastwards.

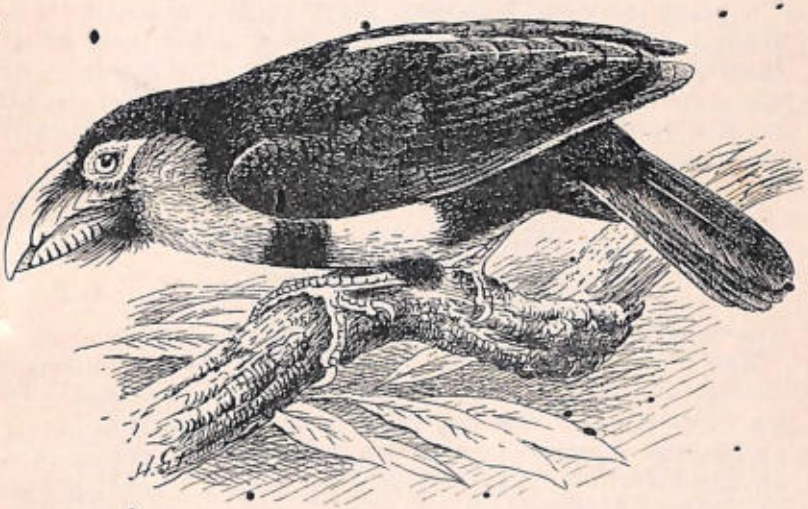
15. Rump scarlet .. .. *Pogoniulus erythronotos*, p. 731
Rump yellow 16
16. Breast clear grey
Pogoniulus leucolaima leucolaima and subsp., p. 733
Breast pale olive with yellowish wash:
(*a*) Throat and facial stripes sulphur-yellow
Pogoniulus subsulphureus subsulphureus, p. 733
(*b*) Throat and facial stripes white
Pogoniulus subsulphureus chrysopygus, p. 734
17. Broad black band on forehead 18
No black band across forehead, upper parts blackish brown, feathers margined with golden yellow
Pogoniulus scolopaceus scolopaceus and subsp., p. 734
18. Under parts pale yellowish; upper parts streaked with white *Pogoniulus chrysoconus chrysoconus* and subsp., p. 729
Under parts dull grey-brown tinged with olive; upper parts black streaked with yellow
Viridibucco coryphaea coryphaea, p. 728
19. Mantle, back and wing-coverts spotted with white or yellow 20
Mantle, back and coverts not spotted with white or yellow 21
20. Spots on upper parts white; throat yellow
Trachyphonus margaritatus margaritatus, p. 736
Spots on upper parts yellow, throat black
Buccanodon duchaillui duchaillui and subsp., p. 727
21. Sides of body uniform greenish yellow, like lower breast and belly 22
Sides of body black, heavily spotted with yellow
Trachylaemus purpuratus purpuratus, p. 737
22. Throat finely speckled with white on black ground, twin white tips to each feather very narrow, giving appearance of fine spotting *Trachylaemus purpuratus goffini*, p. 738
Throat heavily streaked with white, white tips to feathers very long .. .. *Trachylaemus purpuratus togoensis*, p. 738

BEARDED BARBET

Pogonornis dubius (Gmelin)

This fierce-looking barbet cannot be mistaken for any other species which occurs in the semi-arid belt where it lives, but is remarkably like the Tooth-billed Barbet (*bidentatus*) in coloration, a species which occurs in adjoining forested, well-watered districts but has no black band across the scarlet breast. The Bearded Barbet is very

distinctive by reason of its curiously shaped heavy bill (see text figure) and coloration. A short-tailed, thickset bird, it shows three colours. The throat and belly are red, separated by a broad black band; on each side of the belly is a white patch; the upper parts appear black, but a white area on the lower back is a conspicuous feature. The eye is yellow, the bill brownish streaked with white. In total length it measures about 9½ in. The bill measures 32–37 mm., wing 108–115 mm. The adult female resembles the male, but the tuft of white feathers on each side of the body is usually spotted sparsely with black.



The Bearded Barbet is to be met with frequently in the Northern Territories of the Gambia, Gold Coast and Nigeria in the dry bush country in which there are large trees such as the mahogany, baobab or locust bean. Wherever wild fig-trees are present these barbets are sure to gather. It is a wholly arboreal species which is never seen on the ground. Usually encountered in pairs or small family parties, it is to be seen hurrying through the bush with rather dipping, jerky flight, or else partly hidden from view in some leafy tree, an occasional glimpse revealing it peering about anxiously, ever on the alert, but rather silent. When it does utter its note, it is usually a single and rather abrupt *ca*, but it utters a peculiar whirring cry as well—*Hurr-hurr-hurr*—which is difficult to describe.

The Bearded Barbet nests in the hole of a rotten tree or in a knot hole (making no nest), which is lined with the chips of wood accumulated during the excavation. Two eggs appear to be the full

complement, judged by the number of nestlings discovered. The eggs have not been described. A nest with young was discovered in the Niger Province of Nigeria on 26th May.

Distribution. The whole of the semi-arid belt from Senegal to the Logone and Shari Rivers. In Gambia it is the commonest of the barbets. It does not range south of lat. 8° N. and is more often encountered between lat. 10° and 14° N. The northernmost record comes from the vicinity of Mopti in the French Sudan, where a few were met with in the small trees of the poorer and stonier ground. It prefers the type of country in which the baobab and locust bean are a feature of the landscape.

Another species, the Black-breasted Barbet (*Pogonornis rolleti* Defilippi), which has not been recorded west of the Shari River, found a place in my larger work (vol. iii, p. 365). It has the entire throat and breast shining blue-black. It resembles in other respects the next species discussed. Its range extends eastwards through Darfur to the Upper White Nile.

TOOTH-BILLED BARBET

Pogonornis bidentatus (Shaw)

THREE races occur in our area.

This is a large barbet which measures about 8½–9½ in. in length with an expanse of about 14 in., and may be easily distinguished by the bright scarlet cheeks and under parts, blue-black thighs and conspicuous white tufts on each side of the body. The upper parts are blue-black, including the wings, which have a narrow transverse bar. In flight a white patch above the rump is seen, and the sharply defined white patches on the sides are very noticeable. Another feature is the powerful, ivory-white curved bill, notched into "teeth" near the tip. A patch of bare skin round the eye is yellow and gives the impression that the bird is wearing spectacles. The bill measures 26·5–29 mm., the wing 92–99 mm. One giant has a wing of 104 mm.

The Double-toothed Barbet, which is another name for this bird, referring to the two "teeth" on the cutting edge of the upper mandible, is a forest species which frequents the forested area of West Africa. In my larger work I included three races which came within our limits, but the typical race is that which occurs in Upper Guinea and to which my notes refer.

This is not a bird of the dense forest but is to be found in secondary growth on the outskirts, in clearings, and along gallery forests in savanna country. In Sierra Leone its range is extended to include the open bush country of the interior. It usually prefers the thick foliage of larger trees such as *Ficus* and *Musanga*, but in some areas

such as southern Nigeria we find it close to the coast, as near Lagos, where, however, it is reported to be rarely seen.

The Tooth-billed Barbet lays up to four white eggs in the hole of a tree 18–40 ft. or more from the ground. No nest is made, but the debris of insect remains gives a clue to the food with which the youngsters are fed. The adults live mainly on fruit, especially figs.



Distribution and Races

P. bidentatus bidentatus (Shaw) is found in all British Colonies except Gambia. It has not been reported from west of Portuguese Guinea, but extends eastwards through the savanna and forest belts to Nigeria. It is said to be rare in the latter country in the Provinces of Plateau, Benue and Niger, but has been recorded from as far north as lat. 9° 30′. Though fairly wide-ranging it is nowhere common. In the Gold Coast it ranges from the White Volta to Ashanti and "Fanti."

In eastern Africa its place is taken by *Pogonornis bidentatus aequatorialis* (Shelley), which differs in having the band across the wings much more restricted and rose-colour instead of scarlet. The wing measures 96·5–108 mm. This bird ranges west to the Shari River.

In western and southern Cameroon and northern Angola we have *P. bidentatus friedmanni* Bannerman, which differs from the typical race in its larger size (wing 102–109 mm.) and more crimson on the crown. The wing-bar is entirely scarlet and not rose-colour, as in *P. b. aequatorialis*. It has recently been found to inhabit Bamenda and Menenguba Mountain (4,500–6,000 ft.) in British Cameroon.

WEST AFRICAN BARBET

Lybius vieilloti rubescens (Temminck)

Two races of this barbet occur in Upper Guinea; the one mentioned above is the common form, but a paler race is found in a narrow strip immediately south of the desert.

It is a small, stumpy-looking bird about the size of a sparrow, 6 in. in total length, its powerful black bill giving it a grotesque appearance. It is brightly and conspicuously coloured, the forehead and cheeks being scarlet, the crown blackish with scarlet tips, and the rest of the upper parts, wings and tail dark brown. A broad yellow streak extends down the centre of the back, and the rump and upper tail-coverts are sulphur-yellow. Throat and breast are white, the feathers broadly tipped with scarlet; the rest of the under parts is sulphur-yellow with a streak of scarlet down the centre of the belly. The eye is chestnut, and the bill and feet are black. The wing measures 75–83 mm.

An inhabitant of the thorn scrub and grass woodland, we find it in all our Colonies, where it seems to be widely and generally distributed, except perhaps in Gambia, where it is more local, but may occasionally be seen in little parties frequenting the fruit-bearing trees when the fruit is in season. Figs are everywhere its favourite, and the shea-butter tree is a likely tree upon which to find it. For a perch it will choose a limb of a dead tree in a clearing, and at such times when the birds are not feeding they will utter a soft *cwa*. When searching for food this barbet peers about with the same enquiring look as does the Bearded Barbet. There are occasions in the bush when Vieillot's Barbet may be heard yodelling—a succession of two flute-like notes which are uttered by two birds sitting vis-à-vis on a bough as they bow ceremoniously to each other.

The breeding season extends from April to July, the birds laying their white glossless eggs, two or three in number, in a hole in a rotten branch or in the decaying bole of a tree—a woodpecker-like excavation. Eggs measure about 25 × 21 mm. Both male and female bring berries—and probably insects also—to the young.

Distribution and Races

L. vieilloti rubescens (Temm.) occurs widely in West Africa from Senegal and Sierra Leone to Nigeria and northern Cameroon throughout the woodland and semi-arid belt to about lat. 14° N. Thence we find the species extending across Darfur to Abyssinia and the Bahr el Ghazal, where the typical race, *L. vieilloti vieilloti*, with less red on the breast, holds sway.

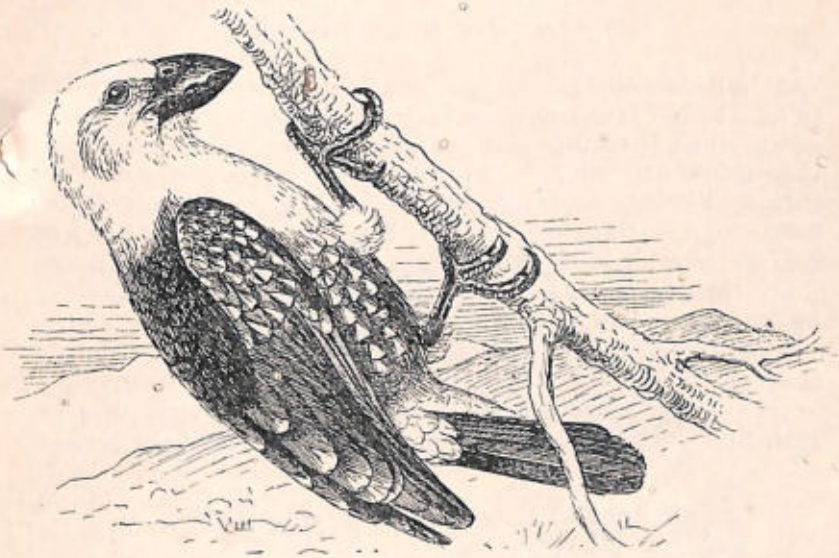
As one approaches the desert in the French Sudan and French Niger territory, a race with much paler upper parts, known as

Buchanan's Barbet, *L. v. buchanani* Hartert, takes the place of the West African subspecies. It is restricted to a narrow belt south of the Sahara which extends from the Inundation Zone of the Niger to the region of Aïr, very dry country on the whole, lying between lat. 14° and 17° N., including the country around Lake Chad.

WHITE-HEADED BARBET

Lybius leucocephalus adamauae Reichenow

Easily identified by reason of its entirely white head and breast. The back, wings and tail are dark brown, and there is a white patch above the tail. The brown wings are spotted with white on the coverts, but the flight feathers are all brown. If seen from below, the bird appears all white except for a dark brown belly and tail.



The heavy bill, which has the upper mandible toothed, is black. The eye is dark brown, the bill is black and the feet are slate-colour. The wing measures 86–91 mm.

A bird of the savanna country which has a very distinctive call—a series of shrill metallic notes of two syllables repeated fifteen to twenty times and then dying off in a sort of *k-k-k-k*. It usually prefers to haunt the larger trees on dry ground and is one of the only barbets recorded as having been disturbed from the ground. It flies fast and direct with swiftly beating wings. It feeds almost entirely on fruit.

Practically nothing is known about its nesting, but this should not be difficult to remedy, as the bird is not uncommon in such localities as the plateau of Nigeria and in northern Cameroon, where there are plenty of little fig-trees growing.

Distribution. The typical race of this barbet (*L. leucocephalus leucocephalus* (Defil.)) is a native of Uganda and the Lado district, ranging westwards to the Ubangi-Shari, where its place is taken by the subspecies *L. l. adamauae*, which occurs in a restricted part of our area, ranging from northern Cameroon into northern Nigeria. I have notes of its occurrence in Kano, Bauchi and Plateau Provinces of Nigeria, in northern Cameroon around Ngaundere and Tibati, and in various localities on the Shari from Fort Auchambault to the Ubangi River. West of Nigeria it has not been found.

LEVAILLANT'S BARBET

Lybius levaillanti levaillanti (Vieillot)

THIS bird is about 7½ in. in total length, with a pale heavy toothed bill. The chief points to observe are: (1) the scarlet crown; (2) the white breast becoming pale vermilion on the belly, and (3) the contrasting black thighs. The upper parts, tail and wings appear from dark brown to blackish, and no white is visible on the upper parts except perhaps at each side of the tail as the bird flies and exposes the white under tail-coverts. The bill is grey washed with pink, the eye blood-red and the feet flesh-colour. The wing measures 88–95 mm.

As this barbet only just comes within our limits in Portuguese Congo it will not be discussed further.

It ranges from Landana to the Lower Congo and North Angola, extending east to Katanga and the country north of Lake Nyasa.

BLACK-THROATED TOOTHBILL

Tricholaema hirsutum (Swainson)

A STUMPY-LOOKING bird about 7–8 in. long with a heavy black bill, a black face and throat, and two conspicuous white bands on the cheeks, one above the eye, the other on a level with the lower mandible. The general colour above is black covered with small yellow spots and showing yellow margins to the wing-feathers. The under parts apart from the black throat are yellow (brighter in females than in males) streaked with black on the breast and spotted with black on the belly. From *T. flavipunctata chapini*, which occurs side by side with it in the Gold Coast, it can only be distinguished

by its all-black throat (instead of whitish with fine black streaks). The adult female has a black throat like the male, but the ground colour of the upper parts is browner and the margins of the secondaries and coverts are golden yellow instead of greenish lemon-yellow. The bill measures 25–27 mm., the wing 90–100 mm., the tail 46–54 mm.

The Black-throated Toothbill is a forest bird which is often heard but seldom seen. Though its range is extensive, few have even set eyes on it, and in consequence we know very little about it. It usually goes about in pairs, searching the branches for insects and larvae, but it probably lives mainly on fruit, as the next species has been proved to do.

Its nest, which is no doubt in a hole in a tree, has not been discovered.

Distribution. The forest belt of West Africa from Sierra Leone to southern Nigeria.

HAIRY-BREASTED TOOTHBILL

Tricholaema flavipunctata Verreaux

Two races of this species come within our limits. That which occurs in the Gold Coast and southern Nigeria I ally with the race I named *chapini*, restricting the typical subspecies to Lower Guinea but including Cameroon Mountain in its distribution. As both this bird and the Black-throated Toothbill breed in the Gold Coast forests, I fail to see how the one can be treated as a subspecies of the other. I therefore treat them separately as in my larger work.



Chapin's Hairy-breasted Toothbill resembles *T. hirsutum* in every particular except that the throat is greyish white streaked with black in both sexes. The white eye and malar stripes are as conspicuous in this as in the Black-throated Toothbill, with which it was for long confused. The wing measures 86–93 mm., the tail 43–48 mm.

A common bird in the forest and second-growth woods, betraying its presence by cooing notes which are usually repeated for a short spell only. Solitary in its habits, it is usually seen perching in trees, but owing to its gold-flecked plumage it is well camouflaged in the dark places which it inhabits, and but for its note it would generally be overlooked.

Fruit forms the principal food, insects being of secondary importance.

This barbet breeds during the rains, nesting in holes in trees like other members of the genus. Its eggs have not been found.

Distribution and Races. Although there is a name *T. f. hybridum* Neumann for the barbets of the Niger Delta, I consider that the type is a hybrid and prefer to ally the race which extends from the Gold Coast to Nigeria and reoccurs in the Uelle River district with *T. f. chapini* Bannerman, the Belgian Congo race which ranges east to the Ituri.

From Cameroon Mountain southwards to the French Congo, through the forests of the Cameroons, we find *T. flavipunctata flavipunctata* Verreaux, a bird which in appearance and size resembles *T. hirsutum* but lacks the two white streaks on the side of the head, which latter is black narrowly streaked with greenish yellow; the cheeks are finely streaked black and white. The wing measures 87–93·5 mm., tail 43–49 mm.

NAKED-FACED BARBET

Gymnobucco calvus (Lafresnaye)

Two races come within our limits.

This very ugly all-brown bird, about the size of a sparrow, has the head completely bare of feathers, the naked skin of the face



blackish and all the feathered parts of body and wings earth-brown. A tuft of straw-coloured bristles spring from the chin and sometimes from each side of the gape. The eye is brown, the bill is flesh colour

and the feet are blue-black. The wing measures 85–96 mm., the tail 44–47 mm.

Another species, *G. peli*, whose distribution overlaps *G. calvus* between the Gold Coast and the Congo valley, can only be distinguished by the position of the tuft of bristles which in the former bird have the appearance of a small paint-brush springing from each nostril.

Apart from these two distinct but very similar *species*, there is a larger race of *G. calvus* which ranges from Cameroon Mountain southwards. This is *G. c. major* Neumann, with a wing measurement of 93–105 mm.

The Naked-faced Barbet is one of the noisiest as well as one of the commonest birds of the forest region of West Africa, nearly every village clearing holding dead trees proving an attraction to the species, which congregate in great numbers and fight for the rotten wood in which to pierce their nesting holes. It is not unusual to find colonies of fifty to a hundred birds nesting in a single dead tree-trunk, but much smaller colonies of four to ten pairs will occur.

Parties of the birds move from place to place in the forest, searching for the ripe fruits and berries which are their favourite food. It is a destructive species to paw-paw, and the musanga-tree fruit is another which is much appreciated. The cries which these barbets utter when they descend upon a tree laden with fruit can be heard at a considerable distance. It has been variously described as an explosive squealing or a loud musical *hweu-u*.

At their nest holes a continual chittering cry can be heard as the birds cling to the trunk or bough, vibrating their wings. Two or three white glossy eggs form the clutch, and these measure about 23 × 20 mm. It appears to breed all the year round.

Distribution and Races

G. calvus calvus (Lafres.) extends from the western extension of the forest in Sierra Leone and French Guinea to southern Nigeria, perhaps to Kupé Mountain in British Cameroon, and is especially numerous in the Gold Coast, where its range overlaps that of *G. peli*, the two species even sharing the same tree in which to nest.

G. calvus major Neumann takes its place in the forests of Cameroon Mountain and ranges to southern Gaboon and the gallery forests of the western Belgian Congo.

Another subspecies, *G. c. congicus* Chapin, is found from the Lower Congo to northern Angola, ranging east to the Mayombe forest.

BRISTLE-NOSED BARBET

Gymnobucco peli Hartlaub

ATTENTION has already been drawn to the only character which distinguishes this barbet from *G. calvus*. The drawing of the head will indicate the position of the straw-coloured bristles which in *G. peli* spring erect from the nostrils. In its bare head and brown plumage it exactly resembles the Naked-faced Barbet. The wing of *G. peli* measures 81–90 mm., which is rather smaller than *G. calvus calvus* and distinctly smaller than *G. calvus major*. The tail measures 43–46 mm.



In habits the two birds are exactly alike, and as *G. calvus* and *G. peli* occur side by side in the same localities from the Gold Coast to Gaboon the greatest care should be taken to identify properly any birds under observation. It is stated that they will even resort to the same tree for nesting purposes, excavating the same kind of holes.

Distribution. The forested parts and coastal areas of the Gold Coast and Nigeria, the Cameroon Mountain area, southern Cameroon, Gaboon and Portuguese Congo, the Mayombe forest and once in Belgian Congo at Butu Polo.

BONAPARTE'S OR GREY-THROATED BARBET

Gymnobucco bonapartei bonapartei Hartlaub

BONAPARTE'S Barbet is very like *G. calvus* at first sight and is about the same size as the smaller Upper Guinea race. On closer inspection it will be noted that the whole head is feathered. Like *G. peli*, it has prominent nasal bristles, and the general colour of the feathers is brown. The throat is grey, and a grey wash overspreads the mantle; the bill is rufous brown, and the feet are blackish brown. It is the smallest in all dimensions of all these brown barbets, the wing measuring 76–88 mm., the tail 41–45 mm.

This is said to be the commonest of the three species of *Gymnobucco* in the forests of southern Cameroon, where they may be seen in great numbers on the fruit-bearing trees, quarrelling, squealing and fighting in their scramble for titbits. Its ordinary note is weak, described as between a chirp and a whistle, but not loud. The birds fly considerable distances in search of fruit, visiting the various species of *Ficus*. Those who know them best have remarked that they never come down to the ground, nor do they visit the remote parts of the forest.

Twenty or more nest holes may be chiselled out in the same tree, for, like its naked-headed relations, it is a colonial nester. Four eggs are laid, white, measuring 22–23·8 × 17·3–18 mm. This barbet is parasitised by the honey-guide (*Melignothes conirostris*), and small bats have been discovered roosting in the holes in the middle of a thriving colony of barbets.

Distribution. Extends from western British Cameroon (Kumba) and the Cameroon River, south to Gaboon, across the Upper Congo to Poko and the Ituri forest. It does not appear to have been taken south of Kwamouth on the Congo River. In eastern Africa another race, *G. bonapartei cinereiceps* Sharpe, takes its place, ranging from Ruwenzori to Mount Elgon.

DUCHAILLU'S YELLOW-SPOTTED BARBET

Buccanodon duchaillui (Cassin)

THREE races of this barbet have been described from our area.

This brightly coloured barbet occurs throughout the whole of the forest belt from Sierra Leone to Gaboon. In size it is about 6½ in. long, with the forehead and crown crimson, passing into glossy steel-blue on the hind crown, neck and mantle. A broad sulphur-yellow streak extends from behind the eye down the sides of the neck. Back, rump, upper tail-coverts and wings are blue-black, the feathers having bright yellow tips. Primaries and secondaries are dark brown, the secondaries with yellow outer margins. Throat and breast are glossy blue, below which the under parts are barred yellow and black. The belly is mostly bright yellow. The eye is dark brown, the bill is black, reddish at base, and the feet are brown. The bill measures 14–16 mm., the wing 71–80 mm., and the tail 39–44 mm.

Despite the bright plumage it is an easy bird to overlook, for it is extremely well camouflaged in the tree-tops which it loves to haunt. It betrays its presence by its loud, far-carrying voice—a hollow *hrrrr*, uttered with puffed-out breast and down-pointed bill. It may be encountered in thick bush and rubber and has a special

liking for the fruit of the umbrella-tree (*Musanga*) and for palm-nuts. Termites are also devoured by this barbet, which may be seen occasionally on a dead tree in company with woodpeckers. Unless attracted by a fruit-laden tree, when several may gather for the feast, it is seldom that more than a pair are seen together.

The breeding season in the Cameroon-Ituri latitude appears to last from February to September. The bird nests in holes in high trees, but its eggs have not been taken so far as I can learn.

Distribution and Races

Buccanodon duchaillui duchaillui (Cassin) is found throughout the whole forest region of Upper Guinea and in the lowlands of northern and southern Cameroon, whence it ranges eastwards through the Upper Congo forest to the Semliki valley and Uganda. The forehead is crimson, and the wing measures 71–80 mm.

Buccanodon duchaillui bannermani Serle is a recently described race from the highlands of the Bamenda Division, British Cameroon. It differs in its larger dimensions. The bill is 13–17 mm., wing 80–87 mm., tail 45–50 mm., tarsus 20–23 mm., but in plumage it resembles the typical subspecies.

Buccanodon duchaillui gabriellae Bannerman is restricted apparently to the vicinity of Pangala, north-west of Brazzaville, French Congo, and differs from both the above in having the forehead scarlet-vermilion instead of crimson and the yellow spots paler as well as the entire under surface, which in this race is pale sulphur-yellow. The wing measures 80–84 mm.

CAMEROON MOUNTAIN BARBET

Viridibucco coryphaea coryphaea (Reichenow)

THIS tiny barbet is about the size of an English Goldcrest, under 4 in. in length. The forehead and sides of the head and general colour of the upper surface are glossy blue-black. A white stripe passes from the gape below the eye and is continued in a broadening streak down the neck. The middle of the head is bright yellow, which colour is continued irregularly the whole length of the upper parts to the upper tail-coverts. Lesser wing-coverts are glossy blue-black, the median coverts broadly tipped with yellow. Primaries and secondaries are blackish, the latter margined with yellow on the outer web. The breast and entire under



surface are dull brownish green; the throat rather greyer. The under wing-coverts are white. The eye is dark red, the bill black and the feet are slaty black. The wing measures 53–55 mm. and the tail 25–29 mm. The bill of this barbet is very short and stumpy, not exceeding 10 mm. in length.

Attention may be drawn to this bird by the little trilling notes which it utters as it climbs about in the small fig-trees which sometimes line the roads. The notes are run together into a rattle and are not at all like the usual notes of the smaller tinker-birds, the latter having a cry like the succession of beats of a small hammer.

In British Cameroon in the Bamenda Division this little bird frequents the patches of forest in the mountains, either in open places in the forest or on the edge, visiting occasionally the little trees in the grassland beyond the forest boundary. A female was found on her nest at Kishong, near Banso (6,000 ft.) on 9th October. The hole was bored in a dead tree stump on the mountainside, the opening just admitting a twelve-bore cartridge, which expanded to the nest cavity. Three eggs lay on wood chips. The eggs are white and unmarked and measured 17·7 × 12·7 mm., 16·7 × 12·5 mm., and 16·8 × 12·8 mm.

Distribution. The typical race of this barbet is restricted to the mountains of western Cameroon, Cameroon Mountain, Manenguba Mountain, and the heights about Chang, Banso, Bamenda and Kumbo. It ascends into the rain-swept mist-laden country around Lake Oku which is seldom visited by white men, but has been seen as low as Buea, from which locality the type specimen was obtained.

Two other races of *V. coryphaea* are found, in western Uganda (*V. c. hildamariae*) and in Angola (*V. c. angolensis*).

YELLOW-FRONTED TINKER-BIRD

Pogoniulus chrysoconus chrysoconus (Temminck)

Two races of this tinker-bird have been recognised from within our limits, but the distinctions are barely perceptible. The typical subspecies is found everywhere in the dry belt except from Lake Chad and northern Cameroons eastwards, where the race known as *P. c. schubotzi* Reichenow is supposed to take its place.

The species cannot be easily confused with any other. It is small in size (about 4½ in. long) and is bright sulphur-yellow on the under parts. A large golden patch on the forehead gives way to black streaked with white on the rest of the crown, neck and mantle. The back is irregularly streaked with golden yellow. The cheeks are conspicuously marked with two black bands on a white ground. Wings are dark brown, the coverts and secondaries margined with

liking for the fruit of the umbrella-tree (*Musanga*) and for palm-nuts. Termites are also devoured by this barbet, which may be seen occasionally on a dead tree in company with woodpeckers. Unless attracted by a fruit-laden tree, when several may gather for the feast, it is seldom that more than a pair are seen together.

The breeding season in the Cameroon-Ituri latitude appears to last from February to September. The bird nests in holes in high trees, but its eggs have not been taken so far as I can learn.

Distribution and Races

Buccanodon duchaillui duchaillui (Cassin) is found throughout the whole forest region of Upper Guinea and in the lowlands of northern and southern Cameroon, whence it ranges eastwards through the Upper Congo forest to the Semliki valley and Uganda. The forehead is crimson, and the wing measures 71–80 mm.

Buccanodon duchaillui bannermani Serle is a recently described race from the highlands of the Bamenda Division, British Cameroon. It differs in its larger dimensions. The bill is 13–17 mm., wing 80–87 mm., tail 45–50 mm., tarsus 20–23 mm., but in plumage it resembles the typical subspecies.

Buccanodon duchaillui gabriellae Bannerman is restricted apparently to the vicinity of Pangala, north-west of Brazzaville, French Congo, and differs from both the above in having the forehead scarlet-vermilion instead of crimson and the yellow spots paler as well as the entire under surface, which in this race is pale sulphur-yellow. The wing measures 80–84 mm.

CAMEROON MOUNTAIN BARBET

Viridibucco coryphaea coryphaea (Reichenow)

This tiny barbet is about the size of an English Goldcrest, under 4 in. in length. The forehead and sides of the head and general colour of the upper surface are glossy blue-black. A white stripe passes from the gape below the eye and is continued in a broadening streak down the neck. The middle of the head is bright yellow, which colour is continued irregularly the whole length of the upper parts to the upper tail-coverts. Lesser wing-coverts are glossy blue-black, the median coverts broadly tipped with yellow. Primaries and secondaries are blackish, the latter margined with yellow on the outer web. The breast and entire under



surface are dull brownish green; the throat rather greyer. The under wing-coverts are white. The eye is dark red, the bill black and the feet are slaty black. The wing measures 53–55 mm. and the tail 25–29 mm. The bill of this barbet is very short and stumpy, not exceeding 10 mm. in length.

Attention may be drawn to this bird by the little trilling notes which it utters as it climbs about in the small fig-trees which sometimes line the roads. The notes are run together into a rattle and are not at all like the usual notes of the smaller tinker-birds, the latter having a cry like the succession of beats of a small hammer.

In British Cameroon in the Bamenda Division this little bird frequents the patches of forest in the mountains, either in open places in the forest or on the edge, visiting occasionally the little trees in the grassland beyond the forest boundary. A female was found on her nest at Kishong, near Banso (6,000 ft.) on 9th October. The hole was bored in a dead tree stump on the mountainside, the opening just admitting a twelve-bore cartridge, which expanded to the nest cavity. Three eggs lay on wood chips. The eggs are white and unmarked and measured 17·7 × 12·7 mm., 16·7 × 12·5 mm., and 16·8 × 12·8 mm.

Distribution. The typical race of this barbet is restricted to the mountains of western Cameroon, Cameroon Mountain, Manenguba Mountain, and the heights about Chang, Banso, Bamenda and Kumbo. It ascends into the rain-swept mist-laden country around Lake Oku which is seldom visited by white men, but has been seen as low as Buea, from which locality the type specimen was obtained.

Two other races of *V. coryphaea* are found, in western Uganda (*V. c. hildamariae*) and in Angola (*V. c. angolensis*).

YELLOW-FRONTED TINKER-BIRD

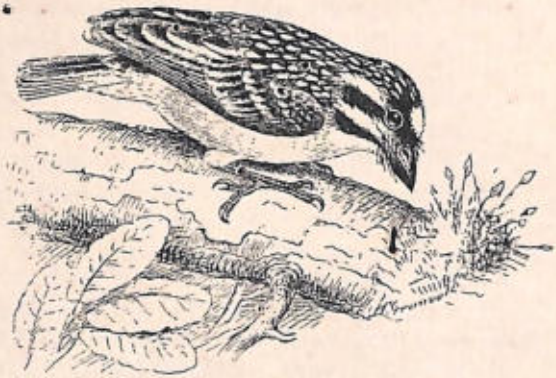
Pogoniulus chrysoconus chrysoconus (Temminck)

Two races of this tinker-bird have been recognised from within our limits, but the distinctions are barely perceptible. The typical subspecies is found everywhere in the dry belt except from Lake Chad and northern Cameroons eastwards, where the race known as *P. c. schubotzi* Reichenow is supposed to take its place.

The species cannot be easily confused with any other. It is small in size (about 4½ in. long) and is bright sulphur-yellow on the under parts. A large golden patch on the forehead gives way to black streaked with white on the rest of the crown, neck and mantle. The back is irregularly streaked with golden yellow. The cheeks are conspicuously marked with two black bands on a white ground. Wings are dark brown, the coverts and secondaries margined with

golden yellow. The tail is blackish with white or sulphur on the edges. The under wing-coverts are white, the eye is dark red, and bill and feet are black. The wing measures 52–58 mm., tail 24–29 mm. The bill is short and stumpy, not exceeding 12–13 mm. The identification is easy if a good view is obtained, but care must be taken not to confuse its yellow breast with that of an *Eremomela*.

The tinkering notes of this little bird sound like *kom, kom, kom* and are probably made by the male only. Another call, *pirrip-pirrip*, is believed to be uttered by both sexes. It is usually from some tree-top



that it gives forth its characteristic notes, repeated monotonously for long periods at a time. Until one has learned the cause, it is one of the most puzzling sounds of the bush.

Found in a variety of haunts, thorn thickets, bare or leafy trees in clearings and fairly thick bush, this tinker-bird is a common species over a wide area and may be present at widely separated places where trees grow beside dry watercourses or in basins. It lives on small fruits and insects, and when searching for these it is very much alert, hopping hither and thither, peering about keenly and seldom remaining for long in one tree. It flies with undulating flight. As it is usually seen singly it is easy to overlook its presence, but its note will usually betray it.

The nest is a hole in a tree, such as the frangipani, and is hollowed out by the birds themselves. It resembles a miniature woodpecker's hole. The eggs, two of which have been found, are pure white. It breeds in spring.

Distribution. The typical subspecies is found over the whole of the dry belt from Senegal and Gambia through the Northern Provinces of French Guinea, Ivory and Gold Coasts and Nigeria to the Shari River and in most of the French Sudan and French Niger, also on the Accra plains.

The race named *schubotzi* by Reichenow is supposed to have the streaks on the mantle broader and whiter, but the difference is very slight. That race was described from the Shari River and ranges eastwards through Chad territory to Darfur and the Bahr el Ghazal.

RED-RUMPED TINKER-BIRD

Pogoniulus erythronotos (Cuvier)

The scarlet rump of this tinker-bird is not exhibited by any other species and is therefore the best guide to its identification. The rest of the upper parts, including the crown and cheeks, are glossy blue-black; a yellow streak borders the ear-coverts both above and below. The wings are black, the coverts and secondaries edged with yellow; the primaries and tail are dull black. The yellow throat is set off by a black malar stripe on each side, the rest of the breast and belly



being yellowish green. Its size is larger than the other tinker-birds in our area, being quite 5 in. or over in total length; the other species barely reach 4 in. in length. The eye is dark brown, and the legs and feet are greenish brown. The wing measures 59–63 mm., and the tail 29–32 mm.

This is a very tame little bird which inhabits forest country and may be seen, five or six together, climbing about in the creeper-clad trees. It will sit at times uttering a curious note, *hoo, hoo, hoo, hoo,* with equal pauses between the syllables, not unlike the notes made by *Pogoniulus subsulphureus*, but in a lower pitch. It is fond of feeding on the fruits of the musanga-tree, but will also fill its stomach entirely with insects. A displaying bird has been seen to puff out its

throat, spread its tail vertically downwards and display its red rump, twisting and turning its head from side to side.

The nest hole is exactly like that of its relations, excavated, presumably by the birds, in stumps and small trees. Two nestlings have been found in a nest. Eggs measure about 19 × 15 mm. It is believed to breed chiefly during the rains.

Distribution. Whether this species has actually occurred in either Senegal or Gambia I feel most uncertain. The country is too dry for it on the whole and not sufficiently forested. From the Casamance River it extends wherever there is true forest or forest remains, right down to the Congo, and thus we find it in all our Colonies except Gambia. It ranges east along the borders of the Congo forest, but it also occurs, though less commonly, in the heavy forest and extends to the western slopes of Ruwenzori.

LEMON-RUMPED TINKER-BIRD

Pogoniulus leucolaima togoensis (Neumann)

This widely spread species has been split into four races, of which no fewer than three occur within the West African region. The race with which we are familiar in all our Colonies from Gambia to Nigeria is listed above, and those from Lower Guinea and Fernando Po will be mentioned when we come to discuss its distribution.

Shining blue-black above, with conspicuous white stripes above and below the eye, a lemon-yellow rump and yellow in the wings are the main points to observe if viewed from below. The whitish throat with the black malar stripes on either side and the lemon-coloured belly are noticeable. The wing measures 51–56 mm. and the tail 24–27 mm.

There are two little tinker-birds with yellow rumps, both very much alike. *P. leucolaima* has a white chin and throat, greyish breast and yellow belly. *P. s. subsulphureus* has a bright yellow chin, gradually merging into greyish olive on the throat, breast and belly. These two can easily be confused. Both have yellow rumps of different shades, distinguishing them from *P. erythronotos*, which has a scarlet rump. The notes of these three tinker-birds can be distinguished once they have been learned.

The Togoland Lemon-rumped Tinker-bird is much more numerous of the two, but both species frequent the forested area, forest clearings, fringing forest and grass woodland. It is not an easy bird to locate, as much of its time is spent in the tree-tops, from which it utters its clinking anvil-like notes. Insects and seeds form its food supply.

Although this bird perches high, it is often found breeding quite

close to the ground in stumps such as are left in clearings for native farms. The entrance hole is bored out as if with an auger to a size just large enough to permit the bird to pass through into the larger nesting cavity within. Two or three white eggs are laid which measure (in the typical subspecies) 15–18 × 11·5–13·5 mm. Naked young were found at Abeokuta on 27th March.

Distribution and Races

P. l. togoensis (Neumann) ranges from Gambia (where it inhabits thick bush) to southern Nigeria and is generally distributed as far as the northern edge of the forest belt from the coastal area, occurring in all our Colonies.

P. l. leucolaima (Verreaux), which has a duller yellow breast and more greenish wash on the belly, with wing 52–55 mm., ranges from Cameroon Mountain to Central Angola and east to the Ubangi-Shari country.

P. l. poensis (Alexander) resembles *P. l. leucolaima* but is larger. The wing is about 62 mm. (but see footnote in *The Birds of Tropical West Africa*, vol. iii, p. 394).

Another subspecies, *P. l. nyanzae* Neum., is found in Uganda.

YELLOW-THROATED TINKER-BIRD

Pogoniulus subsulphureus (Fraser)

Two races of this bird are found in our area, for the range and distinctions of which see the last paragraph.



It is a very small bird, 4 in. in length, which very closely resembles the Lemon-rumped Tinker-bird described last. In the field the two are barely distinguishable, but in the hand the Yellow-throated

Tinker-bird differs from the former in (1) its smaller dimensions, (2) a sulphur-yellow rather than lemon-yellow rump and margins to the wing-feathers, and (3) the under surface strongly washed with olive. The two species have different notes, as mentioned under the last species.

The Yellow-throated Tinker-bird is not well named, as only the race inhabiting Lower Guinea and extending perhaps to the Volta has a conspicuously yellow throat.

It is a common bird in the forested areas which it inhabits and has a habit of perching very high, so that it is seldom seen but often heard. In its ways of life it resembles the last species, and its nest holes, bored into the wood of posts and trees, often at a low elevation, cannot be distinguished from those of the Lemon-rumped Tinker-bird. Eggs are white and measure about 16 × 12 mm.

The race which is found in the Gold Coast and in the rest of Upper Guinea seems to occur more often outside the true forest, as it has been found in large clearings such as around Kumasi and on adjoining farmlands and thick bush.

Distribution and Races

P. subsulphureus subsulphureus (Fraser) was described from Fernando Po and on the mainland ranges from Gaboon and the French Congo to Lagos in southern Nigeria, west of which (to the Volta River in the Gold Coast) there is an area from which none have been collected. It is this race which is found on Cameroon Mountain. Eastwards it ranges to the Ituri and Uganda. The wing measures 48–55 mm., the tail 21–25 mm.

The other race, *P. subsulphureus chrysopygus* (Shelley), extends from the Volta River in the Gold Coast to Sierra Leone. It is clearly distinguished by having the frontal band, superciliary stripe and chin white instead of yellow as in the typical subspecies. The wing of this race measures 47–49 mm., the tail 22–23 mm. In both races the bill is 10–11 mm. in length.

SPECKLED TINKER-BIRD

Pogoniulus scolopaceus Bonaparte

This tinker-bird has three representatives in our area, but only the typical subspecies occurs in Upper Guinea. Their ranges will be given hereafter.

It is another small bird about 5 in. in length, but can be more easily recognised, as it has not the distinctive face markings of the other small barbets and the rump is neither red nor yellow but exactly the same colour as the rest of the upper parts, i.e. very dark brown to blackish, with each feather tipped with golden yellow. It

is a dull-coloured little bird; the under parts are dull whitish washed with yellow, especially on the belly. Wing-coverts and secondaries are brown with yellow margins. The eye is pale yellow, the bill is black and the feet are lead-colour. The wing measures (in the typical race) 54–59 mm.; the bill 13–15 mm. and the tail 29–32 mm.



This is probably the most widely distributed of the small tinker-birds, being found not only in the lower shelf of the forest but also in the savannas and thickets, clearings and farms. Forest, plantations and bush are its hunting ground, and it seems to have been secured in greater numbers by collectors than the tinker-birds we have already discussed, for it lives at a lower level everywhere.

Although it climbs like a woodpecker and occasionally bores into bark for food, it more frequently feeds among leafy foliage, often in company with sunbirds and other species.

The nest is always made in dead wood. A small horizontal hole leads immediately to the top of the nest chamber, which is spherical and about 4 in. in diameter. No extraneous matter is introduced. The female excavates the chamber and the pair roost together in it for weeks or even months before breeding operations begin. The female fights furiously to protect her nest or young. Four white eggs were taken in the Gold Coast from a decayed tree stump and measure about 18 × 13·5 mm. Four eggs of the Cameroon race measure 17–18·5 × 13·5–14·5 mm.

Distribution and Races

P. scolopaceus scolopaceus Bonaparte ranges from Sierra Leone to Calabar. Thus it is the form found in all our Colonies except Gambia, which lies too far to the west.

P. s. flavisquamatus (Verreaux) ranges from southern Cameroon to

the Congo and along the savannas of the Uelle to the Semliki valley. The under parts of this race have a more squamated appearance compared with the typical race. The wing measures 50–55 mm., and the bill is weaker.

P. s. stellatus (Jardine and Fraser) has less golden and more olive-yellow tips to the feathers, among other small points, and is larger, with wing 55–63 mm. This race is restricted to Fernando Po.

P. s. angolensis Bannerman is found in northern Angola perhaps to the Lower Congo, with feathers of the upper parts tipped with brighter greenish yellow than in other races.

Still another race, *P. s. aloysii* Salvad., ranges from Uganda to Lake Naivasha.

YELLOW-BREASTED BARBET

Trachyphonus margaritatus margaritatus (Cretzschmar)

Much larger than the species we have been discussing, the Yellow-breasted Barbet is over 8 in. in total length and is brightly coloured. Even so, its white-spotted brown back and wings help to camouflage it in the dry country which it inhabits. The crown is black, the rest of the head and breast lemon yellow, with a black spot on the throat and small round black spots at the tips of the feathers of the nape. The rump is yellow, the long upper and under tail-coverts are crimson and the belly is white washed with yellow. When the brown tail is spread, the white notches along the border show conspicuously. A brown eye and feet and reddish-brown bill complete the picture of this striking bird, whose bill measures 21–26 mm., wing 92–98 mm. and tail 79–89 mm. The only difference in the sexes is that the female has no black spot on the throat.

Although an inhabitant of the semi-arid belt which extends across Africa from the French Sudan to the Red Sea Province, this barbet is not, like so many other birds in that area, dependent on small thorn-trees for its nesting, for it breeds in holes in the ground, clay or sandy banks serving the purpose equally well. It will excavate its burrows in the side of a wadi or in an earthy cliff and has been known to build in holes bored in houses or to utilise an old ant-hill for the purpose. At Timbuktu it uses the pits dug for building-clay. Nests have been found in May near Lake Chad. In French Niger near Tawa the birds were breeding in June. The nesting season continues well into August, when fresh eggs have been found in the banks of the Niger. Four or five eggs complete the clutch.

This barbet utters a clear piping prolonged call and another less shrill, *thue, thue, thue, thue.* When breeding they chatter like European Starlings.

In the stomach of birds dissected have been found remains of insects, but fruit and the berries of salvadora are also eaten.

Distribution. The narrow strip immediately bordering the desert in French Sudan, French Niger and Chad, ranging east across Darfur to the Red Sea Province. It is found in Bornu to within fifty miles of Maidugari and no doubt in the same latitude, i.e. about 12° N., in the Provinces of Kano and Sokoto and the country lying west of Nigeria. That seems to be its southern limit, but as it has been found breeding at Timbuktu and is not dependent on tree growth it is likely to extend to the edge of the desert, if not beyond. The only subspecies, *T. m. somalicus*, is an inhabitant of Somaliland.

YELLOW-BILLED BARBET

Trachylaemus purpuratus (Verreaux)

I NOW recognise three races of this barbet in West Africa, for distinctions and ranges of which see the final paragraph.

It is a bird about the size of a starling, 10½ in. in length. The upper parts are blackish, glossed with dark blue; the forehead and cheeks are deep crimson; and the rump is mottled black and yellow. The black throat and upper breast are in the typical race finely streaked with white, but in others the streaks are reduced to flecks. The lower breast and belly are yellow, varying in shade in the races and sometimes with a narrow red band separating them from the dark throat. In the typical race the sides of the body are black with broad yellow tips to the feathers. Tail and wings are black with, in the latter, a patch of white on the lesser wing-coverts. The bare skin round the eye is yellow and also the bill. The legs are brownish olive or slate-blue according to the races. The bill is heavy and measures 21–24 mm., the wing (in typical subspecies) 103–112 mm. and the tail 90–102 mm.



Although in parts of its range this barbet is a bird of the forest area, it is the second-growth woods to which it keeps, preferring tangled growth near old clearings to the virgin forest. It usually manages to keep well concealed but betrays its presence by its

guttural croakings—a note like *cook*, uttered every two seconds, sometimes for a long period. The syllables are louder and terminate more abruptly than the soft *coos* of *Tricholaema hirsutum*.

These barbets feed chiefly on fruit, palm-nut pulp and berries, but it will also eat animal food, as snails and bits of slugs have been found in its stomach. In some places it extends into the savanna but also keeps to where the undergrowth is dense, and thus it is seldom seen. It likes the presence of large trees, in which it cuts out its nest in the dead wood. Four white eggs are laid which measure 28·5–29·5 × 18–20·5 mm.

Distribution and Races

T. purpuratus purpuratus (Verreaux), which has the sides black spotted with yellow and a narrow red band across the chest, ranges from northern Angola to the Owerri Province of southern Nigeria, east of the Niger Delta, including the Cameroon Mountain district.

T. p. togoensis Reichenow has a brighter scarlet head than the other races, the feathers of chin and crop with long silvery white tips and the rump-feathers more broadly fringed with yellow even than *T. p. goffinii*. The sides are yellow, as in *T. p. goffinii*. This race ranges from Togoland to the Nigerian Provinces of Benin and Ondo west of the Niger Delta.

T. p. goffinii (Schlegel) is distinguished by having the sides of the body entirely yellow like the belly, the black throat speckled instead of streaked, and the rump heavily fringed with yellow. It ranges from Sierra Leone to the Gold Coast. See volume viii, pp. 346–7, of my larger work for the latest treatment of this species.

FAMILY INDICATORIDAE

Key to the Honey-Guides

1. Breast uniformly coloured, not spotted or marbled .. 2
   Breast spotted or marbled 9
2. Upper tail-coverts streaked black and white:
   (*a*) Throat black .. .. *Indicator indicator* (adult) ♂, p. **739**
   (*b*) Throat whitish .. *Indicator indicator* (adult) ♀, p. **739**
   (*c*) Throat yellow *Indicator indicator* (immature), p. **739**
   Upper tail-coverts not streaked black and white .. 3
3. Two middle pairs of tail-feathers broad and curving markedly outwards towards tip (like a blackcock); outer pair exceedingly short and narrow (like a snipe) *Melichneutes robustus*, p. **746**
   Middle tail-feathers not exceptionally broad or curving markedly outwards towards the tip 4

4. Bill slender and pointed 5
   Bill very short and stumpy, with blunt tip 7
5. Upper parts entirely grey-brown, not washed with olive
   Prodotiscus regulus camerunensis, p. 748
   Upper parts strongly washed with olive 6
6. Outermost tail-feathers pure white; size small (wing under 70 mm.) *Prodotiscus insignis insignis* and subsp., p. 748
   Outermost tail-feathers tipped with brown; size larger (wing over 70 mm.) .. .. *Melignomon zenkeri*, p. 746
7. Middles of feathers of upper parts blackish and in strong contrast to golden-olive edges, causing streaked appearance; faint olive wash on hind crown 8
   Middles of feathers of upper parts dusky, not in strong contrast to dull olive-yellow edges; no olive wash on grey crown *Indicator minor alexanderi* and subsp., p. 743
8. Size larger (wing usually over 80 mm., ranges from 79 to 96 mm.) .. *Indicator conirostris conirostris* and subsp., p. 744
   Size smaller (wing usually under 80 mm., ranges from 65 to 80 mm.) .. .. *Indicator exilis exilis* and subsp., p. 745
9. Forepart of crown speckled; chin and throat spotted
   Indicator maculatus maculatus and subsp. (immature), p. 741
   Forepart of crown not speckled; chin and throat streaked
   Indicator m. maculatus and subsp. (adult), p. 741

BLACK-THROATED HONEY-GUIDE

Indicator indicator Sparrman

THE largest and commonest member of the family, the Black-throated Honey-Guide is about the size of a sparrow, ash-brown above, dirty white below, with smoke-coloured breast, the adult males distinguished by the all-black throat and pale patch on the cheek. A yellow band on the shoulder is invisible until the wing is spread. The tail is mostly white bordered with brown, but the two middle feathers are all brown. Females lack the black throat, and immature birds resemble them but have the throat and breast pale yellow. The wing measures 103–116 mm. The bill varies in colour from brownish pink to blackish; the legs are slate-grey.

The nestling has curved hooks on the tips of both the upper and lower mandibles, which are sometimes retained until it is ready to fly. The purpose of these hooks is unknown.

All types of open country are frequented by the honey-guide with the exception of the desert, and though by no means numerous it is generally distributed except in the closed forest. The birds are usually found singly when adult and to some extent have their own

guttural croakings—a note like *cook*, uttered every two seconds, sometimes for a long period. The syllables are louder and terminate more abruptly than the soft *coos* of *Tricholaema hirsutum*.

These barbets feed chiefly on fruit, palm-nut pulp and berries, but it will also eat animal food, as snails and bits of slugs have been found in its stomach. In some places it extends into the savanna but also keeps to where the undergrowth is dense, and thus it is seldom seen. It likes the presence of large trees, in which it cuts out its nest in the dead wood. Four white eggs are laid which measure 28·5–29·5 × 18–20·5 mm.

Distribution and Races

T. purpuratus purpuratus (Verreaux), which has the sides black spotted with yellow and a narrow red band across the chest, ranges from northern Angola to the Owerri Province of southern Nigeria, east of the Niger Delta, including the Cameroon Mountain district.

T. p. togoensis Reichenow has a brighter scarlet head than the other races, the feathers of chin and crop with long silvery white tips and the rump-feathers more broadly fringed with yellow even than *T. p. goffinii*. The sides are yellow, as in *T. p. goffinii*. This race ranges from Togoland to the Nigerian Provinces of Benin and Ondo west of the Niger Delta.

T. p. goffinii (Schlegel) is distinguished by having the sides of the body entirely yellow like the belly, the black throat speckled instead of streaked, and the rump heavily fringed with yellow. It ranges from Sierra Leone to the Gold Coast. See volume viii, pp. 346–7, of my larger work for the latest treatment of this species.

FAMILY INDICATORIDAE

Key to the Honey-Guides

1. Breast uniformly coloured, not spotted or marbled .. 2
   Breast spotted or marbled 9
2. Upper tail-coverts streaked black and white:
   (*a*) Throat black .. .. *Indicator indicator* (adult) ♂, p. **739**
   (*b*) Throat whitish .. *Indicator indicator* (adult) ♀, p. **739**
   (*c*) Throat yellow *Indicator indicator* (immature), p. **739**
   Upper tail-coverts not streaked black and white .. 3
3. Two middle pairs of tail-feathers broad and curving markedly outwards towards tip (like a blackcock); outer pair exceedingly short and narrow (like a snipe) *Melichneutes robustus*, p. **746**
   Middle tail-feathers not exceptionally broad or curving markedly outwards towards the tip 4

4. Bill slender and pointed 5
   Bill very short and stumpy, with blunt tip 7
5. Upper parts entirely grey-brown, not washed with olive
   Prodotiscus regulus camerunensis, p. 748
   Upper parts strongly washed with olive 6
6. Outermost tail-feathers pure white; size small (wing under 70 mm.) *Prodotiscus insignis insignis* and subsp., p. 748
   Outermost tail-feathers tipped with brown; size larger (wing over 70 mm.) .. .. *Melignomon zenkeri*, p. 746
7. Middles of feathers of upper parts blackish and in strong contrast to golden-olive edges, causing streaked appearance; faint olive wash on hind crown 8
   Middles of feathers of upper parts dusky, not in strong contrast to dull olive-yellow edges; no olive wash on grey crown *Indicator minor alexanderi* and subsp., p. 743
8. Size larger (wing usually over 80 mm., ranges from 79 to 96 mm.) .. *Indicator conirostris conirostris* and subsp., p. 744
   Size smaller (wing usually under 80 mm., ranges from 65 to 80 mm.) .. *Indicator exilis exilis* and subsp., p. 745
9. Forepart of crown speckled; chin and throat spotted
   Indicator maculatus maculatus and subsp. (immature), p. 741
   Forepart of crown not speckled; chin and throat streaked
   Indicator m. maculatus and subsp. (adult), p. 741

BLACK-THROATED HONEY-GUIDE

Indicator indicator Sparrman

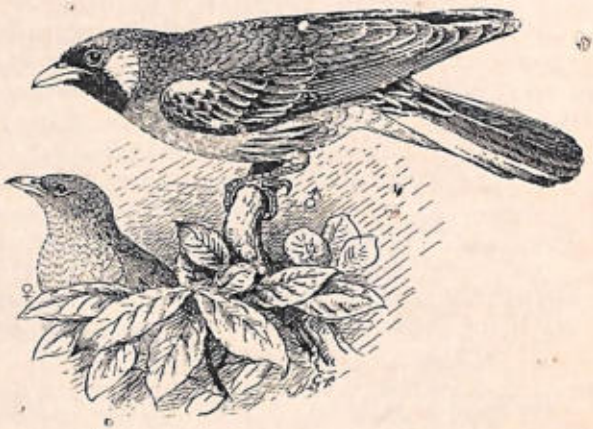
THE largest and commonest member of the family, the Black-throated Honey-Guide is about the size of a sparrow, ash-brown above, dirty white below, with smoke-coloured breast, the adult males distinguished by the all-black throat and pale patch on the cheek. A yellow band on the shoulder is invisible until the wing is spread. The tail is mostly white bordered with brown, but the two middle feathers are all brown. Females lack the black throat, and immature birds resemble them but have the throat and breast pale yellow. The wing measures 103–116 mm. The bill varies in colour from brownish pink to blackish; the legs are slate-grey.

The nestling has curved hooks on the tips of both the upper and lower mandibles, which are sometimes retained until it is ready to fly. The purpose of these hooks is unknown.

All types of open country are frequented by the honey-guide with the exception of the desert, and though by no means numerous it is generally distributed except in the closed forest. The birds are usually found singly when adult and to some extent have their own

territory, which is poorly defined and not necessitated by the competition for breeding sites, as honey-guides are parasitic, like the cuckoos, on other species.

The habit of leading natives and travellers to a beehive is fully authenticated. The bird will appear and begin to call excitedly—a loud chattering *cutta cutta cutta cutta*, repeated very rapidly and over long periods as the bird moves ahead from tree to tree with fluttering flight. An answering whistle from anyone wishing to profit from the bird's knowledge encourages the honey-guide to continue its exertions until eventually the little bird will come to rest on a tree



in which the bees have their nest, or perhaps the bees' nest will be located in the ground close by. It is the invariable custom of African or European to place some of the comb in the fork of a tree as a reward for the bird's intelligence. Beeswax certainly constitutes an essential part of the honey-guide's food supply, but the birds will also catch termites, and insects of various kinds have been found in the stomach, though particles of undigested honeycomb are always present, sometimes to the exclusion of all else.

It is hopeless to try to find a honey-guide. The only hope of success is to allow the bird to find you. It is said that the easiest way to attract the bird is to go into open woods or savanna where it is known to be present and imitate wood-chopping—a sound which indicates to the bird the proximity of man. If the honey-bird is aware of a bees' nest in the vicinity, it will seek the assistance of the wood-cutter and lead him to the find.

This Honey-Guide, like others of the genus, is parasitic on other birds, laying its single egg in the nest of hole-nesting species such as wood-hoopoes, barbets, starlings and woodpeckers, and once in

that of Gordon's Swallow. Eggs are ovate in shape and pure white faintly tinged with lavender-buff and measure 24·5–25 × 18–19·5 mm. "When possible," it has been stated, "the honey-guide breaks the eggs of the foster-parent to make room for its own."

Immature birds, when they have become independent of their foster-parents, form into little parties of five or six and may then be encountered together; otherwise it is rare to meet with the species other than singly.

Distribution. The whole of the Ethiopian region from Senegal and Darfur south to Cape Province, but not in the West African or equatorial forest region or in the desert. The most northern record in our area is from Fiko near Mopti, French Sudan, where a bird had been attracted by native beehives in a large tree. A bird of savanna and open woodland, there are few places of that nature in our area where it cannot be found, but it is not a common species. It may be expected to occur throughout West Africa and to be present in all our colonial possessions.

SPOTTED HONEY-GUIDE

Indicator macylatus Gray

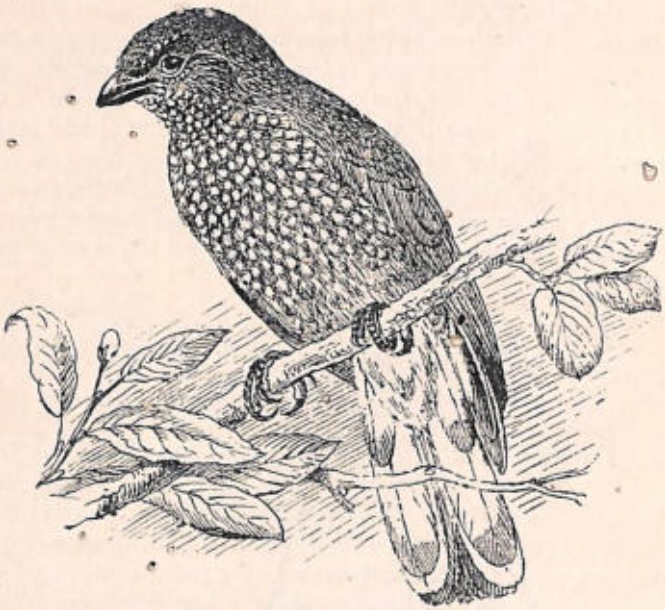
Two races of this bird occur, one in Upper, the other in Lower, Guinea.

In my larger volumes I treated *Indicator maculatus* and *Indicator feae* as two distinct species. In this it seems I was mistaken, for the recent researches of Chapin and Stresemann point to the bird which I described and figured as *I. m. maculatus* being the young of *I. feae*. The former name has precedence. In the same way *Indicator theresae* Alexander becomes a synonym of *Indicator maculatus stictithorax* Reichenow.

Slightly smaller than the Black-throated Honey-Guide, the present species is about 6½ in. in length. The adult is golden olive-green above, the chin and throat whitish with dark shaft-streaks, the rest of the under parts grey-brown, the upper breast covered with ill-defined yellowish-white spots, the belly smoky-white, the thighs streaked with brown. The middle two pairs of tail-feathers are blackish brown, the remainder white, tipped and terminally margined with blackish brown. As will be seen by the text figure, it is strongly graduated, the longest rectrices measuring 59–73 mm. Legs and feet are slate-green. The wing measures 100–111 mm.

The Spotted Honey-Guide is found in dense bush and on the edge of forest in Upper Guinea, but in Lower Guinea its representative seems to occur in heavy forest, for a number have been trapped in southern Cameroon in snares baited with termites. It does not

appear to have the same habit of attracting attention to itself like the Black-throated Honey-Guide, and, indeed, should it desire to lead a human being to a bees' nest it would be well-nigh impossible even for an African to follow it through the dense jungle in which it lives. That it eats beeswax like its better-known relative, *I. indicator*, has been proved by examination of its stomach contents.



Very little is known about the life-history of this bird, owing to the seclusion in which it lives. Those which have been seen have usually been sitting silently in trees in the heavy forest.

Its eggs are unknown. No doubt it is parasitic on hole-breeding birds like other members of the genus.

Distribution and Races

I. maculatus maculatus Gray is restricted to Upper Guinea. The type specimen came from Gambia, where it must be found in the desert bush, as there is no true forest left in Gambia today and little in Portuguese Guinea. From Sierra Leone and Liberia there are also various records, but it has not been found as yet in the Gold Coast or Nigeria, though it must be expected to occur there.

In Lower Guinea its place is taken by *I. maculatus stictithorax* Reichenow, wh h ranges from the British Cameroon highlands (Kupé Mountain) through the lowland forests to Gaboon and the Upper Congo, east to the edge of the Ituri forest and western

Uganda. Compared with the typical race, this species is more golden olive above and more heavily washed on breast and belly with olive-green. The white spots on the under parts in adult birds are larger and more pronounced than in younger birds. The wing measures 99–101 mm.

LESSER HONEY-GUIDE

Indicator minor alexanderi C. Grant

THERE are three races of this widely distributed Honey-Guide in our area, the one named above being found in the Gold Coast and Nigeria north of the forest.

It is a small bird with grey-brown head and golden-olive upper parts with indistinct brown streaks, smoke-grey under parts and white tail tipped with brown except the four central feathers, which are dark brown. The very thick stumpy bill is characteristic of these small Honey-Guides. In flight the white in the tail shows very clearly, and this feature, together with its direct, non-undulating flight, helps in its identification. The wing measures (male) 88–95 mm., (female) 82–86 mm. In total length it measures about 6 in.

This is a fairly common bird, though not easy to find, frequenting more or less open bush, where it is usually seen singly or in pairs. Its note is likely to draw attention to it—a harsh chattering not unlike the *tschuk* of the larger black-throated species. It does not seem to have the same habit of guiding human beings to honey, though there are some vague rumours to that effect.

It is parasitic in its breeding, laying its egg in the nests of barbets and woodpeckers. An egg of *I. minor riggenbachi* measured 21·5 × 16·8 mm. and was pure white.

Distribution and Races. *I. m. alexanderi* C. Grant inhabits the Northern Territories of the Gold Coast and Nigeria, then ranges eastwards to Darfur, where it seems to be present in midsummer only. In Senegal and Gambia we have a paler race, *I. m. senegalensis* Neumann, with obscurely marked upper parts and nearly white throat and belly; while *I. m. riggenbachi* Zedlitz extends from western and northern Cameroon east to the Semliki valley. It is darker in plumage than *I. m. alexanderi* and has more golden edges to the feathers of the upper parts. The wing of this race measures 85–95 mm.

THICK-BILLED HONEY-GUIDE

Indicator conirostris (Cassin)

HERE again, three races are found in our area, one in the Gold Coast, another in Nigeria, and the typical race from Cameroon Mountain eastwards.

This is about the same size as the Lesser Honey-Guide described last, about 6½ in. in length, and resembles it closely in appearance, the chief difference being the brighter golden upper parts of the species we are discussing, with more indistinct black streaking. The under parts are much deeper grey. Both species have the same stumpy bills, and if their ranges did not overlap the one would certainly be considered a race of the other. The wing of this bird measures (male) 88–96 mm.; (female) 79–88 mm.; the tail (male) 56–62 mm.; (female) 50–52 mm.



The Thick-billed Honey-Guide is more of a forest-frequenting bird than the Lesser Honey-Guide, but it is to be found also in plantations and in ravines and high plateaus where there is plenty of tree growth, as well as in clearings in the denser forest and in closed forest itself. It is rather a silent species; the only note is said to be a low chirp. The Nigerian race was never encountered except in association with breeding colonies of *Gymnobucco calvus*, which barbet it is believed to parasitise. Specimens obtained have had wax in the stomach, but it is not known to guide to bees' nests.

The egg has been found in the nest hole of *Pogoniulus leucolaima*, where the entrance is no larger than the circumference of a finger-ring. How the young got out or the egg got in remains a mystery, unless a mistake was made between this bird and *Indicator exilis*. Although fledglings have been discovered, the egg has never been described.

Distribution and Races. I. conirostris conirostris Cassin ranges from Cameroon Mountain through the forests of Cameroon and Gaboon and to northern Cameroon, extending eastwards along the Upper Congo to the Ituri, Ruwenzori and Mount Kenya. Its place is

taken by the paler and greyer *I. conirostris pallidus* Marchant in Nigeria and by *I. c. ussheri* Sharpe in the Gold Coast, which differs in having the entire crown washed with golden olive and the under parts pale grey-brown with an olive-yellow wash. Wing of two specimens measured 91–92 mm.

LEAST HONEY-GUIDE

Indicator exilis Cassin

So many races of this honey-guide have been described, no fewer than six being enumerated in my larger work from within the West African region, that I shall only briefly give their range as known to date. For the distinctions I must refer the reader to the work quoted above.

In plumage this is an exact counterpart of the Thick-billed Honey-Guide, but under 5½ in. in length. The wing measures (male) 72–79 mm.; (female) 65–71 mm.; tail (male) 45–51 mm. (female) 39–43 mm. Thus it appears a much smaller bird in every respect. The colour pattern is exactly the same, the streaky golden-yellow and black upper parts and black and white tail, the outer tail-feathers all white with black tips, the inner rectrices all blackish. It has the thick stumpy-looking bill 8–9 mm. in length of many of its family. From the Lesser Honey-Guide (*I. minor*) the more definitely contrasting black and golden streaking of the upper parts and dark olive (instead of pale grey-brown) under parts should distinguish it, though in size these two birds are much alike. Races of these individual species may occur in the same territory, for whereas *I. minor alexanderi* is a bird of the bush country, and *I. exilis* (and subspecies) is a forest bird, yet the latter at times ranges some way north of the forest proper into the territory occupied by the other bird.

All these Least Honey-Guides live in the forests of West Africa and in the gallery forests. Usually they may be seen two or three together fairly high up in the trees, and when they fly from one point to another they do so with undulating flight, the white on the outer tail-feathers showing conspicuously. They have been heard to utter a short, dry, trilling note. None have ever been known to lead man to bees' nests, but like other members of the genus they eat beeswax, and in order to procure it they probably enlist the services of some living creature other than man to break open the comb.

We know no more about the parasitism of this honey-guide than we do of the other forest *Indicators*.

Distribution and Races. I. exilis exilis Cassin ranges from northern Angola to the Lagos district of southern Nigeria and across the Congo forest to link up with the Uganda race, *I. e. pygmaeus*

THICK-BILLED HONEY-GUIDE

Indicator conirostris (Cassin)

HERE again, three races are found in our area, one in the Gold Coast, another in Nigeria, and the typical race from Cameroon Mountain eastwards.

This is about the same size as the Lesser Honey-Guide described last, about 6½ in. in length, and resembles it closely in appearance, the chief difference being the brighter golden upper parts of the species we are discussing, with more indistinct black streaking. The under parts are much deeper grey. Both species have the same stumpy bills, and if their ranges did not overlap the one would certainly be considered a race of the other. The wing of this bird measures (male) 88–96 mm.; (female) 79–88 mm.; the tail (male) 56–62 mm.; (female) 50–52 mm.



The Thick-billed Honey-Guide is more of a forest-frequenting bird than the Lesser Honey-Guide, but it is to be found also in plantations and in ravines and high plateaus where there is plenty of tree growth, as well as in clearings in the denser forest and in closed forest itself. It is rather a silent species; the only note is said to be a low chirp. The Nigerian race was never encountered except in association with breeding colonies of *Gymnobucco calvus*, which barbet it is believed to parasitise. Specimens obtained have had wax in the stomach, but it is not known to guide to bees' nests.

The egg has been found in the nest hole of *Poggniulus leucolaima*, where the entrance is no larger than the circumference of a finger-ring. How the young got out or the egg got in remains a mystery, unless a mistake was made between this bird and *Indicator exilis*. Although fledglings have been discovered, the egg has never been described.

Distribution and Races. I. conirostris conirostris Cassin ranges from Cameroon Mountain through the forests of Cameroon and Gaboon and to northern Cameroon, extending eastwards along the Upper Congo to the Ituri, Ruwenzori and Mount Kenya. Its place is

taken by the paler and greyer *I. conirostris pallidus* Marchant in Nigeria and by *I. c. ussheri* Sharpe in the Gold Coast, which differs in having the entire crown washed with golden olive and the under parts pale grey-brown, with an olive-yellow wash. Wing of two specimens measured 91–92 mm.

LEAST HONEY-GUIDE

Indicator exilis Cassin

So many races of this honey-guide have been described, no fewer than six being enumerated in my larger work from within the West African region, that I shall only briefly give their range as known to date. For the distinctions I must refer the reader to the work quoted above.

In plumage this is an exact counterpart of the Thick-billed Honey-Guide, but under 5½ in. in length. The wing measures (male) 72–79 mm.; (female) 65–71 mm.; tail (male) 45–51 mm. (female) 39–43 mm. Thus it appears a much smaller bird in every respect. The colour pattern is exactly the same, the streaky golden-yellow and black upper parts and black and white tail, the outer tail-feathers all white with black tips, the inner rectrices all blackish. It has the thick stumpy-looking bill 8–9 mm. in length of many of its family. From the Lesser Honey-Guide (*I. minor*) the more definitely contrasting black and golden streaking of the upper parts and dark olive (instead of pale grey-brown) under parts should distinguish it, though in size these two birds are much alike. Races of these individual species may occur in the same territory, for whereas *I. minor alexanderi* is a bird of the bush country, and *I. exilis* (and subspecies) is a forest bird, yet the latter at times ranges some way north of the forest proper into the territory occupied by the other bird.

All these Least Honey-Guides live in the forests of West Africa and in the gallery forests. Usually they may be seen two or three together fairly high up in the trees, and when they fly from one point to another they do so with undulating flight, the white on the outer tail-feathers showing conspicuously. They have been heard to utter a short, dry, trilling note. None have ever been known to lead man to bees' nests, but like other members of the genus they eat beeswax, and in order to procure it they probably enlist the services of some living creature other than man to break open the comb.

We know no more about the parasitism of this honey-guide than we do of the other forest *Indicators*.

Distribution and Races. I. exilis exilis Cassin ranges from northern Angola to the Lagos district of southern Nigeria and across the Congo forest to link up with the Uganda race, *I. e. pygmaeus*

Reichenow. The only island form is *I. e. poensis* Alexander, restricted to Fernando Po. In the Gold Coast lives *I. e. willcocksi* Alexander, described from Prahsu; in Sierra Leone *I. e. leona* C. Grant, described from near Freetown; in Portuguese Guinea *I. e. ansorgei* C. Grant described from Gunnal, and in northern Nigeria *I. e. hutsoni* Bannerman described from Tatare, Benue Province.

These races are mostly represented by one or two specimens, and though they all appear recognisable it remains to be seen if they will all be valid when larger series come to hand. For their distinctions I must refer the reader to my larger work, vol. iii, p. 417.

ZENKER'S HONEY-GUIDE

Melignomon zenkeri Reichenow

A DULL-COLOURED little bird about 6 in. long, with the upper parts olive-brown, the crown tinged with olive, the feathers of the back and wing-coverts and flight feathers narrowly edged with olive-yellow. The middle pair of tail-feathers are dark brown edged with olive-yellow, the remaining rectrices white broadly tipped with light brown, which colour extends up the margin of the outer web. In shape the tail is almost square except for the shorter outer feather on each side. The under side of the body is pale grey-brown washed with dull yellow, the belly palest buff washed with yellow. The bill is much less blunt than in most honey-guides and more normal and slender in shape; it measures 9–10 mm. The wing measures 73–83 mm., the tail 46–52 mm.

Nothing is known of the habits of this bird, but it is likely to resemble the Least Honey-Guide in its mode of life.

Distribution. The forests of southern Cameroon eastwards through the Congo forest to the Semliki valley.

LYRE-TAILED HONEY-GUIDE

Melichneutes robustus Bates

THIS is perhaps the most interesting of the honey-guides, and thanks to Dr. J. P. Chapin of the American Museum of Natural History we are beginning to learn something about it at last. It is one of the larger members of the genus, about 6½ in. in total length, with a normally shaped bill but a most remarkable tail. The four middle feathers are curved outward at the tip and the three outermost on either side are not only very much shorter and graduated but are also much narrower, the outer pair being so small and narrow as to resemble the similar feathers in a snipe's tail. This lyre-shaped tail

has been compared in structure to that of the European Blackcock, but it is the tiny outer feathers which prove so interesting. The body plumage is dark brown above, light brown below, washed throughout with olive. The black bill measures about 8 mm., the wing 61–65 mm. and the tail 40–44 mm.

This forest bird has focused the interest of naturalists by reason of a remarkable noise which has come to be associated with its presence, a sound which seems to emanate from above the forest canopy. It has been likened to a nasal tooting call which has a tin-horn quality, the double syllables rising slowly in pitch, then dropping off and being repeated from twelve to thirty times. It carries for a quarter of a mile. The origin of the strange noise is attributed by Dr. Chapin* to the wind passing through the minute outer tail-feathers in the same way as the "bleating" of a snipe is produced.



It is not a rare bird, but is so elusive that few see it. Up to the year 1950 only ten specimens had been collected in forty years since its discovery. As the normal flight is described as undulating, it is difficult to see by what manner the noise can be produced unless by diving through space, which it has never been seen to do. Many native inhabitants of the equatorial forests are familiar with the mysterious sound, but few attribute it to the right source. In the southern border of the Uelle district this bird is known as the *nyeté*, which when repeated four times is a fair indication of the sound it produces.

It will take years to discover the breeding habits of *Melichneutes robustus*, concerning which nothing is known.

Distribution. Discovered by G. L. Bates at Bitye in French Cameroon, it has been found now in Gaboon and to extend across the Congo to the Upper Ituri, where it must eventually reach the Semliki valley. Its presence in southern Nigeria is now confirmed, and we can now be sure that *Melichneutes* occupies the whole of the Lower Guinea forest, at any rate as far west as the Niger delta.

* *Birds of the Belgian Congo*, vol. ii, pp. 553–6.

SHARP-BILLED HONEY-GUIDE

Prodotiscus insignis (Cassin)

Two races of this species come within our limits.

It is a very small little bird which has a curious resemblance to an English Goldcrest. In size 4½ in. from bill to tail, in colouring olive-brown, becoming more olive towards the rump and browner on the crown; the under parts are ash-brown. The flight feathers are blackish margined with olive-yellow; the tail is characteristic, the middle two pairs of feathers being dark brown, the others pure white. The bill is fine and sharp, measuring about 8 mm., the wing 61–65 mm. and the tail 39–44 mm.

The race described is the typical subspecies from Lower Guinea. That which inhabits Upper Guinea, *flavodorsalis*, is brighter in colour, the upper surface washed with golden and the rump with yellow tips. It is larger in size also, with a wing of 64–67 mm.

The Sharp-billed Honey-Guides are inhabitants of the forest sub-region and are known to be silent birds which seldom proclaim their presence and look more like warblers than honey-guides until the characteristic tail-pattern is observed. As it flies actively about from bough to bough the white outer feathers are very noticeable. One which was sitting among the red blooms of a flamboyant tree resembled a small flycatcher in appearance.

It is a parasitic species like the rest of the genus in which it is placed, but the species which it victimises are not known. A fully grown young bird, obtained in Cameroon and now in the British Museum collection, was in company with *Apalis rufogularis*, which may very probably have been the foster-parent.

Distribution and Races

P. insignis insignis (Cassin) extends from the Benin Province of Nigeria to the Lower Congo and northern Angola (Quicolungo) and eastward to the Uelle, Ituri and Semliki valleys, Uganda and western Kenya. It has been found on Cameroon Mountain, but examples from there are not quite typical.

P. insignis flavordorsalis Bannerman, whose distinctions have already been given, ranges from Sierra Leone to south-western Nigeria, from which locality the race has now been taken at Abeokuta.

P. insignis ellenbecki Erlanger, described from southern Abyssinia, has the crown and hind neck washed with dark grey. It is recorded from Kenya, Nairobi district.

Two other races of *P. insignis* have also been recognised with which we are not concerned.

A closely allied species, *Prodotiscus regulus camerunensis* Reichenow, has been described from Bosum, French Cameroon. It is entirely

pale brown in colour except for a buffish-white throat and white belly. The middle pair of tail-feathers are blackish brown, the three outer pairs white, the inner of the three with a narrow blackish border on the terminal half of the outer web. The wing measures 75–82 mm. in the typical subspecies. It is described as a restless little bird, continually flitting to and fro with undulating flight. When perched, it sits very erect. Its note may be written *zeet-zeet*. The tail is often fanned, and is thus a good field character to observe.

In British Cameroon a specimen of *P. regulus* was obtained at Ndu (6,000 ft.) in the Banso highlands which cannot be separated from the typical race *P. regulus regulus* Sundevall, which ranges over a wide area of East and South Africa.

SUB-ORDER PICI

FAMILY PICIDAE

Key to the sub-families of the Picidae

1. Shaft of tail-feathers stiff, feathers graduated and tapering to a point .. .. .. Sub-family *Picinae*, p. 751
   Shaft of tail-feathers not stiff but flexible, feathers soft and rounded 2
2. Very small birds (about 3 in. from bill to tail) with rudimentary tail barely reaching tip of wing; skin surrounding eye naked .. .. Sub-family *Picumninae*, p. 772
   Larger birds (about 7 in. from bill to tail); wing falls far short of tail and is almost equal to it in length; no naked patch around eye, skin being feathered normally Sub-family *Jynginae*, p. 774

*Key to the Woodpeckers**

(excluding the Wrynecks, for which see p. 774)

1. Wing reaching to or protruding beyond tip of tail; tail-feathers soft without stiff shafts; large bare patch round eye bare of feathers .. .. *Verreauxia africana*, p. 772
   Wing not reaching to tip of tail, tail-feathers with stiff shafts 2

* The Uganda Spotted Woodpecker (*Dendropicos poecilolaemus*) is not included in this key. It comes within our limits only in northern middle Cameroon. It is a small woodpecker 5¾ in. in length. The back and mantle are golden, obscurely barred; the under parts are greyish white washed with yellow; the breast is covered with small black spots. The forehead is brown, hind crown scarlet in male, black in female. The wing measures 83–89 mm.

2. With red on rump and/or upper tail-coverts 3
   No red on rump and/or upper tail-coverts 6
3. A black or brown streak on either side of white throat .. 4
   No black or brown streak on either side of throat .. 5
4. Feathers down middle of breast and belly tipped with crimson; back not barred *Mesopicos pyrrhogaster*, p. 768
   Feathers of breast and belly not tipped with crimson; back barred .. .. *Dendropicos fuscescens cosensi*, p. 760
5. Size medium (wing over 4 in. (101 mm.)); under parts uniform grey washed with yellow, no spots or streaks on under side *Mesopicos goertae goertae* and subsp., p. 768
   Size small (wing under 3¼ in. (83 mm.)); under parts whitish spotted or obscurely barred with blackish *Dendropicos elachus*, p. 761
6. Back uniformly brown without any trace of green or olive; wing-coverts spotted with white *Dendropicos obsoletus obsoletus*, p. 765
   Back not uniformly brown 7
7. Mantle and back spotted or barred; shafts of tail-feathers golden yellow 8
   Mantle and back uniform green or olive without spots or bars; shafts of tail-feathers not golden yellow 11
8. Under parts streaked, not spotted 9
   Under parts spotted (particularly on throat and breast), not streaked 10
9. Back and mantle conspicuously spotted and barred on dark ground with yellowish white, size medium (wing over 4 in. (101 mm.)) *Campethera abingoni chrysura*, p. 758
   Back and mantle obscurely barred brown and olive; size small (wing under 3½ in. (89 mm.)) *Dendropicos fuscescens* (formerly *lafresnayi*) *zechi*, p. 759
10. Whole under parts, including belly and sides, covered with round black spots *Campethera punctuligera batesi*, p. 758
    Throat and breast covered with very small round black spots or speckles; belly and sides yellow and unspotted *Campethera punctuligera punctuligera*, p. 757
11. Under parts heavily barred (not streaked or spotted) with black on yellow or whitish ground 12
    Under parts spotted, streaked or uniformly plain but not barred 13
12. Under wing-coverts barred and/or spotted *Campethera permista permista* and subsp., p. 752
    Under wing-coverts plain yellowish neither spotted nor barred .. .. *Campethera maculosa*, p. 751

13. Under surface of body spotted with white, yellowish white or buff on a dark olive-brown or blackish-olive ground 14
Under surface of body not spotted with white, yellowish white or buff on dark ground 16
14. Head, face and throat black and white, males with some yellow on jet-black crown *Mesopicos xantholophus*, p. 769
Head, face and throat not black and white, males with some red on dark brown crown 15
15. Broad patch of plain brown on cheeks (ear-coverts); throat spotted with buff like rest of under side *Campethera caroli careli* and subsp., p. 753
Cheeks striped, no brown patch on ear-coverts; throat streaked with blackish, not spotted *Campethera nivosa nivosa* and subsp., p. 755
16. Throat and breast finely speckled; lesser wing-coverts tipped with crimson at bend of wing *Campethera tullbergi tullbergi* and subsp., p. 756
Throat and breast not finely speckled; no crimson at bend of wing 17
17. Under parts heavily streaked with black or dark olive, including throat 18
Under parts practically uniform or with fine shaft-streaks; no black streaking on throat *Mesopicos johnstoni johnstoni* and subsp., p. 770
18. Forepart of crown jet-black .. *Mesopicos elliotii*, p. 771
Forepart of crown brown 19
19. Breast and belly yellow, heavily streaked and spotted with jet-black; in male entire crown except forehead tipped with scarlet .. .. *Dendropicos gabonensis*, p. 762
Breast and belly blackish olive with yellow fringes; in male crown is brown, scarlet confined to occiput and nape .. *Dendropicos lugubris lugubris* and subsp., p. 764

SUB-FAMILY PICINAE

GOLDEN-BACKED WOODPECKER

Campethera maculosa (Valenciennes)

THIS bird is about 7½ in. in length, golden olive above, pale yellowish heavily barred with black below. The entire crown is crimson in the male, black with pale spots in the female. The bill is dark olive-green or blackish. The wing measures 99–107 mm., the bill 16–18 mm.

Care must be taken in the Gold Coast (where their ranges meet) not to confuse this with a very similarly coloured species *C. permista togoensis*. In the field the males are practically indistinguishable. *C. maculosa* has (1) a duller red head, (2) blacker tail, and (3) uniform yellowish instead of black-banded under wing-coverts. The females have the distinctions (2) and (3) enumerated above, but may always be recognised in life from *C. p. togoensis* by the black crown being spotted throughout from the forehead to the occiput with buff spots and no red, whereas in *C. p. togoensis* there is a large scarlet patch on the occiput, only the crown being black spotted with buff.



Usually met with in small second-growth trees or in isolated trees near larger stretches of forest, it is locally distributed and rather scarce, both in the heavily forested districts and the more open bush. It feeds almost, if not entirely, upon ants which live in nests forming excrescences on the trunks of large trees. The bird is unusually lethargic in its movements and exhibits little suspicion.

It nests in the holes of dead trees, but its eggs have not been described.

Distribution. Portuguese Guinea to the Gold Coast. In Sierra Leone it is recorded both from the forested eastern districts as well as fairly open bush, but in the Gold Coast all the localities from which it is reported lie in heavy forest in Ashanti, showing its preference for dense forest trees, when it will also come into the clearings.

GREEN-BACKED WOODPECKER

Campethera permista Reichenow

Two races of this bird come within our limits. It is about 7½ in. in length, green above, the males with red crowns, and a heavy scarlet fringe over the occiput in both sexes. The female has the crown black with small buff spots. Both sexes have the under parts heavily barred from chin to vent with black on a greenish-yellow

ground. The bill has the upper mandible black, the lower horn. The wing measures 93–106 mm., the bill 16–18 mm.

The distinctions between this and *C. maculosa* have been mentioned under the latter species.

The Green-backed Woodpecker is another member of the family which consumes quantities of ants. It is a bird of second-growth forest and of forest clearings rather than of the primeval growth. It is said to be especially fond of the umbrella-tree.



Its nest has not been discovered.

The call is a shrill *whee whee whee*, and it has been heard drumming.

Distribution and Races

C. permista permista Reichenow inhabits Upper Guinea east of the Niger and Lower Guinea from Cameroon to northern Angola, ranging across the northern Belgian Congo to the Ituri River.

C. permista togoensis Neumann takes its place in Upper Guinea but has only been found in Togoland, the Gold Coast (Abokobi, Aburi and Kafaba), and in southern Nigeria near Lagos. From the typical subspecies it differs in being paler above and the black bands on the under parts are narrower, especially on the belly. The under wing-coverts are also less heavily barred. Examples from British Cameroon are intermediate, some having the breast and belly broadly, others narrowly, barred.

BROWN-EARED WOODPECKER

Campethera caroli (Malherbe)

Two races of this bird occur in our area.

This very distinct species, about 8 in. in length, is not difficult to identify by reason of its heavily spotted breast. The pale yellowish spots on the olive-brown breast are very conspicuous, as is the band of yellowish and brown feathers on each side of the dark brown crown. The males have crimson tips to the feathers of the hind crown, the females no red at all. The upper parts are golden olive, the wings and tail blackish with white marginal spots. In this bird the eye is red and the bill, as in most woodpeckers, black. In general appearance it closely resembles the Buff-spotted Woodpecker, and as both species occur in the Gold Coast and perhaps in southern Nigeria, care must be taken not to confuse them. The bill

of the Brown-eared Woodpecker measures 20–25 mm. the wing 99–108 mm., the tail 51–62 mm.

It is a common bird in the forest country, though rather a silent species, and may be seen climbing about on the lower branches of the forest trees. It frequents also the bird armies which work in company through the woods. Small ants are its usual food, but caterpillars have also been found in its stomach.



For breeding it selects an old dead tree, boring into the soft wood. The eggs number two or three and are pure white. They measure 26–27 × 17·7–19 mm.

Distribution and Races. *C. caroli caroli* (Malherbe) has a wide range, being found from the Coanza River in Angola as far west as the Gold Coast. One was shot many years ago in one of the batteries of Cape Coast Castle overlooking the sea—a peculiar place in which to find it. Most Gold Coast examples were obtained in the forests of the interior. In Lower Guinea the bird is numerous in the Cameroon forest country and extends its range right across the Congo forest. Another race, *C. c. budongoensis* Van Som., has been described from Uganda and the north-eastern Belgian Congo, but is barely separable. This woodpecker has not yet been reported from Nigeria, though it must occur.

In Liberia its place is taken by *C. caroli arizelus* (Oberholser) with smaller spots on the under side and the rufous-brown feathers on the sides of the head paler. The culmen measures 24 mm., wing 101 mm., tail 60 mm.

BUFF-SPOTTED WOODPECKER

Campethera nivosa (Swainson)

THREE races of this woodpecker come within our limits.

In many respects it is simply a miniature of the Brown-eared Woodpecker (*C. caroli*), being about 6½ in. in total length. The wing of *C. n. nivosa* measures 84–93 mm. and the bill 16–19 mm. Although similarly coloured above, the spots on the under surface are smaller in size and buffish white instead of yellowish in colour. Moreover the throat is streaked with brown, whereas in the Brown-eared Woodpecker the whole throat is spotted like the rest of the under parts. These distinctions are not easy to see in the field, particularly as the under side is not often visible. Of the two, the larger bird, *caroli*, is the brightest above, and the dark rufous cheek-patches and yellowish band down the side of the head may enable it to be distinguished from *nivosa*, which has no conspicuous marks on the cheeks or head. Neither species utters loud cries or makes loud tapping noises.



The typical subspecies, which is the one we have in Sierra Leone ranging to the Abeokuta Division of south-western Nigeria, is a bird both of the forest and of the fairly open bush country. It outnumbers the Brown-eared Woodpecker in the Liberian forests and probably elsewhere. Most accounts agree that it is a silent bird, but when it does call it resembles a sharp rattle. It has been observed to perch across branches, which is an unusual posture in its family.

Nests have been found in trees at a height of only 8 ft. from the ground, containing two white eggs which measure (in the Lower Guinea race) 21–25 × 16–18 mm. and in the typical subspecies 23 × 17·2 mm. The nests are sometimes remarkable, for when a tree trunk is not utilised the hole may be bored in an old termites' nest, as shown in the accompanying figure. In its disposition this woodpecker seems to be curiously unafraid, and birds will work away unconcernedly on an ants' nest with a throng of noisy natives immediately below the tree.

Distribution and Races

C. nivosa nivosa (Swainson) ranges from Portuguese Guinea to south-western Nigeria (Mekko), and *C. nivosa efulensis* (Chubb) takes its place in the forests of Benin and Owerri (between Benin and Abeokuta it has not been recorded) in southern Nigeria; thence it extends through the Lower Guinea forests to northern Angola. This is the race, too, which inhabits Cameroon Mountain. Compared with the typical race, its plumage is darker, more brownish olive above, blackish olive below, and the spots are more greenish buff. The wing of this race measures 82–91 mm.

A brighter-coloured bird, *C. nivosa poensis* Alexander, is restricted to Fernando Po. The wing measures 84–87 mm.

Still another subspecies, *C. n. herberti* (Alexander), is found in the Upper Congo, ranging to Uganda.

TULLBERG'S WOODPECKER

Campethera tullbergi Sjöstedt

THREE races of this woodpecker occur in West Africa in the Cameroon-Nigerian highlands. The typical race was found by its Swedish describer at Itoki as he was approaching the open country dotted with small trees and bushes.

It is a brightly coloured bird about 8 in. in length, the upper parts being bright green, the male with scarlet head and crest, the female with the forepart of the crown black covered with pale yellowish spots. The under parts are yellow spotted with black, very finely on the throat, heavily below, the middle of the belly being plain yellow. The eye is dark red, the bill dark brown. The bill measures 23–25 mm., the wing 108–111 mm.

Distribution. All the races of this bird live in a comparatively small area in a mountainous district far removed from contact with the lowland species and have, apparently, no near relatives in any other part of Africa. Practically nothing is known concerning them at the time of writing. *C. tullbergi tullbergi* Sjöstedt was discovered at Itoki in the Cameroon Mountains and its main features are mentioned above. Specimens from Kupé Mountain resemble it.

C. tullbergi bansoensis Bates inhabits the Banso Mountains north of Kumbo (6,000 ft.). It differs in having the upper parts a brighter, more bronze green and the speckling on the head and throat denser.

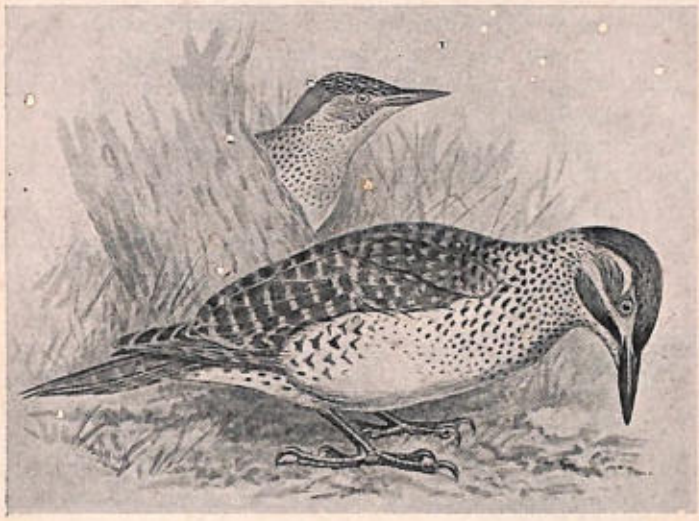
C. tullbergi wellsi Bates is darker on the upper parts than the typical race, the throat being smoke-grey and the breast dingy olive, densely spotted and speckled. It is restricted to the Oku district, *circa* 7,000 ft. above the area inhabited by *C. t. bansoensis*.

FINE-SPOTTED WOODPECKER

Campethera punctuligera (Wagler)

Two races have been described from within our limits.

This woodpecker is about 8 in. in length, the males with an all-crimson head and crest and a crimson streak on the face on a level with the bill, the female with the forepart of the head black striped with white and no malar streak, but the crimson crest as developed as in



the male. In both sexes the upper parts are golden, spotted with paler yellow, the under parts pale yellow with small black spots, heaviest on the breast. The most conspicuous feature is its golden and brown barred tail, the bright yellow shafts catching the light as it flies between the trees. The eye is light carmine, and the bill, which measures 23–28 mm., is black in colour. The wing measures 109–124 mm., the tail 58–69 mm.

This is a bird of the dry belt of West Africa which lies between the northern edge of the forest and the southern borders of the Sahara—a semi-arid savanna country where scattered trees are a feature of the landscape. It naturally keeps to the better-wooded area of the belt described and, unlike the forest woodpeckers we have just been discussing, is a wary bird which, like our green woodpecker at home, takes alarm on the least provocation. The flight is undulating.

Termites are its special prey, and upon these it mainly feeds. The termite soil is knocked away with the beak and the insects licked up with lightning rapidity as they emerge.

This woodpecker breeds early in the year before the rains are over, cutting a circular hole in a hollow tree or branch, or in an old ant-hill. In May and June the loud call of four syllables is frequently heard in the bush and a yaffle-like *piu-piu-piu-piu.*

Distribution and Races

C. p. punctuligera (Wagler) ranges from Senegal and Gambia through the Northern Territories of the Gold Coast and Nigeria and the French Sudan to Lake Chad and northern Cameroon. It has been found in Nigeria in the Ilorin Province and has even reached the Niger delta.

In the Adamawan highlands around Ngaundere ranging to eastern Cameroon, Bosum, Uam, etc., we have another race, *C. punctuligera batesi* Bannerman, which differs in the colouring of the under parts —pale yellowish ochre covered with large round black spots which reach to the chin. The first primary is 38 mm. in length, much longer than in *C. p. punctuligera.*

GOLDEN-TAILED WOODPECKER

Campethera abingoni chrysura (Swainson)



THREE races have been described from West Africa, but only the above-named occurs in British territory and that in Gambia. It has not been reported from our other West African Colonies.

About 7½ in. in length, this woodpecker has the breast so heavily streaked with black that it is not easily mistaken. The olive upper parts (back and wings) are obscurely spotted and barred with yellowish white. As with so many species, the difference between the sexes is in the head, the male with a crimson crown, malar streak and crest, the female retaining the crimson crest but the forepart of the crown black spotted with white and no malar stripe. The eye is dark brown; the feet are plumbeous. The bill

measures 21–24 mm., the wing 105–113 mm., the tail 55–60 mm.

We know very little about this bird, which is everywhere a rare bird, inhabiting dry bush country. Ants and their larvae have been found in the stomach of specimens examined.

Distribution and Races

C. abingoni chrysura (Swainson) is found in Senegal, Gambia, Casamance, Futa Jalon and Portuguese Guinea; thence there is a break in its distribution, or, more likely, it happens not to have been recorded again until far to the east, where it occurs in the vicinity of the Shari and Bamingui Rivers, ranging from there to the Bahr el Ghazal.

Another supposed race, *C. a. tessmanni* Reichenow, has been recognised by its describer from the eastern savanna country of Cameroon, but is probably not separable.

The race *C. a. annectens* Neumann, which is said to have broader black stripes on the throat, breast and cheeks than in *C. a. chrysura*, is found in Gaboon and northern Angola, ranging east to Lake Nyasa and northern Rhodesia.

LITTLE WOODPECKER

Dendropicos fuscescens zechi Neumann

As foreshadowed in a footnote on p. 441 in my third volume of *The Birds of Tropical West Africa*, it is now generally agreed that the two groups of Little Woodpeckers formerly kept separate under the specific names *fuscescens* and *lafresnayi* must be united under the oldest name, *fuscescens*. No fewer than ten races are recognised in Africa.

Four races of this woodpecker occur in West Africa. That which is named above is the one which is found in all British Colonies in Upper Guinea.

It is a small member of the woodpecker family, 5¾ in. in length, golden olive above, white and yellowish streaked with black below, the males with scarlet nape and crest and the forepart of crown brown, the females with the forepart of the head brown, the nape and crest black. The yellow shafts of the tail-feathers are a conspicuous feature. The barring on the upper surface is so faint as to be indistinguishable in the field; the upper parts appear practically uniform (excepting the wings, which are patterned when spread). The lack of any visible scarlet above the tail and the olive upper parts should save this species from confusion with either the Cardinal or the Least Grey Woodpecker. The wing of the race described measures 80–86 mm., the bill 14–18 mm. and the tail 35–44 mm. The bill is black, whitish horn at the base of the lower mandible.

This is a very widely spread bird which is usually met with in pairs or sometimes by itself and is to be found everywhere in the bush and in forest clearings. Its voice is a loud *bwee-bwee-bwee*, and it possesses a sharp rattling trill, rather tinny in timbre. It may be seen climbing about the smaller trees of the savanna country in its search for larvae and other insect food, but this species does not appear to consume ants, as do so many of its relatives.

Curiously enough, its eggs have never been taken within our limits or its nest holes described.



Distribution and Races

D. f. zechi is found everywhere in Upper Guinea from Gambia to Nigeria, but in Nigeria not much north of lat. 9° N.

A bird has been described from Senegal, *D. f. cosensi* C. Grant, which has the upper tail-coverts tipped with scarlet and is known as the Cardinal Woodpecker. It is fully described in volume iii, page 440, of my larger work, but, as pointed out, there is some doubt if the only specimen known did in fact come from Senegal.

In the Cameroon-Nigerian highlands, including Cameroon Mountain, we have *D. f. camerunensis* Sharpe, a dark-backed race which ranges to the lowland forests, while south of that, in Gaboon, *D. f. lafresnayi* Malherbe occurs, which ranges south to the Congo

and again in the Ubangi and Uelle River district of the Belgian Congo.

Eastern Africa is well supplied with races of *D. fuscescens*, the best known being *D. f. lepidus* and *D. f. massaicus* in Uganda and Kenya, while *D. f. loandae* occupies northern Angola on the other coastline.

LEAST GREY WOODPECKER

Dendropicos elachus Oberholser

A VERY small woodpecker, 4½ in. in total length, very pale umber-brown in colour, the back barred with white and the white under parts spotted with brown, but the whole effect indistinct, the barring at a distance appearing mottled. The males have scarlet crests, the



females brown, and both sexes have a scarlet patch above the tail, which last is the only character by which it can be distinguished from the Brown-backed Woodpecker (*D. obsoletus obsoletus*). The latter has much darker brown wings upon which the white spots stand out more conspicuously, and much more definite banding (sepia and white) on the tail and plain under parts, but these

characters are apt to pass unnoticed in the field unless specially looked for. The bill measures 14–15 mm., the wing 75–80 mm., the tail 32–36 mm.

Little has been recorded about this bird, which is probably an uncommon species everywhere. It inhabits the semi-arid belt and owing to its similarity to *D. obsoletus* is usually confused with that bird. It is restricted to very dry regions where trees are small and scattered. It lives largely upon the larvae of wood-boring beetles found under the bark of trees.

Its breeding habits are still a mystery, but it is believed to be in breeding condition about the end of February or March.

Distribution. The range of the Least Grey Woodpecker is entirely along the borders of the desert from Senegal and Casamance to Darfur. It has not actually been recorded from Gambia, but is likely to be found there. It has been found in Bornu and in the Chad area and also in French Sudan and French Niger, ranging as far as Tillia Wells, which lie far within the desert. Further east it has been discovered in Damergu and in Aïr and once in Darfur at Meidob.

GABOON WOODPECKER

Dendropicos gabonensis Verreaux

This is a strikingly marked woodpecker, though small in size, with bill 16–19 mm., wing 77–83 mm. and tail 33–39 mm. The upper parts are bright green, becoming more olive on the wing-coverts. Only the forehead is brown and the entire rest of the crown black tipped with scarlet in the male only; in the female the crown is dark brown. The throat is white streaked heavily with black, the ground colour becoming yellowish green on the breast and belly, each feather with heavy black middle, the belly appearing to be more spotted than streaked. The bill is black above, slate below, and the feet are yellowish green.

This is more of a forest species than any of the *D. fuscescens* group and seems to be restricted to the lowland forest, not ascending the gallery forests of the northern Congo. It prefers second-growth to virgin forest and may be seen on the trees in the clearings, where the softer wood is better suited to its habit of boring for the insect larvae upon which it feeds.

Its nest has never been found.

Distribution. Southern Nigeria, southern Cameroon and Gaboon, from the coastal area east through the Belgian Congo to the Uelle River and the region of the Great Lakes. It has recently been obtained (a pair) at Owerri, southern Nigeria, a considerable extension of its range.

UGANDA SPOTTED WOODPECKER

Dendropicos poecilolaemus Reichenow

THIS small woodpecker, about 6 in. in length, has the upper parts golden yellow, the feather of the rump tinged with red, the males with brown forehead and scarlet crest, the females with blackish crowns and no scarlet. The wings are noticeably barred. The under side



is strongly tinged with yellow and the throat covered with small dark spots. The bright yellow shafts of the tail-feathers are conspicuous. The bill measures 18–20 mm. and the wing 83–89 mm.

This is a rather noisy bird whose note may be syllabled *che-che-che-che-che*. It frequents the savanna country but does not penetrate further west than the highlands of Middle Cameroon, in which area it has been taken on a number of occasions as far west as Bamenda in British Cameroon. It is not an ant-eating woodpecker, but lives chiefly on grubs and insect larvae. In the east of its range it may be seen climbing on erythrinias or other small trees, even in the

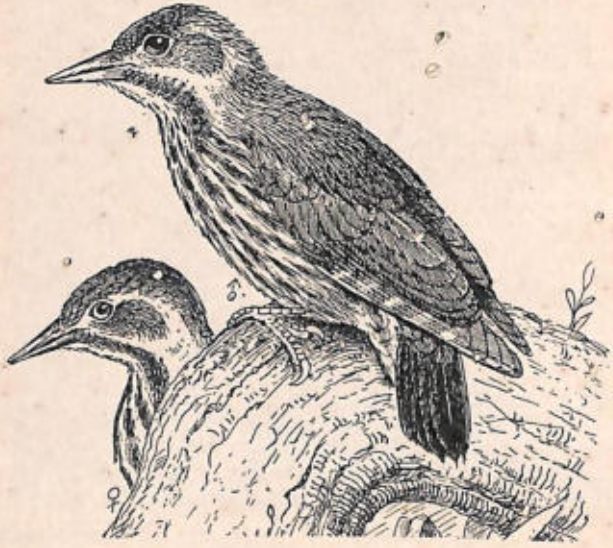
elephant-grass zone, but never entering the mountain forest. It is a common bird of the Upper Uelle.

Distribution. This is an example of a bird which inhabits the highlands of Kenya and Uganda and turns up again in Middle Cameroon, where it has been secured at Ribao, also in the Kumba-Fumban-Ngambe area and at Bamenda. It is recorded from the Bahr el Ghazal and from the Ubangi-Shari.

MELANCHOLY WOODPECKER

Dendropicos lugubris Hartlaub

Two races of this woodpecker come within our limits, the typical subspecies being the one which ranges most widely in Upper Guinea.



In size it is only 6 in. long, bright olive-green above without any barring. The wings are dark brown spotted with white, the tail is blackish without any spots, and the shafts are black, not yellow. The head is brown, the male having only the *hind crown* tipped with scarlet, thus differing from *D. gabonensis*. The under side is very dark olive-green with yellow fringes to the feathers, which gives it a streaky appearance. The white throat is also heavily streaked with triangular black marks. An arresting feature is the blood-red eye.

The bill is black above, bluish horn below, and measures 17–18 mm. The wing measures 78–83 mm. in length, the tail 35–40 mm.

The forested and bush country lying between Sierra Leone and the Gold Coast is the home of this bird, which, oddly enough, has never yet been taken in southern Nigeria, though it turns up again in a slightly differentiated form on Cameroon Mountain. In the extreme west of its range it is to be seen in thick bush country, where it is common in the more mountainous part of the Protectorate, but it has also been found near the mouth of the Sierra Leone River. It inhabits the same type of country in the Gold Coast, from which many records have been received. In the more forested areas it occurs in second-growth forest and in the clearings.

It breeds in the spring months in the holes of dead or rotten trees.

Distribution and Races. D. lugubris lugubris Hartlaub inhabits the forested and bush country of Sierra Leone, Liberia, French Guinea, the Ivory Coast and the Gold Coast. Its place is taken in the Bonge and Kumba districts of the Cameroon Mountain area by *D. lugubris reichenowi* Sjöstedt, which is said to have the streaking of the under side broader than in the typical race. To which of these races Nigerian birds will belong has not been determined, owing to lack of specimens.

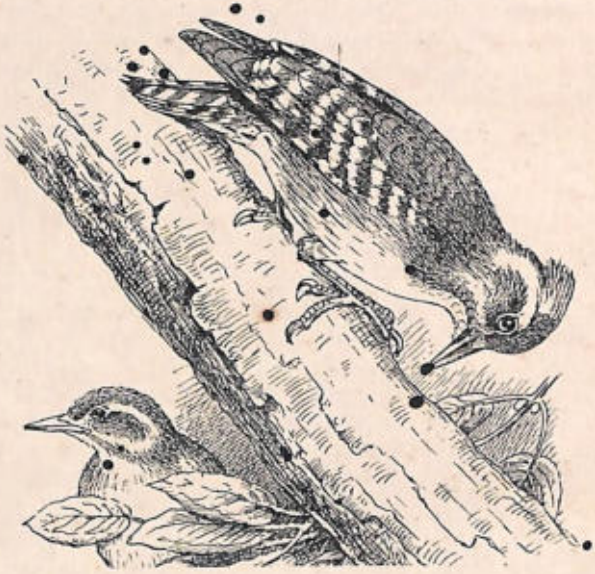
LITTLE WHITE-SPOTTED WOODPECKER

Dendropicos obsoletus obsoletus (Wagler)

A DULL-COLOURED woodpecker about 5½ in. in length with the upper parts entirely umber-brown but copiously spotted on the blackish wings and tail with white. The under parts are whitish, obscurely streaked with brown. The male has a scarlet patch on the nape, but the female has an entirely brown head. A broadening white stripe passes from behind the eye on to the nape in both sexes and another below the ear-coverts. The eye is reddish-brown, the feet are dark brown, and the bill is black. The wing of this little woodpecker measures 77–86 mm., the bill 14–17 mm. and the tail 31–36 mm.

This is an inhabitant of the better-wooded parts of the semi-arid belt which ranges even into the desert and occurs also in the grass country dotted with small trees in northern Cameroon. It is essentially a bird of the Northern Territories of our British Colonies, extending as far west as Gambia. Often it may be encountered in clearings in the bush and is a resident bird of the plains and lower altitudes. An unobtrusive little creature, it is not conspicuous until it takes wing, but may draw attention to itself by its low tapping. It seldom utters a sound at any season.

Eggs have been found, two in the clutch, in Nigeria in March, just about to hatch on the 7th. The hole was at the end of a dead branch, and it was noted that both parents took part in incubation and in feeding the young. The eggs are pure white and glossy.



Distribution. The savanna country of Senegal, Gambia and Portuguese Guinea, ranging in the French Sudan and Niger as far north as the desert and extending eastwards to northern Cameroon. Thence it ranges across Africa to the White Nile, south to northern Uganda.

Other races have been recognised from East Africa, the Kenya representative being *D. o. ingens* (Hartert).

GREY WOODPECKER

Mesopicos goertae agmen Bates

Four races of this woodpecker occur in our area. That named above is the common West African bird ranging from Gambia to Nigeria; the other races will be noted hereafter.

The Grey Woodpecker measures about 8 in. from bill to tail and may be recognised by the general grey coloration of the head and under side. The back and wings are golden olive and there is a large scarlet patch on the rump. The males have most of the crown and crest scarlet, but in the female these parts are pale grey. The

tail is uniform dark brown, the outermost rectrices with whitish bars partly crossing each web. The breast and sides are faintly washed with greenish yellow on a pale grey ground. The eye is dark red, the bill and feet are dark slate. The bill measures 21–26 mm., the wing 105–122 mm. and the tail 55–65 mm.

This is probably the best-known woodpecker in West Africa outside the forest belt, for its range includes the whole of the savanna belt and one of the races has encroached far into the desert area. Large trees attract the West African Grey Woodpecker, and its



partiality for palms has especially been remarked. It avoids the true forest but occurs both north and south of that belt, reaching the coastal area in many places. On the whole it can only be termed moderately common.

It is rather shy, and only on occasions will an individual bird exhibit boldness. Both in flight and when creeping up a tree trunk it moves very fast and can ascend or descend with equal agility.

It makes its nest hole in the trunk of a tree, commonly in a white ants' nest, boring a hole about 2½ in. in diameter. Nests containing two eggs or chicks have been found from January to March in the Gold Coast and in Nigeria. The eggs are blunt ovate, transparent white with a high gloss, and measure 20·3–24 × 15·8–19·2 mm.

Distribution and Races. *M. g. agmen* Bates ranges from Gambia to the Shari River through the whole tree savanna belt and, as noted above, is the race which occurs in all our four West African British Colonies.

M. goertae goertae (P. L. S. Müller) is restricted to Senegal and to the arid belt which extends to the Upper Niger about 40° W. It is distinguished by the greater amount of diffused yellow on the under surface. The wing measures 106–117 mm.

M. goertae koenigi Neumann is found along the borders of the desert from Timbuktu to Lake Chad, ranging north to Aïr and to the Nile valley. It differs from all races in its paler colouring. The wing measures 105–112 mm.

M. goertae centralis Reichenow is a dark race, the under parts being washed with olive and the upper surface deeper golden olive than in any other race. The wing measures 105–117 mm. It comes within our limits in the high grasslands of Cameroon and ranges south to Angola and east to Uganda.

Another race, *M. goertae rhodeogaster* Fischer and Reichenow, inhabits the central districts of Kenya Colony.

FIRE-BELLIED WOODPECKER

Mesopicos pyrrhogaster Malherbe

This is a gaudily coloured bird slightly larger than the Grey Woodpecker, about 9¼ in. in length with an expanse of 15 in. The males are resplendent with their crimson crowns, rump and the middle line of the under parts, the sides of the body appearing to be spotted black and white, while the back is golden olive. The white face and cheeks are ornamented by two black streaks on each side, and there is a white streak over the eye. The female is like the male and has just as much crimson on the rump and under parts, but has a black instead of a crimson crown. The eye is dark brown, the bill and feet are bluish horn. The bill measures 26–32 mm., the wing 111–122 mm. and the tail 63–75 mm.



This forest-frequenting species is less often seen than heard, owing to the impenetrable nature of much of its habitat. That it is not rare may be deduced from the frequency of its "drumming." Sometimes it will leave the heavy

forest and venture into more open country where the ground has been cleared leaving large dead trees in the area, upon which the Fire-bellied Woodpecker delights to search for insects in the soft wood. Normally it is to be seen in couples, the birds answering one another with loud, shrill cries. It keeps fairly high up on the tree trunk but will occasionally descend to search a fallen giant.

Although common enough in forested areas, its eggs have never been taken. No doubt it breeds very high up in forest trees, and thus its nest holes have escaped detection.

Distribution. The forests of Upper Guinea from Sierra Leone to southern Nigeria and the vicinity of Cameroon Mountain, where it is evidently scarce. It seems to be numerous in the forests of Ashanti and Liberia especially.

GOLDEN-CROWNED WOODPECKER

Mesopicos xantholophus (Hargitt)

A STRIKINGLY marked woodpecker, rather larger than many in our area, about 8½ in. in length. The face, throat and stripe over the eye are white with black aural and malar streaks, the crown is black, that of the male with some yellow tips to the hind crown but



not a yellow crest. The upper parts of the body are plain olive, the under parts blackish olive boldly spotted with white. In flight the wings are seen to be also spotted with white, and the tail is blackish without spots. The rump in both sexes is tipped with yellow, but not very conspicuously. The bill of this bird is black above, light grey beneath, and the feet are dark horn-colour. The bill measures 26–31 mm., the wing 108–117 mm. and the tail 66–71 mm.

The Golden-backed Woodpecker is another forest-frequenting species which keeps far out of reach in the highest trees but attracts attention by its loud screams as well as its loud tapping of the trees. Like the Fire-bellied Woodpecker of the Upper Guinea forests, it has been heard "drumming" noisily, but not for more than a second at a time. It has been seen to hack vigorously at wood. In its feeding habits it ignores ants and preys largely on wood-boring beetle larvae. A pair which were seen mating in British Cameroon were uttering low notes, but otherwise only a sharp *pirit pirit* was heard from the pair in question. That was in August and September, when they were seen in the upper branches of old rubber.

In the Congo forests it nests in the driest portion of the year. Its breeding habits resemble those of the other forest woodpeckers, but its eggs have never been taken.

Distribution. The forested area of Cameroon from close to the Mountain south to the Lower Congo, extending east across the whole Congo forest and out into the gallery forests. Its range includes Uganda and western Kenya.

JOHNSTON'S GREEN WOODPECKER

Mesopicos johnstoni (Shelley)



This is a much smaller bird than the last species, being only 7 in. in total length and very distinctive in its colouring—bright green

above, pale sulphur-yellow below, the males with the front half of the crown jet-black, the hind crown scarlet, the female with the entire crown black. In both sexes there is a greenish-buff patch on each side of the forehead. The wings are brown and green, the inner webs with large white spots or notches, so that the under surface of the wing appears greyish black barred or spotted with white. The bill is bluish horn becoming whitish at the tip; the feet are greenish brown. The bill measures 18–23 mm., the wing 87–94 mm., the tail 56–64 mm.

The typical race was discovered in the high forests of Cameroon Mountain by Sir Harry Johnston; it is reputed to be rather a rare bird. It was eventually found to inhabit a similar environment on Fernando Po, and a name was bestowed upon the island bird but without, I believe, justification. We know nothing about its habits.

Distribution. *M. johnstoni johnstoni* Shelley inhabits the forests of Cameroon Mountain, Kupé Mountain, Manenguba Mountain and the banks of Lake Oku, also the mountains of Fernando Po, from which island the type of *M. j. schultzei* Reichenow was described, though its distinctions are hardly discernible.

A race *M. johnstoni sordidatus* Bates has been separated from the Oku district (above 7,000 ft.) in the Cameroon highlands. The type differs from the typical subspecies in its uniform grey throat and dull olive breast and dull yellow belly, but is believed to be an immature bird.

ELLIOT'S WOODPECKER

Mesopicos elliotii (Cassin)

THE heavily streaked under side is the best guide to the identification of this woodpecker, which is a rather small bird about 7½ in. in total length. The upper parts are olive green with a golden-brown tinge, especially noticeable on the wings. The tail is brown washed with golden olive; the shafts are reddish brown. The crimson crest and nape of the male are the distinguishing sexual characters, the forepart of the crown being jet-black. In front of the eye is a buff patch which is continued in a streak over the eye itself. The female has the whole crown black. The throat is white with black shaft-streaks; the rest of the under parts is dull yellow, heavily streaked with black on the breast, less noticeably so on the belly and flanks. The under side of the wing in this woodpecker is conspicuously barred whitish buff and black. The bill measures 19–24 mm., the wing 90–97 mm., the tail 61–69 mm. It is remarkable for its unusually short and rounded wing and has a long outer primary.

Elliot's Woodpecker is a bird of heavy forest which does not occur in Upper Guinea. It may sometimes be seen in tall trees overlooking old second growth, or may be in the company of mixed flocks of insect-eating birds. As it frequents the lower branches of the trees



in search of the grubs and insects upon which it lives it is more easily observed than some of the other woodpeckers. It does not capture ants. The cry is described as *bwe-bwe*.

Juvenile examples have been found in November and February, but the eggs are unknown.

Distribution. The forest country from British Cameroon to northern Angola and through the great Congo forest to Uganda, and the base of Ruwenzori Mountain. In the Kumba district of British Cameroon it may be encountered in the primary forest and also in mixed bird parties.

SUB-FAMILY PICUMNINAE

PYGMY WOODPECKER OR PICULET

Verreauxia africana (Verreaux)

This very small bird is unlikely to be taken for a member of the woodpecker family by anyone observing it for the first time until it is seen to tap on the bark of the trees in the manner of its larger relatives. This it does vigorously with its powerful little bill. In size it measures about 3 in. from the tip of the bill to the tip of its soft, short tail, for, unlike most woodpeckers, the shafts of the rectrices are not stiff. The bird almost appears to be tailless, as the tip of its wings when folded reach to the tip of its tail. In colour it is golden olive above, the crown darker, with (in the male only) a rufous forehead. The under parts are slate-grey. The most conspicuous features are the red eye and the red patch of bare skin which

surrounds it. The horn-coloured bill measures 10–12 mm., the wing 48–53 mm. and the tail 16–20 mm.

The Piculet is a real woodpecker in its habits except that it spends its life much nearer the ground, flitting silently from bush to bush, preferring old thick second-growth woods to the more open virgin forest. It taps quite loudly on the twigs and creepers among which it searches for its food of wood-boring beetle larvae and insects. Unlike the small woodpeckers which inhabit the same country, the Piculet does not touch ants. Sometimes it will be seen in forest bird parties but is more usually encountered in the woods two or three in company.



A nest which had been excavated in the dry end of a stump had a diameter of 40 mm. and a depth of 50 mm., the entrance hole just permitting the insertion of a twelve-bore gun cartridge.

Distribution. This Piculet has never actually been obtained beyond the known range, which includes the Kumba Division of British Cameroon, the whole of the Cameroon forest from Bipindi and Yaunde to Bitye and Efulen, the similar country in Gaboon, and the whole Congo forest east to the Ituri. It has, however, been reported from Lokoja, Nigeria, a sight record upon which doubt has been thrown, and the eggs obtained (*Ibis*, 1935, p. 644), but not the bird. As doubt has been cast upon the authenticity of the eggs, which seemed very much larger than normal, there must remain a doubt about the Piculet ranging into Nigeria until specimens have actually been obtained.

SUB-FAMILY JYNGINAE

EUROPEAN WRYNECK

Jynx torquilla torquilla Linnæus

THIS winter visitor to tropical Africa can be recognised easily enough by anyone familiar with it in Europe, but care must be taken not to confuse it with the Red-breasted Wryneck, which is confined to Africa and will be discussed next. See that bird for the points of distinction.

The Wryneck is about 6–7 in. in length, the plumage a mixture of streaks, bars and vermiculations of grey, brown and rufous. The middle line of the mantle and back is heavily streaked with black; the wings are barred rufous and blackish; the quills are grey-brown spotted on the outer web with rufous buff. The tail is grey closely speckled and vermiculated with shades of brown and obscurely barred. The whole of the under side is pale rufous, narrowly barred with black on the throat and breast, the belly white with spots or broken bars. The bill and feet are pale horn-brown. The bill measures 15–16 mm. and the wing 86–92 mm.

In comparison with the numbers of wrynecks which pass down the eastern side of Africa in autumn, those which make a similar journey to West Africa are smaller. It has been observed crossing the Straits of Gibraltar in August and September, returning in March and April, but the main passage lies further to the east. That it crosses the Sahara is known from its presence in the oases. It is most likely to be found in the tree savanna such as we find in the French Sudan and in the area north of the forest in our British Colonies. It is rarely met with in the forest.

It feeds mainly in trees, on ants, beetles, lice, etc., but will, on occasion, descend to the ground. The snake-like movements of its head are remarkable, and it will utter a hiss if alarmed or captured alive. Its cheery *ha ha ha* is only heard in spring and a rapid whistling *quee quee quee*. When alarmed it remains motionless, but when running on the branches of a tree its actions are mouse-like and fascinating to watch.

Distribution. Breeds in the Palaearctic region, wintering in tropical Africa, at which season it may be found in the woodlands as far south as the northern border of the Congo. It appears to be rather uncommon south of the French and Anglo-Egyptian Sudan. In West Africa there are records from Senegal, Sierra Leone, Portuguese Guinea, Togoland, Gold Coast, Ubangi-Shari and southern Cameroon. It has once or twice been obtained in northern Uganda but is rare south of the Bahr el Ghazal and unknown in the Congo forest.

CAMEROON RED-BREASTED WRYNECK

Jynx ruficollis thorbecki Reichenow

THIS African wryneck differs strikingly from the European species described last in having the ground colour of the upper surface, wings and tail reddish brown instead of grey-brown, but especially in having a rich chestnut breast, with the chin and throat barred narrowly with black and white, some of the feathers with subterminal rufous bars. The narrow black bars on the tail are more clearly defined than in the European bird. The belly and sides are cream-coloured, heavily streaked with black, and the under tail-coverts rich chestnut. The bill is black, and the feet are olive. The wing measures 90–92 mm., the tail 65–69 mm. The bill is 14–15 mm. in length.



In the highland savanna country of Middle Cameroon the Red-breasted Wryneck lives on the small trees which dot the grassy plains. It has been heard to utter a note like *kyah kyah kyah* and also a sharp *zick* on being disturbed from the ground. Ants and pupae provide the bulk of its food. Despite its relation to the woodpecker family, the wryneck has little resemblance to those birds in its habits and still less in its appearance. The feathers of its tail are soft and it does not press its tail against the bark to aid it in climbing or resting. Its flight is said to resemble that of a Passerine bird and is not dipping.

We know little about its breeding. It probably lays its two white eggs in the holes of the little trees of the savanna country, as does its relative in South Africa.

Distribution and Races. *J. ruficollis thorbecki* Reichw. described above is a subspecies of *Jynx ruficollis ruficollis* Wagler, which inhabits South Africa and migrates north as far as the Congo river mouth. In the typical race the chestnut of the breast is continued on to the throat and chin. In *J. r. thorbecki* chin and throat are barred. It is restricted apparently to the highland savanna of Middle Cameroon, where it has been collected at Chang, the Nun River, Tibati

(2,800 ft.), between Kumba and Fumban (4,000 ft.), and near Bamenda.

Another race, *J. r. pulchricollis* Hartlaub, extends from Lake Albert to Bozum in French Equatorial Africa, if correctly identified from the latter locality. In the central districts of Kenya we have *Jynx ruficollis cosensi* C. Grant.

INDEX

abdimii, Sphenorynchus .. 172
abingoni, Campethera, and races 758
abyssinica, Coracias 636
Turtur 520
Abyssinicus, Bucorvus 708
Accipiter badius 295
castanilius 298
macroscelides 296
melanoleucus 294
minullus and races 291
ovampensis 293
toussenelii 298
Acrocephalus 66
Acryllium vulturinum 333
Actitis 20
hypoleucos 424
Actophilornis 16
africanus 381
acuta, Dafila 211
Aegypiidae 10, 222
aegyptiacus, Alopochen 218
aegyptius, Caprimulgus, and races 607
Pluvianus 443
aequatoriale, Apaloderma .. 711
aequatorialis, Micropus, and races 622
aereus, Ceuthmochares, and races 593
Aërops 42
albicollis 679
aeruginosus, Circus 306
aethereus, Phaëthon 130
aethiopicus, Threskiornis .. 182
afer, Turtur 509
Eurystomus, and races .. 639
affinis, Colletoptera, and races .. 626
Afribyx 18
senegallus 402
africana, Upupa 645
Verreauxia 772
africanus, Actophilornis 381
Bubo 543
Cassinaëtus 268
Phalacrocorax 134
Pseudogyps 226
Afroxyechus 18
forbesi 395
tricollaris 394
Agapornis 26
pullaria 523
swinderniana and races .. 524
Agelastes meleagrides 339
Agrobates 66
ahantensis, Francolinus 323
Alaemon 48
Alaudidae 48
alba, Crocethia 419
Platalea 188
Tyto, and races 528
albiceps, Xiphidiopterus .. 399
albicollis, Aërops 679
albifrons, Sterna, and races .. 468
albiventris, Halcyon 666
albocristatus, Tropicranus, and races 704
albogularis, Francolinus .. 316
albotibialis, Bycanistes 693
albus, Casmerodius 148
Alcedinidae 40, 652
Alcedo 40
quadribrachys and races .. 657
alcinus, Machaerhamphus .. 260
Alethe 64
alexandrinus, Leucopolius .. 389
alleni, Porphyrula 360
alopex, Falco 248
Alopochen aegyptiacus 218
alpina, Erolia 415
Amadina 118
Amauresthes 116
Amaurocichla 52
Amblyospiza 112
Anabathmis 102
anaethetus, Sterna 471
Anaplectes 114
Anas angustirostris 210
capensis 209
crecca 204
penelope 202
platyrhynchos 200
punctata 206
querquedula 207
sparsa 203
strepera 201

(2,800 ft.), between Kumba and Fumban (4,000 ft.), and near Bamenda.

Another race, *J. r. pulchricollis* Hartlaub, extends from Lake Albert to Bozum in French Equatorial Africa, if correctly identified from the latter locality. In the central districts of Kenya we have *Jynx ruficollis cosensi* C. Grant.

INDEX

abdimii, Sphenorynchus .. 172
abingoni, Campethera, and races 758
abyssinica, Coracias 636
Turtur 580
abyssinicus, Bucorvus 708
Accipiter badius 295
castanilius 298
macroscelides 296
melanoleucus 294
minullus and races 291
ovampensis 293
toussenelii 298
Acrocephalus 66
Acryllium vulturinum 333
Actitis 20
hypoleucos 424
Actophilornis 16
africanus 381
acuta, Dafila 211
Aegypiidae 10, 222
aegyptiacus, Alopochen 218
aegyptius, Caprimulgus, and races 607
Pluvianus 443
aequatoriale, Apaloderma .. 711
aequatorialis, Micropus, and races 622
aereus, Ceuthmochares, and races 593
Aërops 42
albicollis 679
aeruginosus, Circus 306
aethereus, Phaëthon 130
aethiopicus, Threskiornis .. 182
afer, Turtur 509
Eurystomus, and races .. 639
affinis, Colletoptera, and races .. 626
Afribyx 18
senegallus 402
africana, Upupa 645
Verreauxia 772
africanus, Actophilornis 381
Bubo 543
Cassinaëtus 268
Phalacrocorax 134
Pseudogyps 226
Afroxyechus 18
forbesi 395
tricollaris 394
Agapornis 26
pullaria 523
swinderniana and races .. 524
Agelastes meleagrides 339
Agrobates 66
ahantensis, Francolinus 323
Alaemon 48
Alaudidae 48
alba, Crocethia 419
Platalea 188
Tyto, and races 528
albiceps, Xiphidiopterus .. 399
albicollis, Aërops 679
albifrons, Sterna, and races .. 468
albiventris, Halcyon 666
albocristatus, Tropicranus, and races 704
albogularis, Francolinus .. 316
albotibialis, Bycanistes 693
albus, Casmerodius 148
Alcedinidae 40, 652
Alcedo 40
quadribrachys and races .. 657
alcinus, Machaerhamphus .. 260
Alethe 64
alexandrinus, Leucopolius .. 389
alleni, Porphyrula 360
alopex, Falco 248
Alopochen aegyptiacus 218
alpina, Erolia 415
Amadina 118
Amauresthes 116
Amaurocichla 52
Amblyospiza 112
Anabathmis 102
anaethetus, Sterna 471
Anaplectes 114
Anas angustirostris 210
capensis 209
crecca 204
penelope 202
platyrhynchos 200
punctata 206
querquedula 207
sparsa 203
strepera 201

Anastomus lamelligerus 174
Anatidae 8, 192
andansoni, Excalfactoria .. 331
Andropadus 54
angolensis, Gypohierax 286
angulata, Gallinula 362
angustirostris, Anas 210
Anhinga rufa 138
Anhingidae 4, 136
Anomalophrys 18
superciliosus 405
Anomalospiza 122
Anous 22
stolidus 476
anselli, Centropus 589
Anthoscopus 92
Anthreptes 102
Anthropoides virgo 366
Anthus 50
Antichromus 88
Apalis 70
Apaloderma aequatoriale .. 711
narina and races 711
apiaster, Merops 672
apivorus, Pernis 262
Aplopelia 24
principalis 513
simplex and races 512
apus, Micropus 619
Aquila rapax 263
wahlbergi 264
Aquila Fregata 139
arabs, Ardeotis 368
Choriotis 368
Ardea cinerea 143
melanocephala 144
Ardeidae 6, 141
Ardeirallus sturmii 163
Ardeola ralloides 155
Ardeotis arabs 368
ardesiaca, Melanophoyx .. 149
ardosiaceus, Falco 250
Arenaria 20
interpres 421
Argya 52
Arizelocichla 54
arquatrix, Columba 494
arquatus, Numenius, and races 433
Artomyias 56
ascalaphus, Bubo 542
asiatica, Eupoda 392
Asio 28
capensis 531
flammeus 531
aterrimus, Scoptelus, and races 649
atlantis, Larus 455
atrata, Ceratogymna 707
auguralis, Buteo 287
Auripasser 106
auritus, Nettapus 215
australis, Vinago, and races .. 514
Aviceda cuculoides and races .. 251
Avocet 408
avosetta, Recurvirostra 408
ayresi, Hieraaëtus 267

badius, Accipiter 295
Halcyon, and races 668
Bacopogon 54
balaenarum, Sterna 470
Balaenicipitidae 6
Balearica 16
pavonina 366
Balearicidae 16, 366
bannermani, Proturacus .. 556
Bantam, Stone- 326
Barbet, Bearded 716
Bonaparte's 726
Bristle-nosed 726
Cameroon Mountain .. 728
Duchaillu's Yellow-spotted 727
Grey-throated 726
Levaillant's 722
Naked-faced 724
Tooth-billed 718
West African 720
White-headed 721
Yellow-billed 737
Yellow-breasted 736
bassanus, Morus 132
Bateleur 282
batesi, Caprimulgus 608
Micropus 621
Bathmedonia 74
Batis 58
beaudouini, Circaëtus 278
Bee-eater, Black 684
Black-crowned 679
Black-headed 679
Blue-cheeked 673
Blue-collared 682
Blue-headed 685
Carmine 677
European 672
Green-headed Rosy 678
Least 681
Little Green 674
Red-throated 683
Rosy 676

Bee-eater (*continued*)
Swallow-tailed 686
White-throated 679
bellicosus, Polemaëtus 268
benghalensis, Rostratula 385, 411
biarmicus, Falco 240
Bias 58
bicalcaratus, Francolinus, and races 317
bidentatus, Pogonornis, and races 718
binotatus, Caprimulgus .. 610
Bird, Secretary- 221
Bittern, African Dwarf .. 163
European 164
Red-necked Little 162
Tiger 161
White-crested 161
Bleda 55
böhmi, Sarothrura 359
bollei, Phoeniculus, and races .. 648
Bombylonax 41
breweri 679
bonapartei, Gymnobucco .. 726
Booby, Ascension Masked .. 132
Brown 133
Red-footed 132, 133
Botaurus stellaris 164
bouvieri, Scotopelia 550
Brachycope 114
Bradypterus 68
breweri, Bombylonax 679
brunneiceps, Scoptelus 652
Bubalornis 108
Bubo 28
africanus 543
ascalaphus 542
lacteus 544
leucostictus 546
poensis 547
shelleyi 545
Bubulcus ibis 154
Bucanetes 104
Buccanodon duchaillui 727
Bucerotidae 44, 688
Bucorvus 44
abyssinicus 708
Budytes 50
bullocki, Melittophagus .. 683
Buphagus 96
Burhinidae 16, 376
Bustard, Black-bellied .. 374
Denham's 370
Nubian 371
Savile's Pygmy 373
Senegal 372
Bustard (*continued*)
Sudan 368
Butastur rufipennis 281
Buteo auguralis 287
buteo 287
rufinus 288
Butorides striatus 157
Buzzard, Bannerman's .. 287
Grasshopper 281
Honey 262
Lizard 273
Long-legged 288
Red-tailed 287
Bycanistes 44
albotibialis 693
cylindricus 694
fistulator 689
sharpii and races 691
subcylindricus and races .. 695

caerulescens, Rallus 344
caeruleus, Elanus 259
caffer, Micropus, and races .. 624
Calamoecetor 68
Calamonastes 68
Calidris 20
canutus 418
Calopelia puella and races .. 511
calva, Vinago 514
calvus, Gymnobucco, and races 724
Calyptocichla 54
Camaroptera 72
camelus, Struthio 125
camerunensis, Francolinus .. 324
Campephaga 80
Campephagidae 80
Campethera abingoni and races 758
caroli and races 753
maculosa 751
nivosa and races 755
permista and races 752
punctuligera and races .. 759
tullbergi and races 756
camurus, Lophoceros, and races 703
Canirallus 14
oculeus and races 343
canorus, Cuculus 565
canutus, Calidris 418
Capella 20
gallinago 412
media 412
nigripennis 411
capensis, Anas 209
Asio 531

capensis (*continued*)
Microparra 382
Morus 132
Oedicnemus 379
Oena 506
Tyto, and races 529
Capitonidae 46, 714
Caprimulgidae 34, 598
Caprimulgus 34
aegyptius and races 607
batesi 608
binotatus 610
europaeus and races 600
eximius 609
fossii 607
inornatus and races 604
natalensis and races 605
nigriscapularis 601
ruficollis 600
rufigena 602
tristigma 603
caprius, Lampromorpha .. 580
Carine 28
noctua 538
caroli, Campethera, and races .. 753
Casmerodius albus 148
caspia, Hydroprogne 462
Cassinaëtus africanus 268
cassini, Chaetura 630
castaneiceps, Scoptelus 651
castanilius, Accipiter 298
castanotus, Colius 595
Centropus 32
anselli 589
epomidis 588
grillii 584
leucogaster and races 586
monachus 589
senegalensis 591
superciliosus 592
Ceratogymna 44
atrata 707
elata 706
Cercococcyx mechowi 572
olivinus 571
Ceryle 62
Cercotrichas 64
Certhiidae 104
Ceryle rudis 654
Ceuthmochares 32
aereus and races 593
Chaetura 36
cassini 630
melanopygia 633
sabini 632
Chaetura (*continued*)
thomensis 633
ussheri and races 629
Chalcomitra 100
chalcopterus, Rhinoptilus .. 441
Charadriidae 18, 384, 386
Charadrius 18
dubius 394
hiaticula 393
Chaunonotus 86
chelicuti, Halcyon, and races .. 669
Chilictinia riocourii 255
chiquera, Falco 244
Chlidonias 22
leucopareia 475
leucoptera 473
nigra 472
Chloropeta 56
Chlorophoneus 88
chloropus, Gallinula 361
Choriotis arabs 368
Chrysococcyx 32
cupreus and races 579
chrysocoma, Pogoniulus, and races 729
Cichladusa 64
Ciconia ciconia 169
nigra 170
Ciconiidae 6, 168
cinerascens, Circaëtus 280
cinerea, Ardea 143
Galachrysia 456
cinereus, Circaëtus 277
Xenus 423
Cinnamopteryx 108
Cinnyricinclus 94
Cinnyris 100
Circaëtus beaudouini 278
cinerascens 280
cinereus 277
gallicus 276
Circus aeruginosus 306
macrourus 304
pygargus 305
cirrocephalus, Larus 458
Cisticola 72
Clamator glandarius 574
jacobinus 576
levaillantii 577
serratus 577
clamosus, Cuculus, and races .. 569
clappertoni, Francolinus .. 321
climacurus, Scotornis, and races 615
clypeata, Spatula 199
Clytospiza 118

Coccycolius 94
Coliidae 32, 594
Colius 32
castanotus 595
macrourus and races 596
striatus 595
Coliuspasser 114
Colletoptera 36
affinis and races 626
Columba 24
arquatrix 494
guinea 493
livia and races 493
thomensis 495
unicincta 495
Columbidae 24, 489
conirostris, Indicator, and races 744
coqui, Francolinus 315
Coqui, Upper Volta 315
Coraciidae 38, 635
Coracias 38
abyssinica 636
cyanogaster 638
garrulus 635
naevius 637
Coracina 80
Cormorant, White-breasted .. 134
coronatus, Pterocles 482
Stephanoaëtus 270
Corvidae 92
Corvinella 86
Corvus 92
coryphaea, Viridibucco, and races 728
Corytheola 30
cristata 559
Corythornis cristata and races .. 658
leucogaster and races 659
Cosmetornis 34
vexillarius 613
Cossypha 62
Cossyphicula 64
Coturnix 12
coturnix and races 328
delegorguei and races .. 330
Coucal, Black-bellied .. 584
Black-throated 586
Blue-headed 589
Gaboon 589
Great 586
Rufous-bellied 588
Senegal 591
White-browed 592
Courser, Bronze-wing 441
Cream-coloured 439
Temminck's 440
Crake, African 346
Black 347
Corn- 345
Striped 349
cranchii, Pternistis 325
Crane, Demoiselle 366
West African Crowned .. 366
crassirostris, Hemiparra .. 397
crassus, Poicephalus 520
crecca, Anas 204
Crecopsis egregia 346
Crex 14
crex 345
Crinifer 30
piscator 561
zonurus 562
cristata, Corythaeola 559
Corythornis, and races .. 658
cristatus, Podiceps 126
Crocethia 20
alba 419
Crocodile-bird 443
crumeniferus, Leptoptilos .. 177
Cryptospiza 118
Cuckoo, African Yellow-billed 566
Black 569
Didric 580
Emerald 579
European 565
Gaboon 571
Great Spotted 574
Jackson's 571
Klaas' 582
Levaillant's 577
Olive Long-tailed 571
Pied 576
Red-chested 567
Solitary 567
Thick-billed 573
Von Mechow's Long-tailed 572
White-bellied 580
Yellow-throated 583
Cuckoo-Falcon, West African 251
Cuculidae 32, 563
cuculoides, Aviceda, and races .. 251
Cuculus 32
canorus 565
clamosus and races 569
gularis 566
solitarius 567
Cuncuma vocifer 284
cupreus, Chrysococcyx, and races 579
Curlew 433
Dwarf 434

Curlew (*continued*)
Eastern 434
cursor, Cursorius, and races .. 439
Cursorius 22
cursor and races 439
temminckii 440
cuvieri, Falco 242
cyanogaster, Coracias 638
Cyanograucalus 80
Cyanomitra 100
cylindricus, Bycanistes 694
Cypsiurus 36
parvus and races 627

dactylatra, Sula 132
Dafila acuta 211
Darter, African 136
decipiens, Streptopelia 501
delegorguei, Coturnix, and races 330
Delichon 78
Demigretta gularis 152
Dendrocygna 8
fulva 214
viduata 213
Dendropicos elachus 761
fuscescens and races 759
gabonensis 762
lugubris and races 764
obsoletus 765
poecilolaemus 763
denhami, Neotis 370
Dicrocercus 42
hirundineus 686
Dicruridae 82
Dicrurus 82
Dissoura episcopus 170
dougallii, Sterna 464
Dove, Adamawan Turtle- .. 498
Black-billed Wood- 510
Blue-headed 511
Cameroon Mountain Lemon- 512
European Turtle- 497
Laughing 504
Long-tailed 506
Namaqua 506
Niger Mourning- 501
Pink-headed 503
Red-billed Wood- 509
Red-eyed Turtle- 499
Rosy-grey 503
Senegal 504
Tambourine 507
Vinaceous Turtle- 502
Dreptes 102
Drymocichla 72
Dryophoneus 86
Dryoscopus 86
Dryotriorchis spectabilis .. 275
dubius, Charadrius 394
Pogonornis 716
duchaillui, Buccanodon 727
Duck, African Black .. 194, 203
Ferruginous 194, 197
Fulvous 194, 214
Hartlaub's 194, 212
Marbled 194, 210
Tufted 194, 198
White-backed .. 194, 196
White-faced 194, 213
Dunlin, Lapland 415
Dyaphorophyia 58

Eagle, Abyssinian Tawny .. 263
African Hawk- 265
Ayres' Hawk- 267
Beaudouin's Harrier .. 278
Brown Harrier 277
Cassin's Hawk- 268
Crowned Hawk- 270
Gold Coast Serpent .. 275
Long-crested Hawk- .. 271
Martial 268
River 284
Short-toed 276
Smaller Banded Harrier .. 280
Vulturine Fish 286
Wahlberg's 264
Eagle-Owl, Akun 546
Desert 542
Fraser's 547
Milky 544
Shelley's Banded 545
Spotted 543
ecaudatus, Terathopius 282
edouardi, Guttera, and races .. 335
egregia, Crecopsis 346
Egret, Cattle 154
Little 151
Yellow-billed .. 141, 150
Egretta garzetta 151
elachus, Dendropicos 761
Elanus caeruleus 259
elata, Ceratogymna 706
elliotii, Mesopicos 771
Emberiza 106
Eminia 70
Ephippiorhynchus senegalensis 176
episcopus, Dissoura 170

epomidis, Centropus 588
epops, Upupa 642
Erannornis 58
Eremalauda 48
Eremomela 72
Eremopterix 48
erithacus, Psittacus, and races .. 517
Erolia 20
alpina 415
minuta 416
temminckii 417
testacea 415
Erythrocercus 58
erythrolophus, Turacus 555
erythronotos, Pogoniulus .. 731
erythropus, Tringa 428
Erythropygia 64
erythrorhynchus, Lophoceros .. 697
Phoeniculus 646
Estrilda 120
Euodice 116
Euplectes 114
Eupoda asiatica 392
Eupodotis senegalensis 372
europaeus, Caprimulgus, and races 600
Eurylaemidae 48
Eurystomus 38
afer and races 639
gularis and races 641
Excalfactoria adansoni 331
exilis, Indicator, and races .. 745
eximius, Caprimulgus 609
exustus, Pterocles 481

falcinellus, Limicola 414
Plegadis 181
Falco alopex 248
ardosiaceus 250
biarmicus 240
chiquera 244
cuvieri 242
naumanni 247
peregrinus and races 239
subbuteo 243
tinnunculus and races .. 246
vespertinus 243
FALCON, WEST AFRICAN CUCKOO- 251
Falconidae 10, 234
fasciatus, Hieraaëtus 265
Lophoceros 699
ferina, Nyroca 198
FINFOOT 364
fistulator, Bycanistes 689
FLAMINGO, GREATER 190
LESSER 191
flammeus, Asio 531
flavigularis, Lampromorpha .. 583
flavipunctata, Tricholaema .. 723
flavirostra, Limnocorax .. 347
flavirostris, Rynchops 477
forbesi, Afroxyechus 395
fossii, Caprimulgus 607
FRANCOLIN, AHANTA 323
CAMEROON MOUNTAIN .. 324
CLAPPERTON'S 321
DOUBLE-SPURRED 317
HEUGLIN'S YELLOW-BILLED .. 320
LATHAM'S 312
RED-THROATED 325
RING-NECKED 313
SCALY 322
SCHLEGEL'S BANDED 314
WHITE-THROATED 316
Francolinus 12
ahantensis 323
albogularis 316
bicalcaratus and races .. 317
camerunensis 324
clappertoni 321
coqui 315
icterorhynchus 320
lathami 312
schlegellii 314
squamatus 322
streptophorus 313
Fraseria 56
Fregata aquila 139
magnificens 138
Fregatidae 4, 138
FRIGATE BIRD, ASCENSION ISLAND 139
LOWE'S 138
Fringillaria 106
Fringillidae 204
fulicarius, Phalaropus 436
fuligula, Nyroca 198
fulva, Dendrocygna 214
fulvus, Gyps 223
fuscata, Sterna 471
fuscescens, Dendropicos, and races 759
fuscus, Larus, and races 456

gabar, Micronisus 301
gabonensis, Dendropicos .. 762
GADWALL 194, 201
Galachrysia 22
cinerea 450
nuchalis and races 448

Galerida 48
gallicus, Circaëtus 276
gallinago, Capella 412
Gallinula 14
angulata 362
chloropus 361
Gallinule, Lesser 360
Purple 359
gambensis, Plectropterus .. 219
Gannet, Cape 132
Common 132
Garganey 194, 207
garrulus, Coracias 635
garzetta, Egretta 151
Gelochelidon 22
nilotica 462
genei, Larus 456
Geokichla 60
glandarius, Clamator 574
Glareola 22
nordmanni 447
pratincola and races 445
glareola, Tringa 426
Glareolidae 21, 438
Glaucidium 28
perlatum 538
tephronotum and races .. 540
sjöstedti 541
Glottis 20
nebularis 428
stagnatilis 429
Godwit, Bar-tailed 431
Black-tailed 430
goertae, Mesopicos, and races 766
goliath, Typhon 147
Goose, Comb 216
Egyptian 218
Knob-billed 216
Pygmy 215
Spur-winged 219
Goshawk, Chanting 300
Chestnut-flanked 298
Gabar 301
Vinous-chested 298
West African 296
Grafisia 96
Grebe, African Great Crested 126
African Little 127
Greenshank 428
Griffon, European 223
Rüppell's 224
grillii, Centropus 584
Grouse, Chestnut-bellied Sand- 481
Coroneted Sand- 482
Four-banded Sand- 484
Grouse (*continued*)
Lichtenstein's Sand- 483
Pin-tailed Sand- 481
Spotted Sand- 480
guinea, Columba 493
Guinea-fowl, Black 338
Crested 335
Grey-breasted Helmet .. 334
Plumed 336
Vulturine 333
White-breasted 339
gularis, Cuculus 566
Demigretta 152
Eurystomus 641
Melittophagus, and races .. 684
guielmi, Poicephalus, and races 519
Gull, Atlantic Islands .. 455
Brown-headed 459
Grey-headed 458
Lesser Black-backed .. 456
Slender-billed 456
Guttera edouardi and races .. 335
plumifera 336
Gymnobucco bonapartei .. 726
calvus and races 724
peli 726
Gymnogenys typicus 8
Gymnoris 106
Gypohierax angolensis 286
Gyps fulvus 223
rüppellii 224

Hadada, West African .. 184
Haematopus moquini 410
ostralegus 409
haematopus, Himantornis, and races 341
hagedash, Hagedashia 184
Hagedashia hagedash 184
Halcyon 40
albiventris 666
badius and races 668
chelicuti and races 669
leucocephala 667
malimbicus and races .. 665
senegalensis and races .. 663
haliaetus, Pandion 233
Hammerkop 166
Harrier, Marsh 306
Montagu's 305
Pale 304
Pallid 304
Harrier Eagle, Beaudouin's .. 278
Brown 277
Smaller Banded 280

Harrier-Hawk, West African 363
hartlaubi, Lophoceros, and races 701
hartlaubii, Pteronetta 212
Hawk, Bat- 260
Long-tailed 302
Ovampo Sparrow- 293
West African Black Sparrow- 294
West African Harrier- .. 308
West African Little Sparrow- 291
Hawk-Eagle, African 265
Ayres' 267
Cassin's 268
Crowned 270
Long-crested 271
Hedydipna 100
Heliolais 74
Heliornithidae 14, 364
Hemiparra crassirostris 397
Heron, African Great White 148
African Green-backed .. 157
Black 149
Black-headed 144
Buff-backed 154
Goliath 147
Grey 143
Night 158
Purple 145
Squacco 155
West African Reef 152
White-backed Night .. 160
Herpystera 74
Heterhyphantes 108
Heterotrogon vittatum 713
hiaticula, Charadrius 393
Hieraaëtus ayresi 267
fasciatus 265
Himantopus 18
himantopus 406
Himantornis 14
haematopus and races .. 341
Hippolais 66
hirsutum, Tricholaema 722
hirundineus, Dicrocercus .. 686
Hirundinidae 76
Hirundo 76
hirundo, Sterna 463
Hobby, African 242
European 243
Honey-guide, Black-throated 739
Least 745
Lesser 743
Lyre-tailed 746
Sharp-billed 748
Spotted 741
Thick-billed 744
Honey-guide (*continued*)
Zenker's 746
Hoopoe, Buff-headed Wood- .. 648
Chestnut-headed Wood- .. 651
European 642
Forest Wood- 652
Guinea Wood- 646
Lesser Wood- 649
Senegal 643
Senegal Wood- 647
Hoplopterus 18
spinosus 401
Horizorhinus 52
Hornbill, Allied 700
Black-and-white-tailed .. 699
Black-casqued 707
Black Dwarf 701
Brown-cheeked 694
Grey 696
Grey-cheeked 695
Ground 708
Laughing 691
Piping 689
Red-beaked 697
Red-billed Dwarf 703
White-crested 704
White-tailed 691
White-thighed 693
Yellow-casqued 706
horus, Micropus 625
Hydrobatidae 2, 128
Hydroprogne 22
caspia 462
Hylia 102
Hyliota 58
Hypergerus 52
Hyphantornis 112
Hyphanturgus 112
Hypochera 122
hypoleucos, Actitis 424
hypopyrrhus, Streptopelia .. 498

Ibis ibis 179
ibis, Bubulcus 154
Ibis, Glossy 181
Glive 187
Sacred 182
Spotted-breasted 186
Wood 179
Icteropsis 110
icterorhyncha, Otus 535
icterorhynchus, Francolinus .. 320
Illadopsis 52
Indicator conirostris and races 744

Indicator (*continued*)
exilis and races 745
indicator 739
maculatus and races 741
minor and races 743
Indicatoridae 46, 738
inornatus, Caprimulgus, and races 604
insignis, Prodotiscus, and races 748
intermedius, Mesophoyx 141, 150
interpres, Arenaria 421
iriditorques, Turturoena .. 496
Ispidina picta 660
Ixobrychus minutus 162
Ixonotus 54

Jabiru 176
Jacanidae 16, 381
jacobinus, Clamator 576
johnstoni, Mesopicos, and races 770
Jubula 28
lettii 537
Jynx ruficollis and races .. 775
torquilla 774

Kakelaar 646
Kaupifalco monogrammicus .. 273
Kestrel 246
Fox 248
Grey 250
Red-necked 244
Western Lesser 247
Western Red-legged .. 243
Kingfisher, Blue-breasted .. 665
Chocolate-backed 668
East African Brown-headed 666
Giant 656
Grey-headed 667
Malachite 658
Pied 654
Pygmy 660
Red-headed Dwarf 662
Senegal 663
Shining-blue 657
Striped 669
White-bellied 659
Kite, Black-shouldered .. 259
European Black 258
Swallow-tailed 255
West African Black .. 257
Kittiwake 460
klaasi, Lampromorpha 582
Knot 418
krameri, Psittacula 522

lacteus, Bubo 544
Lagonosticta 120
lamelligerus, Anastomus .. 174
Lampribis olivacea and races .. 187
rara 186
Lamprocolius 94
Lampromorpha caprius 580
flavigularis 583
klaasi 582
Lamprotornis 94
Laniarius 86
Laniidae 86
Lanius 86
Lanner, Abyssinian 240
lapponica, Limosa 431
Lapwing, White-faced 397
Laridae 22, 454
Larus 22
atlantis 455
cirrocephalus 458
fuscus and races 456
genei 456
ridibundus 459
lathami, Francolinus 312
lecontei, Myioceyx 662
Lecythoplastes 78
Leptoptilos crumeniferus .. 177
lepturus, Phaëthon 131
lettii, Jubula 537
leucocephala, Halcyon 667
leucocephalus, Lybius 721
leucogaster, Centropus, and races 586
Corythornis, and races .. 659
Sula 133
leucolaima, Pogoniulus, and races 732
leucolopha, Tigriornis 161
leucolophus, Turacus 556
leuconotus, Nycticorax 160
Thalassornis 196
leucopareia, Chlidonias 475
Leucopolius 18
alexandrinus 389
marginatus 387
pecuarius 389
leucoptera, Chlidonias 473
leucorodia, Platalea 189
leucostictus, Bubo 546
leucotis, Ptilopsis 536
levaillanti, Lybius 722
levaillantii, Clamator 577
lichtensteinii, Pterocles 483
Lily Trotter 381
Lesser 382
Limicola 20
falcinellus 414

Limnocorax flavirostra 347
Limosa 20
lapponica 431
limosa 430
Linurgus 104
Lissotis 16
melanogaster 374
livia, Columba, and races .. 493
Lobotos 80
longipennis, Macrodipteryx .. 611
Lophoaëtus occipitalis 271
Lophoceros 44
camurus and races 703
erythrorhynchus 697
fasciatus 699
hartlaubi and races 701
nasutus 696
semifasciatus 706
Lophotis savilei 373
Lovebird, Black-collared .. 524
Red-headed 523
lucidus, Phalacrocorax 134
lugens, Sarothrura 355
lugubris, Dendropicos, and races 764
Stephanibyx 398
Luscinia 64
Lusciniola 66
Lybius leucocephalus 721
levaillanti 722
vieillotti 720
Lymnocryptes 20
minima 413

Machaerhamphus alcinus .. 260
Macrodipteryx 34
longipennis 611
Macronyx 50
macrorhynchus, Turacus .. 554
macroscelides, Accipiter .. 296
Macrosphenus 52
macrourus, Circus 304
Colius, and races 596
Urotriorchis, and races .. 302
macrura, Sterna 464
maculatus, Indicator, and races 741
maculosa, Campethera 751
madagascariensis, Porphyrio .. 359
magnificens, Fregata 138
Malaconotus 88
malherbii, Turturoena 497
malimbicus, Halcyon, and races 665
Merops 676
Malimbus 112
Mallard 194, 200
Mandingoa 120
Man o' War Bird 138
Marabou 177
margaritatus, Trachyphonus .. 736
marginalis, Porzana 349
marginatus, Leucopolius .. 387
maxima, Megaceryle, and races 656
Sterna 467
mechowi, Cercococcyx 572
media, Capella 412
Megabyas 58
Megaceryle 40
maxima and races 656
Megalopterus minutus 477
meiffrenii, Ortyxelos 487
Melaenornis 56
Melaniparus 92
melanocephala, Ardea 144
melanogaster, Lissotis 374
melanoleucus, Accipiter 294
Melanophoyx ardesiaca .. 149
Melanopteryx 110
melanopygia, Chaetura 633
melanotos, Sarkidiornis 216
meleagrides, Agelastes 339
meleagris, Numida, and races .. 334
Melichneutes robustus 746
Melierax metabates and races .. 300
Melignomon zenkeri 746
Melittophagus 42
bullocki 683
gularis and races 684
muelleri and races 685
pusillus 681
variegatus 682
Melocichla 74
Meropidae 42, 671
Merops 42
apiaster 672
malimbicus 676
nubicoides 678
nubicus 677
orientalis 674
persicus 673
Mesophoyx intermedius .. 141, 150
Mesopicos elliotii 771
goertae and races 766
johnstoni and races 770
pyrrhogaster 768
xantholophus 769
metabates, Melierax, and races 300
meyeri, Poicephalus 521
Micronisus gabar 301
Microparra capensis 382
Micropodidae 36, 617

Micropus 36
aequatorialis and races .. 622
apus 619
batesi 621
caffer and races 624
horus 623
pallidus 621
sladeniae 620
toulsoni 620
unicolor and races 621
migrans, Milvus, and races .. 257
Milvus migrans and races .. 257
minima, Lymnocryptes 413
minor, Indicator, and races .. 743
minor, Phoeniconais 191
minullus, Accipiter, and races .. 291
minuta, Erolia 416
minutus, Ixobrychus 162
Megalopterus 477
monachus, Centropus 589
Necrosyrtes 230
monogrammicus, Kaupifalco .. 273
Monticola 60
MOORHEN, AFRICAN 361
LESSER 362
moquini, Haematopus 410
Morus bassanus 132
capensis 132
Motacilla 50
Motacillidae 50
MOUSEBIRD, BAR-BREASTED .. 595
BLUE-NAPED 596
muelleri, Melittophagus, and races 685
Muscicapa 56
Muscicapidae 56
Musophaga 30
rossae 559
violacea 557
Musophagidae 30, 551
Myioceyx 40
lecontei 662
Myrmecocichla 62

naevius, Coracias 637
nana, Turnix 487
narina, Apaloderma, and races 711
nasutus, Lophoceros 696
natalensis, Caprimulgus, and races 605
naumanni, Falco 247
nebularis, Glottis 428
Necrosyrtes 10
monachus 230
Nectarinia 100
Nectariniidae 98
Neocossyphus 60
Neolestes 88
Neophron percnopterus 232
Neospiza 112
Neotis 16
denhami 370
nuba 371
Nesocharis 120
Nettapus auritus 215
Nicator 88
niger, Phasidus 338
NIGHTJAR, BATES' FOREST .. 608
BLACK-SHOULDERED 601
DUSKY 610
EUROPEAN 600
FRECKLED 603
LONG-TAILED 615
MOZAMBIQUE 607
NORTH AFRICAN RED-NECKED 600
PENNANT-WINGED 613
PLAIN 604
RUFOUS-CHEEKED 601
SAHARAN 607
STANDARD-WING 611
WHITE-TAILED 605
ZINDER GOLDEN 609
nigra, Chlidonias 472
Ciconia 170
nigriscapularis, Caprimulgus .. 601
Nigrita 116
Nilaus 88
nilotica, Gelochelidon 462
nivosa, Campethera, and races .. 755
noctua, Carine 538
NODDY, ATLANTIC 476
COMMON 476
WHITE-CAPPED 477
nordmanni, Glareola 447
nubá, Neotis 371
nubicoides, Merops 678
nubicus, Merops 677
nuchalis, Galachrysia, and races 448
Numenius 20
arquatus and races 433
phaeopus 435
Numida 12
meleagris, and races 334
Nycticorax leuconotus 160
nycticorax 158
Nyroca ferina 198
fuligula 198
nyroca 197

obsoletus, Dendropicos 765

occipitalis, Lophoaëtus 271
Trigonoceps 229
ocrophus, Tringa 425
oculeus, Canirallus, and races .. 343
Oedicnemus 16
capensis 379
oedicnemus 376
senegalensis 377
vermiculatus 386
Oena 24
capensis 506
Oenanthe 62
olivacea, Lampribis, and races .. 187
olivinus, Cercococcyx 571
onocrotalus, Pelecanus, and races 139
Onychognathus 94
Open-bill, African 174
orientalis, Merops 674
Oriolidae 90
Oriolus 90
Ortygospiza 118
Ortyxelos 24
meiffrenii 487
Osprey 233
ostralegus, Haematopus .. 409
Ostrich, North African .. 125
Othyphantes 108
Otididae 16, 368
Otus 28
icterorhyncha 535
scops 533
senegalensis and races .. 534
ovampensis, Accipiter 293
Owl, African Barn 528
African Scops 534
Aïr Little 538
Akun Eagle- 546
Algerian Marsh 531
Desert Eagle- 542
European Scops 533
Fraser's Eagle- 547
Grass 529
Maned 537
Milky Eagle- 544
Pel's Fishing- 548
Sandy Scops 535
Shelley's Banded Eagle- 545
Short-eared 531
Spotted Eagle- 543
Ussher's Rufous Fishing- .. 549
Vermiculated Fishing- .. 550
West African Wood .. 532
White-faced 536
Owlet, Pearl-spotted .. 538
Owlet (*continued*)
Sjöstedt's Barred 541
Yellow-legged 540
Oyster-catcher, Black .. 410
European 409

Pachycoccyx 32
validus 573
Pachyphantes 110
pallidus, Micropus 621
Pandion haliaëtus 233
Pandionidae 10, 233
parasiticus, Stercorarius .. 451
Paridae 92
Parmoptila 116
Parrakeet, Long-tailed .. 522
Parrot, Brown 521
Brown-necked 518
Grey 517
Niam-Niam 520
Red-crowned 519
Senegal 520
Partridge, Stone- 326
parvus, Cypsiurus, and races .. 627
Passer 106
pavonina, Balearica 386
pecuarius, Leucopolius 289
Pelecanidae 4, 139
Pelecanus onocrotalus and races 139
rufescens 140
peli, Gymnobucco 726
Scotopelia 548
Pelican, Grey 140
Pink-backed 140
Rosy 139
penelope, Anas 202
Pentholaea 62
percnopterus, Neophron .. 232
Peregrine, African 239
peregrinus, Falco, and races .. 239
perlatum, Glaucidium 538
permista, Campethera, and races 752
Pernis apivorus 262
persa, Turacus, and races .. 552
persicus, Merops 673
petrosus, Ptilopachus, and races 326
phaeopus, Numenius 435
Phaëthon aethereus 130
lepturus 131
Phaëthontidae 4, 130
Phalacrocoracidae .. 4, 134
Phalacrocorax africanus .. 134
lucidus 134
Phalarope 436

Phalaropus 20
fulicarius 436
Phasianidae 12, 310
Phasidus niger 338
Philomachus 20
pugnax 420
Phoeniconais minor 191
Phoenicopteridae .. 6, 190
Phoenicopterus ruber 190
Phoeniculidae 38, 645
Phoeniculus 38
bollei and races 648
erythrorhynchus 646
senegalensis 647
Phoenicurus 64
Pholidornis 116
Phormoplectes 108
Phyllanthus 52
Phyllastrephus 54
Phyllolais 72
Phylloscopus 68
Picathartes 96
Picathartidae 96
Picidae 46, 749
picta, Ispidina 660
Piculet, Pygmy 772
Pigeon, Bronze-naped 496
Cameroon Mountain Olive 494
Green Fruit- 514
São Thomé Bronze-naped .. 497
Scaly Grey 495
Senegal Rock- 493
Speckled 493
Yellow-bellied Fruit- .. 513
Pintail 194, 211
Pirenestes 118
piscator, Crinifer 561
Pitta 48
Pittidae 48
Plantain-eater, Abyssinian Grey 562
Blue 559
Giant 559
Grey 561
Lady Ross's Violet 559
Violet 557
Platalea alba 188
leucordia 189
Plataleidae 6, 188
platyrhynchos, Anas 200
Platysteira 58
Plectropterus 8
gambensis 219
Plegadidae 6, 181
Plegadis falcinellus 181
Plesiositagra 510
Ploceidae 108
Plocepasser 108
Plover, Black-headed .. 404
Brown-chested Wattled .. 405
Caspian 392
Egyptian 443
Forbes' Banded 395
Grey 391
Kentish 389
Kittlitz Sand- 389
Lesser Ringed 394
Little Ringed 394
Quail 487
Senegal 398
Senegal Wattled 402
Siberian Ringed 393
Spur-winged 401
Three-banded 394
White-fronted Sand- .. 387
White-headed 399
plumifera, Guttera 336
Pluvianus 22
aegyptius 443
Pochard, Common 194
White-eyed 194
Podica 14
senegalensis and races .. 364
Podiceps cristatus 126
Podicipidae 2, 126
poecilolaemus, Dendropicos .. 763
poensis, Bubo 547
Poecoptera 94
Pogoniulus chrysoconus and races 729
erythronotos 731
leucolaima and races 732
scolopaceus and races .. 734
subsulphureus and races .. 733
Pogonornis bidentatus and races 716
dubius 716
Poicephalus crassus 520
gulielmi and races 519
meyeri 521
robustus 518
senegalus and races 520
Polemaëtus bellicosus 268
Poliocephalus 26
Poliocephalus ruficollis 127
Poliolais 72
Poliospiza 104
pomarinus, Stercorarius .. 452
Porphyrio 14
madagascariensis 359
Porphyrula alleni 360

Porzana marginalis 349
pratincola, Glareola, and races 445
PRATINCOLE, BLACK-WINGED .. 447
CHESTNUT-COLLARED 448
COLLARED 448
GREY 450
WEST AFRICAN 445
WHITE-COLLARED 448
principalis, Aplopelia 513
Prinia 74
Prionopidae 84
Prionops 84
Procellariidae 2, 128
Prodotiscus insignis and races .. 748
Proturacus bannermani 356
Psalidoprocne 78
Pseudoalcippe 52
Pseudochelidon 78
Pseudohirundo 76
Pseudogyps africanus 226
Psittacidae 26, 516
Psittacula 26
krameri 522
Psittacus 26
erithacus and races 517
Pternistis cranchii 325
Pteroclididae 24, 479
Pterocles 24
coronatus 482
exustus 481
lichtensteinii 483
quadricinctus 484
senegallus 480
Pteronetta hartlaubii 212
Ptilopachus petrosus and races .. 326
Ptilopsis 28
leucotis 536
Ptilostomus 92
Ptyonoprogne 78
Ptyrticus 52
puella, Calopelia, and races .. 511
pugnax, Philomachus 420
pulchra, Sarothrura, and races .. 352
pullaria, Agapornis 523
punctata, Anas 206
punctuligera, Campethera, and races 757
purpuratus, Trachylaemus .. 737
purpurea, Pyrrherodia 145
pusillus, Melittophagus 681
Pycnonotidae 54
Pycnonotus 54
pygargus, Circus 305
Pyrrherodia purpurea 145
pyrrhogaster, Mesopicos .. 768
Pyrrhurus 54
Pytilia 120
quadribrachys, Alcedo, and races 657
quadricinctus, Pterocles .. 484
QUAIL, AFRICAN BLUE 331
AFRICAN BUTTON- 485
BUSH-LARK 487
COMMON 328
HARLEQUIN 330
MIGRATORY 328
NATAL BUTTON- 487
-PLOVER 487
Quelea 114
querquedula, Anas 207
RAIL, BUFF-SPOTTED PYGMY .. 357
CHESTNUT-HEADED PYGMY .. 355
EUROPEAN LAND 345
GREY-THROATED 343
KAFFIR 344
NKULENGU 341
RED-CHESTED PYGMY 351
STREAKY-BREASTED PYGMY .. 359
WHITE-SPOTTED PYGMY .. 352
Rallidae 14, 340
ralloides, Ardeola 455
Rallus 14
caerulescens 344
rapax, Aquila 263
rara, Lampribis 186
Recurvirostra avosetta 408
REDSHANK, COMMON 427
DUSKY 428
REEDHEN, ALLEN'S 360
RÉEVE 420
Rhinocorax 92
Rhinoptilus chalcopterus .. 441
ridibundus, Larus 459
riocourii, Chilictinia 255
Riparia 78
Rissa tridactyla 460
robustus, Melichneutes 746
Poicephalus 518
ROLLER, ABYSSINIAN 636
BLUE-BELLIED 638
BLUE-THROATED 641
BROAD-BILLED 639
EUROPEAN 635
RUFOUS-CROWNED 637
roseogrisea, Streptopelia .. 503
rossae, Musophaga 559
Rostratula benghalensis 385, 411
Rostratulidae 18, 384, 385
ruber, Phoenicopterus 190

rudis, Ceryle 654
rufa, Anhinga 136
Sarothrura 351
rufescens, Pelecanus 140
RUFF 420
ruficollis, Caprimulgus 600
Jynx, and races 775
Poliocephalus 727
rufigena, Caprimulgus 601
rufinus, Buteo 288
rufipennis, Butastur 281
ruppellii, Gyps 224
Rynchops 22
flavirostris 477

sabini, Chaetura 632
Sagittariidae 10, 221
Sagittarius serpentarius 221
SADDLE-BILL 176
Salpornis 104
SANDERLING 419
SAND-GROUSE, CHESTNUT-BELLIED 481
CORONETED 482
FOUR-BANDED 484
LICHTENSTEIN'S 483
PIN-TAILED 481
SPOTTED 480
SANDPIPER, BROAD-BILLED .. 414
COMMON 424
CURLEW 415
GREEN 425
MARSH 429
TEREK 423
WOOD 426
sandvicensis, Sterna 465
Sarciophorus tectus 404
Sarkidiornis melanotos 216
Sarothrura 14
böhmi 359
elegans 357
lugens 355
pulchra and races 352
rufa 351
savilei, Lophotis 373
Saxicola 62
schlegelii, Francolinus 314
Schoenicola 170
schuetti, Turacus 553
SCISSOR-BILL 477
scolopaceus, Pogoniulus, and races 734
Scolopacidae 20, 384, 410
Scopidae 6, 166
scops, Otus 533
Scoptelus aterrimus and races .. 649
brunneiceps 652
Scoptelus (*continued*)
castaneiceps 651
Scopus umbretta and races .. 166
Scotopelia 28
bouvieri 550
peli 548
ussheri 549
Scotornis 34
climacurus and races 615
SECRETARY-BIRD 221
Seicercus 68
semifasciatus, Lophoceros .. 700
semitorquata, Streptopelia .. 499
senegalensis, Centropus 591
Ephippiorhynchus 176
Lipodotis 372
Halcyon, and races 663
Odicnemus 377
Otus, and races 534
Phoeniculus 647
Podica, and races 364
Stigmatopelia, and races .. 504
Upupa 643
senegallus, Afribyx 402
Pterocles 480
senegalus, Poicephalus, and races 520
Serinus 104
serpentarius, Sagittarius .. 221
serratus, Clamator 577
SHAG, LONG-TAILED 134
sharpii, Bycanistes, and races .. 691
shelleyi, Bubo 545
Sheppardia 64
SHIKRA, ERITREAN 295
SHOEBILL 166
SHOVELLER 194, 199
Sigmodus 84
simplex, Aplopelia, and races .. 512
Sitagra 110
sjöstedti, Glaucidium 541
SKIMMER, AFRICAN 477
SKUA, ARCTIC 451
POMATORHINE 452
RICHARDSON'S 451
sladeniae, Micropus 620
Smithornis 48
SNAKE-BIRD 136
SNIPE, COMMON 412
ETHIOPIAN 411
GREAT 412
JACK 413
PAINTED 385, 411
solitarius, Cuculus 567
SPARROW-HAWK, OVAMPO .. 293

Sparrow-Hawk (*continued*)
West African Black .. 294
West African Little .. 291
sparsa, Anas 203
Spatula 8
clypeata 199
spectabilis, Dryotriorchis .. 275
Speirops 98
Spermestes 116
Spermophaga 118
Sphenorynchus abdimii 172
Spiloptila 74
spinosus, Hoplopterus 401
Spoonbill, African 188
European 189
Sporopipes 108
Spreo 96
squamatus, Francolinus 372
Squatarola 18
squatarola 391
stagnatilis, Glottis 429
Steganura 122
stellaris, Botaurus 164
Stephanibyx lugubris 398
Stephanoaëtus coronatus .. 270
Stercorariidae 22, 451
Stercorarius 22
parasiticus 451
pomarinus 452
Sterna 22
albifrons and races 468
anaethetus 471
balaenarum 470
dougallii 464
fuscata 471
hirundo 463
macrura 464
maxima 467
sandvicensis 465
Stigmatopelia senegalensis and races 504
Stilt, Black-winged 406
Stint, Little 416
Temminck's 417
Stiphrornis 64
Stizorhina 56
stolidus, Anous 476
Stork, Abdim's 172
African Woolly-necked .. 170
Bishop 170
Black 170
Whale-headed 166
White 169
White-bellied 172
strepera, Anas 201
Streptopelia decipiens 501
hypopyrrhus 498
roseogrisea 503
semitorquata 499
turtur 497
vinacea and races 502
streptophorus, Francolinus .. 373
striatus, Butorides 157
Colius 595
Strigidae 28, 525, 531
Strix 28
woodfordii 532
Struthio camelus 125
Struthionidae 2, 125
sturmii, Ardeirallus 163
Sturnidae 94
subbuteo, Falco 243
subcylindricus, Bycanistes, and races 695
subsulphureus, Pogoniulus, and races 733
Sula dactylatra 132
leucogaster 133
sula 132
Sulidae 4, 132
superciliosus, Anomalophrys .. 485
Centropus 502
Swift, Alexander's Plain .. 621
Bates' 621
Cassin's Spine-tailed .. 630
Chapin's Spine-tailed .. 633
Common 619
Fernando Po 620
Gold Coast Spine-tailed .. 629
Horus 625
Little African 626
Loanda 620
Mouse-coloured 621
Palm 627
Sabine's Spine-tailed .. 632
São Thomé Spine-tailed .. 633
White-rumped 624
Willoughby Lowe's Mottled 622
swinderniana, Agapornis, and races 524
sylvatica, Turnix 485
Sylvia 66
Sylvietta 72
Sylviidae 66
Symplectes 108

Tchagra 88
Tchitrea 58

Teal, Common 194, 204
Hottentot 194, 206
Whistling 194, 213
tectus, Sarciophorus 404
Telophorus 88
temminckii, Cursorius 440
Erolia 417
tephronotum, Glaucidium, and races 540
Terathopius ecaudatus 282
Tern, African Royal 467
Arctic 464
Atlantic Bridled 471
Black 472
Caspian 462
Common 463
Damara 470
Gull-billed 462
Gull-billed 462
Roseate 464
Sandwich 465
Sooty 471
West African Little .. 468
Whiskered 475
White-winged Black .. 473
testacea, Erolia 415
Thalassornis 8
leuconotus 196
Thamnolaea 62
Thescelocichla 54
Thick-knee, European .. 376
Senegal 377
Spotted 379
Water 380
Thomasophantes 112
thomensis, Chaetura 633
Columba 495
Threskiornis aethiopicus .. 182
Tigriornis leucolopha 161
Timaliidae 52
Tinker-bird, Lemon-rumped .. 732
Red-rumped 731
Speckled 734
Yellow-fronted 729
Yellow-throated 733
tinnunculus, Falco, and races .. 246
Toothbill, Black-throated .. 722
Hairy-breasted 723
Torgos 10
tracheliotus 228
torquilla, Jynx 774
totanus, Tringa 427
toulsoni, Micropus 620
Touraco, Bannerman's .. 556
Black-billed 553
Touraco (*continued*)
Black-tipped Crested .. 554
Gold Coast 552
Red-crested 555
Red-tipped Crested 554
White-Crested 556
toussenelii, Accipiter 298
tracheliotus, Torgos 228
Trachylaemus purpuratus .. 737
Trachyphonus margaritatus .. 736
Tricholaema flavipunctata .. 723
hirsutum 722
Trichophorus 54
tricollaris, Afroxyechus 394
tridactyla, Rissa 460
Trigonoceps occipitalis 229
Tringa 20
erythropus 428
glareola 426
ochrophus 425
totanus 427
tristigma, Caprimulgus 603
Trochocercus 58
Trogon, Bar-tailed 713
Gold Coast Narina 711
Yellow-cheeked 711
Trogonidae 44, 710
Tropic Bird, Red-billed .. 130
Yellow-billed 131
Tropicranus 44
albocristatus and races .. 704
Trotter, Lily 381
Lesser Lily 382
tullbergi, Campethera, and races 756
Turacus 30
erythrolophus 555
leucolophus 556
macrorhynchus 554
persa and races 552
schuetti 553
verreauxi 554
Turdidae 60
Turdoides 52
Turdus 60
Turnicidae 24, 485
Turnix 24
nana 487
sylvatica 485
Turnstone 421
Turtur abyssinica 510
afer 509
turtur, Streptopelia 497
Turturoena iriditorques 496
malherbi 497
Tympanistria tympanistria .. 507

Typhon goliath 147
typicus, Gymnogenys 308
Tyto 28
alba and races 528
capensis and races 529
Tytonidae 28, 528

umbretta, Scopus, and races .. 166
unicincta, Columba 495
unicolor, Micropus, and races .. 621
Upupa 38
africana 645
epops 642
senegalensis 643
Upupidae 38, 642
Uraeginthus 120
Urolais 79
Urotriorchis macrourus and races 302
ussheri, Chaetura, and races .. 629
Scotopelia 549

validus, Pachycoccyx 573
variegatus, Melittophagus .. 682
vermiculatus, Oedicnemus .. 380
verreauxi, Turacus 554
Verreauxia africana 772
vespertinus, Falco 243
vexillarius, Cosmetornis .. 613
Vidua 122
viduata, Dendrocygna 213
vieilloti, Lybius 720
vinacea, Streptopelia 502
Vinago 24
australis and races 514
calva 514
waalia 513
violacea, Musophaga 557
virgo, Anthropoides 366
Viridibucco coryphaea and races 728
vittatum, Heterotrogon 713
vocifer, Cuncuma 284
VULTURE, AFRICAN WHITE-BACKED 226
COMMON 230
EGYPTIAN 232
HOODED 230
NUBIAN 228
VULTURE (*continued*)
PALM-NUT 286
WHITE-HEADED 229
vulturinum, Acryllium 333

waalia, Vinago 513
wahlbergi, Aquila 264
WHIMBREL 435
WIDGEON 194, 202
CAPE 209
woodfordii, Strix 532
WOODPECKER, BROWN-EARED .. 753
BUFF-SPOTTED 755
ELLIOT'S 771
FINE-SPOTTED 757
FIRE-BELLIED 768
GABOON 762
GOLDEN-BACKED 751
GOLDEN-CROWNED 769
GOLDEN-TAILED 758
GREEN-BACKED 752
GREY 766
JOHNSTON'S GREEN 770
LEAST GREY 761
LITTLE 730
LITTLE WHITE-SPOTTED .. 765
MELANCHOLY 764
PYGMY 792
TULLBERG'S 756
UGANDA SPOTTED 763
WRYNECK, CAMEROON RED-BREASTED 775
EUROPEAN 774

xantholophus, Mesopicos .. 769
Xanthophilus 112
Xenus cinereus 423
Xiphidiopterus albiceps .. 399

YELLOWBILL 593

zenkeri, Melignomon 746
zonurus, Crinifer 562
Zosteropidae 98
Zosterops 98