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ZOOLOGICAL GARDEN CALCUTTA

THE BIRDS OF BURMA

BY

BERTRAM E. SMYTHIES

B.A., M.B.O.U.

Colonial Forest Service, late Burma Forest Service

With 31 Colour Plates by

COMMANDER A. M. HUGHES, O.B.E., R.N.(retd.)

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PREFACE TO THE SECOND EDITION

THE first edition of this book (1,000 copies) was printed in Rangoon in 1940 by the American Baptist Mission Press and sold out by the end of 1941 ; it was intended to be a concise guide to the birds of Burma, primarily for the use of field naturalists, to encourage the study of natural history in general and of birds in particular ; the welcome it received is a tribute to the high standard attained by the Mission Press, thanks to the personal interest taken by the Superintendent, Mr. Reid.

The book was originally planned in 1937 by Mr. H. C. Smith, I.F.S., who was to arrange for the illustrations, and Mr. J. K. Stanford, I.C.S., who was to write the text. Not every artist can paint life-like studies of birds from stuffed skins (by which I mean, not those examples of the taxidermist's art that you see in the show-cases of museums, but the rough skins that your average Burmese skinner turns out) ; fortunately there happened to be one stationed in Rangoon at the time—Commander A. M. Hughes, R.N., who was working for the Port Commission and had already done some notable paintings of Asiatic birds in Hong Kong and elsewhere in previous years.

The list of birds to be illustrated, and the lay-out of each plate, was decided by Smith and Hughes jointly, and the next problem was to secure the models ; for to paint a bird you must have either a live model, or a stuffed skin, or a previous painting. Bearing in mind the fact that there is no museum in Burma whence skins can be borrowed, the difficulty of assembling models for each of the 290 birds illustrated in this book can be appreciated ; some birds were painted from live examples in the Rangoon Zoo, chiefly waders and game birds ; a few were copied from paintings in other books ; but the majority had to be collected in the fields and the forests and the marshes, by those responsible for the book, in their spare time.

Some birds down on the list eluded us altogether, and substitutes had to be found ; thus the only reason why the comparatively rare rufous-bellied hawk-eagle appears on Plate XIX is that it is a substitute for the hobby, which we could not obtain. Others, when I look at their portraits now, bring back memories of long and anxious quests, extending over a year or maybe two ; there was the great

barbet, not a rare bird, but a shy one, which we chased unavailingly up and down the slopes of Nattaung for a week and more without success ; the greater adjutant, which fell to No. 4's, and the choked barrel on the mudflats of the Sittang estuary after days of sweat and glare in the blistering October sun ; the masked finfoot, a rarity that we hardly hoped to find except by despatching a special mission to its known haunts in the flooded jungles of the Myitmaka drainage, but which gaily swam into Smith's ken, much to his astonishment, in a totally unexpected place on a back-water of the Pegu river ; and there was the sad story of the argus pheasant, pride of the Rangoon Zoo, which died mysteriously in its cage immediately after its portrait had been painted and was forthwith skinned and stuffed by the artist (roast argus, it was hinted, was delicious) ; and the three vultures, freshly skinned and exuding a foul and sickly odour, are to this day a vivid and unhappy memory for the artist's wife, who had to endure them in the house till their portraits had been finished.

When all other means failed an appeal was made to Dr. C. B. Ticehurst, who sent out from England the skins required to fill the remaining gaps ; and even when the plates had been completed there was the difficulty of keeping them in good condition in a damp, tropical climate ; only constant care and attention by the artist (and frequent use of his wife's hair-drier) prevented them from being ruined by the damp. The final crisis was the outbreak of war ; some of the plates were still incomplete on that date, and were only just finished by the time that the artist had to leave for England. Thus ended the first chapter in the story of the plates.

Meanwhile Mr. J. K. Stanford had been at work on the text, but the outbreak of war made it impossible for him to continue, and I was asked to take it over. I feel sure that he would have produced a more interesting book, for he is not only one of the most competent field naturalists Burma has had, but also a gifted writer, as his various books and papers (ornithological and otherwise) bear witness. However, it was a question of writing the text rapidly or shelving the book indefinitely, and I therefore took up the task on New Year's day 1940 and finished it on the 7th October of the same year, carrying on my normal duties as a forest officer at the same time.

The book was on sale by New Year's Day 1941, and most of the copies were bought by Europeans living in Burma, and left behind by them when they evacuated before the Japanese invasion in 1942. It is interesting to record that the Japanese collected as many as they could and shipped them off to Tokyo, where they housed them

in the library of the Royal Veterinary College, later destroyed in an air raid ; this information was given to Lord Alanbrooke by a brother of the Emperor of Japan, and passed on to the Bombay Natural History Society, who informed me. Not many copies were sold outside Burma, and the book became scarce after the fall of Burma.

Meanwhile, what of the precious paintings and the valuable blocks used for printing the plates (each plate is printed from a set of four copper blocks) ? On the 19th February (as it turned out, only two days before the authorities ordered the evacuation of Rangoon) I visited the Mission Press ; the whole place was deserted, except for the acting superintendent (Mr. Crain) ruefully contemplating the probable loss of much valuable printing machinery ; together we searched the building and found twenty-one sets of blocks stacked together in a room, but the remaining eleven sets were not to be found, and what became of them is a mystery to this day. I took away the twenty-one sets and was fortunate in getting them out to India, thanks to Lieut.-Commander E. J. Dunkley of the Burma Navy, who shipped them aboard one of his vessels. The loss of eleven sets of blocks was serious, but not irreparable, for the blocks could always be re-made from the original paintings. Where were the paintings ? They were in Mr. Smith's possession, and were eventually rolled up in a bundle and taken out to India by Mrs. Smith when she left Burma by air, as part of the 30 lbs. of kit allowed to evacuees. They came to rest in a Bombay safe deposit, and the twenty-one sets of blocks were stored in my father's house in Katmandu, the capital of Nepal ; and there they stayed till the end of the war.

From time to time proposals came forward to re-print the book in India, but they came to nothing for several reasons ; among them may be mentioned the shortage of printing materials (especially the high-grade paper required for the plates), our anxiety to ensure that the quality of production did not fall below that set by the Mission Press, and the fact that none of us was likely to have the time or opportunity to correct proofs. There was a keen demand for the few surviving copies of the first edition, and prices up to £25 per copy were asked and paid. On returning to Rangoon we learnt that the American Baptist Mission had lost all their printing machinery and decided not to re-open their Press. So the paintings and blocks set out on their travels once more and reached England safely.

The latest development is the departure of Burma from the

British Commonwealth of Nations on the 4th January 1948. The Burma Government's decision to terminate the services of all European officers in Government service, and to expropriate foreign commercial firms, means that the European population outside Rangoon and the oil-fields will soon be negligible. The study of birds in Burma seems doomed to stagnate, for you will search the bibliography in vain for any contribution by a Burma national, and I know of none who takes any interest in the subject at the present time, unlike India where a number of competent Indian observers have come forward in recent years. A chapter in Burma's ornithological as well as in her political history closed in 1948.

The first edition, as I have already stated, was intended to be a concise handbook for use in Burma; birds that were rare or of restricted distribution were dealt with very briefly, and the common species at greater length. It seems to me desirable now to approach the subject from a rather different angle; at this closing of a chapter it seems desirable to place on record any first-hand information of value (whether on a bird's appearance, habitat, behaviour, or breeding biology) that has been gathered in Burma, bit by bit, by the long line of naturalists from the days when Blyth first started describing new species from Arakan a century ago down to the present day, and in particular to define as accurately and in as much detail as possible the status and distribution of each species in Burma, irrespective of whether the species is common or rare, widespread or confined to a small part of Burma. This book, then, is Burma's contribution to the ornithology of the oriental region; it is a peculiarly British contribution, for apart from the collections made by Leonardo Fea in the 'eighties, and by some recent American and German expeditions, the information has been collected by British officers in their leisure hours and recorded by them in notes scattered through many scientific journals. The extra space required to summarise all this information has been obtained by cutting out much second-hand matter, especially descriptions of nests and eggs, that can be got elsewhere.

When writing the preface to the first edition I compared the book to the melancholy of Jacques, because it was " compounded of many simples, extracted from many objects." In writing this edition I have had access to a wider range of " objects " than before, including the literature and specimens in the bird room at the British Museum (Natural History), and unpublished notes on birds, or criticisms of the first edition, sent to me by various observers. The whole book

has been re-written from end to end, and I believe it to be a fuller and more accurate account of the birds of Burma than was possible in the first edition. It is to be hoped that Burma nationals will one day become aware of the rich and varied bird life of their country and find the same pleasure in observing it that the British have found over the last hundred years.

The untimely death in 1941 of Dr. C. B. Ticehurst was a sad blow; he had the taxonomy of, and the literature on, Burma birds at his finger tips, and I am sure that he would have given of his time and advice as generously to this effort as he did to the first edition. I sent a draft of the systematic list to Dr. E. Mayr, of the American Museum of Natural History at New York, and to Mr. H. G. Deignan of the Smithsonian Institution at Washington; these gentlemen assisted me nobly by sending over large bundles of literature published in the U.S.A. during the past ten years with a bearing on Burma birds (the most important are listed in the bibliography) and by commenting on the draft; this has enabled me to bring the nomenclature and classification up-to-date and in line with other handbooks recently published on the birds of Malaysia, the Philippines, and the South-west Pacific; a revised draft was sent out again to Dr. Mayr, and I am indebted to him and to Messrs. Dillon Ripley and Jean Delacour for checking it. Mr. N. B. (now Sir Norman) Kinnear, Director of the British Museum (Natural History), has been very helpful in answering numerous queries and in listing out the names of authors of most of the scientific names.

I am also indebted to the following naturalists, either for pointing out "howlers" in the first edition or for supplying interesting first-hand notes of which I have made use: Mr. Salim Ali, for his review of the first edition printed in the JBNHS; Mr. W. L. Roseveare, I.S.E. (retd.), for manuscript notes on the birds of the irrigated areas of the Shwebo and Minbu districts, which have since been published; Mr. R. H. Baillie, formerly of the Bombay Burmah Trading Corporation, for supplying general notes with the keenest enthusiasm; Mr. C. E. Milner, I.F.S. (retd.), for some general notes.

B. E. SMYTHIES

CASTLE MORRIS
TRALEE
CO. KERRY

POSTSCRIPT.—During my absence in Sarawak since the above preface was written Messrs. Smith, Roseveare and Baillie have read the proofs of this book and prepared the index; no one who has not seen a book of this type through the press can appreciate the amount of work involved, and I am very grateful to them for undertaking the onerous task. I shall also long remember the several happy periods during the summers of 1948 and 1952 that Mr. Smith allowed me to spend at his home in the lovely Wye valley, when many problems were discussed and resolved with the help of a well-stocked library.

ZOOLOGICAL GARDEN CALCUTTA

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INTRODUCTION

TOPOGRAPHY. The topography of Burma is known probably better to the man-in-the-street to-day than it was before the Japanese campaigns of 1942–45 brought Burma into the limelight of the world's publicity. The dominant feature of the country is the Irrawaddy–Chindwin river system, and the mountains that divide it from other systems to east and west; these mountains fall into three groups.

In the extreme north, from the Hukawng Gap (through which, the geologists tell us, the Brahmaputra once flowed down the Chindwin valley to the sea, and across which was driven the famous Ledo road) along the Assam–Tibet–Yunnan frontier round to the Shweli river run the high mountain barriers of the "Hump"; in outline they resemble a gigantic question mark "?" embracing the top of Burma, symbolic of our ignorance of the wild life to be found in these remote and inaccessible areas; Ka-karpo Razi and Gamtang Razi, two clusters of snow peaks over 19,000 feet in height near Burma's most northerly point, dominate the range, and their untrodden summits rise up as a challenge to mountaineers. This frontier range throws off two main subsidiary ranges to the south. The first of these is the Kumon Bum range or Irrawaddy–Chindwin divide, which takes off at the Chaukan pass and averages 6,000–7,000 feet for most of its length, to terminate in a peak of 7,956 feet, visible 26 miles to the north-west from Myitkyina. The second is the long ridge that forms the backbone of the Triangle and divides the N'Mai Hka from the Mali Hka; it branches off south of the Diphuk La in lat. 28°, where there are peaks of 15,000–16,000 feet, and runs south-east for a short distance at an average height of 8,000–9,000 feet before entering the Triangle and turning south; some of the peaks in the Triangle exceed 11,000 feet.

The western hills of Burma belong to what is known geologically as the Burma–Java arc, which runs from the Hukawng Gap through the Naga, Manipur and Chin Hills and the Arakan Yomas to Cape Negrais, and then continues, in parts as a sub-marine ridge, through the Andamans and Nicobars to Sumatra and Java. The highest point on this system (in Burma) is Saramati (12,553 feet), but more accessible and therefore better known is Mt. Victoria (10,085 feet) in the southern Chin Hills.

The eastern hills, from the Shweli river southwards, belong to the Indo-Malaya mountain system, which comprises the Shan plateau and its southern continuation through the Karen Hills and the Dawnas to the range that forms the backbone of Tenasserim, Peninsular Siam, and Malaya. These hills are separated from the Irrawaddy–Sittang plains by an almost unbroken scarp, which rises abruptly for 2,000 feet or more and up which the roads and railways to Maymyo and Kalaw weave their tortuous ways. The Indo–Malaya mountain system averages 3,000–4,000 feet and cannot boast any high mountains, but includes the following well-known peaks: Taungme (7,544 feet) above Mogok, Loi Ling (8,771 feet, the highest peak in the Shan States) east of the Lashio–Kutkai road, " One Tree Hill " (4,289 feet) near Maymyo, Loi Mai and Loi Maw (both over 8,000 feet) east of Taunggyi, Mt. Byingye (6,254 feet) on the boundary between the Yamethin district and the Southern Shan States, Nattaung (8,607 feet) in Karenni, Mt. Mulayit (6,821 feet) in northern Tenasserim, and Mt. Myinmoletket (6,800 feet) in southern Tenasserim.

These three mountain systems—northern, western, and eastern—block off Burma from her neighbours and enclose the plains and foothills of Central and Southern Burma, the dominant features of which are the semi-arid plains and uplands of the dry zone (described below) running up into densely forested hilly country to the north and down to the extensive paddy plains of the Irrawaddy delta and the teak forests of the Pegu Yomas to the south.

CLIMATE. Burma has a typical monsoon climate, with a well-marked rainy season associated with south-westerly monsoon winds from the middle or end of May to October, a cold dry season from November to February, and a hot dry season from March to May (with some showers in April and May); the greater the distance from the coast the more continental is the climate and the more pronounced the cold weather. In the mountains of northern Burma wet and dry spells alternate during the " dry " season; snow falls down to 6,000 feet, but does not lie for more than a day or two much below 8,000 feet; the heaviest falls of snow occur in February and March, and above 10,000 feet the snow lies from January to May; from June to mid-October the mountains are exposed to the full force of the south-west monsoon and the climate is appalling, as the few botanist-explorers who have spent a rainy season in these mountains unanimously testify, with perpetual rain and mist for weeks on end, and infinite torment of leeches and ticks and all manner of biting flies.

The annual rainfall is very high (about 250 inches) all along the coasts of Arakan and Tenasserim, and is high also in the mountains of northern Burma (*e.g.* 158 inches at Fort Hertz), decreasing concentrically towards Central Burma. If the dry zone is defined as the zone receiving 50 inches of rain or less per annum, it covers most of Central Burma, and extends down the Irrawaddy valley to Prome, while much of the Shan plateau almost qualifies for inclusion ; in the driest part of the dry zone, round Pakokku, the rainfall is about 20 inches. Maximum shade temperatures in the dry zone normally exceed 100 degrees in April and May, and may exceed 110 degrees for a few days ; outside the dry zone temperatures over 100 degrees are unusual.

DISTRIBUTION AREAS. We have carved up the map of Burma into ten distribution areas (see map at end), separated from each other by civil district boundaries, which are more or less permanent and are unmistakable on the ground or on any map. One of these areas (Southern Burma) we have further sub-divided into four areas on a topographic basis ; many species are represented by one form in the Arakan Yomas and another form in the Karen Hills, and some east-west division was therefore essential. We also divide Burma into three vertical zones by using the following terms consistently throughout the book :

" Plains and foothills " means land below 3,000 feet.
" Higher hills " means hills 3,000–6,000 feet.
" Mountains " means hills above 6,000 feet.

It may be of interest to outline briefly the topography and ornithological history of each of these areas.

ARAKAN. A coastal belt of islands, mangrove swamps and paddy plains, backed by foothills and higher hills covered with dense evergreen forest or with a pure growth of bamboo (*kayin-wa*) ; mountains occur in the north-east (Arakan hill tracts). An aerial view discloses bare grassy tops to many of the peaks and ridges, but of insufficient extent to have much faunal significance. Although Arakan was longer under British rule than any other part of Burma except Tenasserim, it was a Cinderella province so far as birds were concerned and was much neglected by naturalists ; Blyth listed the birds many years ago, and his records were repeated by Oates ; Hopwood published a list (1912*b*) ; Villar made a collection of 357 skins comprising 258 forms (but some of these came from the Arakan Yomas of Southern Burma, and not from Arakan proper), which was

reported on by Ticehurst (1933*a*) ; finally Christison, Buxton and Emmet recently published a very useful paper (1946), based on field notes recorded by them during the Japanese campaigns in Arakan, but no specimens could be preserved.

Chin Hills. Foothills, higher hills, and mountains, with Mt. Victoria (10,085 feet) in the south as the principal peak ; it has been worked by several collectors, including Wood and Rippon, but most of our knowledge derives from the paper by Stresemann and Heinrich (1940) ; the latter spent nearly six months on the mountain and its approaches in 1938 and collected about 2,500 specimens. Hopwood and Mackenzie listed the birds of the northern Chin Hills (1917).

Upper Chindwin. Foothills, higher hills, and mountains. The highest peak is Saramati (12,553 feet), but it is merely the highest of a chain of mountains running through the country of the head-hunting Nagas, up to the Hukawng Gap, which no ornithologist has yet succeeded in exploring ; I have little doubt that many mountain species at present known only from Mt. Victoria and from localities 350–400 miles distant in North-East Burma will be found one day to link up through these mountains with a more or less continuous distribution. In the systematic list I have entered a " ? " in column 3 against these species.

Our knowledge of the birds of the Chindwin valley and the foothills derives from the paper by Mears and Oates (1907), which deals with the area south of the Sittaung–Tamu road, and which was supplemented by Hopwood (1908*a*), and from Mayr's report on the Vernay–Hopwood Chindwin expedition, which collected 776 specimens (all except thirty-four from Homalin northwards) ; some of these specimens were obtained in the Jade Mines area, which falls in North-East Burma.

North-East Burma. A very interesting account of the botany and geography of northern Burma (by which is meant Burma north of lat. 25°) has been written by the veteran botanist-explorer Kingdon Ward (1944), which should be read by anyone interested in the subject. Stanford has sketched (*Ibis*, 1938, pp. 65–74) the topography and ornithological history of North-East Burma, which " offers a series of violent contrasts of heat and cold, wet and dry, mountain and plain, which it is quite impossible, in a brief space, to do more than outline." Roughly speaking, the country north and east of Myitkina is all mountainous, but the valley of the N'Mai Hka is a deeply cut " V," like the gorges of the Salween and Mekong,

and the hillsides are of unrelenting steepness ; the Mali Hka, on the other hand, has a rounded " U " valley, hilly and densely forested, but not precipitous, and at Fort Hertz it runs through a small plain, 200 square miles in area and only 1,400–1,600 feet above sea-level in spite of the distance from the sea ; like the vale of Katmandu it is the drained-out basin of a former lake, but it is highly malarious and covered with grassy savannas, evergreen forest, and limited areas of paddy fields. South and west of Myitkyina lie the river valleys of the Chindwin, Uyu, Mogaung and Irrawaddy with their innumerable tributaries of every size, heavily forested and separated from each other by low hills running in a southerly direction.

Very little was known about the birds of this area until the 'thirties ; then in 1931 Kingdon Ward and Cranbrook spent nearly a year in the Adung valley, primarily to collect plants, but the collection of 152 bird skins, which was reported on by Kinnear (1934), added at least thirty mountain species to the Burma list. Soon afterwards, by a fortunate chance, Stanford was posted to the charge of the Myitkyina district and from November 1932 to June 1936 (with the assistance of several officers of the Burma Military Police and Burma Frontier Service) he collected 1,769 skins of 472 species ; this collection was the subject of a joint paper by Stanford and Ticehurst (1938–39). Stanford then retired, but returned to the district in 1938–39 with the Vernay-Cutting expedition, which collected 1,505 specimens of 296 species in the Laukkaung subdivision and along the N'Mai Hka valley to Laukkaung ; a joint paper on this collection was written by Stanford and Mayr (1940–41). In the same year, 1938–39, Kaulback spent some time in the Tamai valley, based on Pagnamdim (whence he travelled up the Taron and back by the Thala Wang), and also in the Triangle ; a collection of 260 specimens was sent home, and reported on briefly by Ticehurst (1939*b*), but no field notes accompanied the collection. In 1944–45 I spent four months touring the Tamai valley from the Lakin stream in the south to the Adung valley in the north, including also the Ahkyang and Taron valleys to the Yunnan frontier, but owing to war-time conditions was unable to collect any specimens ; in 1948 I spent three months in the Laukkaung subdivision, mostly in the area covered by the Vernay-Cutting expedition, and made a small collection which is now in the British Museum, but has not yet been critically examined ; a short account of these two trips was published in the *Ibis* (1949). Finally mention must be made of George Forrest, who made large collections of birds, which were worked out by Rothschild (1926),

during his many plant-hunting expeditions to Yunnan between 1904 and 1931 ; he or his native collectors at various times worked the Taron–Salween and N'Mai–Salween divides, but whether any bird specimens were actually taken on the Burma side of the border is uncertain ; he was primarily a botanist and unfortunately recorded no field notes, apart from the data on his labels. Nearly all the birds he obtained on the Shweli–Salween divide and in western Yunnan have now been obtained in North-East Burma, but a few remain which will probably turn up one day and which I have included in square brackets.

CENTRAL BURMA. This area is dominated by the river valleys of the Irrawaddy, Chindwin and Mu. The Mogok hills and Maymyo have to be included, although zoologically they are part of the Shan plateau ; apart from these two areas, the most interesting peaks are the extinct volcanoes of Taungthonlon (5,600 feet) in the north near the Myitkyina and Upper Chindwin district borders, and Mt. Popa (4,981 feet) in the south. Except for the Katha district and the northern part of the Shwebo district the area consists of semi-arid plains and uplands, covered with thorny scrub-jungle except where sessamum, cotton and various leguminous crops are grown in cultivated fields ; in the Mandalay, Kyaukse and Shwebo districts extensive areas of flat land are irrigated by canals, which make the cultivation of rice possible.

Sewell (1899) published some notes on the birds of the Kyaukse district. Macdonald (1906) listed the birds of the Myingyan district. Hopwood (1908*a* and 1912*b*) published notes on birds of the Lower Chindwin district. Smith's notes (1942) include much information on birds seen or collected in the Katha district (including the Mogok hills), Shwebo district, Mandalay district (including Maymyo), and the dry zone uplands west of Meiktila. During the 'thirties we studied the birds of Maymyo, and when writing the first edition in 1940 I made use of a comprehensive paper on them prepared by Garthwaite, but never published and now lost. Roseveare (1949) published notes on the birds of the irrigated areas of the Shwebo district. Heinrich made a large collection (some 1,500 specimens) in the Mandalay district and on Mt. Popa as a preliminary to his work on Mt. Victoria ; in 1940 I went through the list of specimens collected in these areas, but have not seen any published notes on this part of his collection.

SOUTHERN BURMA. This area is dominated by the valleys of the Irrawaddy and Sittang rivers, separated by the Pegu Yomas, a range

of low hills clothed with the largest and most valuable single block of teak forest in the world. The dry zone comes down as far as Prome on the west and Pyinmana on the east. The southern part of the area consists of one vast paddy plain, terminating in the mangrove forests and mudflats of the coastal belt. On the west the area is shut in by the Arakan Yomas, and on the east by the Karen Hills of the Toungoo, Thaton and Salween districts.

The birds of the Arakan Yomas are no better known than those of Arakan. Oates obtained a few birds from Nyaunggyo near the crest of the Yomas on the Prome–Taungup road, and Stanford collected in the same locality; the collection made by Villar, already referred to under Arakan, included some specimens from the Prome–Taungup road, and from the Arakan Yomas in the Thayetmyo district.

By contrast, the birds of the Pegu Yomas and Plains of Southern Burma are probably better known than those of any other area in Burma. In the intervals of constructing the Pegu–Sittang canal Oates collected assiduously for many years in what was then known as the province of Pegu, later as Lower Burma, and by 1883 had obtained over 5,000 specimens. Armstrong wrote a paper (*Stray Feathers*, Vol. 4, p. 295) on the birds of the Rangoon river and the coast from its mouth to China Bakir. In the 'thirties Stanford and Ticehurst listed the birds of the Prome district (1931), based on a collection of 411 skins, comprising 209 species, and also of the Irrawaddy–Sittang plain (1935*a*), based on a further collection of about 400 skins of 166 species. Smith's notes (1942) include much information on birds of the Myitmaka drainage, the eastern Pegu Yomas, the Sittang valley and its estuary, and on the birds of Rangoon. I spent three years in the forests of the Taungnyo and Bawbin drainages, on the western side of the Pegu Yomas in the north of the Tharrawaddy district, and had almost completed a paper on the birds of the Pegu Yomas, which was lost in the war, but the gist of which is included in this book. Roseveare (1950) published notes on the irrigated areas of the Minbu district.

The history of collecting in the Karen Hills and Karenni is given in detail by Ticehurst (JBNHS, Vol. 41, p. 579). Wardlaw Ramsay collected 400–500 birds of about 150 species in 1874, and his results were included by Oates in his book. Subsequently Fea collected in the Karen Hills and his birds (467 specimens of 165 species) were reported on by Salvadori (1889). Cook (1912*b*) published some notes on the birds of Thandaung. Our joint paper (1943) on the hill birds

of the Karen Hills and Karenni, based on collections made at Thandaung and round Nattaung, summarised earlier work. Specimens obtained by Davison in the Thaton and Salween districts, and included by Hume in their joint paper on Tenasserim (discussed below) are referable to the Karen Hills as here defined.

NORTHERN SHAN STATES. This is a very large area of which we know very little, except by inference from what we know of the Mogok hills and Maymyo; no list or collected account has ever been published. Bangs (1921) reported on some birds collected east of the Salween, along the Yunnan border; most of this trans-Salween area is inhabited by the head-hunting Was, and is ornithologically unknown; the birds of the area west of the Salween are not likely to differ markedly from those of the better-known Southern Shan States.

SOUTHERN SHAN STATES. The Shan States as a whole are very different from the other hill areas of Burma; much of the country is a gently sloping plateau, some of it cultivated and some under grass, with ranges of mountains arising here and there; pine forests are extensive in parts of the Southern Shan States, and elsewhere high forest is scarce except along the major river valleys, especially that of the Myitnge or Namtu river in the north, and on some of the higher peaks. Across the Salween the country is more mountainous and more thickly forested.

The birds of Kalaw have been listed by Rippon (1896 and 1897) and by Cook (1913). More general lists have been published by Bingham and Thompson (1900), Rippon (1901), Thompson and Craddock (1902), Bingham (1903) and Wickham (1929), and notes dealing with nidification by Harington, Livesey and others. Recently de Schauensee (1946) has reported on some birds collected in Kengtung state, which he describes as "a most interesting region, the meeting ground of many forms recorded from Yunnan, Siam and French Indo-China."

KARENNI. This small state is traversed by the Salween, and by a large tributary that drains the Inle lake and flows through a wide elevated plain; high hills and mountains on the west, culminating in the peak of Natṭaung (8,607 feet), form the Sittang–Salween divide and separate Karenni from the Toungoo district; across the Salween to the Siam border the terrain is mountainous and ornithologically unknown. Wardlaw Ramsay made a short expedition into Karenni in 1874, and we spent short periods on Nattaung in 1939 and 1940; our joint paper (1943) summarises this work.

TENASSERIM. I define Tenasserim as the area east and south of the Salween, comprising the civil districts of Amherst, Tavoy, and Mergui; I exclude the districts of Toungoo, Thaton and Salween, which fall within the civil division of Tenasserim as defined to-day; Hume and Davison excluded Toungoo, but included the other two districts in their joint list of the birds of Tenasserim (*Stray Feathers*, Vol. 6), which extended from the Pa Chaung (or frog creek) in the north to the Pakchan estuary in the south, a territory estimated by Hume at no less than 625 miles in length and over 70 miles in width in many parts. I use the terms "northern Tenasserim" for the Amherst district down to Ye, "southern Tenasserim" for the Tavoy and Mergui districts, and "the extreme south of Tenasserim" for the vicinity of the Pakchan estuary.

Hume described his Tenasserim as "a province of the most varied physical configuration, embracing every conceivable variety of tropical and subtropical vegetation from the dismal mangrove swamps of the coast to the gloomy pine forests of the loftiest mountains—a province, broken up by innumerable rivers and interminable creeks, traversed in all directions by complex ranges of lower and higher hills—a province in which an hour's walk may take you from the shimmering velvet of the rice plains to the inaccessible precipices of the limestone hills, from the feathery sea of the bamboo jungle to the still recesses of the primeval evergreen forests—a province teeming almost without parallel with wild fruit and flowers and insect life, and with an avifauna worthy of this glorious profusion and this marvellous diversity of physical surroundings."

The principal peaks are Mt. Mulayit (so spelt on modern survey maps, formerly Muleyit or Mooleyit, 6,821 feet) at the head of the Thaungyin river, 70 miles ESE. of Moulmein; Mt. Nwalabo, somewhat lower, 16 miles E. by S. of Tavoy; and Mt. Myinmoletket (6,800 feet), a peak that has not been worked, on the Tavoy–Mergui district border. The countless islands of the Mergui Archipelago are an interesting feature of the area.

For most of our knowledge of the birds of Tenasserim we have to go back to Hume and Davison's paper, which was published in 1878, and to Bingham's paper (*Stray Feathers* Vol 9), which dealt mainly with the Thaungyin valley and was published in 1880. The former summarised the results of four years spent by Davison collecting throughout the province, in the course of which he obtained about 8,600 specimens, but Hume indicated that even this large collection was only a beginning. "Clearly no one man, however

gifted, could, within any reasonable period of time, achieve anything like an exhaustive exploration, even ornithologically, of this enormous and difficult tract. Davison has completed a sort of preliminary reconnaissance (impaired alas by some sad breaks), sufficient to give us some general idea of the avifauna and its distribution. . . ."

These two papers were summarised by Oates in his book, but no one has since studied the birds, year in and year out, as Davison did, and I have therefore quoted extensively from his notes, either verbatim or in summarised form, on the habits of Tenasserim birds; he died in 1893, and it is noteworthy that in Chasen's opinion no subsequent naturalist has equalled his knowledge of Malayan birds. Later work in Tenasserim can be briefly summarised. Bingham published some notes (1894–95) on the Amherst district; Hopwood published a note (1919) on some nests and eggs; Lowe (1933) reported on some birds collected by the Vernay expedition which travelled eastwards from Moulmein into Siam, finishing up at Bangkok. Riley (1938) reported on collections made by Abbott in the Mergui Archipelago in 1900 and 1903–4, and by Dr. H. M. Smith, who floated down the Salween in a dug-out from "the remote town of Mehongsorn on the Pai river, a tributary of the Salween" down to Moulmein, camping at night on the sandbanks.

This completes the description of the ten distribution areas. To distinguish them in the text, capital letters are used consistently, thus: North-East Burma and Southern Burma, but north-east Assam and southern Tenasserim; Chin Hills and Karen Hills, but Kachin hills and Bhamo hills, etc.

BIRD GEOGRAPHY IN BURMA. I have used in this book the following standard zoo-geographical terms:

HOLARCTIC REGION. The whole northern hemisphere, including Europe, a small portion of Africa, northern and central Asia down to the Himalayas, and North America.

PALAEARCTIC REGION. The holarctic region minus North America (the nearctic region).

ORIENTAL REGION. That part of Asia not included in the palaearctic region. We are concerned with three of its sub-regions, as follows:

Indian sub-region. The continent of India.

Indo-Chinese sub-region. Assam, Burma, Siam, French Indo-China, southern China, Formosa, Andamans, and Nicobars.

Malaysian sub-region. Defined by Delacour as the Malay Peninsula (Malaya) and the group of islands on the Sunda shelf below lat. 10° north, the largest of which are Sumatra, Java and Borneo.

Burma is a small part of the oriental region, but because of its favourable situation, with its head near the Himalayas and its tail extending down to Malaysia, it has one of the richest avifaunas, for its size, of any country in the world. Burma can justifiably claim, in round numbers, 1,000 species; I have accepted 953 species as reliably reported, and the balance will probably be added in course of time, partly from birds I have included in square brackets, and partly from unexpected finds. In the whole world there are only 8,616 species ± 5 per cent. (see Mayr on "The number of species of birds," *Auk*, Vol. 63, p. 64).

PALAEARCTIC BIRDS. A bird might be considered as a palaearctic species if treated as such in Hartert's standard work *Die Vögel der Paläarktischen Fauna* (Berlin, 1903–23). Palaearctic species occurring in Burma fall into two groups:

(i) The resident mountain species of Sino-Himalaya, a term that comprises the entire mountain region from Kashmir to western China, including Tibet and the mountainous parts of what are politically Assam and Burma.

(ii) The migratory birds that breed in or north of Sino-Himalaya and winter in the oriental region (*e.g.* many waders and ducks).

ORIENTAL BIRDS. I have already defined the three sub-regions, namely Indian, Indo-Chinese, and Malaysian that affect Burma.

Indian sub-region. A number of species typical of continental India range through Bengal and Chittagong into northern Arakan. Christison recorded the following:

Corvus splendens splendens
Turdoides longirostris
Monticola cinclorhyncha
Coracina sykesi
Nectarinia zeylonicus
Brachypteryx benghalensis
Cuculus varius
Strix ocellatum
Glaucidium radiatum
Amaurornis akool

Except for *Coracina sykesi*, *Cuculus varius* and *Glaucidium radiatum*, which Hopwood and Mackenzie recorded from the northern Chin Hills, none of these species has been recorded elsewhere in Burma.

The dry zone of Central Burma, although it cannot be included in

the Indian sub-region, nevertheless has some strong links with the birds of continental India, no doubt for climatic reasons. The following birds are characteristic of the dry zone :

Crypsirina cucullata
Pellorneum ruficeps hilarum
Turdoides gularis
Pycnonotus blanfordi blanfordi
Pericrocotus erythropygia albifrons
Prinia polychroa cooki
Anthus similis jerdoni
Mirafra assamica microptera
Athene brama pulchra
Falco jugger
Neohierax insignis insignis
Hieraaetus fasciatus fasciatus
Butastur teesa
Streptopelia decaocto xanthocycla
Burhinus oedicnemus indicus
Anas poecilorhyncha haringtoni

It is noteworthy that the wide-ranging hawks and falcons are not racially separable from Indian birds, whereas species of restricted range, isolated by the mountain barriers of the Chin Hills, have evolved well-marked endemic subspecies. *Turdoides gularis* is an endemic species.

Indo-Chinese sub-region { Assam–Burma element. / Indochine element.

The Assam–Burma element occupies nearly all Burma. In North-East Burma, as Mayr has shown, its boundary coincides with the western slope of the Irrawaddy–Salween divide, at the 3,000–5,000 feet level ; above this altitude, and further east, is the mountain fauna of Sino-Himalaya, except for a finger-like penetration along the deep-cut valleys of the Taping, Shweli, and Salween rivers into western Yunnan ; zoo-geographically these valleys are still part of northern Burma. Further south the Assam–Burma element extends through the Shan States to the Salween–Mekong divide. Deignan has shown that the Khun Tan range in northern Siam is a major zoo-geographical boundary, dividing a characteristically Assam–Burma fauna on the west from a characteristically Indochine fauna on the east ; a continuation of the same line northwards seems to coincide roughly with the Salween–Mekong divide, and (as I have remarked earlier) de Schauensee's work in Kengtung State, east of the divide, shows it to be a meeting ground of the two elements, but predominantly Indochine. Forms definitely recorded from Kengtung I have entered in the systematic list with the word " Kengtung " in the remarks column, and some other forms that Deignan and I consider likely to be identified in Kengtung when larger collections from that area are available have been entered as " Kengtung ? " in the remarks column ; otherwise the assumption might have been

made that the form occurring in the Southern Shan States extended all the way to the Mekong, which is unlikely to be correct.

Malaysian sub-region

Down in Tenasserim, in the Tavoy district, the Indo-Chinese birds (Assam-Burma element) grade into the Malaysian birds. As Hume pointed out many years ago, the region of lat. 13° north is an important zoo-geographical boundary because "a vast number of Malayan species, both birds and mammals, seem to extend northwards to about lat. 13° north and no further"; on the eastern, or Siamese, side of the peninsula the boundary is further down, in lat. 10° (Isthmus of Kra). This boundary delimits subspecies also. Many species are represented by a large form in the Himalayas and a smaller form in Malaya; as Hume pointed out, "the gradation in size is not uniform and gradual throughout. As a rule it seems that the species run down, only slightly diminished in size, to somewhere near the latitude of Tavoy, below which there is a very sudden decrease, and then by the time you get to the Pakchan the birds are only a trifle larger than those from Malacca and Johore." That is not quite the whole story, for (quoting Mayr) "it is a well-known phenomenon that a number of species have smaller measurements in Burma than in the Himalayas (Nepal, Sikkim) and that they still decrease in size farther south in the Malay Peninsula. Some of these have been separated subspecifically; in most cases the difference in size is too small to be acknowledged by name." It might be added that lack of sufficient properly sexed material often precludes any decision being arrived at, because in comparing different populations for size it is essential to compare adult males with adult males, or adult females with adult females; the taxonomy of such a common bird as the jungle crow is even now in an unsatisfactory state for this very reason; hence the great importance attached nowadays to the correct sexing of all specimens.

Factors controlling Geographical Variation. This diminution in size from the Himalayas to Malaya is an example of the well-known principle known as Bergmann's rule (which holds good for 70–90 per cent. of the species so far investigated). Huxley, in his book *Evolution: the Modern Synthesis*, states it thus: "Within a polytypic warm-blooded species, the body-size of a subspecies usually increases with decreasing mean temperature of its habitat." In other words, the more tropical the climate the smaller the subspecies tend to be.

Another well-known principle governs the colour of warm-blooded animals ; it is known as Gloger's rule and holds good for 85–90 per cent. of the species so far investigated. Huxley states it thus : " The intensity of melanin pigmentation tends to decrease with mean temperature ; however, humidity also has an effect, great humidity together with high temperature promoting the formation of the black eumelanins while aridity together with high temperature promotes the substitution of the yellowish or reddish-brown phaeomelanins. Thus the maximum depth of pigmentation will be found in humid and hot climates, the minimum in arctic climates. Heat and aridity, as in subtropical deserts, will promote yellowish and reddish-brown." In other words, subspecies tend to be blacker in hot and humid climates, browner or yellower in hot but arid climates, and paler in cold climates. Anyone who has observed the roller in India and Burma must have been impressed by the much darker blue of the Burmese race.

Combining these two rules, one would expect a gradation from large light-coloured subspecies in northern India to small dark subspecies in Malaya. To work out this thesis would require a book in itself, and Burma is too small a unit of area to illustrate the tendencies satisfactorily ; in the hope that it may be of some assistance to anyone who may investigate the geographical variation of oriental species at some future date, the distribution of subspecies in Burma is given as accurately as present knowledge permits in the systematic list. I content myself here with giving some examples of variation with altitude, and of variation arising out of geographical separation.

Since the mean temperature decreases as you go up a mountain, sedentary subspecies should be larger at high elevations. Mayr points out that " in regard to certain South American mountain ranges the high-altitude populations are frequently different (for example, darker and larger) from mid-mountain and lowland populations of the same locality. The Archbold expedition proved that exactly the same phenomenon occurred in New Guinea." In both South America and New Guinea there is good evidence to show that most of the altitudinal races have developed on the spot—in fact, they are generally connected by a graded series of intermediate populations ; some, however, originated at different localities, and have come to their present close proximity only by secondary migrations ; these generally show a decided gap between the characters of the two races involved. This type of altitudinal race is particularly

common in the Myitkyina district. Why? Kingdon Ward (1944) has shown that in the mountains of the district the ice sheet extended as far south as lat. 25° 30′ in Pleistocene times, and a possible explanation is that the high-altitude forms colonised the mountains only after the retreat of the ice, and have not had sufficient time to grade into the low-altitude forms. Examples of altitudinal races from the Myitkyina district are the following:

Species	Low-altitude form	High-altitude form
Corvus macrorhynchos	*levaillanti*	(larger) *alticola*
Kitta erythrorhyncha	*magnirostris*	*bhamoensis*
Stachyris ruficeps	*planicola*	*picaoides*
Heterophasia picaoides	*cana*	*arctus*
Pycnonotus striatus	*striatus*	*yunnanensis*
Saxicola torquata	*leucura*	*daurica*
Hirundo striolata	*striolata*	*vernayi*
Alauda arvensis	*gulgula*	*sordidior*
Picus canus	*gyldenstolpei*	*obscurus*
Dendrocopos nanus	*canicapillus*	*forresti*
Dryocopus javensis	*feddeni*	*helenae*
Harpactes erythrocephalus	*erythrocephalus*	*orientalis*
Streptopelia orientalis	*agricola*	*forresti*
Streptopelia chinensis	*tigrina*	

Finally, it may be of interest to outline the trend of geographical variation in the Assam–Burma element. The most obvious feature is the tendency for hill species to develop geographic races in western and eastern Burma because these populations are isolated from each other by the plains of Central and Southern Burma; the population of the western hills, however, is itself not uniform, neither is the population of the eastern hills.

Considering the western hills first, Ripley's recent work indicates that the birds of the Mishmi hills and Margherita are often the same as the birds of North-East Burma and the Hukawng valley, but that further south there is a difference; some characteristic Himalayan forms (different from the Mishmi–Hukawng–Myitkyina population) reach across Manipur to the Central Chindwin or further south into the Chin Hills; this is well illustrated by *Pomatorhinus montanus*, which is represented by the Himalayan form *schisticeps* round Tamanthe, by *salimalii* in the Mishmi hills, by *cryptanthus* round Margherita (? and the Hukawng valley, whence specimens have not

been obtained) and by *mearsi* in the Lower Chindwin, Chin Hills and Arakan. Other examples are :

SPECIES	MISHMI-HUKAWNG RACE	CHIN HILLS RACE
Pellorneum ruficeps	subsp.	*victoriae*
Malacocincla tickelli	*assamensis*	*grisescens*
Stachyris nigriceps	*coltarti*	subsp.
Stachyris chrysaea	*chrysaea*	*binghami*
Stachyris rufifrons	*ambigua*	*pallescens*
Paradoxornis gularis	*transfluvialis*	*rasus*
Alcippe nepalensis	*commoda*	*stanfordi*
Alcippe poioicephala	*fusca*	*phayrei*
Seicercus burkei	*burkei*	? *tephrocephala*
Seicercus xanthoschistos	*pulla*	*tephrodiras*

It is impossible to analyse the position in greater detail because some of the key pieces in the jig-saw puzzle are missing ; we know little or nothing of the populations of the Arakan Yomas, Burmese Naga hills, Lohit-Irrawaddy divide, and the Triangle, and only when these areas have been sampled as carefully and accurately as Heinrich sampled Mt. Victoria, and the results compared with the Mishmi, Manipur and Lushai populations, will it be possible to complete the picture.

In the eastern hills we are again handicapped by our lack of knowledge of the Northern Shan States. Further south we know that the majority of the lowland species of Southern Burma, northern Tenasserim and north-western Siam are not racially separable ; the montane birds of north-western Siam are almost identical with those of Mt. Mulayit, but further west, in the area between the Sittang and Salween rivers, a number of endemic races have developed, *e.g.*

Pomatorhinus montanus nuchalis
Pomatorhinus ferruginosus mariae
Pomatorhinus erythrogenys imberbis
Paradoxornis poliotis feae
Garrulax erythrocephalus ramsayi
Siva cyanouroptera oatesi
Yuhina humilis clarkei
Heterophasia melanoleuca castanoptera
Heterophasia annectans saturata
Aethopyga nipalensis karenensis

SUMMARY OF BURMA BIRD POPULATIONS. Most of Burma falls in the Indo-Chinese sub-region of the oriental region and is occupied by its western or Assam–Burma element, which is not a uniform population, but exhibits geographical variation that has not been fully analysed ; it grades into the eastern or Indochine element roughly in the area of the Salween–Mekong divide, and into the Malaysian sub-region in

the area of lat. 13°. The dry zone has affinities with the Indian subregion, and a number of forms characteristic of the latter occur in northern Arakan. Palaearctic birds are represented by the resident mountain birds of Sino-Himalaya and by a large number of winter visitors.

SIBLING SPECIES. Some pairs of species resemble each other so closely that the naturalist finds it difficult or impossible to distinguish them in the field, and yet observation shows that they behave as distinct species and do not interbreed, although they may live side by side over much of their range; such morphologically similar twins or doubles are termed sibling species and are of great interest to the student of evolution. Several good examples occur in Burma, *e.g. Pericrocotus brevirostris* and *ethologus*, *Garrulax pectoralis* and *moniliger*, *Tesia cyaniventer* and *olivea*, *Pnoepyga albiventer* and *pusilla* (a marked difference in size but remarkable resemblance in plumage), *Pycnonotus charlottae* and *viridiscens*, *Zoothera dixoni* and *mollissima*, *Hirundo daurica* and *striolata*; several of these have only been recognised and separated in recent years, and in the genus *Collocalia* we have a number of species of swiftlet that resemble each other very closely, but their relationships have not yet been worked out. Sibling species demonstrate the important fact that the reality of a species has nothing to do with its distinctness, and (as Mayr points out) subspecies often show more conspicuous visible differences than many full species, especially sibling species, exhibit.

BIRD ECOLOGY IN BURMA. There is no doubt that elevation above sea-level is the most important single factor controlling the distribution of birds in the tropics, and explains why the ornithologist scans the map for high peaks with the eagerness of a mountaineer. A writer on the ecology of birds in Tanganyika " was astonished to find that altitude above sea-level had the appearance of ruling the distribution of many species. It was as if every bird carried a pocket aneroid." An illustration from Burma will emphasise the point. From the plains of Toungoo both Thandaung (4,300 feet) and Nattaung (8,607 feet) are visible to the east, the former 28 miles by road; Thandaung and Nattaung are 40 miles apart by air. Many species are common round Thandaung that you never see in the plains round Toungoo; and not a few species are common on the higher slopes of Nattaung that you never see at Thandaung, or even on the lower slopes of Nattaung; conversely many of the common plains species of Toungoo are never seen up in the hills at Thandaung or on Nattaung. As you go further north in Burma the elevation

control is less rigid (unless you consider *breeding* elevations only), for the colder winters with snow on the mountains drive many of the high-altitude birds down to the warmer valleys ; thus *Garrulax sannio, Pteruthius erythropterus, Actinodura egertoni, Heterophasia picaoides, Chelidorhynx hypoxantha,* are species that you never see much below 3,000–4,000 feet in Southern Burma, but which are not uncommon along the N'Mai Hka valley (1,000 feet) in winter ; in more general terms, many species that range through Burma tend to have the lower limit of their altitudinal zone 1,000–2,000 feet lower in the north, a fact that Stuart Baker also noticed in Assam. This fact must be kept in mind when looking at the elevation figures given in the systematic list, which are intended only as a rough guide to distinguish high-altitude and low-altitude forms.

After elevation, the next most important factor controlling the distribution of birds is probably the type of vegetation. The principal types found in Burma might be listed as follows :

(1) Evergreen forest.
(2) Mixed deciduous forest.
(3) *Indaing* forest.
(4) Unclassed forest.
(5) Dry zone thorn scrub.
(6) Paddy plain.
(7) Hill savanna.
(8) *Ponzo.*
(9) Aquatic habitats.

(1) *Evergreen forest.* This type is associated with a rainfall exceeding 80 inches per annum, and is best developed in Arakan, Tenasserim, northern Burma, the southern and south-eastern part of the Pegu Yomas, parts of the Karen Hills and Karenni. I include here all forests of the evergreen facies from sea-level to their upper limit at about 9,000 feet ; botanically several altitudinal zones can be recognised, and have been listed by Kingdon Ward (1944), but so far as the birds are concerned subdivision is not necessary. Some typical birds of this type are the fairy bluebird, large niltava, pittas and broadbills.

(2) *Mixed deciduous forest.* This type is associated with a rainfall of 40–80 inches per annum, and is best developed in the Pegu Yomas, the foothills west of the Irrawaddy not quite up to the Arakan Yoma crest, the Chindwin drainage up to Homalin, parts of the Shwebo, Katha, Bhamo and Myitkyina districts, and parts of the Shan States and northern Tenasserim. A mixture of deciduous species form the upper storey, including the commercially valuable teak and *pyinkado* (*Xylia dolabriformis*), and shed their leaves in January ; ground fires occur annually in February or March ; and fresh leaves appear

in April. An understorey of bamboos is characteristic and keeps down the undergrowth, thus making it comparatively easy to walk about in these forests. Some typical birds are various small babblers of the genera *Macronus*, *Stachyris*, *Alcippe* and *Pellorneum*, and tree-top birds such as minivets, orioles and grackles.

(3) *Indaing forest.* This replaces the preceding type on lateritic or sandy soils, and consists of an almost pure stand of *Dipterocarpus tuberculatus* (*In* or *Eng*) with an undergrowth of grass. It covers extensive areas along the east bank of the Irrawaddy in the Bhamo and Katha districts, between the Chindwin and the Mu in the Shwebo and Lower Chindwin districts, and in a narrow belt along the western edge of the Pegu Yomas and the east bank of the Sittang. It is similar to the *pa daeng* forest, which Deignan estimates as covering half the forested portions of all Siam north of the Isthmus of Kra, and to the sub-montane *sal* (*Shorea robusta*) forests of the Himalayas. Most of the birds of the dry, mixed, deciduous forests are found also in the *indaing*, but some species seem to prefer the latter, among them the jay, great tit, chestnut-bellied nuthatch and hoopoe.

(4) *Unclassed forest.* Between the paddy plains and the "reserved" State forests there is usually a belt of "unclassed" forest, or public forest land, in which the villagers are free to obtain, with the minimum of red tape, their requirements of houseposts, bamboos, and firewood; low ridges and bumps covered with scrub-jungle, bamboo thickets, and *bizat*, make an intricate pattern with the paddy fields, which extend as finger-like projections along the streams. Typical of this habitat are species that like to feed on grain, with a safe retreat in the jungle near at hand, species such as the jungle-fowl, rufous turtle dove, and francolin.

(5) *Dry zone thorn scrub.* Extensive areas in Central Burma and down the Irrawaddy valley to Prome, are covered with low, thorny shrubs, where these have not been cleared for upland cultivation; the characteristic dry zone birds have already been listed.

(6) *Paddy plain.* Wherever the land is flat and irrigation (natural or artificial) is possible, paddy fields will be found. They cover about 13,000,000 acres, principally in the Irrawaddy delta, but there are appreciable areas in Arakan, in Central Burma (in districts where canals have been constructed), and small areas in northern Burma, *e.g.* along the railway corridor from Mohnyin to Mogaung. The various egrets are perhaps the most typical birds of the paddy plains.

(7) *Hill savanna.* I include under this head open park-like forests,

consisting of scattered pines or oaks or chestnuts with an undergrowth of grass or bracken. It covers extensive areas in central Karenni and the Shan States, especially along the China road from Kutkai to the border. Much of the Ngawchang valley from Htawgaw eastwards is covered with hill savanna. *Prinia atrogularis* and *Melophus lathami* are characteristic birds of the rather limited fauna.

(8) *Ponzo*. Most of the hill tribes practise shifting cultivation (or *taungya*), with the result that in the Arakan Yomas, Chin Hills, Naga hills, Kachin hills and Karen Hills, the hillsides up to 6,000–7,000 feet (even higher locally) are covered with dense secondary growth and not with climax high forest. Many species seem to prefer the *ponzo*, *e.g.* many bulbuls and the silver-eared mesia.

(9) *Aquatic habitats*. This might be sub-divided into freshwater habitats (rivers, streams, lakes, jheels and swamps) and salt-water habitats (mangrove swamps, tidal estuaries, coastal mudflats). Some birds will be found in both salt and fresh-water habitats, but others frequent one or the other ; thus most of the migratory ducks winter on the rivers and jheels, whereas some of the waders prefer the coastal mudflats.

The habitats so far listed replace each other geographically. In a tropical forest, however, there is a vertical stratification of the fauna, which also has to be noticed in any account of the bird ecology. We have :

(i) Birds of the tree-tops, *e.g.* minivets, parakeets, sibias.
(ii) Birds of the lower canopy, *e.g.* bulbuls, barwings.
(iii) Birds of the undergrowth, *e.g. Alcippe*, *Stachyris*, *Garrulax*, some flycatchers.
(iv) Ground birds, *e.g.* pittas, gamebirds.

In this book, under the heading " Habits and Food," I have tried to give some indication of the bird's preferences in regard to both habitat and vertical zone, but space does not permit of any detailed analysis of the ecology of Burma birds.

ARRANGEMENT OF THE TEXT. I have adopted the orders and families proposed by Wetmore (1940) in "A systematic classification for the birds of the world," Smithsonian Misc. Coll. 99 (No. 7), a classification that has been followed in most recent handbooks ; but I have had to retain the sequence of orders used by Stuart Baker in the *F.B.I.*, because the plates were based on it and they cannot be altered. In some families I have re-shuffled the genera in accordance with modern ideas, but in others I have left Stuart Baker's sequence

undisturbed, although there is scope for improvement (notably in the crows and woodpeckers).

Birds are described species by species ; those species that have been illustrated, or are considered to be characteristic of Burma, have been dealt with under a greater number of headings, and printed in larger type, than species that are not often seen, or that are restricted to a small part of Burma. The only object of this arrangement is to save space. The information about each species in the first group is given under the following heads : English name of species, scientific name of species, author of the scientific name, typical locality associated with the name ; next, the subspecies (if any) are listed with the authors' names and typical localities ; next, the local names (if any) ; next, information about the bird under the headings—Identification, Voice, Habits and Food, Nest and Eggs, Status and Distribution. For the second group of birds, *i.e.* those printed in small type, the information under identification, voice, and habits and food, is telescoped under the heading Identification.

It is customary in modern handbooks to describe birds subspecies by subspecies. I am aware that subspecific differences in voice or habits have been detected in a few species of birds, and that the danger of lumping life histories under the specific name is that such subspecific differences will be obscured ; in a territory the size of Burma, however, I do not regard this danger as serious, and where such differences have been noticed, *e.g.* in the songs of the races *vernayi* and *gulgula* of the skylark and in the notes of the races *richardi* and *rufulus* of the pipit, I have indicated them.

Some explanatory notes on the headings follow :

ENGLISH NAME. Unfortunately there is no standard list of English names for oriental species, and no general agreement among authors —some birds appear under three or four different names in as many books. I have selected names on the following principles :

(i) Names are given to species only, not to subspecies. The coining of English names for subspecies is futile, and if it is desired to designate a subspecies this can be done more usefully by a reference to its typical locality.

(ii) The name selected must be generally applicable to the species as a whole, not merely to one or two of its subspecies. I am aware that there are anomalies and exceptions ; thus I retain the name " red-vented bulbul " for *Pycnonotus cafer* although the south-eastern subspecies are yellow-vented, and merely point

out that such anomalies will persist until the English names of oriental species are standardised.

(iii) For birds on the British list I generally follow the name given in Witherby's Handbook, sometimes with the prefix "European."

(iv) For birds with typical localities in Malaysia I generally follow Delacour (*Birds of Malaysia*) in preference to Stuart Baker.

(v) For birds other than those included in (iii) and (iv) I generally follow Stuart Baker (*F.B.I.*).

We have abandoned the use of capitals for English names of birds in the text, following the lead of *The Scottish Naturalist* for the reasons given in an editorial in Vol. 60, No. 1, April 1948, of that journal:

> Elimination of capitals may lead in rare instances to ambiguity, especially with unfamiliar names, and it makes it somewhat less easy to spot references to individual species on the printed page. However, the added simplicity, and conformity with ordinary non-technical English as well as with the best modern practice in scientific literature, greatly outweigh these considerations.

In the matter of hyphens we have adopted the following criteria:

(i) Where the two parts of the hyphened name both consist of a bird's name (*e.g.* shrike-babbler) the hyphen is retained.

(ii) Where the second part is a bird's name but not the first (*e.g.* rose finch) the hyphen is omitted.

(iii) Where the second part is not a bird's name (*e.g.* parrotbill) the hyphen is omitted and the name printed as one word.

Under these rules we have abolished most of the hyphens used by other writers and thus made the index of English names much easier to compile and to use.

SCIENTIFIC NAME. I have brought the nomenclature up to date in accordance with the findings of American authorities, published since the first edition was printed; the more important papers are listed in the bibliography (see under Amadon, Deignan, Delacour, Mayr, Ripley). This has involved many changes in the names used by Stuart Baker; the most obvious change is the disappearance of many genera owing to "lumping," and it may be as well to give briefly the reasons for this operation, on the necessity for which all progressive ornithologists seem to be in agreement. The whole question is dealt with very lucidly by Mayr in his most interesting book (1942), which I commend to all students, and from which I quote below.

To some extent all taxonomic categories (*i.e.* subspecies, species, genus, etc.) are collective units. " The subspecies or geographic race is a geographically localised subdivision of the species, which differs genetically and taxonomically from other subdivisions of the species." Even the subspecies is generally composed of a number of slightly distinct populations, some of which connect it with neighbouring subspecies. It is, in many cases, entirely dependent upon the judgment of the individual taxonomist how many of these populations are to be included in one subspecies. No system of nomenclature is able to represent adequately the complicated set of inter-relationships and divergences found in nature.

It was Linnaeus's principal service to biology that he established a set of rules to play the taxonomic game. Every species was, according to him, the product of a separate act of creation and therefore clearly separated from all other species. Groups of similar species were united in genera, and consequently each species was given two names, one to designate the species and one the genus. This is what we understand by binomial nomenclature.

This method works well as long as only a few specimens are known in every species ; but in well-studied groups such as birds, as museum collections increased, more and more species were described, some of which were closely related to each other, and then specimens were found with increasing frequency which had to be placed in species "A" on the basis of one character and in species "B" on the basis of another character. It gradually became obvious that the set of rules which Linnaeus had given to the game of taxonomy had to be revised, or else the whole procedure of taxonomy would turn into a farce.

The first change was the introduction of trinomial nomenclature for geographic subdivisions of the species, and this led to many " species " being reduced to the rank of subspecies. In 1910 was published the last complete list of all the birds in the world, recording 19,000 species. Since then about 8,000 additional forms have been described, but the birds are now arranged in 8,616 species (± 5 per cent.), instead of in 27,000. This reduction in the number of species led to a revision of the genus concept ; when it was discovered that there were 10,000 generic names for 8,616 species of birds, and that the genus had in general become synonymous with the species and therefore served no useful purpose, the bird taxonomists started the lumping of genera, with the result that the latest estimate gives 2,600 genera of birds, *i.e.* 3·3 species per genus. Even so, it is generally admitted that birds are still oversplit generically, and that

a reduction to 1,700 genera, giving an average of five species per genus, would be preferable. The genus is a subjective unit and to be a convenient category in taxonomy it must be neither too large nor too small. At the end of this introduction I give a list of generic names used by Stuart Baker, but suppressed in this book.

In regard to the spelling of scientific names I am in agreement with Delacour and Mayr (1945*a*), who set out their views as follows :

> We have always stood for the strict application of the law of priority, but according to the rules and opinions of the International Commission. These provide for corrections in evident cases of misprints, of *lapsus calami*, and of errors in transcription. . . . To retain the original spelling of a name, however wrong it evidently is, constitutes a retrograde solution, too easy and too uncritical. It is a great pity that both the A.O.U. and the B.O.U. committees on nomenclature have recently chosen to follow such a course. We are absolutely opposed to it, now as in the past, and consequently we correct all misprints, lapsus calami, and errors in transcription. Also, according to the same rules, the endings of the adjectival species names should agree with the gender of the genus, and Greek endings should not be latinised. Furthermore, we conserve long-used names, unless the necessity for a change is unequivocally established.

I have endeavoured to spell names in accordance with these principles, but for want of the time required to verify all original references I cannot guarantee that every name is spelt correctly ; departures from the spelling used by Stuart Baker are usually made on the authority of Deignan or Delacour. Dedication names, *i.e.* names taken from surnames, sometimes end in *ii* and sometimes in *i* (*e.g. temminckii*, *ripponi*) because in the old days the surname was first latinised (*temminckius*) and then placed in the genitive, whereas the modern custom is simply to add *i* to the unchanged surname. Since it is impossible, without looking up the original reference, to know whether a describer used the old or the new method, *i.e.* used one *i* or two, I have adopted the modern method irrespective of the original spelling.

The name of the naturalist or author who first introduced the scientific name into literature is printed after the name. If the scientific name is coupled with a generic name other than that with which the author published it, his own name is placed in brackets. Thus Lesson named the jungle crow of India as *Corvus levaillanti* ; this bird is now treated as a subspecies of *Corvus macrorhynchos* and its name becomes *Corvus macrorhynchos levaillanti* Lesson ; although placed under another species, the genus has not changed, and therefore Lesson is printed without brackets. On the other hand, Daudin

observers seem to hear them quite the same ; moreover, there may be variation, both individual and subspecific, as pointed out by Mayr (1942, pp. 54–55), Stanford (1945), and others. However, we have recorded what the more important songs and call-notes sound like to us ; only observers with a musical ear can hope to equal Heinrich's detailed and careful descriptions, some of which are quoted.

HABITS AND FOOD. This section deals first with ecology (habitat), then with actions and behaviour, and lastly with food. Davison many years ago dissected his specimens in Tenassserim and recorded the stomach contents (*Stray Feathers*, Vol. 6), and Stanford recorded the food of specimens collected by the Vernay–Cutting expedition.

NEST AND EGGS. In the first edition I gave a concise summary of the nest and eggs of each species ; for most Burma species this information is available in considerable detail in Stuart Baker's standard work on nidification (1932–35), and I have therefore restricted my remarks in this edition to describing in what season of the year, in what parts of Burma, and in what type of country or habitat in Burma, nests have been found and by whom. Brief descriptions of nests and eggs taken in Burma are also given.

STATUS AND DISTRIBUTION. I first define the distribution of the species outside Burma in general terms, and then give as accurately as possible its status and distribution within Burma. Whistler gives a good account of migration, which is here summarised.

The avifauna of Burma, or of any square mile of it, is never stationary, but changes season by season in response to the great tide of bird life that sweeps across it with the regularity of the tides of the sea. The fundamental principle of migration is easy to understand. With the changing of the seasons a bird that summers in northern latitudes is unable to find food in those latitudes in winter ; it therefore moves southwards to an area that time and circumstances have fixed as its winter quarters. In the north the bird is termed a " summer resident," in the south a " winter visitor," and in the intervening countries through which it travels a " passage migrant " ; the southerly route followed in the " autumn passage " is not necessarily the same as the route by which it returns northwards in the " spring passage."

Burma lies south of the great mass of northern and central Asia, where winter conditions are severe after a short but luxuriant summer ; it is therefore not strange that a huge wave of bird-life pours down to winter in Burma, where insect life and vegetable food is so abundant. The movement starts as early as July and reaches

named the racket-tailed treepie *Corvus temia*; this species is now placed under the genus *Crypsirina* and its name becomes *Crypsirina temia* (Daudin). As I have not verified the original references, some brackets may be found that should have been omitted, and vice versa.

TYPICAL LOCALITIES. The most important thing to know about a subspecies, after its scientific name, is its typical locality; the modern practice is to name a single-type specimen as the type of a new subspecies, and the exact locality in which it was collected as the typical locality. I have given as a rule the geographical area, *e.g.* S-E. Yunnan, or the district of Burma in which the typical locality is situated rather than the actual pin-point specified by the author of the name.

LOCAL NAMES. Most of the Burmese names given were recorded by Oates, and are generally known by Burmans. I have verified that the Chinghpaw names given are in current use (the people known to us as Kachins call themselves Chinghpaw, and their language is the *lingua franca* of the Kachin hills); I have not included the Lashi, Maru and Yawyin (=Lisu) names that have been recorded, because they are of very local application. No doubt the Chins, Karens and Shans have their own names for birds, but I have not seen any recorded and have no personal knowledge of these languages.

IDENTIFICATION. The coloured plates illustrate 290 of the Burma species, and facing each plate is a sheet giving for each bird the following information:

(i) The English and scientific name,
(ii) whether adult or immature,
(iii) if the sexes differ noticeably, whether male or female,
(iv) if the plumage varies noticeably with the seasons, whether summer or winter plumage.

In the section on identification only important features of the plumage not brought out in the plate are mentioned. The description of birds not illustrated aims at assisting the observer with field glasses, but we have not seen in the field *all* the birds mentioned in this book, and for many of these no field description has been published, and it is not always easy to picture from a detailed description of the plumage just what a bird looks like—one cannot see the bird for the feathers.

VOICE. The call-notes and songs of birds are as important an aid to identification as they are difficult to render on paper, and no two

its height in September and October ; in the spring the tide recedes again, starting at the end of February, and all our winter visitors have gone by the end of May. This type of movement comes under the heading of true migration and a good example is afforded by the Arctic willow warbler, which performs a journey of about 4,000 miles twice a year from its breeding quarters in Siberia to its winter quarters in south-eastern Asia and back again, an astonishing distance for so minute a bird.

Smaller and more irregular movements also take place and come under the heading of local migration. The cause of some of these movements is obvious, as when birds of the mountains and higher hills move down to lower elevations in winter, but the cause of others is obscure ; why does the black drongo arrive in the plains of Southern Burma in large numbers every October and leave again in the hot weather ? Why does the pariah kite (*Milvus migrans lineatus* and *govinda*) come down to Southern Burma in large numbers for the cold weather and leave again either before breeding (*lineatus*) or after breeding (*govinda*) ? Examples can be quoted of all degrees of migration, and there is no clear-cut distinction between local and true migration ; some species entirely desert their breeding quarters during part of the year ; others split up, some individuals staying in the breeding area and the rest migrating to a greater or less distance ; others again move about wholly within their breeding range. We know little enough about migration in Burma, but I have summarised as carefully as possible such observations as have been made.

In the systematic list " R " denotes that the bird is believed to be a resident, " M " denotes that it is a migrant (usually a winter visitor, but sometimes a summer visitor), and " U " denotes uncertainty as to whether the bird is a resident or migrant. This is necessarily a rough classification and ignores local migration.

GENERIC SYNONYMS

Generic name used in F.B.I.	*Generic name used in this book*
Urocissa	Kitta
Cissa	"
Dendrocitta	Crypsirina
Lophophanes	Parus
Sylviparus	"
Machlolophus	"
Suthora	Paradoxornis
Neosuthora	"
Psittiparus	"
Dryonastes	Garrulax
Ianthocincla	"
Trochalopterum	"
Trocholopterum ripponi	Liocichla
Grammatoptila	Garrulax
Stactocichla	"
Argya	Turdoides
Acanthoptila	"
Babax	"
Pyctorhis	Chrysomma
Cursonia	Turdinus
Turdinulus	"
Horizillas	Malacopteron
Erythrocichla	Malacocincla
Aethostoma	"
Thringorhina	Stachyris
Stachyridopsis	"
Cyanoderma	"
Mixornis	Macronus
Schoeniparus	Alcippe
Pseudominla	"
Fulvetta	"
Lioparus	"
Sibia	Heterophasia
Leioptila	"
Ixops	Actinodura
Staphidia	Siva
Ixulus	Yuhina
Erpornis	"
Hilarocichla	Pteruthius
Aethorhynchus	Aegithina
Mesia	Leiothrix
Minla	Siva
Tricholestes	Microscelis
Alophoixus	Criniger
Cerasophila	Microscelis
Hemixus	"
Alcurus	Pycnonotus
Molpastes	"
Xanthixus	"
Otocompsa	"
Pinarocichla	"
Trachycomus	"

Generic name used in F.B.I.	*Generic name used in this book*
Iole	Microscelis
Rubigula	Pycnonotus
Microtarsus	"
Elachura	Spelaeornis
Tesia castaneocoronata	Oligura
Larvivora	Luscinia
Heteroxenicus	Brachypteryx
Oreicola	Saxicola
Hydrocichla	Enicurus
Microcichla	"
Chaimarrhornis	Phoenicurus
Rhyacornis	"
Cyanosylvia	Luscinia
Calliope	"
Ianthia	Tarsiger
Notodela	Myiomela
Kittacincla	Copsychus
Oreocincla	Zoothera
Laiscopus	Prunella
Hemichelidon	Muscicapa
Siphia	"
Cyornis	"
Nitidula	"
Stoparola	"
Anthipes	"
Anthipes olivaceus olivaceus	Rhinomyias
Alseonax	Muscicapa
Niltava	"
Lalage	Coracina
Graucalus	"
Chaptia	Dicrurus
Chibia	"
Bhringa	"
Dissemurus	"
Tribura	Bradypterus
Franklinia	Prinia
Phragmaticola	Acrocephalus
Herbivocula	Phylloscopus
Acanthopneuste	"
Seicercus cantator	"
Muscitrea	Pachycephala
Abrornis	Abroscopus
Neornis	Cettia
Horornis	"
Horeites	"
Urophlexis	"
Phyllergates	Orthotomus
Soya	Prinia
Eulabes	Gracula
Lamprocorax	Aplonis
Spodiopsar	Sturnus

Generic name used in F.B.I.	*Generic name used in this book*
Sturnia	Sturnus
Agropsar	,,
Ampeliceps	Mino
Gracupica	Sturnus
Aethiopsar	Acridotheres
Sturnopastor	Sturnus
Ploceella	Ploceus
Munia	Lonchura
Uroloncha	,,
Amandava	Estrilda
Perissospiza	Mycerobas
Propasser	Carpodacus
Procarduelis	,,
Hypacanthis	Carduelis
Chrysomitris	,,
Ptyonoprogne	Riparia
Alaudula	Calandrella
Chalcoparia	Anthreptes
Chalcostetha	Nectarinia
Leptocoma	,,
Piprisoma	Dicaeum
Prionochilus	Anaimos
Pachyglossa	Dicaeum
Anthocincla	Pitta
Chrysophlegma	Picus
Callolophus	,,
Gecinulus	,,
Hypopicus	Dendrocopos
Dryobates	,,
Leiopicus	,,
Yungipicus	,,
Dinopicus	Dinopium
Chloropicoides	,,
Thriponax	Dryocopus
Thereiceryx	Megalaima
Chotorhea	,,
Cyanops	,,
Xantholaema	,,
Hierococcyx	Cuculus
Penthoceryx	Cacomantis
Zanclostomus	Phoenicophaeus
Rhopodytes	,,
Rhamphococcyx	,,
Rhinortha	,,
Melittophagus	Merops
Bucia	Nyctyornis
Rämphalcyon	Pelargopsis
Entomothera	Halcyon
Sauropatis	,,
Caridagrus	,,
Carcineutes	Lacedo

Generic name used in F.B.I.	*Generic name used in this book*
Dichoceros	Buceros
Pyrotrogon	Harpactes
Micropus	Apus
Tachornis	Cypsiurus
Hirundapus	Chaetura
Rhaphidura	,,
Lyncornis	Eurostopodus
Ketupa	Bubo
Huhua	,,
Sarcogyps	Torgos
Erythropus	Falco
Cerchneis	,,
Lophotriorchis	Hieraaëtus
Astur	Accipiter
Baza	Aviceda
Crocopus	Treron
Dendrophasa	,,
Butreron	,,
Sphenocercus	Sphenurus
Muscadivora	Ducula
Myristicivora	,,
Alsocomus	Columba
Dendrotreron	,,
Oenopopelia	Streptopelia
Gennaeus	Lophura
Excalfactoria	Coturnix
Tropicoperdix	Arborophila
Hypotaenidia	Rallus
Amaurornis fuscus	Porzana
Amaurornis bicolor	,,
Orthoramphus	Esacus
Squatarola	Pluvialis
Leucopolius	Charadrius
Eupoda	,,
Tringa hypoleucos	Actitis
Glottis	Tringa
Erolia	Calidris
Bubulcus	Ardeola
Asarcornis	Cairina
Casarca	Tadorna
Eunetta	Anas
Chaulelasmus	,,
Mareca	,,
Nettion	,,
Dafila	,,
Querquedula	,,
Spatula	,,
Nyroca	Aythya
Glaucionetta	Bucephala
Mergellus	Mergus

GLOSSARY

Axillaries : Feathers on the under surface of the wing where it leaves the body.

Bedabin : The Water Hyacinth (*Eichhornia crassipes*), an introduced weed that grows very freely on tanks, canals and waterways.

Bizat : *Eupatorium odoratum*, another introduced weed that colonises open spaces and has spread through Burma with astonishing rapidity in recent years.

Dhoob : Short grass of a creeping variety.

Hpongyi kyaung : A Buddhist monastery.

Htee : The ornamental top of a pagoda.

Indaing : Dry dipterocarp forest without bamboos.

Kaing : Tall thick " elephant " grass (*Saccharum* spp.).

Kalauks : Wooden bells tied round the necks of cattle

Kokko : Properly *thinbaw-kokko* (*Enterolobium saman*), a common roadside tree in Burma, also known as the Rain Tree.

Lantana : *Lantana camara*, another introduced plant, an impenetrable thorny shrub that has spread in certain areas, *e.g.* round Maymyo.

Letpan : *Bombax malabaricum*, or the Silk-Cotton Tree ; it produces large trumpet-shaped scarlet or orange flowers, which are much visited by birds, at the end of the cold weather.

Lwin : An open grassy plain, usually undulating, and often quite a small area surrounded by forest.

Mayin : Rice harvested in the hot weather.

Ponzo : Dense regrowth on abandoned cultivation.

Primaries : The outermost 9 or 10 quills of the wing, forming the wing-tip.

q.v. : Please refer to the bird named.

Secondaries : The feathers forming the hinder part of the wing near the body.

Tamarind : *Tamarindus indica* or *magyi-bin*, a common village tree in Burma.

Taungya : Shifting cultivation in the forest.

Terai : A belt of marshy and malarious jungle between the Himalayan foothills and the plains.

Thetke : Thick grass of medium height, used for thatching (mainly *Imperata arundinacea*).

Zayat. A wayside shelter for travellers.

Order PASSERIFORMES

Family CORVIDAE

CROWS, MAGPIES, TREEPIES, JAYS, AND NUTCRACKERS

THE crows and their allies are the prosperous gangsters of the bird world ; at all times they are more or less omnivorous, and during the breeding season they delight in smash-and-grab raids on the nests of other birds, eating their eggs and young. As a family they have few other characters in common and yet there is no group of birds more easily recognised ; they are found in all parts of the world and include some of our most familiar birds.

JUNGLE CROW

Corvus macrorhynchos Wagler, JAVA
SUBSPECIES : *levaillanti* Lesson, BENGAL
andamanensis Tytler, ANDAMAN IS.
subsp., Mountains of North-East Burma

LOCAL NAMES. Burmese : *taw kyi-gan* ; Chinghpaw : *u-hka*.
IDENTIFICATION. Plate I, fig. 1, p. 4. Length 20–22 inches. The flight is straight, rather slow, with regular wing-beats, and the flight-feathers of the wing-tips are noticeably larger and more separated than in the house crow ; for other distinctions see under house crow.
VOICE. The ordinary call is a variable caw, sometimes harsh, sometimes almost melodious in tone, and very often distinctly like the quack of a domestic duck ; a full-throated *gow-wah, gow-wah*, is also uttered, and in addition as it meditates on a shady bough during the heat of the day it indulges in a succession of amusing croaks and gurgles.
HABITS AND FOOD. So universal is the jungle crow in Burma that the camper in that country is wont to address the bird with the familiar words : " If I climb up into heaven thou art there, if I go down to hell thou art there also ; thou art about my path and about my bed and spiest out all my ways." At sea-level in the suburban precincts of Rangoon you will find him, and at 11,000 feet in the silver fir forests of the Chimili you will not escape him ; he is the common crow of Maymyo, and there of an evening in the rains several thousand may be seen flying in parties of varying numbers southwards

over the Maymyo reserved forest to Pathin, where they roost, and returning by the same route at dawn to spend the day scavenging in Maymyo town.

NEST AND EGGS. In Tenasserim the breeding season is in January and February; elsewhere March and April are the normal months, but in the plains a few nests may be found as early as February. The nest is built in a tree and is usually a massive and moderately deep cup of twigs and small sticks lined with hair, fibres, roots, dry grass or wool. The eggs, 4 or 5 (occasionally 6) in number, are pale greenish-blue, dingy olive, or blackish-green in ground-colour, marked with brown or inky-purple blotches and streaks.

STATUS AND DISTRIBUTION. Widespread in the oriental region and a common resident throughout Burma.

[NOTE.—The Burma population of these crows, excluding the large form of the mountains of North-East Burma, is a graded series from *levaillanti* in the north towards *macrorhynchos* in the south, *vide Ibis*, 1940, pp. 694–5.]

HOUSE CROW

Corvus splendens Vieillot, BENGAL
SUBSPECIES: *splendens* Vieillot, BENGAL
insolens Hume, TENASSERIM

LOCAL NAME. Burmese: *kyi-gan*.

IDENTIFICATION. Plate I, fig. 2, p. 4. Length 17 inches. Distinguished from the jungle crow by smaller size and less massive bill; the nape is faintly grey in *insolens*, markedly so in *splendens*. Albinistic varieties are frequently reported.

VOICE. *Caw* or *kraah*, softer and less harsh than the voice of the jungle crow.

HABITS AND FOOD. The house crow, as its name implies, is a bird of the inhabited plains of Burma, of the towns and villages; in Rangoon during the rains thousands of these birds make their way to Dalhousie Park, where they may be seen all over the paths and lawns and up in the trees where they eventually roost; on fine evenings they thoroughly enjoy a bathe before roosting and may be seen disporting themselves in the water round the edge of the Royal Lakes. Like the pariah dog, the house crow lives a life of "aimless vagabondage," but unlike that miserable bag of skin and bones it always contrives, however numerous it may be in a particular town, to look sleek and well-fed; it always seems to have plenty of leisure, like most successful gangsters and unlike many of the smaller birds, which spend their waking life in a ceaseless and frantic search for

food. An amusing character sketch, in Eha's inimitable style, will be found in *The Tribes on my Frontier*.

NEST AND EGGS. In Rangoon the house crows start building early in February; in Myitkyina they are back in the gardens where they breed by mid-December and numerous nests begin to appear in the first fortnight of January, but it is doubtful whether they lay before March. The normal breeding months are March and April, but a few nests, probably built by birds that have had their first nests destroyed, may be found in June and July. The nests are usually built in trees growing in a town or village, and are often found in colonies in the topmost branches of *kokko* trees; where suitable trees are scarce they nest in bamboo clumps. The eggs, usually 3 to 5 (rarely 6) in number, resemble those of the jungle crow, but are smaller.

STATUS AND DISTRIBUTION. The house crow is widespread in India, Burma, and Ceylon, and is ubiquitous throughout the cultivated parts of Burma as far south as Mergui, locally ascending to 5,000 feet, but it is not found in the forests. In Arakan, according to Christison, both subspecies are found in North Ramree Island, Akyab, Myebon, and Baronga Island; south of this area only *insolens*, and north of it only *splendens* occurs.

EUROPEAN MAGPIE

Pica pica (Linnaeus), SWEDEN
SUBSPECIES: *sericea* Gould, AMOY, CHINA

LOCAL NAME. Burmese: *hnget-kya*.

IDENTIFICATION. Plate I, fig. 3, p. 4. Length 18 inches, including a tail of 8–10 inches. There is a broad white band across the rump. The flight is direct, rather slow, with fairly rapid wing-beats.

VOICE. The usual note is a harsh and typically corvine chatter of 4 or 5 notes, *chatchatchatchatchack*, uttered both on the wing and from a perch at the top of a tree.

HABITS AND FOOD. This familiar British species is, in Burma, a bird of open park-like forest and cultivation in the hills, and is typically seen on the outskirts of villages; in the Ngawchang valley it is a characteristic bird of the terraced fields of the Lashis, and in early March I have seen a party of 15 birds stalking about on the wet stubble, though smaller parties or pairs are more usual. It feeds largely on the ground, the usual gait being a walk with the tail somewhat elevated, though long sidling hops are taken when excited. Its diet is as varied as that of other members of the family.

NEST AND EGGS. Harington noted that they begin to nest in January in the Bhamo district, and that old nests are often repaired from year to year. A conspicuous domed nest of twigs, lined with rootlets or wool, is usually built high up in a tree, rarely low down in a bush, and is often within sight of a village or rest house; it is usually solitary, but Harington once found more than a dozen nests in one tree. Most eggs are probably laid from February to April; the eggs, 4 to 7 in number, are a pale blue-green in colour with blotches and spots of dull reddish-brown scattered profusely all over the surface, but chiefly at the larger end. Harington found several eggs of the koel in nests of this species.

STATUS AND DISTRIBUTION. A palaearctic species. In Burma its breeding range extends from little above sea-level at Myitkyina (where it has nested on several occasions) to 7,000 feet near the Panwa pass, and it is found east of the Irrawaddy from North-East Burma through the Mogok hills to the Shan States, where it becomes very local in the south. West of the Irrawaddy it has been recorded only from Myitkyina, and once from Wuntho, Katha district, where a single bird was seen by Smith (possibly a young bird that had escaped from captivity).

RED-BILLED BLUE MAGPIE

Kitta erythrorhyncha (Boddaert), CHINA
SUBSPECIES: *magnirostris* (Blyth), ARAKAN YOMAS
alticola (Birckhead), N-W. YUNNAN

LOCAL NAMES. Burmese: *hnget-taw-pya*, *hnget-aung-ma*, or *hnget-sat*.
IDENTIFICATION. Plate I, fig. 4, p. 4. Length 26 inches, including a tail of 18 inches. There is a large pure white patch on the nape, continued down the back. The flight is rather slow, laboured and undulating, and the white tips to the tail-feathers are usually conspicuous.
VOICE. The usual call is a series of harsh, rather staccato notes.
HABITS AND FOOD. This magpie is arboreal in habits, frequenting the undergrowth and the lower canopy, and is a typical bird of the teak forests of the foothills; it frequently feeds on the ground and has a curious hopping gait with the tail held high to prevent it touching the soil; it is commonly seen in parties, particularly in scrub-jungle round paddy fields and clearings or along the wider forest streams. In the Ngawchang valley the subspecies *alticola* is a characteristic bird of village cultivation at 5,000–7,000 feet.
NEST AND EGGS. Have been taken in many parts of Burma. The

PLATE I

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1. JUNGLE CROW (adult) 1
Corvus macrorhynchos levaillanti.

2. HOUSE CROW (adult) 2
Corvus splendens insolens.

3. EUROPEAN MAGPIE (adult) 3
Pica pica sericea.

4. RED-BILLED BLUE MAGPIE (adult) 4
Kitta erythrorhyncha magnirostris.

5. GREY TREEPIE (adult) 7
Crypsirina formosae assimilis.

6. RUFOUS TREEPIE (adult) 6
Crypsirina vagabunda kinneari.

7. GREEN MAGPIE (adult) 5
Kitta chinensis chinensis.

8. BLACK RACKET-TAILED TREEPIE (adult) . . . 8
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9. HOODED RACKET-TAILED TREEPIE (adult) . . . 8
Crypsirina cucullata.

10. EUROPEAN JAY (adult) 9
Garrulus glandarius leucotis.

PLATE I

breeding season is in March and April, a few birds laying up to the middle of May. The flat shallow nest is built in a tree, which may be in open country or in fairly thick forest, and is made of twigs, lined with finer twigs, rootlets or wool. The eggs, 3 to 6 in number, are pale cream to pale pink in ground-colour, with light red blotches and spots over the whole surface and numerous underlying marks of neutral tint.

STATUS AND DISTRIBUTION. This species is found in the northern part of the oriental region, and is a common resident throughout Burma, except Tenasserim, in the forests of the plains and foothills, and locally in the higher hills of North-East Burma and the Shan States.

YELLOW-BILLED BLUE MAGPIE

Kitta flavirostris (Blyth), DARJEELING
SUBSPECIES : *flavirostris* (Blyth), DARJEELING
schäferi (Sick), MT. VICTORIA

IDENTIFICATION. A shy high-altitude forest form, differing from the preceding species in yellow bill, more distinctly black head with only a small nuchal patch, apple-green under-parts and dark greenish upper-parts. Its notes, especially a single loud pipe not unlike that of a bullfinch, and its alarm chatter and shrill whistling call are much like those of the preceding species.

NEST AND EGGS. Wickham found this bird breeding at 7,000 feet in the Chin Hills north of Falam and described the nests as being lower down on the tree than those of the red-billed blue magpie usually are ; one clutch of eggs was rather coarsely, and the other very finely, spotted.

STATUS AND DISTRIBUTION. Throughout the Himalayas and across northern Burma to western Yunnan ; it is not uncommon in twos and threes in the mountain forests of North-East Burma at 6,000–9,000 feet, and is also found in the Chin Hills and (probably) the Upper Chindwin.

GREEN MAGPIE

Kitta chinensis (Boddaert), S. SIAM
SUBSPECIES : *chinensis* (Boddaert), S. SIAM

LOCAL NAMES. Chinghpaw : *u-yen*.

IDENTIFICATION. Plate I, fig. 7, p. 4. Length 15 inches, including a tail of 8 inches. It cannot be confused with any other bird in Burma.

VOICE. The ordinary call is a harsh and very raucous chattering note, usually ending with a higher note ; another consists of 3 notes uttered quickly, followed by a shrill whistle.

HABITS AND FOOD. The green or hunting magpie is a bird of the undergrowth in evergreen forests ; it may be found singly or in small parties, or associated with laughing-thrushes, hunting the cover systematically and feeding both high up in trees and on the

ground, its diet being similar to that of other magpies. It is a shy bird and a skulker, and therefore not easy to observe.

NEST AND EGGS. The breeding season is April to May, though fresh eggs have been taken (in Assam) on the 6th August. The nest is built in a tree, bush or bamboo clump, usually in evergreen forest, and is a strong well-made cup of leaves, twigs and roots lined with rootlets or grass. The eggs, 4 to 6 in number, vary greatly in appearance, from white faintly speckled with reddish to dark buffy-brown densely freckled all over.

STATUS AND DISTRIBUTION. The green magpie ranges along the Himalayas and through Burma to south-east Asia; it is locally distributed throughout Burma in suitable localities, ascending to 6,000 feet, and is resident where found. Davison did not observe it south of Tavoy, but it reappears in Malaya (*robinsoni*).

RUFOUS TREEPIE

Crypsirina vagabunda (Latham), MALABAR
SUBSPECIES: *kinneari* (Stuart Baker), TOUNGOO
sclateri (Stuart Baker), MT. VICTORIA
saturatior (Ticehurst), AMHERST Dist

LOCAL NAME. Burmese: *na-hpa-gyi.*

IDENTIFICATION. Plate I, fig. 6, p. 4. Length 18 inches, including a tail of 9 inches. A conspicuous white wing-patch shows in flight, which is dipping, with about six rapid and very noisy wing-beats alternating with glides.

VOICE. In addition to a number of raucous calls and harsh swearing notes, a loud melodious *bob-a-link* is sometimes heard.

HABITS AND FOOD. As its name indicates, the treepie is essentially arboreal, frequenting both the tops of tall trees and the undergrowth and rarely visiting the ground. It is a typical bird of the teak forests, but seems equally at home in open scrub-jungle, and even in gardens. It is generally found in pairs or small family parties, but during the rains 80 or more birds may collect into a flock and play follow-my-leader from tree to tree. Its food is similar to that of the magpies, and it has the reputation of being one of the most destructive enemies of the eggs and young of other birds; a party has been observed hawking flying-ants.

NEST AND EGGS. In Tenasserim hard-set eggs have been taken on the 12th February, but most birds breed in March and early April (latest date the 3rd May); elsewhere in Burma the breeding season is April to May. The nest is usually built in a tree in open forest and

is a very untidy structure of twigs and sticks. The eggs, 4 or 5 (rarely 6) in a clutch, vary greatly, but are of two main types: the first having a pinkish ground-colour, handsomely blotched with reddish, and the second having a pale bluish ground-colour with markings of olive-grey to reddish-brown.

STATUS AND DISTRIBUTION. Widespread in the northern part of the oriental region, and a common resident throughout the foothills of Burma (excluding Mergui district), ascending locally into the higher hills (up to 7,000 feet).

GREY TREEPIE

Crypsirina formosae (Swinhoe), FORMOSA
SUBSPECIES: *himalayensis* (Blyth), SIKKIM
assimilis (Hume), MT. MULAYIT

LOCAL NAME. Chinghpaw: *u-kala.*

IDENTIFICATION. Plate I, fig. 5, p. 4. Length 16 inches, including a tail of 8 inches. Differs from the preceding species in having no rufous in the plumage, except on the under tail-coverts, and in its smaller size.

VOICE. The usual notes are harsh and raucous, and difficult to distinguish from those of the preceding species.

HABITS AND FOOD. Similar to those of the rufous treepie, except that it keeps more to the higher hills.

NEST AND EGGS. Have been taken in several areas of Burma. The breeding season is April–June. The nest may be found in any type of hill forest, from fairly open forest to dense evergreen; it is usually built in a tree or shrub, and is made of twigs and coarse roots. The eggs, 3 or 4 (rarely 5) in number, are pale bluish to cream in ground-colour with large dark brown blotches and paler or darker secondary markings.

STATUS AND DISTRIBUTION. This species extends all along the Himalayas and thence across Burma and south-east Asia to Formosa. In most parts of Burma it is common in the higher hills, but is not found at low elevations; in North-East Burma, however, it is found throughout the lower Kachin hills. It is a common bird of hill stations such as Mogok, Maymyo, and Thandaung; not recorded south of Mt. Mulayit.

WHITE-NAPED TREEPIE

Crypsirina frontalis McClelland, ASSAM

IDENTIFICATION. Resembles the grey treepie but is a much more richly coloured bird, and the grey crown and nape, which appear almost white in the

field, are unmistakeable; the chestnut back and abdomen are noticeable. It has one very musical note and a great variety of others.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Himalayan species, extending from Nepal to northern Burma; it is a common bird of the lower Kachin hills from 750 to 3,500 feet in the Mali Hka valley, and is also found in the Sadon–Sima hills, but seems to be absent from the N'Mai Hka valley.

BLACK RACKET-TAILED TREEPIE

Crypsirina temia (Daudin), JAVA

LOCAL NAMES. Burmese: *ami-waing*.
IDENTIFICATION. Plate I, fig. 8, p. 4. Length 13 inches, including a tail of 7–8 inches. The plumage has a metallic green gloss, not usually visible in the field. Less obtrusive habits and the tail prevent confusion with the black drongo.
VOICE. A harsh swearing note of three syllables is frequently uttered, and it is said to have a not unpleasant metallic call.
HABITS AND FOOD. This bird is strictly arboreal in habits and rarely if ever visits the ground. It frequents bamboo scrub and open forest and hunts systematically for fruit and insects through the foliage. It is usually solitary and prefers to keep out of sight, so that it would seldom be noticed but for its rather loud and arresting call.
NEST AND EGGS. In Tenasserim the breeding season is April–May, elsewhere in Burma May–July. The nest is built in a shrub or bamboo clump and is composed of fine dead twigs firmly woven together, with a lining of tendrils. The eggs, 2 to 4 in number, are buff in ground-colour with rather large blotches all over the surface.
STATUS AND DISTRIBUTION. A Malaysian species, extending through Tenasserim into Southern Burma; it is found as far north as Thayetmyo and Yamethin, and does not quite reach Central Burma. It is resident and locally common, *e.g.* in the scrub-jungle between Rangoon and Mingaladon. In Tenasserim Davison found it excessively common from Moulmein to Tavoy, rare from Tavoy to Mergui, and absent south of Mergui.

HOODED RACKET-TAILED TREEPIE

Crypsirina cucullata Jerdon, THAYETMYO

LOCAL NAMES. Burmese: *ami-waing* or *na-hpa-kyu*.
IDENTIFICATION. Plate I, fig. 9, p. 4. Length 12 inches, including a tail of 7–8 inches. The throat is black and the under-parts are more

rufous than the upper-parts. In flight a distinct whirring noise is made by the wings.

VOICE. It utters a mewing note rather like a ring dove (Roseveare).

HABITS AND FOOD. It prefers drier forests than the black racket-tailed treepie, and is partial to dense regrowth on the edge of cultivation. In Minbu district it is sometimes seen in scrub and *indaing* jungle and in compounds, but usually on *ya* land (Roseveare). On two occasions a pair of these birds have been observed hopping about in and around the nest of a Pallas's fishing eagle high up in a tall *letpan* tree, presumably searching for insects or scraps of food.

NEST AND EGGS. Eggs have been taken in May, and as late as the 14th July (at Prome). The nest is built in a small tree or shrub, and is neatly made ; the eggs are not distinguishable from those of the preceding species.

STATUS AND DISTRIBUTION. This species is a common and characteristic bird of the dry zone of Central Burma ; it extends as far north as Mingin in the Upper Chindwin, and Mogaung in the Myitkyina district, and southwards it straggles down the Irrawaddy and Sittang valleys to Rangoon, but is rare south of the Prome and Toungoo districts. Outside Burma it is found in Siam.

WHITE-WINGED JAY

Platysmurus leucopterus Temminck, SUMATRA

IDENTIFICATION. Length 16 inches, including a tail of 8–9 inches. Whole plumage black except for a large white wing-patch. A deep rolling metallic note is constantly uttered. It is an arboreal bird of evergreen forest, and is usually seen in small parties, which are excessively restless and always on the move, flying about from tree to tree at a considerable height (Davison).

NEST AND EGGS. Have been taken by Hopwood and Mackenzie in Tenasserim in March–May. The nest is usually built in a cane-brake or bamboo clump and is a bulky structure of twigs lined with roots and tendrils. The eggs are a very pale yellowish-stone minutely stippled all over with light yellowish-brown.

STATUS AND DISTRIBUTION. A Malaysian species, extending through southern Tenasserim as far north as Tavoy, where it is common and resident.

EUROPEAN JAY

Garrulus glandarius Linnaeus, SWEDEN

SUBSPECIES: *leucotis* Hume, TENASSERIM
oatesi Sharpe, CHIN HILLS (=*haringtoni* Rippon)
sinensis Swinhoe, S. CHINA

IDENTIFICATION. Plate I, fig. 10, p. 4. Length 12 inches. When flying away, the pure white rump contrasting with the black tail and

the large amount of white on the head and throat identify it. At close range the black crown, erectile crest, moustachial streak, reddish-brown back, and blue and black barring on the wings are distinctive features. The flight appears weak and laboured with a rather quick, jerky action of the rounded wings.

VOICE. The usual call is a loud and very harsh *skaak-skaak*, uttered by several members of a party; a prolonged high-pitched mewing note, *whee-chu, wheee-chu*, seems to be uttered by one bird out of the party whilst the rest continue their harsh cries; this may be the note described by Heinrich as resembling the whistle of the eagle *Spizaëtus*.

HABITS AND FOOD. The jay is a forest bird and seems to favour the drier types; it is partial to oak and pine forests in the hills and to *indaing* forests in the plains. It is usually seen in pairs or small noisy parties, and is wary, restless and easily alarmed. It moves by rather long, heavy hops both on branches and on the ground, frequently jerking the tail up and down or from side to side. It feeds on fruit and insects, and the eggs and young of other birds.

NEST AND EGGS. Have been described in detail by Hopwood and Mackenzie (1917), who took many nests in the Chin Hills at 4,000–6,000 feet. The breeding season is March to May, but most eggs will be found in April. Round Maymyo it breeds in communities of six or more pairs in the oak and chestnut forests; Bingham found it breeding in mixed *indaing* and pine forests in the Thaungyin valley and Harington (1908) records a nest from Taok. The nest consists of a rough outline of coarse twigs with a compact cup-shaped lining of grass. The eggs, 4 or 5 in number, are typical jay's eggs, green-blue in colour and stippled all over with brown specks.

STATUS AND DISTRIBUTION. A palaearctic species. In the higher hills of Burma it is common in the Chin Hills, Shan States (including Maymyo), and Karenni, but is rare in North-East Burma; in the Kabaw valley, Upper Chindwin, it has frequently been reported in the cold weather. At low elevations it shows a strong preference for *indaing*; it is widespread in the high *indaing* forests of the Katha and Shwebo districts, and we have seen it west of the railway line in the Yamethin and Toungoo districts in *indaing* or semi-*indaing* forest (in May, June and September). It has not been recorded south of Mt. Mulayit. In Arakan *leucotis* is recorded by Christison as sparsely distributed north and south of Ruywa.

CRESTED MALAY JAY

Platylophus galericulatus Cuvier, JAVA
SUBSPECIES : *ardesiacus* (Bonaparte), MALACCA

IDENTIFICATION. Length 11 inches. A dark brown bird with a black head, white neck-patch, and a remarkable long crest of broad feathers, which is always kept fully erected. Its call-note is a sharp clicking metallic rattle ; it frequents evergreen forest and is very restless, flying about from tree to tree, sometimes close to the ground and sometimes high up ; even when perched it keeps bobbing and bowing (Davison).
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, not uncommon in the extreme south of Tenasserim.

EUROPEAN NUTCRACKER

Nucifraga caryocatactes Linnaeus, SWEDEN
SUBSPECIES : *yunnanensis* Ingram, YUNNAN

IDENTIFICATION. Length 15 inches. A dark chocolate-brown bird spotted with white, and with white outer tail-feathers conspicuous in flight. It has a loud harsh call *carrr-carrr-carrr-carrr-carrr*, and at times utters a mewing call which sounds like *come here, come here*, 3 or 4 times, the head being bobbed up and down at each call. It feeds chiefly on pine seeds.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Palaearctic. The Shweli valley and Shweli-Salween divide, where Forrest collected a number, seem to be one of this bird's strongholds in Yunnan, and I found it to be common in the pine forests above the Panwa pass at 7,500–8,500 feet, which pass leads into the Shweli valley ; I have also seen it on the Hpimaw pass, and it has been obtained on Imaw Bum and in the Adung valley ; it has not been recorded in Burma outside the Myitkyina district.

Family PARIDAE

TITS

Members of this family are found in Europe, Asia and parts of Africa, and the various species are much alike in their actions and behaviour. They are small, plump, thick-necked, stumpy-billed birds, active and sprightly in all their movements. They feed mainly on trees, clinging to twigs in a variety of acrobatic postures and gently flicking the wings and tail as they move about ; they also frequently forage amongst dead leaves and debris on the ground, moving about by hopping. The flight is usually more or less direct from tree to tree and though fairly swift appears weak and laboured.

EUROPEAN GREAT TIT

Parus major Linnaeus, SWEDEN
SUBSPECIES : *nepalensis* Hodgson, NEPAL
thibetanus Hartert, S-E. TIBET
vauriei Ripley, N-E. ASSAM
nubicolus de Schauensee, SIAM
ambiguus (Raffles), SUMATRA

IDENTIFICATION. Plate II, fig. 1, p. 20. Length 5 inches. The European subspecies have green backs and yellow under-parts, whereas the Asiatic subspecies (often known as grey tits) have grey backs and whitish or buff under-parts. Cannot be confused with any other tit found in Burma.

VOICE. Very diverse. A loud cheery whistle *tsee-tsee-tsee* is a common call and a scolding *churr* is often heard ; in the breeding season a number of louder and clearer calls are uttered, of which the most familiar is a ringing *tink-tink-tink* ; the chief form of song is the so-called "saw-sharpening," a strongly metallic *teechu-teechu-teechu-* . . .

HABITS AND FOOD. Like the jay, it seems partial to oak and pine forests in the hills and to *indaing* forest in the plains. The habits of this familiar British species are too well known to need description.

NEST AND EGGS. Nests may be found in February, but most birds breed in March to May ; two broods are probably reared. The nest is built in a hole, which may be in a wall, bank, tree, or rock, and the old nesting hole of a woodpecker or barbet is sometimes used ; one nest found in Maymyo was built in an old packing case in a stable. The eggs, 4 to 6 in number, are white in ground-colour, speckled with reddish-brown or purple.

STATUS AND DISTRIBUTION. A palaearctic species. It is found almost throughout the higher hills of Burma, but in the Myitkyina district it is chiefly a bird of the plains and foothills and is rare in the mountains (I have seen it at 7,000 feet near the Panwa pass) ; it is also found in the plains and foothills of Central Burma, and is common in tidal jungle at the mouth of the Rangoon river, but seems to be absent from the Pegu Yomas.

GREEN-BACKED TIT

Parus monticola Vigors, HIMALAYAS
SUBSPECIES : *monticola* Vigors, HIMALAYAS
yunnanensis La Touche, MILATI, YUNNAN

IDENTIFICATION. Size of the great tit, but differs in having a double wing-bar and the under-parts bright yellow.

NEST AND EGGS. Have been taken by Venning in the Chin Hills; they resemble those of the great tit.
STATUS AND DISTRIBUTION. Himalayas to Yunnan and Formosa. A common bird of the higher hills and mountains of northern Burma, sometimes found at low elevations in winter.

EUROPEAN MARSH TIT

Parus palustris Linnaeus, SWEDEN
SUBSPECIES: *hypermelas* Berezowski and Bianchi, SHENSI, KANSU

IDENTIFICATION. Length 4 inches. The size of the coal tit, from which it is distinguished by the absence of a white patch on the nape, the brown (not olive-grey) upper-parts, and the absence of wing-bars.
NEST AND EGGS. Heinrich found a nest on Mt. Victoria; the young were almost fledged by the 19th April. Further north Baillie saw fledglings being fed in April.
STATUS AND DISTRIBUTION. Palaearctic. In Burma known only from Mt. Victoria, and the northern Chin Hills where Baillie found it common.

[NOTE.—The record of *poecilopsis* (Sharpe), W. YUNNAN, given in *F.B.I.*, vol. i, p. 82, is not satisfactory.]

EUROPEAN COAL TIT

Parus ater Linnaeus, SWEDEN
SUBSPECIES: *aemodius* (Hodgson), NEPAL

IDENTIFICATION. Length 4 inches. Unlike subspecies found in Europe, the Nepal subspecies has an erect pointed crest; except for a large white spot on the nape, the head pattern resembles that of the great tit. The call-note consists of two notes of different pitch. Found in flocks in the mountains, sometimes pure and sometimes mixed with the other mountain tits.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Palaearctic. I have observed it near the Hpimaw and Chimili passes, and it probably extends from there northwards along the Irrawaddy-Salween divide to the Adung valley, where it has also been collected. It has not been recorded below 9,000 feet in Burma.

BLACK CRESTED TIT

Parus rubidiventris Blyth, NEPAL
SUBSPECIES: *beavani* Blyth, SIKKIM

IDENTIFICATION. Length 5 inches. A larger and darker bird than the coal tit, with a similar crest but no white spots on the wing-coverts. It has a most distinctive call-note, a peculiar vibrating note like the twanging of a low-pitched guitar string, and I have also heard a loud typical tit-like note.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Turkestan to Yunnan and western China. In Burma it has the same distribution as the coal tit.

BROWN CRESTED TIT

Parus dichrous Blyth, NEPAL
SUBSPECIES : *dichrous* Blyth, NEPAL (= *wellsi* Stuart Baker)

IDENTIFICATION. Length 5 inches. Upper-parts brownish-grey with a cream half-collar on the hind-neck ; chin and throat grey. A pale tit of high elevations, usually seen in mixed flocks with coal and black crested tits.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas to Central Yunnan. It was not observed in the Adung valley, but the Vernay-Cutting expedition obtained a series near the Chimili pass and I observed it in the same locality ; there are no other Burma records apart from the statement, probably incorrect, that it occurs in the Northern Shan States (*F.B.I.*, vol. i, p. 87).

YELLOW-BROWED TIT

Parus modestus (Burton), HIMALAYAS
SUBSPECIES : *modestus* (Burton), HIMALAYAS (= *saturatior* Rippon)

IDENTIFICATION. Length 4 inches. Except for the shape of the head it might well be mistaken for a *Phylloscopus* owing to its green colour with greenish-white under-parts ; the crest is frequently raised, disclosing the short yellow eyebrow from which the bird derives its English name, and there is a yellow ring round the eye. A typical tit in every way, including pugnacity, and usually seen in mixed hunting parties, roving about the tops of trees and tall bushes.
NEST AND EGGS. Unknown. Heinrich found young just out of the nest on the 11th May.
STATUS AND DISTRIBUTION. Himalayas to China and Tongking. It has been recorded from Mt. Victoria and is not uncommon in the mountains of North-East Burma over 6,000 feet ; also recorded from Kengtung State.

BLACK-SPOTTED YELLOW TIT

Parus xanthogenys Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)
SUBSPECIES : *spilonotus* Blyth, DARJEELING
subviridis Blyth, MT. MULAYIT

IDENTIFICATION. Length 5½ inches. A large tit with a loose, pointed black crest tipped with yellow and striking plumage, spotted yellow and black with hints of green and grey ; it cannot be confused with any other bird.
VOICE. It utters a variety of loud, cheerful notes, not unlike those of the great tit.
HABITS AND FOOD. This bird is usually seen in pairs, which often attach themselves to the mixed hunting parties so characteristic of the higher hills. It frequents most types of hill forest, working

through the undergrowth and lower canopy and often entering compounds and gardens; it is a bold, familiar bird, and does not mind being watched.

NEST AND EGGS. Have been taken in the Chin Hills and at Sinlum Kaba. Breeds in April to May in holes in trees. A nest found at Sinlum Kaba on the 8th April contained 3 eggs.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan, Siam and Indo-China, and through Burma to Mt. Mulayit. It is probably resident throughout the higher hills of Burma and is locally common, *e.g.* in North-East Burma, the Karen Hills and Karenni, but has not been recorded from Maymyo.

RED-HEADED TIT

Aegithaliscus concinnus (Gould), CHINA
SUBSPECIES: *manipurensis* Hume, MANIPUR
pulchellus Rippon, S. SHAN STATES
talifuensis Rippon, GYI-DZIN-SHAN, YUNNAN

IDENTIFICATION. Length 4 inches. A diminutive bird of the higher hills, which is nearly always seen in parties in trees and bushes. The longish tail, conspicuous black eye-patch, and rufous crown are distinctive features.

VOICE. The members of a party constantly utter a very high-pitched call-note, almost like the squeak of a bat; a soft, gentle *tcheck* alternating with a harsh *tree*, and a low churring note have also been described.

HABITS AND FOOD. This attractive little tit is equally at home in the branches of high trees in thick forest and amongst the bushes of open, grassy hillsides. Fussy sociability is its leading characteristic, and throughout the year it is found in parties of about a dozen birds; these often attach themselves to the mixed hunting parties of small birds that wander through the hill forests, suddenly filling with busy activity a ravine or clump of trees that a moment before was empty of bird life. It is one of the most active of all the tits, and apparently so engrossed in its feeding that it will often give an entertaining display of acrobatics, hanging upside-down in true tit-fashion, within a yard or two of a patient observer. The food consists almost entirely of insects in their various stages, but small seeds and fruits are probably eaten as well.

NEST AND EGGS. Have been taken in the Chin Hills and at Sinlum Kaba. The breeding season is in March–May. The nest is built in a variety of situations ranging from a tangle of matted grass to a

branch 40 feet from the ground, but is usually found in stunted hill oaks and bushes within easy reach. It is a beautiful nest, closely resembling the " bottle " nest of the long-tailed tit of the British Isles, being a large, upright, egg-shaped structure of moss and lichen, bound together with cobwebs and with a small entrance hole high up on one side. The walls are thick and closely woven, and there is a dense lining of feathers, sometimes mixed with seed-down. The tiny eggs, 3 to 8 (usually 5 or 6) in number, are creamy-white or pinkish with a conspicuous zone of minute specks at the larger end.

STATUS AND DISTRIBUTION. Throughout the Himalayas, extending eastwards to China. It is probably found throughout the higher hills of northern Burma, extending down to the Chin Hills on the west and through the Shan States to Karenni on the east ; it is not found below 3,000 feet, but is not uncommon at 5,000–7,000 feet.

[NOTE.—It is doubtful whether *talifuensis* is separable from the typical race *concinnus*.]

BLACK-HEADED TIT

Aegithaliscus iouschistos Blyth, NEPAL
SUBSPECIES : *bonvaloti* (Oustalet), S-W. SZECHWAN
sharpei Rippon, MT. VICTORIA

IDENTIFICATION. The size of the red-headed tit, but differs in having a black head with a coronal streak, white in front turning to rufous-buff on the nape. A typical long-tailed tit, rather slow and deliberate in its movements and very tame, it is usually seen in parties, often mixed with other hill species. The call-note is a faint twitter.

NEST AND EGGS. Unknown. Heinrich noted fledged young in May.

STATUS AND DISTRIBUTION. Himalayas to Yunnan and western China. In Burma it has been recorded on Mt. Victoria, and is not uncommon in the mountains north-east of Myitkyina above 7,000 feet.

SULTAN TIT

Melanochlora sultanea (Hodgson), NEPAL
SUBSPECIES : *sultanea* (Hodgson), NEPAL
flavocristata (Lafresnaye), SUMATRA

LOCAL NAMES. Chinghpaw : *bainam-jawban* (goat-crest).

IDENTIFICATION. Plate II, fig. 4, p. 20. Length 8 inches. The outer tail-feathers are tipped with white. The black parts of the male are greenish-brown in the female, and the yellow parts are not so bright.

VOICE. A variety of shrill calls ; the commonest is *chip-tree-tree* and a

plaintive high-pitched *pway-pway-pway* is sometimes heard. It also has a chattering alarm-note like that of the great tit.

HABITS AND FOOD. This bird keeps to the tree-tops in moist and evergreen forests, occasionally visiting more open country. It goes about in small parties of half a dozen birds, searching for insects, fruits and seeds in the foliage, and is noticeably slower and more deliberate in its actions than the smaller tits.

NEST AND EGGS. Little is known about the breeding of this species. I have seen a pair at their nest-hole in a tree in the N'Mai valley on the 16th April, and fully fledged young have been seen in Central Burma at the end of July.

STATUS AND DISTRIBUTION. This species is widely distributed in the oriental region from Nepal eastwards. It is sparingly distributed almost throughout Burma, but is very local and seldom met with ; in the lower Kachin hills and in the Hukawng valley it is quite common, and is found here and there throughout the Pegu Yomas. Unlike the other tits it is a bird of the plains and foothills, seldom ascending over 3,000 feet (it has been seen at Bernardmyo at 5,500 feet).

Family SITTIDAE

NUTHATCHES

Nuthatches are non-migratory birds found in Europe, Asia and Australia. They share with woodpeckers and treecreepers the ability to climb about the trunks and branches of trees and search the crevices of the bark for insects and their larvae, which live there secure from the attentions of most insect-feeding birds, but unlike them they do not need the support of their tails against the bark ; in consequence they are more agile and lively and by far the most skilful climbers of them all ; they move with short, jerky leaps and climb upwards, downwards or sideways with equal facility ; they are also able to perch on twigs in the normal passerine manner.

Nuthatches usually nest in hollow trees, and are probably best known for their remarkable habit of reducing the size of the entrance hole with mud plaster-work, often of considerable extent, to suit their needs, but this habit is not invariable. In a tree the nest consists of a mere lining of bark flakes, but when built in a wall it is more substantial, with a moss foundation and perhaps a lining of fur. The nest site is often close to the ground.

WHITE-TAILED NUTHATCH

Sitta himalayensis Jardine and Selby, HIMALAYAS
SUBSPECIES : *himalayensis* Jardine and Selby, HIMALAYAS
victoriae Rippon, MT. VICTORIA

IDENTIFICATION. Length 5 inches. Resembles the European nuthatch, but recognisable by the reddish sides to the breast and the white patch on the central tail feathers (visible when the tail is fanned, as when alighting on a branch). The female is rather duller and paler than the male. It has a variety of notes, including a rapid, rattling *chip-chip-chip-chip* and a *cho-ee, cho-ee, cho-ee.*

NEST AND EGGS. Not described from Burma. Heinrich noted fledged young on the 28th April.

STATUS AND DISTRIBUTION. Himalayas to western Yunnan. It is not uncommon in the mountains of North-East Burma in climax forest from 5,000–9,000 feet, and has also been recorded from the Chin Hills and once from Kengtung (Loi-hsam-hsum on the Salween-Mekong watershed).

CHESTNUT-BELLIED NUTHATCH

Sitta castanea Lesson, BENGAL
SUBSPECIES : *cinnamoventris* Blyth, DARJEELING
neglecta Walden, KAREN HILLS

LOCAL NAMES. Burmese : *hnget-pya-chauk* ; Chinghpaw ; *hkindi-shalip* or *hpun-shalip* apply to all nuthatches.

IDENTIFICATION. Plate II, fig. 3, p. 20. Length 5–6 inches. The female is paler and duller below. The subspecies *cinnamoventris* differs from the bird illustrated in having the under-parts from throat to abdomen uniform in colour.

HABITS AND FOOD. The chestnut-bellied nuthatch is not uncommon in the plains and foothills, and is very partial to tamarind and *kokko* trees. It is a sociable bird and may be seen hunting with *Sitta frontalis* in mixed parties. It sometimes feeds on the ground on ants and termites, and seems to like hunting on walls, cliffs, and banks.

NEST AND EGGS. Have been taken by Harington and Mackenzie (localities not stated). The breeding season is March to April. The entrance hole may or may not be reduced in size with mud-plaster. The nest is merely a thin pad of grass, fur, etc. The eggs, 5 to 7 (occasionally 4) in number, are white, profusely spotted with dark red.

STATUS AND DISTRIBUTION. Some authorities treat *castanea* as a low-elevation subspecies of *europaea*, but in this book it is convenient to retain it as a separate species. It is found all over Burma as far south as Mt. Mulayit in the plains and foothills, and is locally common.

EUROPEAN NUTHATCH

Sitta europaea Linnaeus, SWEDEN
SUBSPECIES : *nagaensis* Godwin-Austen, NAGA HILLS
nebulosa La Touche, MILATI, YUNNAN
whistleri Delacour, N-W. SIAM

IDENTIFICATION. Length 5 inches. The very pale grey under-parts readily distinguish it from other nuthatches of similar size. The upper-parts are slaty blue-grey ; sides of head and neck grey ; a black line through the eye to the nape. A bird of the higher hills, favouring much more open country than *himalayensis*, but like that species often accompanying mixed hunting parties of tits and other birds. The note is a loud chitter like that of a greenfinch ; Heinrich states that the voice of the subspecies *nagaensis* is less full and softer than that of *europaea*, and that the call-note is a peculiar stifled long-drawn-out *tjäb*. Like *castanea*, this species often feeds on the ground.
NEST AND EGGS. Have been taken in the Bhamo hills and at Kalaw in April and May ; the eggs resemble those of *castanea*.
STATUS AND DISTRIBUTION. Palaearctic and northern oriental regions. It is the common nuthatch of the higher hills and mountains of northern Burma, down to the Chin Hills on the west and the Southern Shan States on the east.

GIANT NUTHATCH

Sitta magna Wardlaw Ramsay, KARENNI
SUBSPECIES : *magna* Wardlaw Ramsay, KARENNI
ligea Deignan, N-W. YUNNAN

IDENTIFICATION. Length 8 inches. In the field it appears dark grey above and paler below, with a broad black band through the eye ; the female has more buff on the breast. The flight is bold and dipping, like that of a woodpecker.
VOICE. This bird utters a variety of notes, including (1) a clear flute-like pipe ; (2) a trisyllabic call, *get-it-up, get-it-up*, etc., harsh and corvine in character ; (3) a curious cry like a mammal's ; (4) a call not unlike that of the pigmy woodpecker. No. 2 is perhaps the usual call.
HABITS AND FOOD. This fine nuthatch is usually seen solitary or in pairs. It frequents open forest, especially pine, and is a conspicuous bird wherever it occurs on account of its loud call-notes and bold flight ; it is not quite so restless as the smaller nuthatches, but is often seen in a characteristic pose they adopt, head downwards with the head and neck sticking out almost at right angles to the tree, apparently considering where to go next.
NEST AND EGGS. Described by Livesey (1933*c*). A nest found on the 4th April contained three half-fledged young birds ; it was situated in a natural hole in a tree-trunk, about 7 feet from the ground, and there was no mud plaster round the entrance.

STATUS AND DISTRIBUTION. This species is confined to eastern Burma, Yunnan, and Siam. It is not uncommon in Karenni and parts of the Shan States, and has also been recorded from the Mogok hills.

BEAUTIFUL NUTHATCH

Sitta formosa Blyth, DARJEELING

IDENTIFICATION. Length 7 inches. The beautiful nuthatch deserves its name for its lovely colouring; the upper-parts are black streaked with blue, the wings are mostly bright blue, and the under-parts are dull chestnut. Found in pairs or small parties in the evergreen forests of the higher hills, but it is the shyest and most elusive of all the nuthatches. I have not heard its voice, which is said to be rather low and sweet in tone.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Sikkim eastwards to Assam, and parts of Burma. It seems to be a rare bird everywhere, and in Burma it is very rare indeed but at the same time the few records are widely dispersed. There are several skins in the British Museum from Manipur, and it evidently extends thence into the northern Chin Hills, where Mackenzie attributed to this species the remains of a skin brought in to him with 3 eggs. It seems to miss out Mt. Victoria, but reappears in the Arakan Yomas, where I collected one and saw others at 5,000 feet on the border between the Thayetmyo and Minbu districts. North of Manipur it probably extends along the unknown mountains of the Burma-Assam border into North-East Burma, where I have twice come across it (once at Laukkaung, 4,050 feet, and again near the Mekh river further north, at 6,000 feet) and Kaulback obtained specimens in the Tamai valley and in the Triangle at 3,200 feet; finally a single specimen was obtained by Thompson and Craddock on the Salween-Mekong watershed, Kengtung State. It is probably resident where found.

VELVET-FRONTED NUTHATCH

Sitta frontalis Swainson, CEYLON
SUBSPECIES: *corallina* Hodgson, NEPAL

IDENTIFICATION. Plate II, fig. 2, p. 20. Length 5 inches. The male differs from the bird illustrated in having a black line running back from the eye to the nape. Blue upper-parts and coral-red bill prevent confusion with any other nuthatch.

VOICE. A mouse-like cheep, *chwit-chwit*, is constantly uttered when feeding, and a trilling note when disturbed.

HABITS AND FOOD. This is the quickest and most active of all the nuthatches; it is found in all types of forest, in the plains, foothills and higher hills alike, and often hunts in parties of half a dozen birds, searching the undergrowth and the canopy of the taller trees.

NEST AND EGGS. The breeding season is February to March in the

PLATE II

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1. EUROPEAN GREAT TIT (adult) 12
Parus major ambiguus.

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Sitta frontalis corallina.

3. CHESTNUT-BELLIED NUTHATCH (adult male) . . . 18
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4. SULTAN TIT (adult male) 16
Melanochlora sultanea sultanea.

5. BLACK-THROATED LAUGHING-THRUSH (adult) . . 48
Garrulax chinensis propinquus.

6. WHITE-BROWED LAUGHING-THRUSH (adult) . . . 49
Garrulax sannio.

7. WHITE-CRESTED LAUGHING-THRUSH (adult) . . . 50
Garrulax leucolophus belangeri.

8. GREATER NECKLACED LAUGHING-THRUSH (adult) . . 52
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Turdoides earlei.

10. WHITE-THROATED BABBLER (adult) 46
Turdoides gularis.

PLATE I

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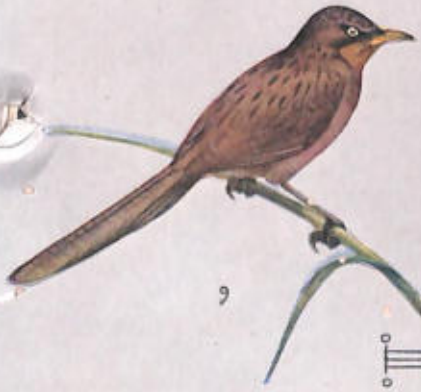

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south, March to April in the north. Though it seldom uses mud to reduce the size of the entrance, it often enlarges crevices sufficiently to obtain access to some desirable hollow. The nest is the usual pad of moss, on top of which there is often a plentiful layer of fur and feathers. The eggs, 3 to 6 in number, are more heavily blotched than most nuthatch eggs.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is a common resident throughout Burma in the foothills, and is found locally up to 6,000 feet, *e.g.* in Karenni, but not in northern Burma where 3,000 feet seems to be its ceiling.

Family TIMALIIDAE

This family contains a very large number of species, nearly all tropical and sub-tropical in their distribution. Most of them have strong legs and bills, but short, rounded wings, and are mainly terrestrial in habits. The family has been revised by Delacour (1946*a*) whose arrangement has been followed here. He treats the *Timaliidae* as a sub-family of the *Muscicapidae*, but without denying the correctness of this view I have retained the *Timaliidae* as a full family and raised Delacour's tribes to the status of sub-families, to avoid too drastic a re-arrangement of this book.

Sub-family PELLORNEINAE

JUNGLE BABBLERS

The babblers of this sub-family are plain birds, chiefly brown in colour, and live in the undergrowth and on the ground, feeding on insects; they generally make globular nests placed on or near the ground, and lay spotted eggs. They are found in Africa and the oriental region to the Celebes.

SPOTTED BABBLER

Pellorneum ruficeps Swainson, NILGIRIS

SUBSPECIES: *stageri* Deignan, MYITKYINA
shanense Deignan, MALIPA, WA STATES
hilarum Deignan, PAKOKKU Dist.
victoriae Deignan, MT. VICTORIA
minus Hume, THAYETMYO
subochraceum Swinhoe, MOULMEIN

insularum Deignan, MERGUI ARCHIPELAGO
subsp. 1 : ARAKAN
subsp. 2 : PEGU YOMAS and KAREN HILLS

IDENTIFICATION. Plate III, fig. 5, p. 36. Length 6 inches. The rufous cap, white eyebrow and whitish under-parts streaked on the breast are distinctive features. A skulker in undergrowth with persistent call-notes.

VOICE. One of the most familiar sounds of the teak forests, heard chiefly in the mornings and evenings, is the clear *pretty-dear* call-note ; even more familiar is the erratic whistling taken up by bird after bird like a party of schoolboys tunelessly whistling in turn. When disturbed it utters a harsh churring alarm-note.

HABITS AND FOOD. Being a great skulker and rather shy, the spotted babbler is far more often heard than seen ; it goes about in small parties in bamboos and undergrowth, never ascending into the canopy, and spends much of its life on the ground searching for insects amongst the fallen leaves and tangles of grass. " They live exclusively on insects, and their larvae and eggs, ants' eggs especially. On sunny days in Burma many species of ants bring all their eggs out to sun them, especially if there has been a good deal of rain recently, and then it is a grand find for one of our ' Pretty dears,' when he happens to hit upon such a drying-ground and whips off all the eggs before the poor ants well know what is happening " (Davison).

NEST AND EGGS. The breeding season is from March to May, with second broods into August. The nest is built either on the ground under the shelter of a stone or bush, or else just off the ground in the base of a bamboo clump, generally amongst fallen leaves and similar rubbish. It is a large globular structure of leaves and grass, with a slight lining of moss roots. The eggs, 2 to 4 in number, are a very pale greenish- or yellowish-white, profusely speckled all over with reddish-brown and with secondary spots of pale grey and neutral tint.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common throughout the forests of Burma in the plains and foothills, ascending locally to 5,000 feet.

[NOTE.—The MARSH SPOTTED BABBLER, *Pellorneum palustre* Jerdon, CACHAR has not been recorded from Burma but is common in Assam and may be found one day over the Burma border. Differs from the spotted babbler in having the upper-parts olive-brown with only the forehead rufous ; wings and tail rufous.]

PLAIN BROWN BABBLER

Pellorneum albiventer Godwin-Austen, MANIPUR
SUBSPECIES : *albiventer* Godwin-Austen, MANIPUR
nagaense Godwin-Austen, NAGA HILLS
cinnamomeum (Rippon), S. SHAN STATES

IDENTIFICATION. Length 6 inches. Brown above and dull white below, with no distinguishing features. A skulker in undergrowth, but not very shy ; in habits it resembles the spotted babbler.
NEST AND EGGS. Described by Hopwood and Mackenzie (1917) from the Chin Hills, and it breeds in April and May in the Bhamo hills. The nest is a deep cup of grass and bamboo leaves, lined with grass. The eggs, 2 to 4 in number, are pale pink with freckles of brownish-red profusely scattered over the whole surface.
STATUS AND DISTRIBUTION. Oriental region from Bhutan to Annam. In Burma it is found in the Chin Hills, North-East Burma, the Karen Hills, Shan States, and Karenni ; it is nowhere common and is confined to the higher hills.

BLACK-CAPPED BABBLER

Pellorneum capistratum (Temminck), JAVA
SUBSPECIES : *nigricapitatum* (Eyton), MALACCA

IDENTIFICATION. Length 7 inches. A rusty-brown bird with a black cap, grey eyebrow, and white chin and throat. Its call-note is a lóng-drawn single note, and it is usually solitary or in pairs ; it frequents dense cover, especially cane-brakes, and is seldom seen off the ground (Davison).
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, extending north to the extreme south of Tenasserim as a rare straggler.

TICKELL'S BABBLER

Malacocincla tickelli (Blyth), TENASSERIM
SUBSPECIES : *tickelli* (Blyth), TENASSERIM
assamensis (Sharpe), ASSAM
ochracea (Kinnear), TONGKING
grisescens (Ticehurst), ARAKAN

IDENTIFICATION. Length 6 inches. Upper-parts olive-brown and under-parts tawny. The call-note is a loud *pit-you, pit-you*, . . . uttered fairly rapidly. It skulks in dense undergrowth and is partial to bamboo thickets near streams in evergreen and moist forests ; it feeds mostly on the ground and flies with reluctance.
NEST AND EGGS. The only nest described from Burma seems to be one found by Smith on the 23rd March in Tavoy district ; it was placed 5 feet off the ground in evergreen forest and was made of dead leaves and thin rootlets with an inner cup of fine dried grass. The eggs, 3 or 4 in number, are perfect miniatures of the dull-coloured eggs of the magpie-robin.

STATUS AND DISTRIBUTION. This species extends from Assam through Burma to Annam and Malaya. It is common in Tenasserim and in the evergreen forests of the Pegu Yomas, and perhaps elsewhere in its range; it has been recorded from an elevation of 7,000 feet, but seems to be normally a bird of the plains and foothills.

FERRUGINOUS BABBLER

Malacocincla bicolor (Lesson), SUMATRA
SUBSPECIES: *bicolor* (Lesson), SUMATRA

IDENTIFICATION. Length 7 inches. Upper-parts rusty; under-parts white, suffused with brownish on the breast. Entirely a ground bird, flying up into trees or bushes when disturbed (Davison).
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, extending north to the extreme south of Tenasserim, where it is very rare.

BLYTH'S BABBLER

Malacocincla rostrata (Blyth), SINGAPORE
SUBSPECIES: *rostrata* (Blyth), SINGAPORE

IDENTIFICATION. Length 7 inches. The tail is very short (2 inches). Resembles Abbott's babbler but the tail is olive-brown and the under tail-coverts white. Said to be arboreal in habits.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, extending north to the extreme south of Tenasserim.

ABBOTT'S BABBLER

Malacocincla abbotti Blyth, RAMREE I.
SUBSPECIES: *abbotti* Blyth, RAMREE I
rufescentior Deignan, PENINSULAR SIAM

IDENTIFICATION. Length 7 inches. The very short deep rufous tail and the whitish throat distinguish this olive-brown bird, but voice is the best field character; it has a loud distinctive call of 3 notes, dropping in pitch on the middle note, or sometimes 4 notes, in which case the first note is low and the other three higher and on the same pitch. The bird calls persistently, especially at dawn. Dense undergrowth mainly evergreen in character seems to be essential for it, and it will be found skulking therein, living mainly on the ground, either solitary or in pairs.
NEST AND EGGS. Have been taken by Hopwood in Tavoy (in March) and by Oates in Southern Burma (May–June). The nest is usually built close to the ground, and is a massive cup of dead leaves, weeds and grass compactly bound together and lined with rootlets. The eggs, 3 to 5 in number, are very beautiful, varying from pale to rich pink with spots and lines of deep red-brown.
STATUS AND DISTRIBUTION. Widespread in the oriental region from Nepal eastwards. It is found in Arakan, the Pegu Yomas (evergreen or very moist forests only), and Tenasserim, and is locally common.

RED-HEADED TREE BABBLER

Malacopteron magnum (Eyton), MALACCA
SUBSPECIES : *magnum* (Eyton), MALACCA

IDENTIFICATION. Length 7 inches. Forehead and crown bright rusty ; nape black ; upper-parts tawny-brown ; a broad grey eyebrow ; under-parts whitish, streaked with grey on the breast. An arboreal forest bird, found in pairs or small parties, hunting about the leaves and bushes in a desultory way, not systematically like *Alcippe*, and rather resembling a bulbul in its deportment (Davison).
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, extending to the extreme south of Tenasserim, where it is very rare.

BROWN-HEADED TREE BABBLER

Malacopteron magnirostre (Moore), MALACCA
SUBSPECIES : *magnirostre* (Moore), MALACCA

IDENTIFICATION. Length 7 inches. Distinguished from the preceding species by olive-brown crown and bright chestnut-brown upper tail-coverts and tail. Found in small restless parties in the undergrowth and lower canopy.
NEST AND EGGS. Little known.
STATUS AND DISTRIBUTION. A Malaysian species, extending north to the extreme south of Tenasserim, where it is common.

Sub-Family POMATORHINAE

SCIMITAR BABBLERS AND WREN-BABBLERS

The birds of this sub-family are brown in colour, more or less marked with black, grey, white, and brown ; they are chiefly terrestrial in habits, feeding on the ground on insects and their larvae, and are shy and difficult to observe. They make globular nests on the ground and the eggs are white in ground-colour, spotted to a greater or less degree. The scimitar babblers and wren-babblers, at first sight two very different groups, are linked by the genera *Rimator* and *Jabouilleia*. They are found in the oriental region and Australia.

YELLOW-BILLED SCIMITAR BABBLER

Pomatorhinus montanus Horsfield, JAVA
SUBSPECIES : *mearsi* Ogilvie-Grant, TAUNGDWIN, LOWER CHINDWIN Dist.
schisticeps Hodgson, NEPAL
nuchalis Walden, KAREN HILLS
ripponi Harington, N. SHAN STATES
olivaceus Blyth, N. TENASSERIM
fastidiosus Hartert, PENINSULAR SIAM

IDENTIFICATION. Plate III, fig. 1, p. 36. The last three subspecies

listed differ from the bird illustrated in lacking the chestnut band from the neck down the flanks, the chestnut being confined to the neck, and some authors group them under the separate species *olivaceus*.

VOICE. The ordinary call-note consists of 3 to 6 hoots uttered at varying speeds, but generally lasting about one second. Another common call-note is *kaw-kaw-ka-yit*, answered by a drawled *chyu-chee* with a rising inflection. The alarm-note is a harsh *screee-chit-chit-chit-chit*. Members of a party utter low conversational notes when feeding.

HABITS AND FOOD. The various scimitar babblers are gregarious birds with similar habits; they are great skulkers, living on the ground or in thick cover close to the ground and only occasionally ascend trees; they are very shy, and conceal themselves so well that they are seldom seen, but their loud and characteristic call-notes betray their presence. "The restlessness, rapidity, and skill with which they slip through the forest undergrowth is quite astonishing; they do not remain still for a second in one spot, but slip like a mouse along a horizontal branch, hop hither and thither like a shadow through the dense undergrowth and skim away to another thicket before one can clearly see what bird it is." (Heinrich.)

The yellow-billed scimitar babbler is a characteristic bird of the teak forests of the plains and foothills, frequenting both high forest and *ponzo*, and is a familiar bird round hill stations such as Mogok and Maymyo.

NEST AND EGGS. The breeding season is from March to May, but in Tenasserim nests have been taken as late as October, and Heinrich found a nest with hard-set eggs near Mandalay on the 31st December. All scimitar babblers nest on the ground or on sloping banks, and most species make a domed nest of grass, leaves and fibres. The eggs, 2 or 3 in number, are white.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common in most parts of Burma, ascending to about 5,000 feet, but it seems to be rare in the north; a single specimen of *schisticeps* was obtained by the Vernay-Hopwood Chindwin expedition at Tamanthe, and no form of this species has yet been obtained in North-East Burma or Yunnan.

[NOTE.—*cryptanthus* Hartert, MARGHERITA, may occur in the Hukawng valley.]

RUFOUS-NECKED SCIMITAR BABBLER

Pomatorhinus ruficollis Hodgson, NEPAL
SUBSPECIES : *bakeri* Harington, SHILLONG
similis Rothschild, TENGYUEH, YUNNAN
bhamoensis Mayr, SINLUM KABA, BHAMO Dist.

IDENTIFICATION. Length 8 inches. Rufous collar on the hind-neck and streaked breast distinguish this species from *montanus*. Heinrich describes the call-note of *bakeri* as consisting of 3 full-sounding whistled notes, the first accented; the second at the same pitch, and the third about three tones lower ; the call-note of *similis* is a mellow double or triple hoot, and another (probably the one described by Stanford as a curious whistling chirrup ending in a churr) sounds not unlike the *kaw-kaw-ka-yit* call of *montanus* ; so far as I was able to observe these two calls are used indifferently.
NEST AND EGGS. Breeds in April in the Chin Hills and Bhamo district.
STATUS AND DISTRIBUTION. Himalayas from Nepal through northern Burma to Yunnan. It is the commonest scimitar babbler of the higher hills and mountains north-east of Myitkyina, where I have seen it up to 8,000 feet, and also occurs in the Chin Hills and no doubt in the Upper Chindwin. Some authors treat this bird as a high-elevation subspecies of *montanus*.

CORAL-BILLED SCIMITAR BABBLER

Pomatorhinus ferruginosus Blyth, DARJEELING
SUBSPECIES : *phayrei* Blyth, ARAKAN
albogularis Blyth, MT. MULAYIT
mariae Walden, TOUNGOO (=*albogularis* Blyth ?)
stanfordi Ticehurst, MYITKYINA Dist.

IDENTIFICATION. Length 9 inches. The coral-red bill distinguishes it from all except *ochraceiceps* (*q.v.*). The head markings resemble those of *montanus* (Plate III, fig. 1) but the upper-parts are browner. It seems to be a quiet bird for a scimitar babbler, and the only note described is a low grating *churrr* of alarm. It does not seem to associate with others of its own species, though it is frequently seen with barwings and other hill birds.
NEST AND EGGS. Have been taken by Macdonald on the Taok plateau in April, and by Hopwood and Mackenzie in the Chin Hills in April and May.
STATUS AND DISTRIBUTION. Himalayas from Nepal to Assam, and through Burma to Tenasserim. It is probably resident throughout the higher hills of Burma but is nowhere common.

RED-BILLED SCIMITAR BABBLER

Pomatorhinus ochraceiceps Walden, KAREN HILLS
SUBSPECIES : *ochraceiceps* Walden, KAREN HILLS
austeni Hume, E. MANIPUR
stenorhynchus Godwin-Austen, SADIYA

IDENTIFICATION. Length 9 inches. The red bill distinguishes it from all except *ferruginosus*, which it also resembles in having a long white eyebrow with a blackish band below it ; in this species however the bill is half as long

again as the head, slender, and greatly curved, whereas in *ferruginosus* it is no longer than the head, stouter, and less curved, and a deeper red. Both are birds of the higher hills. I have heard it utter a single musical call-note unlike that of any other scimitar babbler ; other notes alleged are a soft full double hoot and a pleasant whistling chuckle. It is a great skulker, generally single or in pairs, and keeps to bamboo thickets and dense undergrowth in evergreen forests.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Assam and Burma. It is probably a scarce resident in the higher hills of northern Burma, having been recorded from the Upper Chindwin, the Pino-taung (Katha district) and the Myitkyina district ; it re-appears in the south, from the Southern Shan States through the Karen Hills and Karenni to Tenasserim, and will probably be found one day in the intervening area (Bhamo district and Northern Shan States).

RUSTY-CHEEKED SCIMITAR BABBLER

Pomatorhinus erythrogenys Vigors, NEPAL
SUBSPECIES : *mcclellandi* Godwin-Austen, KHASIA HILLS
odicus Bangs and Phillips, MENGTSZ, S-E. YUNNAN
imberbis Salvadori, KARENNI
celatus Deignan, N-W. SIAM

IDENTIFICATION. Length 11 inches. An olive-brown bird with the chin, throat and abdomen white ; sides of the neck, thighs, and under tail-coverts chestnut ; absence of a white supercilium distinguishes it from scimitar babblers other than the next species. Bill yellowish-horny.

VOICE. The call-note is loud and distinctive, *callow-creee, callow-creee* (*creee* being about four tones higher than *callow*), with variants. I could detect no difference in the field between the calls of *odicus* as heard in the hills north-east of Myitkyina, and of *imberbis* as heard in Karenni, and doubt whether they can belong to separate species as some authorities maintain (on the grounds that they occur together in parts of Yunnan). A harsh swearing alarm-note is also uttered.

HABITS AND FOOD. This is a typical bird of *ponzo* in the higher hills, and except that it does not seem to be gregarious its habits do not differ from those of *montanus*.

NEST AND EGGS. Have been taken by several collectors in the Chin Hills, Bhamo hills, and round Kalaw. One nest was taken on the 17th February, but most are found from March to May.

STATUS AND DISTRIBUTION. Oriental region, excluding Malaysia. It is common in the higher hills of Burma as far south as Thaton, but has not been recorded from Tenasserim.

LONG-BILLED SCIMITAR BABBLER

Pomatorhinus hypoleucos (Blyth), ARAKAN
SUBSPECIES : *hypoleucos* (Blyth), ARAKAN
tickelli Hume, MT. MULAYIT

IDENTIFICATION. Length 12 inches. Like the last species, this has no white supercilium, but is distinguished by large size and a massive bill longer than the head ; there is a rusty patch behind the ear-coverts and the sides of the breast are slaty streaked with white. The ordinary call is a triple hoot, distinguished by its deep mellowness, and the male is said to have a deeper hoot than the female. According to Davison it keeps much more to the ground than any other *Pomatorhinus*, hopping about in a very ungainly manner, and members of a party keep in touch with their comrades by uttering a short chuckling note, each in turn. It is a bird of evergreen forest and is partial to cane brakes ; it is usually seen in pairs and feeds on small shells and snails in addition to insects and wood-lice.

NEST AND EGGS. A very early breeder, December to February being the normal months. The nest is usually placed on the ground in thick bamboo or scrub-jungle or in cane-brakes, but a nest found by Hopwood was placed in a fork of a bamboo.

STATUS AND DISTRIBUTION. Assam and Burma to Indo-China and Malaya. It is evidently rare in the Myitkyina district, and extends thence through the Upper Chindwin and the Chin Hills to southern Arakan ; it reappears in Tenasserim. It is a bird of the foothills, ascending locally to 4,000 feet.

SLENDER-BILLED SCIMITAR BABBLER

Xiphirhynchus superciliaris Blyth, DARJEELING
SUBSPECIES : *forresti* Rothschild, YUNNAN

IDENTIFICATION. Length 8½ inches. It has a much longer, more slender, and more curved bill than any other scimitar babbler ; the head is slaty-grey with a long white supercilium ; upper-parts bright rufous-brown ; bill black. Like many other scimitar babblers this bird has two call-notes, which appear to be used indifferently : (1) a soft hoot, consisting sometimes of 7 and sometimes of 8 syllables uttered rapidly on a monotone, after the manner of *Stachyris chrysaea* ; (2) a harsh swearing or chittering note, not unlike a similar call uttered by *Pomatorhinus ruficollis*, with which species it sometimes associates, and from which its habits differ little. I have seen it on bamboo culms in climax forest, apparently picking off ants or small insects, and flying from culm to culm at intervals, and I have watched it hunting about amongst the fallen half-burned tree-trunks in a *taungya* of the previous year, and could not discover that the highly developed bill served any particular purpose.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas, from Sikkim to Yunnan. In Burma I have observed it at 7,500 feet near the Hpare pass and in the Ngawchang headwaters, and the Vernay-Cutting expedition bought one or two specimens in the Gangfang area ; Kaulback obtained it at 3,000 feet in the Tamai valley ;

there are no other records, but it is probably a scarce resident of the mountains of northern Burma.

[NOTE.—The original spelling of the generic name is *Xiphoramphus*. The subspecies *intextus* Ripley, MISHMI HILLS, occurs in the Manipur hills and may extend into the Upper Chindwin.]

LONG-BILLED WREN-BABBLER

Rimator malacoptilus Blyth, DARJEELING
SUBSPECIES : *malacoptilus* Blyth, DARJEELING

IDENTIFICATION. Length 5 inches. Long bill curved down at the end and short stumpy tail are diagnostic ; colour brown, paler below, streaked with white on the crown and nape. Said to have a rather beautiful whistle.
NEST AND EGGS. Not described from Burma ; in Assam makes a globular nest on the ground.
STATUS AND DISTRIBUTION. Himalayas from Sikkim to Assam, Manipur and North-East Burma, where I have seen it once near the Taron-Tamai confluence in the far north, and again at 7,000 feet on the way from Laukkaung to the Panwa pass ; there are no other records and it is evidently rare. Reappears in Tongking and Sumatra.

LIMESTONE WREN-BABBLER

Turdinus crispifrons Blyth, MT. MULAYIT
SUBSPECIES : *crispifrons* Blyth, MT. MULAYIT

IDENTIFICATION. Length 7½ inches. Whole head, neck, and under-parts pure white ; upper-parts olive-brown. It is described by Davison as being a very lively and sprightly bird, not at all shy, and easy to watch ; it goes about in pairs or small parties and keeps up a continuous twittering chatter, occasionally perching on a point of rock and, with lowered wings and erected tail, pouring out a fine and powerful song.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Confined to the limestone crags and ranges of Tenasserim, Siam, and Indo-China.

SHORT-TAILED WREN-BABBLER

Turdinus brevicaudatus (Blyth), MT. MULAYIT
SUBSPECIES : *brevicaudatus* (Blyth), MT. MULAYIT
striatus (Walden), KHASIA HILLS
venningi (Harington), SHAN STATES

IDENTIFICATION. Length 6 inches. A dark brown bird with black tips to the feathers of the upper-parts ; chin and throat white ; remaining under-parts rusty. The short tail gives it a wren-like appearance. It has low churring notes, a mournful single note *piou*, and a chattering alarm-note. It favours evergreen forest, especially where the terrain is broken up by steep slopes and rocky ravines, and is often met with on the densely-clothed banks or in the bed of small streams during the heat of the day. It is a shy bird and a great skulker.

NEST AND EGGS. In the Southern Shan States the breeding season is from February to April. The nest is nearly always built on the ground, generally in a damp situation at the foot of a tree or rock ; it is a deep cup or semi-domed structure of dead leaves, grass, and moss, bound together with roots and tendrils, and lined with dead leaves ; it resembles a lump of decaying vegetation and is hard to find. The eggs, 2 to 4 in number, are a glossy china-white with a few reddish specks.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam. It is sparsely distributed through the moist and evergreen forests of Burma and is found at all elevations up to 7,000 feet ; Rippon recorded it as not uncommon in the Southern Shan States above 4,000 feet in suitable places.

SMALL WREN-BABBLER

Turdinus epilepidotus (Temminck), JAVA
SUBSPECIES : *guttaticollis* (Ogilvie-Grant), MIRI HILLS
davisoni (Ogilvie-Grant), N. TENASSERIM
bakeri (Harington), S. SHAN STATES

IDENTIFICATION. Length 4 inches, tail under 1 inch. General colour a rich chocolate-brown ; the feathers of the head and back are edged with black and have pale centres, giving the bird a mottled appearance. Distinguished from the preceding species by smaller size and shorter tail, and white streaks on the breast.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Oriental region as far west as Assam. The Vernay-Hopwood expedition obtained one specimen of *guttaticollis* in the Upper Chindwin, and the other subspecies are found from the Southern Shan States through Karenni to Tenasserim ; in between there is a large gap in the bird's distribution as known at present.

GREATER SCALY-BREASTED WREN-BABBLER

Pnoepyga albiventer (Hodgson), NEPAL
SUBSPECIES : *albiventer* (Hodgson), NEPAL

IDENTIFICATION. Length 4 inches. Distinguished from the commoner *pusilla* by larger size and voice. The normal alarm-note is a single *zick* repeated at regular intervals every 4 or 5 seconds for a couple of minutes ; Ludlow also describes a shrill piercing whistle uttered when the bird is almost trodden upon and is really frightened. Heinrich describes its habits as follows : " On Mt. Victoria the breeding area of this species lies in the summit zone above 8,300 feet. The shady damp ground of the forest recesses is its habitat, and its favourite haunt the neighbourhood of a fallen giant tree, whose broken and half-decayed branches are covered with moss and plant life. It always remains close to the ground, only rarely climbing 1–2 feet in the thickest tangle of the ground vegetation. When alarmed it hops across gaps in the undergrowth, jerking its short wings in a regular rhythm with every *zick* that it utters—a comical movement on this tail-less ball-like little body. The song is short and trilling like the first part of the song of *Brachypteryx cruralis*."

NEST AND EGGS. In the middle of May two nests of green moss hidden in the mossy covering of a bank were found by Heinrich ; they resembled those of the European wren and contained 2 relatively large pure white eggs.

STATUS AND DISTRIBUTION. Himalayas to northern Burma. Recorded from Mt. Victoria and the mountains of North-East Burma (down to 5,500 feet in winter) where it seems to be much less common than *pusilla*, unless I overlooked it. Wardlaw Ramsay's record from Karenni is erroneous, and we did not find it there.

LESSER SCALY-BREASTED WREN-BABBLER

Pnoepyga pusilla Hodgson, NEPAL
SUBSPECIES : *pusilla* Hodgson, NEPAL

IDENTIFICATION. Length 3½ inches, the ½-inch long tail being completely concealed from view. A dark-brown bird with white or rusty under-parts marked with black. Both *pusilla* and *albiventer* are dimorphic, white-bellied and rusty-bellied birds being about equally common, and except for size the resemblance between the two species is striking.

VOICE. The call-note is most distinctive ; it consists of a loud shrill whistle, followed after an interval of about one second by a lower note, and is typically heard emanating from a damp and gloomy ravine in climax forest, the whistle having a penetrating quality that enables it to cut through the roar of the stream. The bird calls on the move, at intervals of 10–20 seconds for several minutes, but is apt to fall silent and slip away if followed. The alarm-note is a sharp *zick*, sharper and thinner than that of *albiventer*, and uttered more frequently.

HABITS AND FOOD. This quiet and attractive little bird is easily overlooked ; it favours especially the dense fern growth and luxuriant moss edging mountain streams in climax forest ; in this it runs about like a small brown mouse and all that the observer usually sees is the faintest disturbance of the boskage at infrequent intervals. In the Chimili mountains I tried for three weeks pursuing bird after bird, before I was able to connect the call-note described above with this species ; on one occasion the call sounded so close that I could imagine the bird saying to itself (like Humpty Dumpty) :

> " I said it very loud and clear ;
> I went and shouted in his ear "

and still I could not see it ; and then it softly and silently vanished away, and although I stood there in the rain for half an hour longer it did not call again.

NEST AND EGGS. Heinrich found one empty nest, like that of *albiventer* but smaller, and noted young birds just out of the nest at the end of June.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending as far west as Nepal. It is resident throughout the higher hills of Burma and is locally common (markedly so in the mountains north-east of Myitkyina).

LONG-TAILED WREN-BABBLER

Spelaeornis chocolatinus Godwin-Austen, MANIPUR
SUBSPECIES : *reptatus* Bingham, KENGTUNG
oatesi Rippon, MT. VICTORIA

IDENTIFICATION. Length 4½ inches, including a tail of nearly 2 inches. A dark brown little bird, distinguished from the other wren-babblers by the longer tail. Heinrich reports that on Mt. Victoria this small and agile ground bird is a dweller in the thickest undergrowth, especially at the edges of and in clearings in evergreen forests, and prefers the almost impenetrable thickets of reed bamboo, often mixed with thorny briars ; it is not as exclusively a ground bird as *Pnoepyga*, and is usually seen hopping about in the vegetation 1–2 feet from the ground.

The song consists of a loud warbling strophe of mostly 3, but often 2, syllables, which are repeated quickly many times. Besides this song a trill *ticki-ticki-ticki-ticki* is often repeated at short intervals.

NEST AND EGGS. Have been described from the Chin Hills and Bhamo district, where it breeds from March to May. The nest is usually built on a bank under dense undergrowth ; it is a domed oval-shaped structure of dead leaves with a waterproof lining resembling *papier-mâché*, apparently made of skeleton leaves and some soft fibrous stuff worked into a pulp and then spread over the whole interior of the nest to form a very neat cup. The eggs are white speckled with dark red.

STATUS AND DISTRIBUTION—Himalayas to Yunnan. In Burma it is a rather scarce bird of the higher hills, and has been recorded only from the Chin Hills, North-East Burma, and Kengtung.

[NOTE.—Both *kauriensis* and *sinlumensis* Harington are probably inseparable from *reptatus*.]

BARRED-WINGED WREN-BABBLER

Spelaeornis troglodytoides Verreaux, W. SZECHWAN
SUBSPECIES : *souliei* Oustalet, N-W. YUNNAN

IDENTIFICATION. Length 4½ inches. The fine black and grey barring on wings and tail is diagnostic ; the rufous-brown upper-parts with white speckling on the head and nape, white throat, and rufous under-parts with bright ochre flanks are other noticeable features.

Few observers have seen this bird, whose home is in the inaccessible mountains of north-western Yunnan ; according to Stanford the male has a low

song of 4 or 5 notes, and the alarm-note is a faint churr. A pair I watched working through bushes on a dry hillside resembled *Alcippe vinipectus* in their actions and were definitely not ground birds like the other wren-babblers.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. The mountains of Yunnan and North-East Burma, where it is known to exist at 8,000–9,500 feet on the heights above the Panwa pass and above Hpare, but is no doubt more widely distributed.

SPOTTED WREN-BABBLER

Spelaeornis formosus Walden, DARJEELING

IDENTIFICATION. Length 4½ inches, including a tail of 1 inch. A brown bird, paler below, with white spots all over.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Sikkim to eastern Assam. In Burma recorded from Mt. Victoria only.

[NOTE.—*Spelaeornis badeigularis* Ripley, MISHMI HILLS, may occur north and west of Fort Hertz.]

[NOTE.—The PLAIN BROWN WREN, *Elachura haplonota* Stuart Baker, is an imaginary species based on an error in identification.]

WEDGE-BILLED WREN-BABBLER

Sphenocichla humei Mandelli, SIKKIM
SUBSPECIES : *roberti* Godwin-Austen, N. CACHAR

IDENTIFICATION. Length 5 inches. A dark golden-brown bird with a distinctive wedge-shaped bill.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Assam and northern Burma, where it is a rare resident of the higher hills ; I have seen it in the hills east of Fort Hertz and specimens have been obtained in the Tamai valley at 3,000 feet (Kaulback) and at Laukkaung.

Sub-family TIMALIINAE

BABBLERS

The birds of this sub-family are gregarious and arboreal in habits, frequenting chiefly the undergrowth in forest and occasionally ascending into the trees or descending to the ground. The plumage is often elegant. The birds build a globular nest near the ground and lay heavily spotted eggs. They are found in the oriental region to the Philippine Islands, and also in Madagascar.

SPOTTED-NECKED BABBLER

Stachyris striolata S. Müller, SUMATRA
SUBSPECIES: *guttata* (Blyth), TENASSERIM
diluta Kinnear, YUNNAN
helenae Delacour and Greenway, HAUT-LAOS
nigrescentior Deignan, PENINSULAR SIAM

IDENTIFICATION. Length 7 inches. Round the eye black; a large patch of white below the eye bounded by a black moustachial streak; a white supercilium to the nape; sides of neck black with white spots; rest of upper-parts golden-brown; chin and throat white; rest of under-parts rusty; bill black. Found in small parties in evergreen forest and bamboo jungle.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam, but a rare bird in Burma and recorded only from Bhamo and Tenasserim.

[NOTE.—*oglei* Godwin-Austen, SADIYA, may occur on the Assam border.]

BLACK-THROATED BABBLER

Stachyris nigriceps Blyth, NEPAL
SUBSPECIES: *coltarti* Harington, MARGHERITA, ASSAM
spadix Ripley, CACHAR
yunnanensis La Touche, S-E. YUNNAN
dipora Oberholser, PENINSULAR SIAM
subsp., Arakan

IDENTIFICATION. Length 6 inches. A rather dark brown bird with a black-and-white crown and nape and a blackish chin and throat. A quiet bird as a rule, but one note (call-note or alarm-note) is *prrreee-prrreee*. A typical skulker in thick undergrowth, often accompanying travelling parties of *Alcippe* and other hill birds.
NEST AND EGGS. Have been taken by several collectors in the Shan States, Pegu Yomas, and northern Tenasserim. The breeding season is March to May. The nest is built on the ground, generally on a bank, and is made of bamboo leaves and grass, and may be either cup-shaped or domed. The eggs, 3 or 4 in number, are pure white.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and found all over Burma in the moist and evergreen forests of the foothills, ascending to 5,000 feet.

GOLDEN-HEADED BABBLER

Stachyris chrysaea Blyth, NEPAL
SUBSPECIES: *chrysaea* Blyth, NEPAL
binghami Rippon, MT. VICTORIA
assimilis Walden, KARENNI
chrysops Richmond, PENINSULAR SIAM
aurata de Schauensee, N. SIAM

IDENTIFICATION. Length 4½ inches. A fleeting glimpse of the head and breast, which appear as a golden haze, is all that is usually seen

of this tiny bird. Upper-parts olive, under-parts bright yellow. Usually seen in active parties in dense undergrowth in the higher hills.

VOICE. The usual call consists of 7 or 8 notes on a monotone, *pee pi-pi-pi-pi-pi-pi*, very like the call of *ruficeps*, but with a noticeable pause after the first note ; another call consists of 3 sibilant notes rising in pitch, *tzu-tzu-tzu*, somewhat like the note of Franklin's wren-warbler. Members of a party keep up a constant soft, low twittering, which rises to shriller and louder notes if the birds are disturbed.

HABITS AND FOOD. Outside the breeding season it collects in quite large parties, numbering as many as 40 or 50 birds, and is very partial to dense bamboo thickets ; it seldom if ever descends to the ground, but is perpetually on the move, scrambling and flitting from one twig to another ; like other small babblers of the undergrowth it occasionally ascends trees when feeding.

NEST AND EGGS. Have been taken in the Southern Shan States on the 2nd April. The nest is a small, neat facsimile of that of the preceding species, and is generally built in a bamboo clump or bush close to the ground. The eggs, normally 4 in number, are pure white.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and probably resident throughout the higher hills of Burma. It is extremely common in the Karen Hills and Karenni. In Yunnan it has once been obtained, near the Bhamo border.

RED-HEADED BABBLER

Stachyris ruficeps Blyth, DARJEELING

SUBSPECIES : *ruficeps* Blyth, DARJEELING
bhamoensis (Harington), BHAMO Dist. (higher hills)
planicola Mayr, MYITKYINA Dist. (foothills)
insuspecta Deignan, BAS-LAOS

IDENTIFICATION. Length 5 inches. Very like *rufifrons* (*q.v.*). The call-note resembles that of *chrysaea* but there is no pause after the first note. These birds add their quota to most hunting parties of small birds in the higher hills.

NEST AND EGGS. Breeds from March to May in the Bhamo Hills. The nest is built low down, either in a bamboo clump or thick bush or in a clump of over-hanging grass. It is a small rather neat egg-shaped structure with the entrance at the top, and is made of bamboo leaves, roots and fibres, with a lining of rootlets. The eggs, 3 or 4 in number, are white in ground-colour and faintly to boldly marked with specks and blotches.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to Yunnan ; also in Annam. In Burma it has been recorded from Mt. Victoria, North-East Burma, and the Southern Shan States ; it is not uncommon in the higher hills of

PLATE III

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1. YELLOW-BILLED SCIMITAR BABBLER (adult) 25
Pomatorhinus montanus nuchalis.

2. RED-CAPPED BABBLER (adult) 38
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3. YELLOW-EYED BABBLER (adult) 40
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4. STRIPED BABBLER (adult) 38
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5. SPOTTED BABBLER (adult) 21
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Chloropsis aurifrons pridii.

10. BLUE-WINGED LEAFBIRD (adult male) 83
Chloropsis cochinchinensis cochinchinensis.

PLATE III

North-East Burma and the subspecies *planicola* is found along the N'Mai valley at a low altitude.

RED-FRONTED BABBLER

Stachyris rufifrons Hume, PEGU YOMAS
SUBSPECIES: *rufifrons* Hume, PEGU YOMAS
pallescens Ticehurst, ARAKAN
rodolphei Deignan, N-W. SIAM

IDENTIFICATION. Length 4½ inches. A small brown bird with the forehead rufous, not the whole crown and nape as in the red-headed babbler. It is easily confused with the yellow-breasted babbler, but has quite a different call-note.

VOICE. The call, consisting of 6 to 7 notes on a monotone with a pause after the first note and the rest uttered rapidly, is one of the typical sounds of the teak forests of the Pegu Yomas; it is remarkable that three different species of *Stachyris* (*rufifrons*, *ruficeps*, and *chrysaea*) should have call-notes that resemble one another so closely.

HABITS AND FOOD. This bird hunts in parties, often in company with *Alcippe*, *Macronus* and other small birds, through the undergrowth and also the crowns of bamboo clumps and medium-sized trees.

NEST AND EGGS. Have been taken by Hopwood in Tavoy on the 20th May. Similar to those of *ruficeps*.

STATUS AND DISTRIBUTION. This species extends from Sikkim eastwards through Burma to Siam, Indo-China, and Malaysia. It has not been recorded from the Chin Hills, Upper Chindwin, or North-East Burma, but elsewhere is resident in the forests of the plains and foothills, ascending locally to 5,000 feet, and is common in the Pegu Yomas.

RED-WINGED BABBLER

Stachyris erythroptera Blyth, SINGAPORE
SUBSPECIES: *erythroptera* Blyth, SINGAPORE

IDENTIFICATION. Length 5½ inches. A brown bird with red wings and tail, slaty under-parts, and bare light blue skin round the eye. It utters a sharp metallic rolling sound and lives in evergreen forest, frequenting the undergrowth, small trees, and cane-brakes in parties and working through the foliage (Davison).

NEST AND EGGS. Described by Hopwood (1919), who found a nest with 2 eggs on the 16th April in southern Tenasserim.

STATUS AND DISTRIBUTION. A Malaysian species, extending north to the extreme south of Tenasserim, where Davison found it very abundant.

STRIPED BABBLER

Macronus gularis (Horsfield), SUMATRA
SUBSPECIES : *sulphureus* (Rippon), S. SHAN STATES
deignani de Schauensee, S-W. SIAM
connectens (Kloss), PENINSULAR SIAM
ticehursti (Stresemann), MT. VICTORIA
lutescens (Delacour), TONGKING
archipelagicus Oberholser, MERGUI ARCHIPELAGO

IDENTIFICATION. Plate III, fig. 4, p. 36. Length 5 inches. The breast is a very pale yellow, hardly noticeable in the field ; the fine black streaks distinguish it from *Stachyris*.

VOICE. The ordinary call-note is a loud *chuk-chuk-chuk-chuk*, 4 to 6 times, persistent and distinctive, uttered from the middle of a bush or bamboo thicket. When feeding undisturbed, members of a party utter a low *chee-cha chee-cha*, or *chew—chew, chew, chew, chew, chew*.

HABITS AND FOOD. This is a typical undergrowth-haunting babbler, and one of the commonest and most characteristic birds of the teak forests in the plains and foothills ; it is less tit-like than *Stachyris*, creeping and clambering about in a quiet unobtrusive manner except for its constantly reiterated call-notes.

NEST AND EGGS. Have been taken in several areas in Burma. The breeding season is from late February to July. It builds a domed nest of grass and bamboo leaves, with a meagre lining of finer grass, either in a bamboo clump or bush close to the ground. The eggs, 2 to 4 in number, are white with numerous specks and blotches of red or reddish-brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending westwards to Sikkim. It is a common resident throughout the forests of Burma, but does not ascend much above 4,000 feet.

RED-CAPPED BABBLER

Timalia pileata Horsfield, JAVA
SUBSPECIES : *bengalensis* Godwin-Austen, KHASIA HILLS
intermedia Kinnear, TOUNGOO–PEGU

IDENTIFICATION. Plate III, fig. 2, p. 36. Length 7 inches. Strong, shiny black bill, pure white forehead, and deep red crown are diagnostic, but it frequents thick cover and is often best identified by voice.

VOICE. One very distinctive call is a curious combination of a trill

and a whistle descending in pitch, and is unlike any other bird note ; another call commonly uttered as the bird climbs about in cover resembles *chew-aye, chit, chit, chit, chit,* or sometimes *scree . . . chit, chit, chit* ; another call consists of 5 or 6 notes harsh and rising in pitch. The alarm-note is harsh and rasping.

HABITS AND FOOD. Small birds that live in parties in thick cover all have much the same habits. The individuals work from stem to stem unseen down in the thicket, picking insects, etc., off the twigs and leaves ; then one bird works to the top and suns itself for a few seconds and utters a snatch of song before plunging again into the cover below, whereupon another bird emerges in turn for his breath of air. The red-capped babbler is typically a bird of *kaing* grass, but also occurs in *bizat* and similar heavy cover growing in damp localities ; it is not confined to extensive areas of *kaing* grass, like some species, but is found in small patches of an acre or less in extent, often a considerable distance up some jungle stream ; it is not typically a forest bird, but has been observed in heavy forest up the N'Mai valley.

NEST AND EGGS. Have been taken in several areas of Burma. The breeding season is from April to August. A domed nest with an entrance near the top is built either on the ground or close to it ; it is made of bamboo leaves or grass and lined with grass or a few fine rootlets. The eggs, 3 or 4 (rarely 5) in number, are white in ground-colour, densely covered all over with spots and blotches of reddish-brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending as far west as Nepal, and a common resident throughout Burma at low elevations in suitable localities.

Sub-family CHAMAEINAE

BABBLERS AND PARROTBILLS

The parrotbills derive their name from their peculiar bills, which in all species except *Conostoma* are not as long as they are deep and have sinuate margins to the mandibles, thus resembling a miniature parrot's bill ; the bill of *Conostoma* is intermediate between the bills of *Paradoxornis* and *Chrysomma*. These are birds of the undergrowth, or of grasslands, building a deep cup-shaped nest. They are found in central Asia, the oriental region, Europe, and western North America.

YELLOW-EYED BABBLER

Chrysomma sinense (Gmelin), KWANGTUNG, CHINA
SUBSPECIES : *hypoleucum* (Franklin), BENARES

IDENTIFICATION. Plate III, fig. 3, p. 36. Length 7 inches, including a tail of 4 inches. The orange eyelids are conspicuous in the field ; in open scrub-jungle, usually in parties.

VOICE. In the breeding season a characteristic phrase resembling *twee-twee-ta-whit-chu*, with the emphasis on *whit*, is constantly uttered from a perch on the extremity of a tall *kaing* stem ; another song consists of a loud *cheep-cheep-cheep-cheep-cheep*, about two notes per second, alternating with a low *kru-kru-kru*. Members of a party keep up a soft chatter.

HABITS AND FOOD. This pretty little bird avoids forest and wanders about in parties in open country, frequenting tall grass, low scrub and clumps of bushes ; it is abundant in extensive areas of *kaing* grass, and often enters gardens. It appears to visit the ground very seldom.

NEST AND EGGS. Breeds during July and August, with late nests in September ; nests have been found in Maymyo and on the Taok plateau as well as in the plains. The nest is an inverted cone in shape, a very compact and beautiful structure, made of broad grass blades and long strips of fine fibrous bark, coated with cobwebs and lined with fine grass stems and roots. It is generally built in an upright fork of a tree or bush, or is suspended in thick grass stems like the nest of a reed warbler. The eggs, normally 5 in number, vary considerably in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is resident throughout Burma, and though chiefly a bird of the plains it ascends locally up to 6,000 feet.

JERDON'S BABBLER

Chrysomma altirostre Jerdon, THAYETMYO
SUBSPECIES : *altirostre* Jerdon, THAYETMYO
griseigulare (Hume), BHUTAN DUARS

IDENTIFICATION. Length 6½ inches, including a tail of 3 inches. A smaller and dingier bird than the yellow-eyed babbler, being dull rufous and dirty white as opposed to bright rufous and clean white ; also the eyelids are greenish and not conspicuous. The call-note or song is reminiscent of the call of Tickell's sibia ; it is mournful, rather feeble and tremulous, and consists of about 8 notes, the first 6 uttered rather quickly on a monotone, and the last two slower and dropping in pitch.

NEST AND EGGS. Stuart Baker describes a nest, said to be of this species, sent to him from the foot of the Maymyo hills.
STATUS AND DISTRIBUTION. A sub-Himalayan species, found in Sind and again from Bhutan to Burma. Harington described it as common round Bhamo. The typical race is known only from the Irrawaddy-Sittang plain ; here it was widely distributed in the vast areas of high grass that covered the plain in Oates's day, and we were able to prove in 1941 that it still exists in the small remnant of the great Myitkyo swamp described elsewhere in this book, but it has not been observed anywhere else in recent years.

GREAT PARROTBILL

Conostoma aemodium Hodgson, NEPAL
SUBSPECIES : *aemodium* Hodgson, NEPAL
graminicola Deignan, N-W. YUNNAN

IDENTIFICATION. Length 12 inches. A brown bird, paler below, with a greyish-white forehead and large orange bill ; it utters a clear musical *wheou, wheou*, and the alarm-note is a four-fold grating croak or a churring note. Found in small parties hopping about like laughing-thrushes in the undergrowth and feeding on bamboo, beetles and seeds ; the carriage is noticeably upright.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Nepal to western China. In Burma it has been observed only in the Imaw Bum and Chimili pass areas north-east of Myitkyina, from 7,500 feet upwards.

GOULD'S PARROTBILL

Paradoxornis flavirostris Gould, NEPAL
SUBSPECIES : *flavirostris* Gould, NEPAL
guttaticollis David, SZECHWAN

IDENTIFICATION. Length 7 inches. General colour pale brown above and whitish below. The two black patches, one round the eye and the other on the ear-coverts, separated by a small white patch, and the straw-coloured crown are distinctive features. A bird of grassy undergrowth in the higher hills. The call-note consists of a harsh peculiar series of 6 to 7 notes on a monotone, lasting about 2 seconds ; a variety of chittering and strident notes are uttered by way of alarm.

Like other parrotbills it goes about in small parties and skulks in grass and reeds ; it climbs with considerable agility but is very loath to fly and usually flutters only a few yards into thicker cover when disturbed. It feeds on insects, seeds and berries.
NEST AND EGGS. Breeds from April to early June. A very compact and deep nest of soft grasses, well coated with cobwebs and lined with fine grass stems, is built in reeds, a bamboo clump or a bush. The eggs, 2 or 3 (rarely 4) in number, are white in colour, very sparsely speckled with pinkish-brown.
STATUS AND DISTRIBUTION. Extends from Assam through Burma to western China ; it has been recorded from Mt. Victoria, North-East Burma, the Shan States and Karenni and is confined to the higher hills and mountains ; it is rather scarce everywhere.

BROWN PARROTBILL

Paradoxornis unicolor Hodgson, CACHAR–NEPAL

IDENTIFICATION. Length 8 inches. A dull-brown bird with a dark head and a white ring round the eye, long tail and short round wings, and a weak fluttering flight; on bamboo it sits bolt upright. The note (alarm-note ?) is a faint churr. It feeds on insects, bamboo, moss, buds, etc.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. Himalayas to Yunnan and eastern Tibet. In Burma so far only recorded from the mountains of the Myitkyina district, as far south as Lungre Bum on the Bhamo district border.

BLYTH'S PARROTBILL

Paradoxornis poliotis (Blyth), KHASIA HILLS
SUBSPECIES: *poliotis* (Blyth), KHASIA HILLS
feae (Salvadori), KARENNI
ripponi (Sharpe), MT. VICTORIA

IDENTIFICATION. Length 4 inches. The small size, rufous crown, white cheek and white under the eye, black chin and throat, and parrot-like bill set in an attractive little face distinguish this species; the upper-parts are bright orange-brown and the wings mostly black and chestnut. The ordinary call-note is a very plaintive little bleat, constantly uttered by each member of a party, in addition to a variety of low cheeps and churring notes.

Intense and furious activity distinguish the parties, and they are usually seen working their way through the tops of the bamboo undergrowth in climax forest, *ponzo* and scrub in the open, and almost any type of heavy cover. It is far from shy, being far too busy in its frantic haste to worry about human beings.

NEST AND EGGS. The only nest described from Burma was taken at Fort Stedman in 1905; it was a small cup of grass blades well plastered with cobwebs, and was found in a very thick bush standing in matted reeds and creepers; the eggs were blue.

STATUS AND DISTRIBUTION. Yunnan, Burma, and the Himalayas as far west as Sikkim. It is widely but sparingly distributed in the higher hills and mountains of Burma, ascending to about 9,000 feet.

ORANGE PARROTBILL

Paradoxornis verreauxi (Sharpe), TIBET
SUBSPECIES: *craddocki* (Bingham), S. SHAN STATES
rasus (Stresemann), MT. VICTORIA

IDENTIFICATION. Resembles *poliotis* in size and general appearance, but has brown and not grey ear-coverts, and more of an orange tinge on the breast. A streak from above the eye and a band below the eye, white; chin and throat black; upper parts orange-brown; primary-coverts brown, forming a conspicuous patch on the upper portion of the wing.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. In Burma recorded only from Mt. Victoria, and the Salween-Mekong divide in Kengtung state at 8,000 feet (Craddock).

VINOUS-THROATED PARROTBILL

Paradoxornis webbiana (Gray), SHANGHAI
SUBSPECIES : *brunnea* Anderson, W. YUNNAN

IDENTIFICATION. Length 5 inches. A very beautiful little bird with the whole head chestnut and the throat vinous-pink ; the rest of the plumage is olive-brown, paler below. Like other parrotbills it feeds in brambles, grass and bracken on open hillsides or under open forest, and is far from shy ; the flocks are often large, numbering 30 to 50 birds, and keep up a continuous twitter.
NEST AND EGGS. Breeds in the Bhamo hills from April to early June. The nest is carefully concealed in a clump of reeds or grass, or in a thick bush or tangle of creepers ; it is a rather deep cup of bamboo leaves and grass blades, lined with finer grass. The eggs, 3 or 4 in number, are a fairly deep unspotted blue.
STATUS AND DISTRIBUTION. A Chinese species, extending westwards to the mountains of North-East Burma, where it is common above 4,000 feet, and down to the Mogok hills.

FULVOUS-FRONTED PARROTBILL

Paradoxornis fulvifrons (Hodgson), NEPAL
SUBSPECIES : *albifacies* Mayr, LIKIANG Mts.

IDENTIFICATION. Length 6 inches. A small parrotbill, in body size resembling *poliotis*, but at once recognisable by its long tail and more deliberate movements ; the general colour is a bright fulvous. Found in flocks in the bamboo undergrowth of climax forest in the mountains, feeding on buds, seeds, etc.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Himalayas through northern Burma to Yunnan. In Burma recorded only from the mountains of North-East Burma, where I have observed it at 8,500 feet near the Fenshuiling pass and the Vernay-Cutting expedition obtained it further north at 9,500–11,500 feet.

BLACK-BROWED PARROTBILL

Paradoxornis atrosuperciliaris (Godwin-Austen), SADIYA
SUBSPECIES : *atrosuperciliaris* (Godwin-Austen), SADIYA

IDENTIFICATION. Length 6 inches. This is another brown bird, paler below, but the chestnut on the forehead, crown and hindneck and the short black eyebrow are distinctive features. Even more distinctive is the curious wheezy call-note, like the twang of a guitar ; a loud chittering alarm-note is also uttered.

This handsome parrotbill is a great skulker in dense bamboo thickets, long grass and similar heavy cover, and usually goes about in large parties, often associated with *Gampsorhynchus rufulus* ; every now and then an individual

bird emerges for a short spell, chirps loudly once or twice, and then drops back into cover. It often feeds upside down like a tit.

NEST AND EGGS. Little known, and not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to Yunnan. In Burma it is common in the foothills and higher hills to 5,000 feet in North-East Burma, and I have collected it at Thandaung in the Karen Hills and seen it in the Naga Hills west of the Hukawng valley ; it has not yet been reported from the Shan States, but no doubt is to be found there.

SHORT-TAILED PARROTBILL

Paradoxornis davidiana (Sclater), N-W. FOKIEN
SUBSPECIES : *thompsoni* (Bingham), S. SHAN STATES

IDENTIFICATION. Length 4 inches. Distinguished from the other parrotbills by its much shorter tail. Top and sides of head bright rufous ; upper-parts slate-grey ; wings and tail grey-brown ; chin and throat black ; under-parts mainly buff.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Chinese species, about which we know nothing in Burma except that it was collected by Thompson at 2,500 feet near Kyatpyin, Loilong State, Southern Shan States.

RED-HEADED PARROTBILL

Paradoxornis ruficeps (Blyth), BHUTAN
SUBSPECIES : *bakeri* (Hartert), N. CACHAR

IDENTIFICATION. Length 7 inches. Resembles the black-browed parrotbill but is larger and lacks the black eyebrow ; the whole head, nape and upper back are chestnut. Stanford describes a mewing note and a loud guitar-like note ; it is a great skulker in high reed-like grass, and like other parrotbills much resembles bearded tits in its actions.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Burma, where it has been recorded from the Upper Chindwin, North-East Burma, Karen Hills (Papun), and Karenni, but seems to be nowhere common ; it has not been reported from the Shan States, but must occur there.

GREY-HEADED PARROTBILL

Paradoxornis gularis Gray, SIKKIM
SUBSPECIES : *transfluvialis* (Hartert), N. CACHAR
rasus Stresemann, MT. VICTORIA
laotiana (Delacour), LAOS

IDENTIFICATION. Length 6 inches. The grey head with a black stripe on each side of the crown, and the yellow bill are distinctive ; upper-parts brown, forehead and chin black ; under-parts whitish.

VOICE. When one bird of a pair is calling to the other a loud call

of four notes on a monotone is used ; a harsh chattering note of alarm is uttered when disturbed.

HABITS AND FOOD. It is found in parties working through the undergrowth in all types of forest, and also through *ponzo*. It is much less of a skulker than other large parrotbills, and is not afraid of showing itself ; in the north it inhabits bamboo jungle of a type found all over the lower Kachin hills, but in Karenni it seems to prefer higher elevations.

NEST AND EGGS. Have been taken by Hopwood and Mackenzie in the Chin Hills. The nest is the usual deep well-made grassy cup of the genus, built in reeds or high grass, a bamboo clump or a bush. The eggs, 2 or 3 (rarely 4) in number, are variable in colour and markings.

STATUS AND DISTRIBUTION. South-east Asia, westwards to Sikkim ; not in Yunnan. In Burma it has been recorded from the Chin Hills, and Upper Chindwin at 3,000 feet, North-East Burma, the Southern Shan States, and Karenni (where it is abundant along the Mawchi road), ascending to 6,000 feet in the south.

Sub-family TURDOIDINAE

BABBLERS, LAUGHING-THRUSHES, BARWINGS, YUHINAS, SIBIAS, Etc.

The birds of this sub-family have strong legs and bills ; the wings are short and rounded and often ornamented with beautiful colours, and the plumage as a whole is generally more brilliant than that of the preceding sub-families. They frequent the undergrowth in parties, which are generally noisy and combine melodious notes with discordant cries ; some species feed on the ground, whereas others (*e.g.* sibias, yuhinas) are entirely arboreal birds of the tree-tops. They build cup-shaped nests in bushes and lay eggs that are either plain, unmarked blue or white, or spotted. They are found in Africa, Asia Minor, Arabia, and the oriental region.

STRIATED BABBLER

Turdoides earlei (Blyth), CALCUTTA

IDENTIFICATION. Plate II, fig. 9, p. 20. Length 9 inches. A bird of *kaing* grass with streaked brown plumage ; can only be confused with the striated marsh warbler. The chin, throat and breast are rufous with dark stripes.

VOICE. Utters both a single whistling note rapidly repeated and a

loud trisyllabic whistle, *keep quiet*, also repeated (Roseveare). Oates described the note as a sort of mew, rather loud and extremely monotonous.

HABITS AND FOOD. The striated babbler is found only in extensive areas of *kaing* grass, wide grassy plains, and marshy tracts. It is gregarious and found in noisy parties throughout the year, including the breeding season ; the birds clamber through grass and bushes and flutter from one patch of cover to another, seldom descending to the ground. They feed chiefly on insects.

NEST AND EGGS. Breeds principally during the rains. It prefers marshy land, where it makes a nest in the reeds or in the *kaing* grass like the nest of a large reed warbler ; or else it makes a larger and more untidy nest of grass and reed blades in a low bush or thicket of grass. The eggs, 3 or 4 in number, are a bright deep blue.

STATUS AND DISTRIBUTION. India and Burma. It has been recorded from Arakan, round Bhamo, Central Burma, and the plains of Southern Burma ; it is common and resident in suitable localities.

WHITE-THROATED BABBLER

Turdoides gularis (Blyth), PEGU

LOCAL NAME. The Seven Sisters. Burmese : *zwe*.

IDENTIFICATION. Plate II, fig. 10, p. 20. Length 10 inches, including a tail of 5½ inches. An untidy brown bird with a white throat and breast and a long moth-eaten tail. A familiar bird of towns and villages in Central Burma.

VOICE. Members of a party constantly utter grating, squeaky call-notes. Also has a *cheep cheep* call followed by a trill (Roseveare), and a curious loud trilling noise on the wing.

HABITS AND FOOD. The white-throated babbler is a typical bird of bungalow compounds in the dry and dusty city of Mandalay ; the birds go about in small parties and seem very busy as they hop about with the tail held at various angles, hunting for insects and turning over the fallen leaves, and every now and again taking a short, rocketing flight, with the small, round wings extended and the tail spread fan-wise. In the semi-arid plains and uplands of the dry zone, where cultivated fields alternate with waste lands dotted with thorn scrub, their real habitat is in the thorn hedges of the field boundaries ; they rove from hedge to hedge, from thorn bush to thorn bush, in search of food, and can be seen flying over the open spaces between them.

NEST AND EGGS. The breeding season is from early April to mid-June. Nest and eggs resemble those of the preceding species.

STATUS AND DISTRIBUTION. This species is found only in Burma ; it is common throughout the arid scrub-jungles of the dry zone, whence it straggles down the Irrawaddy and Sittang valleys to Rangoon, where it is probably resident in the scrub-jungle on the laterite ridge beside the trunk road 9 miles north of the city (it has been seen regularly from late May to the end of August and again in late October and in November).

SLENDER-BILLED BABBLER

Turdoides longirostris (Moore), NEPAL

IDENTIFICATION. Slightly smaller than the preceding species, and distinguished by slender curved black bill and absence of streaks or spots on the upper-parts, which are reddish-brown ; cheeks, chin and throat white ; remaining under-parts rusty.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Nepal to Assam, Manipur, Chittagong, and Arakan where Christison found it fairly common at low elevations. Rippon recorded a specimen from Bampon, Southern Shan States, but Ticehurst gives reasons for not accepting this record (*Ibis*, 1938, p. 99) ; Stanford, however, considers that it will be found one day in the big grass plains of the Myitkyina district near Ayeindama or in the Hukawng valley.

[NOTE.—The SPINY BABBLER, *Turdoides nipalensis* Hodgson, NEPAL is a bird of the terai that may extend into Burma. In size and appearance it resembles *earlei*, but has spiny shafts to the feathers and a longer tail.]

CHINESE BABAX

Turdoides lanceolatus (Verreaux), CHINESE TIBET
SUBSPECIES : *lanceolatus* (Verreaux), CHINESE TIBET
woodi (Finn), MT. VICTORIA

IDENTIFICATION. Length 11 inches. A brown bird boldly striped above and below and with a black moustachial streak and a long tail ; somewhat resembles *Turdoides earlei* in appearance and actions, but the two species do not occur together, the babax being a bird of the higher hills. It has a loud wailing call-note *ou-pheee-ou-pheee* 6 to 8 times, which may be the call described by Harington as resembling the creaking of a gate hinge ; what is probably the same call is described by Heinrich for the subspecies *woodi* as consisting of a full far-sounding double whistle, repeated many times at short intervals ; the second, emphasised note of the call lies about two tones higher than the first. It is a rather shy and typical babbler, favouring thin scattered forest and the more open hillsides covered with reedy grass or bracken and brambles, and is usually seen in parties.

NEST AND EGGS. Breeds from April to June in the Bhamo hills and Venning found a nest at 6,000 feet near Haka in the Chin Hills on the 13th April. The nest is a cup of dead leaves, grass, bits of bracken, etc., lined with roots and built in a low bush. The eggs, 2 to 4 in number, are a dark spotless blue.

STATUS AND DISTRIBUTION. A Chinese species extending westwards to northern Burma; it has been recorded from the Chin Hills, North-East Burma, the Mogok hills, and the Northern Shan States, but is nowhere common and is not normally found below 4,000 feet.

RUFOUS-NECKED LAUGHING-THRUSH

Garrulax ruficollis (Jardine and Selby), HIMALAYAS

IDENTIFICATION. Length 10 inches. In the field it appears black with bright chestnut on the sides of the neck and under the tail. A flock in dense undergrowth keeps up a continual shrill whistling chatter, which at times amounts almost to song. It is not a forest bird but frequents *kaing* grass and *bizat*, the outskirts of villages where there is suitable cover, and at higher elevations the grass and brambles that spring up where the top of a hill has been cleared of its trees; it is very gregarious, collecting in parties that may number from 6 to 20 or more birds, but is a great skulker and difficult to observe.

NEST AND EGGS. One nest was taken by Hopwood and Mackenzie in the Chin Hills at 2,000 feet.

STATUS AND DISTRIBUTION. Extends from Nepal to northern Burma. It is very common in the plains of Myitkyina district, notably in the Putao plain and at the southern end of the Indawgyi lake, and ascends the hills to 4,000 feet, but in the eastern hills it is replaced by *sannio*; it has been recorded from the Upper Chindwin, and I have seen it at Kutkai, Northern Shan States.

OGLE'S LAUGHING-THRUSH

Garrulax nuchalis (Godwin-Austen), KHASIA–NAGA HILLS

IDENTIFICATION. Length 9½ inches. On the rare occasions when it affords a view of itself, the slate-grey crown, black chin and throat, and white cheeks and ear-coverts are distinctive. It has a fine song of 4 or 5 notes, and an unmistakable *churr* when alarmed. Its favourite haunt is *ponzo*, in which its loud rich whistling call at once attracts attention.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. This species is confined to Assam and northern Burma; it appears to be common in the foothills of the Upper Chindwin and Myitkyina districts, but has not been recorded elsewhere.

BLACK-THROATED LAUGHING-THRUSH

Garrulax chinensis Scopoli, CHINA
SUBSPECIES: *propinquus* Salvadori, TENASSERIM
lochmius Deignan, N. SIAM

IDENTIFICATION. Plate II, fig. 5, p. 20. Length 11 inches. The black and white head pattern should prevent confusion with any other species.

VOICE. This is one of the few really good songsters in Burma, and its repertoire of powerful, clear, musical notes is a pleasure to hear; it also utters many of the harsher notes common to the genus.

HABITS AND FOOD. This bird is a great skulker and favours dense cover such as thick *lantana* scrub, bamboo thickets and the undergrowth in hill forest ; small parties are sometimes seen, but unlike most other laughing-thrushes it is often solitary.

NEST AND EGGS. The only nest described was taken by Hopwood on the 28th April on Mt. Nwalabo in Tenasserim ; it was built in the fork of a small tree in open forest, and was made of bamboo leaves mixed with tendrils and long roots ; the eggs were white.

STATUS AND DISTRIBUTION. A Chinese species, which reaches eastern Burma. It is not found in North-East Burma, but extends from the Northern Shan States through the Karen Hills and Karenni to Tenasserim, and is locally common ; it has also been recorded from low elevations in the Mandalay and Pegu districts. Wickham considered it to be a local migrant from breeding haunts to the east, possibly along the Yunnan and Siam borders, and describes how they suddenly became numerous round Taunggyi at the end of March and early April for a few days and then disappeared again towards the east.

GREY-SIDED LAUGHING-THRUSH

Garrulax caerulatus Hodgson, NEPAL
SUBSPECIES : *kauriensis* Rippon, BHAMO HILLS
latifrons Rothschild, SHWELI–SALWEEN Divide

IDENTIFICATION. Length 11 inches. In the field the rich rufous-brown upper parts, black forehead and black round the eye, and white under-parts are noticeable. Harington described its note as a very fine, almost human, whistle, and one of its call-notes is a loud *oh dear dear* ; in addition the alarm-note is a very sharp and distinctive chitter. Frequents bamboo thickets and dense jungle in the higher hills.

NEST AND EGGS. Breeds round Sinlum Kaba from April to June. The nest is built in a bush or bamboo clump and is usually made of bamboo leaves lined with roots. The eggs, 2 or 3 in number, are a pale blue-green like those of *moniliger*.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Yunnan ; it is not uncommon in the higher hills of North-East Burma, but has not been recorded elsewhere.

WHITE-BROWED LAUGHING-THRUSH

Garrulax sannio Swinhoe, AMOY, CHINA

IDENTIFICATION. Plate II, fig. 6, p. 20. Length 10 inches. The yellowish-white cheeks and eyebrows contrasting with the pale chestnut head and throat distinguish this species. A bird of the higher hills.

VOICE. It is a noisy bird, like most laughing-thrushes, but has no very distinctive notes.

HABITS AND FOOD. This is one of the few laughing-thrushes that allows a satisfactory view of itself at close quarters, being less of a skulker and less shy than most ; it is usually seen in small parties, sometimes singly or in pairs, working through scrub-jungle or the undergrowth inside open forest ; typical habitats are the *lantana* scrub round Maymyo and the more open hillsides along the eastern border of the Myitkyina district, where bracken and wild raspberry predominate.

NEST AND EGGS. Have been taken in the Bhamo hills and round Maymyo, where it breeds from February to July. The nest is a cup of grass and rootlets built in a bush or small tree, usually close to the ground. The eggs, 2 to 4 in number, vary from pure white to pale blue.

STATUS AND DISTRIBUTION. A Chinese species, extending across northern Burma to Assam. It is common on the Shan plateau, including Maymyo and the Mogok hills, and is the common village laughing-thrush of the hills along the Yunnan border in North-East Burma, ascending to about 6,000 feet.

AUSTEN'S LAUGHING-THRUSH

Garrulax galbanus Godwin-Austen, MANIPUR

IDENTIFICATION. Length 10 inches. Crown and nape ashy-brown with a whitish eyebrow ; rest of head and chin black ; upper-parts brown ; under-parts yellow.

NEST AND EGGS. A common breeding bird of the Chin Hills at 5,000–6,000 feet from mid-April to early June. The nest is usually built in the fork of a low shrub and is roughly made of grass stems with the ends sticking out in all directions. The eggs, 2 or 3 (rarely 4) in number, are usually white, occasionally very pale blue.

STATUS AND DISTRIBUTION. Manipur and Chin Hills only.

WHITE-CRESTED LAUGHING-THRUSH

Garrulax leucolophus (Hardwicke), HIMALAYAS (KUMAON)
SUBSPECIES : *pathaicus* Reichenow, PATKAI HILLS (=*hardwickii* Ticehurst)
belangeri Lesson, PEGU
diardi (Lesson), COCHIN-CHINA

LOCAL NAMES. Burmese : *wa-yaung-hnget gaung-byu* ; Chinghpaw : *u-chyu-naw-baw-hpraw.*

IDENTIFICATION. Plate II, fig. 7, p. 20. Length 12 inches. Common in parties in foothill forests.

VOICE. The loud cackling outbursts described below, in which each bird seems to be trying to out-shout the rest, are peculiar to this species; some birds shout one phrase, and some another, like a choir singing in harmony.

HABITS AND FOOD. This is perhaps the most characteristic bird of the teak forests, and Heinrich's graphic pen-picture of it is worth quoting at length: "Dense, shady forests, especially those rich in bamboo, appear to be the favourite dwelling-place of this fine bird, as remarkable for its colouring as for its behaviour and, above all, for its voice.

"In small companies or more frequently in larger flocks these feathered goblins roam through the forest thickets. Wherever they appear, the mysterious silence of the primeval forest is suddenly broken and gives place to a bustle and stir. Reddish-brown hob-goblins with shining white caps flit through the bamboo canes, turn somersaults on liana swings, or rustle through the ground vegetation. Everywhere there is a cracking and creaking in the branches, a whispering and murmuring, a mysterious hidden life. We will assume that you have observed all this from cover and now step slowly from behind the sheltering tree—a sudden rustle and flurry, then dead silence. You may see in the background three or four little red-brown imps, their white crests bristling with indignation, sitting almost motionless in a row on a bent bamboo pole. This breathless pause only lasts a second however. Then a brief, low chattering can be heard and immediately after this preliminary there starts up a chorus of diabolical cackling laughter, uttered with a precision worthy of a great orchestral conductor, the volume and vehemence of which is almost alarming. Silence falls again immediately, only to be followed after a short pause by a new burst of laughter with the same introduction. So it goes on until one moves and the Laughing Goblins are put to flight and their cackling grows fainter until it finally dies away in the recesses of the forest."

NESTS AND EGGS. In Tenasserim eggs may be found in February, but elsewhere the breeding season extends from the end of March to May, with second broods to the beginning of August. The nest is usually built in a bush, and is a broad shallow cup, generally made of grass and bamboo leaves rather loosely put together and bound with plant stems and tendrils. The eggs, 3 to 5 (rarely 2 or 6) in number, are pure white.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending westwards to Simla. It is a common resident throughout

the forests of Burma, not normally found above 4,000 feet, but it has been seen at 7,000 feet in the north.

GREATER NECKLACED LAUGHING-THRUSH

Garrulax pectoralis (Gould), NEPAL
SUBSPECIES : *pectoralis* (Gould), NEPAL
meridionalis Robinson and Kloss, S-W. SIAM
robini Delacour, TONGKING

LOCAL NAME. Burmese : *wa-yaung-hnget.*
IDENTIFICATION. Plate II, fig. 8, p. 26. Length 13 inches. At a casual glance they appear rather plain-looking, but when viewed in the open in full plumage they are seen to be beautiful birds with rich tones of olive and brown.
VOICE. Heinrich describes the note as a strange, very human piping, to which is usually added several short, high whistles. As these birds usually appear in large companies, whose various individuals simultaneously and confusedly utter these strange sounds, the result is an orchestra of mournful, weepy piping. In addition, various other notes, especially grating noises, are frequently heard.
HABITS AND FOOD. These are typical birds of the teak forests of the plains and foothills, and the oak forests of Maymyo. They progress with great hops, both on the ground and from branch to branch of a bush or tree, and their manner of crossing an open space is very characteristic ; they never fly all together (unless alarmed), or even a few birds at a time, but follow one another singly at short intervals, after each one has made sure from his protective thicket that there is no danger around. The flight is rather clumsy and jay-like.
NEST AND EGGS. Breeds from March to May, with second broods into August. The nest is typical of the genus and the eggs, 3 or 4 (rarely 5) in number, are blue-green.
STATUS AND DISTRIBUTION. Widespread in the oriental region, westwards to Nepal. It is a common resident throughout the forests of Burma, up to 5,000 feet (rather less in the north).

LESSER NECKLACED LAUGHING-THRUSH

Garrulax moniliger Hodgson, NEPAL
SUBSPECIES ; *moniliger* Hodgson, NEPAL
fuscatus Stuart Baker, TAVOY
schauenseei Delacour and Greenway, LAOS

LOCAL NAME. Burmese : *wa-yaung-hnget.*
IDENTIFICATION. Length 12 inches. Indistinguishable from *pectoralis*

in the field ; apart from two small characters they differ only in size.

VOICE. Has not been distinguished from that of *pectoralis*.

HABITS AND FOOD. These two species, *pectoralis* and *moniliger*, have been described by Ticehurst as affording one of the most remarkable examples of parallelism to be found among birds. "Where one is found the other frequently is also, even in the same hunting party. Their nests, habits, eggs, courtship, and terrain are almost identical ; they share the same ecological niche. Furthermore, when the form of the one changes geographically—as it does in Southern Burma, *pectoralis* to *meridionalis*—*moniliger* changes to *fuscatus* in the same area."

NEST AND EGGS. Similar to those of *pectoralis* except that the eggs are smaller.

STATUS AND DISTRIBUTION. Owing to the similarity of the two species it is difficult to work out their relative status, which is by no means equal, the one or the other being much the commoner in certain areas (*e.g.* the Vernay–Hopwood Chindwin expedition collected 14 *pectoralis* and no *moniliger* in the Upper Chindwin) ; in Central Burma *pectoralis* seems to be the commoner, but in North-East Burma they seem to be about equal (Stanford collected 12 *pectoralis* and 11 *moniliger* over the same period) ; in Tenasserim Davison collected 19 *moniliger* and 1 *pectoralis*, but Darling obtained many *pectoralis* round Kawkareik.

McCLELLAND'S LAUGHING-THRUSH

Garrulax gularis (Horsfield), ASSAM
SUBSPECIES : *gularis* (Horsfield), ASSAM

IDENTIFICATION. Length 10 inches. The chestnut-brown back and primrose-yellow under-parts are distinctive. Legs bright orange-yellow. Frequents dense scrub, not far from villages.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. From Assam across northern Burma to Laos. It probably occurs in the northern Chin Hills, and has been obtained in the Upper Chindwin and the Myitkyina district at elevations up to 4,000 feet, but seems to be scarce.

TICKELL'S LAUGHING-THRUSH

Garrulax strepitans Blyth, TENASSERIM
SUBSPECIES : *strepitans* Blyth, TENASSERIM

IDENTIFICATION. Length 12 inches. A brown bird with a black face, a reddish tinge on the crown and nape, and the throat and breast chocolate-brown ;

eyes red, bill black. De Schauensee records that it has a loud, clear, whistled song of three notes on the same pitch, followed by a longer note three tones lower. Davison found it in flocks on Mt. Mulayit, favouring densely forested ravines. "Though very like *G. leucolophus* both in voice and habits they are very shy of man, but they will follow a dog about from tree to tree, peering down and jeering at him in the most uproarious fashion. I have seen a dozen or more dancing together on a huge branch, much as *leucolophus* does on the ground. The stomachs of all the many specimens I examined contained nothing but beetles and ants."

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. From south-eastern Burma through the higher hills of Siam to Indo-China. It is not uncommon on Mt. Mulayit from 3,500 feet to the summit, and has been recorded from Kengtung.

WHITE-SPOTTED LAUGHING-THRUSH

Garrulax ocellatus (Vigors), HIMALAYAS (SIMLA-ALMORA Dists.)
SUBSPECIES : *similis* Rothschild, SHWELI–SALWEEN Divide

IDENTIFICATION. Length 12 inches. Large size and spots on the wings and back are diagnostic for this beautiful bird ; the buff side of the face and black crown are noticeable as the bird peers at you, for it is inquisitive and easily observed. The call-note is a loud *cacreee-creee-creee-creee-rrrr-cacreee-creee* at the rate of 2 *creee* per second ; while observing you the birds keep uttering a low note of interrogation, which rises to a squawk of alarm if a sudden movement startles them. Found in pairs or small parties in the bamboo and shrub undergrowth of climax forest in the mountains.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal to western Yunnan. I found it to be common in the Fenshuiling pass area at 7,000–9,000 feet and the Vernay-Cutting expedition obtained a pair on Imaw Bum ; there are no other records from Burma.

ASHY LAUGHING-THRUSH

Garrulax cineraceus (Godwin-Austen), MANIPUR
SUBSPECIES : *cineraceus* (Godwin-Austen), MANIPUR
styani (Oustalet), NINGPO

IDENTIFICATION. Length 9 inches. Cap, stripe through eye, and moustachial streak, black ; a white eyebrow ; upper-parts greyish, the tail tipped white and with a subterminal black band ; under-parts tawny ; eyes yellow, bill horny. A handsome bird, usually seen in pairs.

NEST AND EGGS. In the Chin Hills breeds in late April and early May. The nest is a small and flimsy copy of that of *pectoralis* ; the eggs are a fairly deep unspotted blue.

STATUS AND DISTRIBUTION. From Assam and Manipur this species extends into the Chin Hills, where it is common in the north, but very rare on Mt.

Victoria ; it reappears with a big gap in its distribution in Yunnan, whence it extends into the Shan States east of the Salween.

RUFOUS-CHINNED LAUGHING-THRUSH

Garrulax rufogularis (Gould), SIKKIM
SUBSPECIES : *rufogularis* (Gould), SIKKIM

IDENTIFICATION. Length 9 inches. General colour rich olive-brown and grey squamated with black ; a large ring round the eye grey ; a broad olive-green eyebrow ; chin and throat rufous ; under tail-coverts deep chestnut.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal to northern Burma, not reaching Yunnan. Recorded once from the Upper Chindwin and twice from the Myitkyina district, and seems to live at about 4,000 feet.

BROWN-CAPPED LAUGHING-THRUSH

Garrulax austeni (Godwin-Austen), KHASIA HILLS
SUBSPECIES : *victoriae* (Rippon), MT. VICTORIA

IDENTIFICATION. Length 9½ inches. General colour reddish-brown with pale streaks on the crown, nape and neck ; under-parts paler with white edges to the feathers. Described on Mt. Victoria by Heinrich as follows :—" Together with *G. erythrocephalus* the most characteristic bird of the ground vegetation of the highest mountain region. The reed-bamboo thickets of the forest margins, as well as other bush formations of the ravines and clearings, form the dwelling-place of this bird. Its ecology, behaviour, movements, and even its voice are in striking harmony with other *Garrulax* species. It moves almost exclusively along the ground in the protection of the sheltering thickets, though it can be seen occasionally climbing a few feet above ground in the bushes and low trees overhung with liana or veils of moss. Met with only singly or in pairs, not in flocks.

" In April and May this bird plays one of the principal instruments in the symphony of the feathered orchestra of the alpine zone of Mt. Victoria. There is no thicket from which its pleasant flute-like notes cannot be heard. Like other *Garrulax* species its song consists of a succession of sounds, which can quite well be imitated. The strophe sounds something like *ti-ti-ti-tia-tuiti* ; the first three notes thereof are quite short and pitched at ' B ' ; the fourth note (also ' B ') is accented, somewhat long drawn-out and with an added deeper note (about ' G ' sharp) ; the last three notes of the phrase form the joyous finale ' A–C sharp–B.' This song is repeated at intervals; various other individual modulations are heard, especially the abbreviation of the preliminary syllables. Another song, probably the call-note, consists of a double whistle repeated at intervals, not unlike the referee's whistle at a football match, *krru . . . krru*, loud and resounding. The alarm-note consists of a soft *krupp . . . krupp . . . krupp* frequently and quickly repeated."

NEST AND EGGS. Not described from Burma

STATUS AND DISTRIBUTION. Assam and Chin Hills only, so far as we know at present.

BLUE-WINGED LAUGHING-THRUSH

Garrulax squamatus (Gould), HIMALAYAS

IDENTIFICATION. Length 10 inches. This species is dimorphic, some individuals having the upper-parts rufous olive-brown and the tail bronze with a chestnut tip, whereas others have the crown grey and the tail black. A black eyebrow reaching to the nape; wings black, the primaries edged with blue on the outer web; under-parts tawny. Eye white or pale blue and exceedingly conspicuous (Baillie). Described by Harington as fond of valleys covered with dense jungle.

NEST AND EGGS. Harington found a nest with 3 eggs on the 30th April in the Bhamo district.

STATUS AND DISTRIBUTION. Himalayas from Nepal to western Yunnan. It has been recorded from Mt. Victoria, North-East Burma, the Mogok hills, Northern Shan States, and Kengtung, but seems to be scarce everywhere and confined to the higher hills.

STRIATED LAUGHING-THRUSH

Garrulax striatus Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)
SUBSPECIES: *brahmaputra* Hachisuka, DAFLA HILLS
cranbrooki Kinnear, ADUNG VALLEY

IDENTIFICATION. Length 12 inches. Large size, rich brown plumage streaked with white, and no eyestripe distinguish this species. The call-note is a double whistle *whe-ho*, and the alarm note resembles that of the blackbird. A bird of climax forest in the higher hills and mountains, feeding on lichens, beetles, berries, and fruiting and flowering trees.

NEST AND EGGS. Breeds in April and May in the Chin Hills, continuing up to early August in Assam. The nest is the usual deep cup about 10 inches in diameter, and the eggs are pale blue.

STATUS AND DISTRIBUTION. Himalayas to northern Burma, but not Yunnan. It is not uncommon at 4,000–8,000 feet in North-East Burma and will no doubt be found in the Upper Chindwin in addition to the northern Chin Hills.

SPOTTED-BREASTED LAUGHING-THRUSH

Garrulax merulinus Blyth, KHASIA HILLS
SUBSPECIES: *merulinus* Blyth, KHASIA HILLS

IDENTIFICATION. Length 10 inches. A brown bird with a spotted breast, thrush-like in appearance. Said to have a wide range of beautiful notes. Stanford describes a deep churring note and states that it resembles the spotted babbler in its actions.

NEST AND EGGS. Not described from Burma, but Hopwood and Mackenzie took a nest in the northern Chin Hills.

STATUS AND DISTRIBUTION. Assam, Burma, Annam, and once in Yunnan. In Burma it is found in the Chin Hills, Upper Chindwin, and North-East Burma, and seems to be another rare laughing-thrush of the 4,000 foot level.

RED-HEADED LAUGHING-THRUSH

Garrulax erythrocephalus (Vigors), HIMALAYAS
SUBSPECIES : *erythrolaema* Hume, S. MANIPUR
forresti Rothschild, SHWELI–SALWEEN Divide
shanus de Schauensee, KENGTUNG
melanostigma Blyth, MT. MULAYIT
ramsayi Ogilvie-Grant, KARENNI

IDENTIFICATION. Length 11 inches. In general appearance a dull-looking bird with a very dark head and breast ; the chestnut crown, spotted neck and gilded wings and tail are not conspicuous in the forest. Common in parties in the higher hills.

VOICE. The ordinary call-note heard in Karenni resembles *too-rit-a-re-ill*, with the accent and the highest note falling on the penultimate syllable ; answered by another bird *wroo-wroo* ; there are variants of this call, and members of a party utter low conversational notes. On Mt. Victoria, Heinrich describes the song as consisting of 5–6 whistling notes, while a succession of 3–4 similar notes forming the finale of a strophe is characteristic of this species. The second note of the song is about 2 tones higher than the first, the 3–4 final notes of equal pitch lie somewhat lower, between the second and first. A call-note he ascribes with some degree of certainty to this species consists of 4 notes, of which the first and last are the same (approx. " D "), while the second and third rise ½ tone, the third note being softly accented. Finally, Kingdon Ward described its note in the Adung Valley as a sort of hissing whistle on two notes. The evidence is insufficient to say whether these variations are of subspecific or merely individual significance.

HABITS AND FOOD. This bird is usually found in parties in any type of thick undergrowth in hill forests, feeding on or near the ground ; it is very shy and secretive and on the rare occasions when it emerges into the open it flutters and hops back into cover at the slightest alarm ; it feeds on insects and seeds, and it is amusing to watch a party making the leaves of the forest floor dance into the air with powerful jabs of their bills at morsels of food underneath.

NEST AND EGGS. Have been taken in the Chin Hills and on Mt. Nwalabo in April from May. The nest is a large cup of dead leaves bound with grass, fine twigs and long strips of fibrous bark until a very solid wall has been made ; moss and ferns are also used and there is a lining of fine grass and rootlets. The eggs, 3 in number, are a pale greenish-blue with a few spots and streaks of brownish-red.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It

is common throughout the higher hills and mountains of Burma, up to 9,000 feet.

CRIMSON-WINGED LAUGHING-THRUSH

Garrulax phoeniceus (Gould), NEPAL
SUBSPECIES : *bakeri* (Hartert), N. CACHAR

IDENTIFICATION. Length 9 inches. Crimson on the sides of the head, neck, and wings prevents confusion with any bird other than *Liocichla ripponi* (*q.v.*) ; there is a short black eyebrow, the tail is black tipped orange, and the rest of the plumage is olive-brown, paler below. In the field it looks dark brown.

NEST AND EGGS. Have been taken by Mackenzie in the northern Chin Hills. The eggs resemble those of *Liocichla ripponi* but are paler.

STATUS AND DISTRIBUTION. Himalayas from Nepal to northern Burma. It has been recorded from the Chin Hills, Upper Chindwin, and North-East Burma above 4,000 feet ; it is not common.

[NOTE.—This bird may belong to the genus *Liocichla* ; authorities differ on the point.]

RED-TAILED LAUGHING-THRUSH

Garrulax milnei David, S-E. CHINA
SUBSPECIES : *sharpei* (Rippon), BHAMO Dist.

IDENTIFICATION. Length 11 inches. Has the plump and well-fed outline of the red-headed laughing-thrush, but the bright red tail and wing-tips are diagnostic ; a good view reveals the orange-brown crown and nape, black chin and throat, and grey ear-coverts. Habits differ in no way from those of the red-headed species.

NEST AND EGGS. Have been taken at Sinlum Kaba, where it breeds in April and May. The nest is usually found in dense undergrowth in a ravine. The eggs resemble an oriole's, and are unlike those of any other laughing-thrush ; they are pure white in ground-colour, sparingly spotted with reddish-brown or blackish.

STATUS AND DISTRIBUTION. A Chinese species, entering eastern Burma. It is common in the higher hills of North-East Burma and extends southwards to Kengtung.

PLAIN-COLOURED LAUGHING-THRUSH

Garrulax subunicolor (Blyth), SIKKIM
SUBSPECIES : *subunicolor* (Blyth), SIKKIM

IDENTIFICATION. Length 9 inches. A dark-coloured bird, with black crescentic tips to the feathers of the head and body and a gilded wing ; it has a clear whistle of 4 notes, and a sharp alarm-note.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal through northern Burma

to Yunnan. It is not uncommon in North-East Burma above 6,000 feet, and is a characteristic bird of the magnificent forests of the Fenshuiling pass.

BLACK-FACED LAUGHING-THRUSH

Garrulax affinis (Blyth), NEPAL
SUBSPECIES : *oustaleti* Hartert, TSEKOU, YUNNAN

IDENTIFICATION. Length 10 inches. Head and neck black except for the white cheeks and a large white patch behind the ear-coverts. Looks dark in the field, with some golden-yellow on wings and tail. It has a mournful and monotonous call of 3 or 4 notes, the second being lower in pitch, and also a variety of high-pitched scolding notes and a long rolling alarm-note. It feeds on berries, seeds, insects, and fruit.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Yunnan. It is the common laughing-thrush of the mountains of North-East Burma, south to the Panwa pass, and occupies a higher ecological niche than any other species, being a typical bird of the cane at 9,000–11,000 feet.

STREAKED LAUGHING-THRUSH

Garrulax virgatus (Godwin-Austen), NAGA HILLS

IDENTIFICATION. Length 10 inches. A long white eyebrow ; upper-parts brown, the wings ashy ; chin and throat deep chestnut, shading off into yellowish-buff towards the tail.

NEST AND EGGS. In the Chin Hills breeds April to June ; the nest is usually built in open jungle in a thick bush or in grass, and is a deep, stoutly made cup of various materials ; the eggs, 2 or 3 in number, are a pale unspotted blue.

STATUS AND DISTRIBUTION. Assam and the Chin Hills only.

[NOTE.—*Garrulax ellioti* (Verreaux), CHINESE TIBET, was obtained by Bailey at Lagyap, near the source of the Taron, in the south-eastern corner of Tibet, but has not been recorded from Burma.]

CRIMSON-HEADED LAUGHING-THRUSH

Liocichla ripponi (Oates), KENGTUNG

IDENTIFICATION. Length 9 inches. Superficially resembles *Garrulax phoeniceus* but the crimson of the head extends on to the sides of the neck, throat, and eyebrow ; the under-parts are greyish-yellow and the tail is narrowly tipped with ochre instead of broadly with orange. The ordinary call is a loud musical double note, *chi-chweew, chi-chweew*, and members of a party utter low churring notes.

NEST AND EGGS. Breeds in the Bhamo hills and Shan States from April to June. It makes a compact nest of the usual type, which it places 3–5 feet from the ground in a sapling, thorn bush, or clump of bamboos, and generally lays 3

(occasionally 2) eggs; these are a beautiful pale blue, spotted and streaked with numerous fine curly lines of dark red.

STATUS AND DISTRIBUTION. Eastern Burma and Siam. It extends from the Bhamo hills to Karenni and seems to be common above 4,000 feet; Rippon described it as the commonest of all the laughing-thrushes found in the Southern Shan States.

RED-BILLED LEIOTHRIX

Leiothrix lutea Scopoli, CHINA
SUBSPECIES: *callipyga* (Hodgson), NEPAL
yunnanensis Rothschild, SHWELI–SALWEEN Divide

LOCAL NAME. Known in aviaries as the Pekin robin.

IDENTIFICATION. Length 6 inches. Sexes differ, the female being duller with no crimson on the wing. Coral-red bill, plain buff side of the head, and yellow throat and breast are noticeable features; otherwise a dull olive bird with a black tail and the wing-feathers brightly variegated with yellow, orange, crimson, and black. The usual call-note (or alarm-note) is *tee-tee-tee-tee-tee*, and in the breeding season the male has a delightful song of some variety and compass, which he sings from the top of a bush to the accompaniment of quivering wings and fluffed out feathers. This bird is found in all types of forest, but thick undergrowth is essential; in this it goes about in small parties, keeping close to the ground as a rule but occasionally visiting the canopy.

NEST AND EGGS. Have been taken by Hopwood and Mackenzie in the Chin Hills, but not described.

STATUS AND DISTRIBUTION. A Chinese species, extending westwards along the Himalayas to Simla. In North-East Burma it is locally common above 5,000 feet along the Yunnan border, and is a characteristic bird of the extensive climax forests on the way to the Fenshuiling pass; on the west it extends through the Chin Hills to northern Arakan, but on the east side it has not been recorded anywhere south of the Bhamo district.

SILVER-EARED LEIOTHRIX or MESIA

Leiothrix argentauris Hodgson, NEPAL
SUBSPECIES: *gertrudis* Ripley, MISHMI HILLS
vernayi Mayr and Greenway, UPPER CHINDWIN
galbana Mayr and Greenway, N. SIAM

LOCAL NAMES. Chinghpaw: *u-cherit* or *cheroi-cherit*.

IDENTIFICATION. Length 7 inches. The black head with silvery-white ear-coverts and the golden-yellow body plumage, in parts washed with green, are features of this beautiful bird, while the red patch on the wing and red upper and under tail-coverts are also noticeable. Common in scrub in hill forests.

VOICE. The song is aptly rendered in tone by the Chinghpaw name,

but usually consists of 7 or 8 syllables. Members of a party keep up a continual chirrup with occasional loud, clear whistling notes.

HABITS AND FOOD. This is one of the commonest birds of the higher hills; it frequents *ponzo* and scrub-jungle of all types, but not as a rule high forest, and is found in parties which may number 30 birds; as it flits about in the bushes it affords a wonderful spectacle of bright colour against the uniform green of the vegetation. It is not shy, nor is it obtrusive (except when singing) for it does not catch the eye like some of the more arboreal hill birds.

NEST AND EGGS. Indistinguishable from those of the preceding species.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending westwards along the Himalayas to Garhwal. It is common throughout the higher hills of Burma, from 3,000 feet upwards, but has been recorded at 1,500 feet in Karenni.

[NOTE.—For remarks on the validity of *vernayi* and *galbana* see Deignan, 1945, p. 352.]

FIRE-TAILED MYZORNIS

Myzornis pyrrhoura Blyth, NEPAL

IDENTIFICATION. Length 5 inches. Aptly described by Ludlow as "this perfect little gem among birds—a living emerald." Sexes differ. The male is a brilliant green bird with a red tail and chestnut-red under tail-coverts; wings chiefly black with white-tipped primaries. The female differs in having the primary-coverts green tipped with white and the red parts of the plumage are duller. Frequents climax forest at high elevations. Cranbrook found it in flocks in the Adung valley "chattering and methodically searching bushes and low trees, sometimes making flights like a flycatcher."

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. Himalayas from Nepal through northern Burma to Yunnan. In North-East Burma it extends from the Adung valley to the heights above Hpare (south of Htawgaw), but has not been recorded below 8,000 feet, and is rare.

CUTIA

Cutia nipalensis Hodgson, NEPAL
SUBSPECIES: *nipalensis* Hodgson, NEPAL
melanchima Deignan, N. SIAM

IDENTIFICATION. Length 7 inches. Sexes differ, but both are birds of lovely plumage. The male has a broad black band passing through the eyes and round the nape; crown slate-grey; upper-parts rufous striped with black, except for the upper tail-coverts, which

are almost as long as the tail and a conspicuous light rufous ; underparts white with the flanks heavily barred with black. The female has the band through the eyes chocolate-brown, and the back and shoulders reddish-brown with large oval black spots ; otherwise as in the male. Arboreal bird of hill forests.

VOICE. Has no very distinctive note, but utters a shrill *chip*, or a loud chirp.

HABITS AND FOOD. I have watched this bird in various types of hill forest, such as the open pine forests of Nattaung in Karenni, dense oak and hemlock forest near the Chimili, and hill evergreen in the Ngawchang headwaters ; it is usually seen in small parties, and its actions are so typical of the shrike-babblers that its retention in a separate genus is, perhaps, hardly justified.

NEST AND EGGS. Unknown. Heinrich noted fully fledged young in June.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Yunnan, Burma, Siam, Indo-China, and Malaya. In Burma it is found in the Chin Hills, no doubt in the Upper Chindwin, in North-East Burma, and Karenni, and is not uncommon.

RED-WINGED SHRIKE-BABBLER

Pteruthius erythropterus (Vigors), HIMALAYAS
SUBSPECIES : *erythropterus* (Vigors), HIMALAYAS
aeralatus Tickell, MT. MULAYIT
yunnanensis Ticehurst, SHWELI–SALWEEN Divide

IDENTIFICATION. Length 7½ inches. Sexes differ. The male is a grey bird, whitish below, with the top and sides of the head black and a broad white eyebrow ; there is a chestnut or yellow patch on the wing, and the tail is black. The female has the head bluish-grey and the eyebrow is very indistinct ; the tail is green and black, tipped yellow. Solitary or in parties in high forest in the hills.

VOICE. Common call-notes are *cha-chew, cha-chew* and *cha-cha-chip, cha-cha-chip*, and *chu-wip-chip-chip* ; also a trisyllabic call in an ascending scale, the first note longer than the others. The male sometimes utters a *pink* note, and the alarm-note is a continuous grating churr.

HABITS AND FOOD. This shrike-babbler is an arboreal bird of hill forests, and like the Nepal cutia it is not particular about the composition of the forest ; it is a remarkably fearless bird, and is often seen sitting and peering about in a curious short-sighted manner ;

it is sedate and rather slow in its movements and when feeding works its way slowly up a tree, searching chiefly the main branches for insects and berries and often hopping sideways along a branch; having arrived at the top it may spend half an hour or more calling persistently before resuming its feeding on another tree.

NEST AND EGGS. Not described from Burma. In India the nest is a cradle of fine roots suspended from a small fork like an oriole's nest.

STATUS AND DISTRIBUTION. Almost throughout the Himalayas and widespread in the oriental region. It is probably resident throughout the higher hills of Burma and is locally common, but has not been observed round Maymyo.

CHESTNUT-THROATED SHRIKE-BABBLER

Pteruthius melanotis Hodgson, NEPAL TERAI
SUBSPECIES: *melanotis* Hodgson, NEPAL TERAI

IDENTIFICATION. Length 5 inches. A very striking little bird, the sexes differing slightly. The male has a white ring round the eye, a chestnut throat contrasting with the bright yellow under-parts, a bold head pattern, and a double white wing-bar; upper-parts greenish and the tail white-tipped. The female has pinkish instead of white wing-bars and the chestnut on the throat does not reach the breast. Found singly or in pairs in the large mixed flocks of tits and babblers in climax forest and easily picked out by reason of its slow movements, round form and upright carriage. The only note I have heard is a pleasant *too-weet, too-weet,* seldom uttered.

NEST AND EGGS. Have been taken by Hopwood and Mackenzie in the northern Chin Hills.

STATUS AND DISTRIBUTION. Himalayas as far west as Nepal. In Burma it is probably resident throughout the higher hills as far south as Karenni, but is nowhere common.

CHESTNUT-FRONTED SHRIKE-BABBLER

Pteruthius aenobarbus (Temminck), JAVA
SUBSPECIES: *intermedius* (Hume), MT. MULAYIT

IDENTIFICATION. Length 5 inches. So similar to *melanotis* that the two would be considered conspecific if they did not both occur together over a considerable area (see *Ibis* 1938, p. 209). It differs in having the forehead chestnut (rufous in the female), the nape greenish-yellow, not grey, and the ear-coverts olive-yellow, not black.

NEST AND EGGS. Have been taken by Hopwood and Mackenzie (*vide* Stuart Baker) in the Chin Hills in April and May. The nest is a beautiful little cradle of fine roots with a little moss and lichen and a scanty lining of fine rootlets.

The eggs, 4 to 6 in number, are pale pink with fine specks of dark purple or reddish-brown.

STATUS AND DISTRIBUTION. A Malaysian and Indo-Chinese species, found in eastern Burma, from North-East Burma to Tenasserim, and in the Chin Hills.

GREEN SHRIKE-BABBLER

Pteruthius xanthochloris Gray, NEPAL
SUBSPECIES: *hybridus* Harington, CHIN HILLS
pallidus David, KOKONOOR

IDENTIFICATION. Length 5 inches. A pale grey-green bird found in mountain forests close to the limit of tree growth, sometimes associated with flocks of tits; under-parts from the abdomen bright yellow. According to Heinrich the call-note is a rapid repetition of one note on a monotone, resembling the call of *Stachyris chrysaea* except that the momentary pause after the first note is wanting. Stanford gives the note as a single *whit*.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas, western China and Yunnan. In Burma a rare bird of high elevations in North-East Burma and on Mt. Victoria.

RUFOUS-BELLIED SHRIKE-BABBLER

Pteruthius rufiventer Blyth, DARJEELING
SUBSPECIES: *rufiventer* Blyth, DARJEELING

IDENTIFICATION. Length 8 inches. Sexes differ. The male is a pale-throated bird with a black cap and wings and lovely chestnut upper-parts. The female differs in having the sides of the head grey and the upper-parts green barred with black; rump chestnut and tail black, tipped with chestnut. Both sexes have the under-parts from the breast rufous. I have seen it mixed up with a party of red-winged shrike-babblers, which it closely resembles in size and behaviour.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Yunnan; also in Tongking. In Burma it has been recorded from Mt. Victoria and the mountains of North-East Burma, where it is not uncommon above 4,000 feet.

WHITE-HEADED SHRIKE-BABBLER

Gampsorhynchus rufulus Blyth, DARJEELING
SUBSPECIES: *rufulus* Blyth, DARJEELING
torquatus Hume, YUNZALIN R., SALWEEN Dist.

IDENTIFICATION. Length 10 inches. Whole head, neck and breast white; upper-parts golden brown; under-parts pale tawny; eye yellow. Found in parties in dense thickets.

VOICE. Has a weird, grating call-note, *kaw-ka-yawk*.

HABITS AND FOOD. Gregarious and by no means shy, it frequents

bamboo thickets and the undergrowth in evergreen forest, often in company with the black-browed parrotbill; it is not shy, and being very curious is not difficult to observe; it seems to keep entirely to trees or bushes and bamboos, not descending to the ground.

NEST AND EGGS. Not described from Burma. In Assam it builds a flimsy, untidy saucer of a nest.

STATUS AND DISTRIBUTION. Himalayas from Sikkim eastwards to Indo-China, and through Burma to Malaya, but not in Yunnan. In the south of Burma it is a bird of the higher hills, but in the north is found all over the foothills.

SPECTACLED BARWING

Actinodura egertoni Gould, NEPAL
SUBSPECIES: *ripponi* Ogilvie-Grant, MT. VICTORIA
ramsayi Walden, KARENNI
radcliffei Harington, RUBY MINES

IDENTIFICATION. Length 9 inches. In the field appears brownish with a full but not prominent crest, and at close range the fine barring on the wings, from which the birds of this genus derive their name, can be seen. The subspecies *ramsayi* and *radcliffei* have a prominent white ring round the eye. In flocks in scrub jungle in the higher hills.

VOICE. The usual call-note of *ramsayi* is a mournful one of three syllables, the first and third on the same pitch and the middle one lower; a fourth note is sometimes added, and the last two notes are then drawn out and wailing. Livesey describes a call of 6 notes falling in cadence *pi-pi pi-pi pi-yuuu*, the last note mournful, plaintive and prolonged, with about two seconds interval between each double note; also a similar call *pi-yuu, pi-yuu, pi-yuu* with about four seconds between each double note. Heinrich describes the call of *ripponi* as consisting of three syllables, the first two on the same pitch and the third about a quarter of a tone lower, *ti-ti-ta*, the first note being accented. Harsh, subdued murmurings emanate from flocks in cover.

HABITS AND FOOD. Like the leiothrixes, these birds are usually seen working through the undergrowth in parties without showing themselves unnecessarily, and any type of thick cover in the hills seems to suit their purpose.

NEST AND EGGS. Breeds in April to May. Nests have been taken in the Chin Hills, round Sinlum Kaba in the Bhamo hills, and near

Taunggyi. The nest is usually built in a bush, sapling or bamboo and is a rather large cup made of roots, grass-stems, moss, etc., lined with fine grass or roots. The eggs, 2 or 3 in number, are blue or blue-green, spotted and marked with dark brown.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Yunnan. A common bird of the higher hills of Burma.

HOARY BARWING

Actinodura nipalensis (Hodgson), NEPAL
SUBSPECIES : *poliotis* (Rippon), MT. VICTORIA
wardi Kinnear, ADUNG VALLEY
saturatior Rothschild, SHWELI–SALWEEN Divide

IDENTIFICATION. Length 8 inches. The short tail, grey head, and coffee-brown body are diagnostic, and in flight the grey line on the wings is observable. The call-note is a soft *chup, chup*, and at times it utters a mewing note not unlike that of *Yuhina gularis*, and a churr. Travelling parties move with the slow heavy flutterings so characteristic of the beautiful sibia, and the birds cling to mossy tree-trunks in the same manner.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal through northern Burma to Yunnan. In Burma it has been recorded from the Chin Hills and is not uncommon in North-East Burma in climax forests at 7,500–9,000 feet.

CHESTNUT-HEADED SIVA

Siva castaniceps (Horsfield and Moore), CACHAR
SUBSPECIES : *castaniceps* (Horsfield and Moore), CACHAR
striata (Blyth), MT. MULAYIT
conjuncta Mayr, MYITKYINA Dist.

IDENTIFICATION. Length 5½ inches. A greyish-brown bird with a short erectile crest, chestnut ear-coverts and white streaks on the back ; under-parts whitish, tail tipped white. An arboreal tit-like bird of the higher hills.

VOICE. Parties utter a constant low *chir-chit, chir-chit.*

HABITS AND FOOD. This bird is usually seen in active parties, which may number 30 or more birds, working through the lower canopy and the top of the undergrowth in the more open parts of the hill forests. In actions it is tit-like, and closely resembles the yuhinas.

NEST AND EGGS. Have been taken in the Chin Hills, Karen Hills, and elsewhere in April and May. The nest is nearly always built just inside a hole in a small bank, such as that on the upper side of a hill path, and is often poorly concealed ; it is made of soft fibrous

material surrounded with grass, moss and leaves. The eggs, 3 or 4 in number, are white, speckled with brown.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to Assam, southern China, Siam, Indo-China, Borneo, and Burma as far south as Mt. Mulayit. Resident throughout the higher hills of Burma, and locally common ; not found at Maymyo.

CHESTNUT-TAILED SIVA

Siva strigula Hodgson, NEPAL

SUBSPECIES : *castanicauda* Hume, MT. MULAYIT
yunnanensis Rothschild, LIKIANG Mts. (= *victoriae* Meinertzhagen)

IDENTIFICATION. Length 6½ inches. The black crescents on the feathers of the yellow throat, orange-brown crown and nape, yellow ring round eye and black moustachial stripes are distinctive features ; tail red and black with yellow tips, increasing outwardly ; there is a yellow band along the closed wing and the under-parts are chiefly yellow. A gregarious arboreal bird of the mountains.

VOICE. The usual call is *too-sweet-sweet*, the first note being low, the second high and accentuated, while the third lies between the first and second in the scale ; a two-syllabled introductory phrase is often added.

HABITS AND FOOD. This bird is found in small parties, often associated with other hill birds, working like tits through the tops of high shrubs, low and medium-sized trees.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Almost throughout the Himalayas, and through Burma to Yunnan and Siam. In Burma it probably occurs throughout the mountains, but is local ; on Nattaung in Karenni it was not seen below 6,000 feet, but was abundant above that level ; in North-East Burma I found it tolerably common, at 6,000–8,000 feet.

BLUE-WINGED SIVA

Siva cyanouroptera Hodgson, NEPAL

SUBSPECIES : *wingatei* Ogilvie-Grant, KUNMING
sordida Hume, MT. MULAYIT
oatesi Harington, MT. BYINGYE, S. SHAN STATES
aglae Deignan, MT. VICTORIA

IDENTIFICATION. Length 6 inches. In the field it appears greyish above and whitish below with a rather long blue tail tipped white and a blue band along the closed wing. An arboreal bird of the higher hills, found in small parties which have no very characteristic call-notes.

NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. From the Central Himalayas eastwards to Yunnan, and southwards to northern Tenasserim. It is found more or less throughout the higher hills of Burma.

RED-TAILED SIVA or MINLA

Siva ignotincta Hodgson, NEPAL
SUBSPECIES : *ignotincta* Hodgson, NEPAL

IDENTIFICATION. Length 5½ inches. Sexes differ. In the male, the black head with a long white stripe down each side of the crown, the crimson and black tail and beautifully variegated wings are diagnostic. The female and young differ in having the upper tail-coverts brown, and the crimson on the wing replaced by pinkish-white and on the tail by pale red. It has a loud ringing call of 4 syllables, and other tit-like notes. This beautiful little bird is found in small parties, often with nuthatches, tits, sivas, and other hill species, working through the crowns of low and medium trees ; it often searches the moss-clad branches and trunks of trees like a nuthatch or treecreeper, and its food consists of insects and seeds.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas to Yunnan. In Burma it is found on Mt. Victoria, in North-East Burma (all along the eastern hills from 4,000 feet upwards), and on Nattaung, Karenni (not below 6,000 feet).

STRIPED-THROATED YUHINA

Yuhina gularis Hodgson, NEPAL
SUBSPECIES : *gularis* Hodgson, NEPAL

IDENTIFICATION. Length 6 inches. A small, plump-bodied, greenish-brown bird with a very marked crest ; found in incessantly active parties, constantly raising the crest and uttering a very distinctive mewing or bleating note, and then suddenly taking fright and disappearing into the nearest cover. The vinous-striped throat and orange-buff legs are noticeable on the rare occasions when the bird is at rest and can be observed.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan. In North-East Burma large numbers come to fruiting and flowering trees in the higher level climax forests at 5,000–10,000 feet, and its voice is one of the few sounds that break the silence of the snow-bound forest in February. Elsewhere it is probably resident throughout the western hills, and has been recorded from the Northern Shan States.

WHITE-COLLARED YUHINA

Yuhina diademata Verreaux, TIBET

IDENTIFICATION. Length 6½ inches. An earthy-brown bird with a conspicuous white patch on the nape, carried forward by a white band to the eyes ; crest

full and frequently erected. The call is a cheeping note not unlike that of a white-eye but louder. Like other yuhinas, an active tit-like bird found in flocks.

NEST AND EGGS. Breeds in the Bhamo hills in April to May. The nest is nearly always built low down in brambles, bracken or coarse grass, and is a flimsy, almost transparent cup of black roots well plastered with cobwebs and lined with rootlets. The eggs, 2 or 3 in number, are a dull greenish-blue in colour profusely blotched and speckled with brown.

STATUS AND DISTRIBUTION. Yunnan and North-East Burma, where it is one of the most familiar birds of the higher hills, up to 8,000 feet.

RUFOUS-VENTED YUHINA

Yuhina occipitalis Hodgson, NEPAL
SUBSPECIES : *obscurior* Rothschild, LIKIANG Mts.

IDENTIFICATION. Length 6 inches. Chestnut under tail-coverts are diagnostic ; it shows a small chestnut patch on the nape, not a large rufous-buff patch as in *flavicollis* ; has no distinctive calls, but members of a party utter a sort of buzzing call-note. Found in parties, sometimes associating with other yuhinas.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan. Not uncommon in the mountains north-east of Myitkyina, and usually seen at 7,000–8,000 feet but occurs down to 4,000 feet.

BLACK-CHINNED YUHINA

Yuhina nigrimentum (Hodgson), NEPAL
SUBSPECIES : *nigrimentum* (Hodgson), NEPAL
intermedia Rothschild, MEKONG–SALWEEN Divide

IDENTIFICATION. Length 4½ inches. Distinguished from other yuhinas by smaller size, red lower mandible, salmon-pink gape, white throat with a black spot on the chin, and grey nape.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Garhwal eastwards to Yunnan and China. Probably occurs in the western hills of Burma as far south as northern Arakan, and a few specimens have been obtained in North-East Burma, from 2,000 feet upwards.

CHESTNUT-HEADED YUHINA

Yuhina bakeri Rothschild, NEPAL

IDENTIFICATION. Length 5 inches. Chestnut crown, white nape, olive-green back and white throat are good field characters.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Garhwal to northern Burma, where it seems to be uncommon ; the Vernay-Cutting expedition obtained

one near Pyepat, and I have seen it at 5,000 feet on the Fort Hertz–Nogmung trail. Not in Yunnan.

YELLOW-NAPED YUHINA

Yuhina flavicollis Hodgson, NEPAL
SUBSPECIES : *baileyi* Stuart Baker, MISHMI HILLS
harterti Harington, SINLUM KABA
rouxi Oustalet, LY-SIEN-KIANG

IDENTIFICATION. Length 5 inches. Full dark brown crest, buffy-rufous nape, white ring round eye, and white cheeks and throat with a black moustachial streak are distinctive features. Common in flocks in the higher hills, hunting bushes and fruiting trees methodically for berries and insects, with tit-like actions and heavy sparrow-like flight.

NEST AND EGGS. Have been taken in the Chin Hills and Bhamo district in April and May. The nest is generally built amongst the moss growing on branches and twigs, and is made chiefly of moss, mixed to some extent with bits of leaves and bracken, and lined with rootlets. The eggs, 3 or 4 in number, resemble those of the swallow.

STATUS AND DISTRIBUTION. Almost throughout the Himalayas, and through northern Burma to Yunnan. It is common in North-East Burma and extends down to the Chin Hills on the west and the Mogok hills on the east.

BURMESE YUHINA

Yuhina humilis Hume, TENASSERIM
SUBSPECIES : *humilis* Hume, TENASSERIM
clarki Oates, MT. BYINGYE, S. SHAN STATES

IDENTIFICATION. Length 5 inches. Short crest, plain brown upper-parts, white under-parts with fine brown streaks, and a dark moustachial stripe distinguish this yuhina. A low *chuck-chuck* is the call-note of a party, and now and then a *chir-chir-chir-chir* note, rather hard to describe, is uttered ; another note is *chit-a-wit* repeated.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. This species is confined to the higher hills of south-eastern Burma, and has a very small range from Mt. Byingye (on the border between the Yamethin district and the Southern Shan States) in the north to Mt. Mulayit in the south. It is found above 4,000 feet.

WHITE-BELLIED YUHINA or HERPORNIS

Yuhina zantholeuca Hodgson, NEPAL
SUBSPECIES : *zantholeuca* Hodgson, NEPAL
interposita Hartert, MALAYA

IDENTIFICATION. Length 5 inches. Upper-parts and a short erectile crest greenish-yellow; under-parts white, except for the under tail-coverts which are bright yellow. The only note I have heard is a bleating call of 3 notes. This bird is normally silent, solitary, and rather mysterious, but is occasionally

seen in small parties or hunting with quaker babblers, minivets, flycatchers, etc. It frequents both the undergrowth and the tree-tops, searching the branches and twigs, and is partial to bamboo jungle.

NEST AND EGGS. The only nest described from Burma seems to be one taken by Hopwood on the 24th March in the Pegu Yomas; the nest is a cradle of fine roots, fibres and fine grass stems, and the eggs, 2 or 3 in number, are white or creamy-white with a few pale reddish blotches.

STATUS AND DISTRIBUTION. Widespread in the oriental region and resident throughout the forests of Burma up to 6,000 feet (in North-East Burma it goes up to 9,000 feet), but nowhere abundant, although not uncommon throughout the Pegu Yomas.

WHITE-EYED QUAKER BABBLER

Alcippe nipalensis (Hodgson), NEPAL
SUBSPECIES: *commoda* Ripley, MISHMI HILLS
stanfordi Ticehurst, ARAKAN YOMAS

IDENTIFICATION. Length 5 inches. Differs from the common quaker babbler in having a white ring round the eye, and dark lateral coronal stripes always present.

NEST AND EGGS. Heinrich found nests with eggs in March and June.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to western Burma, where it is found more or less throughout the foothills and higher hills west of the Irrawaddy; it is also found all over the hills of the Myitkyina district, up to 7,000 feet.

GREY-EYED QUAKER BABBLER

Alcippe morrisonia Swinhoe, FORMOSA
SUBSPECIES: *fratercula* Rippon, S. SHAN STATES
laotiana Delacour, LAOS

IDENTIFICATION. Only differs from the preceding species in having a grey and not white eye-rim, and in lacking the white post-orbital patch. The dark lateral coronal streaks may be well-marked to almost absent.

NEST AND EGGS. Resemble those of the next species.

STATUS AND DISTRIBUTION. Oriental region as far west as eastern Burma; it is found throughout the eastern hills as far north as Htawgaw, where it is found side by side with *nipalensis* without intergradation.

COMMON QUAKER BABBLER

Alcippe poioicephala (Jerdon), NILGIRIS
SUBSPECIES: *fusca* Godwin-Austen, NAGA HILLS
phayrei Blyth, ARAKAN YOMAS
davisoni Harington, S. TENASSERIM
haringtoni Hartert, BHAMO
karenni Robinson and Kloss, KARENNI

IDENTIFICATION. Plate III, fig. 6, p. 36. Length 6 inches. Dark lateral coronal stripes are prominent in some subspecies. These

difficult tit-like birds have proved a sore puzzle to the taxonomic scholars; for a discussion of the Burmese species and subspecies of quaker babbler see *Ibis*, 1935, pp. 49–53, and 1941, pp. 71–75.

VOICE. It has a distinctive musical call-note *chewy-chewy-chewy-chewy-chewy* uttered quickly with each *chewy* alternately higher and lower in pitch. This is one of the most characteristic sounds of the teak forests and may be heard at all times of the year, though it is perhaps most persistent in the cold and hot weathers.

HABITS AND FOOD. These birds are always seen in active, restless parties working their way through the bamboos and undergrowth; the members of the party act independently of each other, but keep up a general communication amongst themselves by continually calling as they move about. They frequent all types of forest and any scrub or re-growth there may be nearby, and are confiding enough when undisturbed, but shy and wary if their suspicions are aroused.

NEST AND EGGS. Nests may be found from January to September, but most eggs are laid from February to May. The nest is usually built in a fork or suspended from two or three twigs, and is quite conspicuous as a rule, there being little attempt at concealment; it is a deep cup of moss and dead leaves, lined with rootlets. The eggs, 2 or 3 in number, are pale pink in ground-colour with very variable markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region. In Burma it is common throughout the forests of the foothills, and ascends to 5,000 feet.

RUFOUS-HEADED TIT-BABBLER

Alcippe dubia (Hume), MT. MULAYIT

SUBSPECIES: *dubia* (Hume), MT. MULAYIT
mandellii (Godwin-Austen), NAGA HILLS
intermedia Rippon, S. SHAN STATES

IDENTIFICATION. Length 5½ inches. The rufous crown and olive-brown upper-parts give it a superficial resemblance to a *Pellorneum*, but the black stripe on each side of the crown over the prominent white eyebrow, and the absence of streaks on the under-parts, at once distinguish it. A small bird of the undergrowth in the higher hills.

VOICE. It has a distinctive call-note *chee-chee-chee-chee-chee-hpwit*, and a chattering note of alarm is also uttered.

HABITS AND FOOD. This bird is usually seen in pairs or small parties in the undergrowth in all types of hill forest, from the banks of shady streams in dense climax forest to grass-covered hillsides under open pine. It feeds partly on the ground, partly on low bushes, and sometimes ascends the lower part of a tree-trunk like a nuthatch. It is restless, energetic, and tit-like in its actions (as its name implies).
NEST AND EGGS. In Tenasserim it starts laying in February, but elsewhere most eggs will be found in April and May. The nest is nearly always built on sloping ground, usually under a thick patch of cover or tuft of grass ; it is made of dead leaves mixed with bracken, grass, roots, etc., and is either a deep semi-domed cup or a completely domed egg-shaped affair. The eggs, 3 or 4 in number, are white or creamy-white, smudged and blotched with yellowish-brown and with a few darker spots and lines.
STATUS AND DISTRIBUTION. From Assam through Burma to Yunnan, Siam, and Indo-China. It is a common resident throughout the higher hills of Burma, as far south as Mt. Mulayit, ascending to about 7,000 feet.

RED-THROATED TIT-BABBLER

Alcippe rufogularis Mandelli, BHUTAN
SUBSPECIES : *rufogularis* Mandelli, BHUTAN
collaris Walden, SADIYA
blanchardi Delacour and Jabouille, ANNAM

IDENTIFICATION. Length 5½ inches. Differs from the preceding species in having a buffy-white ring round the eye, olive-green upper-parts and a chestnut band across the throat. A bird of foothills with an unmistakable note, a musical *chip-churr* which attracts attention. It is a great skulker and moves about almost on the ground in dense cane-brakes and bamboo jungle.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Bhutan to northern Burma, northern Siam, and Annam ; not recorded from Yunnan. It is not uncommon in the lower Kachin hills of the Myitkyina district, and has probably been overlooked in the Upper Chindwin and Shan States.

YELLOW-THROATED TIT-BABBLER

Alcippe cinerea (Blyth), DARJEELING

IDENTIFICATION. Length 4½ inches. Prominent yellow eye-stripe and throat contrasting with general grey colour of the under-parts are diagnostic ; usually known by the inappropriate name of dusky-green tit-babbler, perhaps because the lovely yellow tint fades completely in museum skins. Found in typical babbler flocks cascading down the hillside in incessant movement ; the call-note is a low *chip*.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal to northern Burma ; not Yunnan. It is not uncommon at 5,000–9,000 feet in the mountains north-east of Myitkyina.

CHESTNUT-HEADED TIT-BABBLER

Alcippe castaneceps (Hodgson), NEPAL
SUBSPECIES : *castaneceps* (Hodgson), NEPAL
exul Delacour, BAS-LAOS

IDENTIFICATION. Length 4½ inches. Crown and nape chestnut-brown streaked with white ; a broad black streak through the eye ; sides of head white ; upper-parts olive-green with some black on the wings ; under-parts whitish. In flocks in the higher hills and mountains.

VOICE. It has a distinctive call of three notes crescendo, *tu-twee-twee*.

HABITS AND FOOD. This bird is a common constituent of the hunting parties of small birds so characteristic of the hills ; sometimes it devotes its attention to the foliage, and sometimes it climbs about mossy trunks and lichen-covered branches like a nuthatch ; there are usually about half a dozen of them in a hunting party, and they are confiding birds and easily observed.

NEST AND EGGS. In Tenasserim, Davison took two nests in February. Further north most eggs will be found in April and May. The nest is either cup-shaped or domed and may be built in a thick bush or into the moss growing on a tree-trunk ; it is usually made of moss and lined with fibres and dry leaves. The eggs are white to pale brown, profusely speckled with dark brown.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to Yunnan. It is found throughout the higher hills and mountains of Burma from 4,500 feet upwards, and is very common on some peaks, *e.g.* Nattaung and Mulayit.

WHITE-BROWED TIT-BABBLER

Alcippe vinipectus (Hodgson), NEPAL
SUBSPECIES : *ripponi* (Harington), MT. VICTORIA
perstriatus Mayr, MYITKYINA Dist.

IDENTIFICATION. Length 5 inches. The white supercilium, black cheeks and chestnut crown are noticeable in the field ; the upper-parts are chestnut, chin and throat white, remaining under-parts tawny. The note is a *chip* and also a tit-like *churr*. Quite one of the most charming and confiding birds of the mountains of northern Burma, in flocks at high elevations.

NEST AND EGGS. Have been taken in the Chin Hills in April and May. The nest is usually built in a low bush inside forest ; it is a deep well-made cup of grass and leaves thickly bound together with green moss and lined with fine roots.

The eggs, 2 or 3 in number, are grey or grey-blue with a few bold markings of dark brown on the larger end.

STATUS AND DISTRIBUTION. Himalayas from Simla to Yunnan. Found in the Chin Hills and in North-East Burma, where its ecological niche is the stunted cane near the limit of tree growth at 9,000–11,000 feet (Cranbrook collected some at 6,000 feet in the Adung valley, but it is exceptional to find them so low) ; it extends as far south as the Kambaiti pass.

BROWN-HEADED TIT-BABBLER

Alcippe cinereiceps (Styan), CHEKIANG AND FOKIEN
SUBSPECIES : *manipurensis* Ogilvie-Grant, MANIPUR

IDENTIFICATION. Length 4½ inches. Resembles a quaker babbler but is smaller and has a more rufous back. It creeps about like a wren-babbler or bush warbler in dense secondary scrub-jungle, brambles, etc., and rarely shows itself, although I once saw a pair up in the crowns of pine trees, mixed up with a party of willow warblers ; it has a rattling song of 3 or 4 notes.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Manipur through northern Burma to Yunnan. I found it to be not uncommon and widely distributed in the mountains north-east of Myitkyina, at 6,000–8,000 feet, below the habitat of *vinipectus* ; it extends south to Lungre Bum.

[NOTE. — RIPPON'S TIT-BABBLER, *Alcippe ruficapilla sordidior* Rippon, TALIFU, may extend to North-East Burma ; absence of a white eyebrow, chestnut crown, and white ring round the eye distinguish it from other species.]

GOLDEN-BREASTED TIT-BABBLER

Alcippe chrysotis (Blyth), NEPAL
SUBSPECIES : *forresti* Rothschild, SHWELI–SALWEEN Divide

IDENTIFICATION. Length 4½ inches. A tiny but lovely golden-orange bird with a prominent white coronal streak contrasting with the black crown and nape ; ear-coverts, cheeks, and a ring round the eye silvery-white ; wings dark with a single grey wing-bar. In active flocks in the bamboo undergrowth of climax forest in the mountains.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal through northern Burma to Yunnan. Not uncommon in the mountains north-east of Myityina.

LONG-TAILED SIBIA

Heterophasia picaoides Hodgson, NEPAL
SUBSPECIES : *picaoides* Hodgson, NEPAL
cana (Riley), N. SIAM

IDENTIFICATION. Length 13–14 inches, including a tail of 7–8 inches. A dark grey bird of slim and graceful build with a white streak on the closed wing and

white tips to the tail feathers. The call-note is a high-pitched but not loud *tsip-tsip-tsip-tsip* uttered rapidly. A bird of the tree-tops in hill forests, found in parties from half-a-dozen to 30 or 40 strong, which play follow-my-leader from tree to tree, the birds swinging their long tails or cocking them over their backs, and sometimes crouching on a branch with outspread tail.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Burma, but not Yunnan ; extends to Indo-China. In Burma it probably occurs throughout the higher hills ; in Karenni it is not found below 4,000 feet, but in North-East Burma it is one of several hill species that drop down to low elevations along the N'Mai valley in winter.

GREY SIBIA

Heterophasia gracilis (McClelland), ASSAM
SUBSPECIES : *gracilis* (McClelland), ASSAM
dorsalis Stresemann, MT. VICTORIA

IDENTIFICATION. Length 9½ inches, including a tail of 4½ inches. A grey bird with a black cap and pale under-parts ; wings and tail dark. It is said to have a fine clear treble call-note, and Stanford describes the alarm-note as a *churr* or chittering note.

NEST AND EGGS. Have been taken in the Chin Hills in April and May at 5,000–6,500 feet. The nest is built at the end of a branch, pine trees being preferred, and is a rather massive and well-built cup of green moss lined with roots. The eggs, 2 or 3 (rarely 4) in number, are a pale greyish- or greenish-blue lightly freckled all over with pale red.

STATUS AND DISTRIBUTION. Assam to northern Burma and western Yunnan. Forrest obtained a single specimen in the hills north of Tengyueh. Recorded from the Chin Hills and North-East Burma, where it is not uncommon in the Laukkaung area at 4,000–7,000 feet.

[NOTE.—Birds from North-East Burma have long tails and may belong to an undescribed subspecies.]

TICKELL'S SIBIA

Heterophasia melanoleuca (Blyth), MT. MULAYIT
SUBSPECIES : *melanoleuca* (Blyth), MT. MULAYIT
castanoptera Salvadori, KAREN HILLS

IDENTIFICATION. Plate III, fig. 8, p. 36. Length 9 inches. There is some dark brown on the back, of the same shade as the wing patch, and in flight a white spot shows on the wing. See under the chestnut-backed sibia for distinctions from that species.

VOICE. The song is a distinctive musical whistle of about five notes in a minor key ; it starts with a very short trill, which runs into three quick notes on the same pitch and ends with two longer notes

dropping in pitch, the last note prolonged and very mournful; it also has a chattering note when feeding, and the alarm-note is a rather shrike-like abuse.

HABITS AND FOOD. The sibias with their lovely clean-cut lines and their sweet and plaintive call-notes are among the most fascinating of the hill birds. They are purely arboreal in habits, spending most of their time in the tree-tops and descending to the undergrowth only infrequently in search of fruit. They can flit rapidly up a tree from branch to branch, usually keeping close to the trunk and sometimes clinging to the bark like a nuthatch while picking out a grub or insect. They frequent both oak and pine forests, feeding chiefly on insects and seeds. The flight is direct, rather weak, and not sustained.

NEST AND EGGS. The breeding season is from mid-February to early May. The nest is usually built on the small outer branches of a tree, often in pine forests; it is a mossy cup lined usually with a black hair-like substance, which is the mycelium of a fungus that grows on decomposing leaves. The eggs, 2 or 3 in number, are either pale, spotless blue or rather greener, and well marked with red, usually in a cap at the larger end.

STATUS AND DISTRIBUTION. From the Mogok hills southwards through the higher hills of eastern Burma to Mt. Mulayit, and eastwards into Siam; it is very common round Mogok, in parts of the Shan States, and in Karenni, but is rare at Kalaw and does not occur at Thandaung or Maymyo.

[NOTE.—Some authorities treat this species, *gracilis* and *desgodinsi* as subspecies of *capistrata* Vigors, DARJEELING. Since these forms not only look different in the field but differ markedly in their songs, it is convenient to retain them as separate species in this book.]

BLACK-EARED SIBIA

Heterophasia desgodinsi David and Oustalet, S-W. SZECHWAN
SUBSPECIES: *desgodinsi* David and Oustalet, S-W. SZECHWAN

IDENTIFICATION. Length 9½ inches. Resembles the grey sibia but the black crown contrasts with the grey back, whereas in *gracilis* the back is browner and the contrast less noticeable. The song is a melodious phrase of 5–7 notes of unequal interval rising in pitch, sometimes followed by a lower note.

STATUS AND DISTRIBUTION. A Chinese species, common in the Tengyueh district. The Vernay-Cutting expedition obtained one at Htawgaw; I obtained one on the Panwa pass and saw others round Laukkaung, where it was singing in April and may breed.

CHESTNUT-BACKED SIBIA

Heterophasia annectens (Blyth), DARJEELING
SUBSPECIES : *annectens* (Blyth), DARJEELING
saturata (Walden), KARENNI
davisoni (Hume), MT. MULAYIT
mixta Deignan, SIAM-KENGTUNG Border

IDENTIFICATION. Length 7½ inches. Distinguished from Tickell's sibia by voice, and by the pale chestnut wash on the flanks and under tail-coverts ; in *saturata* the chestnut mantle is also a distinguishing feature, but in *davisoni* the back and wing-coverts are black and the upper tail-coverts mingled black and deep maroon.

VOICE. The song is a musical phrase of 4 notes, the first 2 on the same pitch followed by 2 notes dropping in pitch, the whole sometimes preceded by an introductory grace note.

HABITS AND FOOD. Do not differ from those of Tickell's sibia.

NEST AND EGGS. Similar to those of Tickell's sibia.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to Burma, but not Yunnan ; it is probably resident throughout the higher hills of Burma, but is nowhere common. Eastwards it extends into Siam.

BEAUTIFUL SIBIA

Heterophasia pulchella Godwin-Austen, NAGA HILLS
SUBSPECIES : *caeruleotincta* Rothschild, SHWELI–SALWEEN Divide

IDENTIFICATION. Length 9 inches. A uniform dark grey-blue except for the brighter crown, black patch round the eye, and grey tips to the tail-feathers. The usual song is a musical phrase of 6 notes in pairs, with a drop in pitch after each pair and also a drop after the first note ; the song is variable and not easy to describe, and when heard near at hand sometimes seems to consist of more than 6 notes. Kingdon Ward and Cranbrook state that " it goes about mainly in flocks, occasionally singly. Makes a continual chattering while searching trees and shrubs and often sits up in the top branches of a dead tree. Small parties often sit on clusters of rhododendron flowers putting their beaks right down inside. . . . It is rather the buffoon amongst birds, has as many calls as a starling, and is a very cheerful bird." Birds collected were stained yellow on the throat and breast with rhododendron pollen, and I noticed the same stains on *desgodinsi*.

NEST AND EGGS. Not described from Burma, and apparently only one nest on record (from the Naga hills).

STATUS AND DISTRIBUTION. Assam through northern Burma to Yunnan. Very common in the higher hills and mountains of the Myitkyina district, but not recorded from elsewhere.

Family AEGITHINIDAE

FAIRY BLUEBIRDS, IORAS, AND LEAFBIRDS

This family comprises three groups, the general coloration being black and blue in the genus *Irena*, yellow or olive-green and black in the genus *Aegithina*, and bright grass-green in the genus *Chloropsis*. They are forest birds, though some of the ioras frequent gardens, and live mainly on fruit ; the plumage is long, thick and fluffy, especially on the rump, the legs short and thick, and the bills long and slightly curved. The nests are neat and cup-shaped.

The family is widespread in the oriental region, and includes some very familiar and well-known birds.

FAIRY BLUEBIRD

Irena puella Latham, INDIA
SUBSPECIES : *sikkimensis* Whistler and Kinnear, DARJEELING
malayensis Horsfield and Moore, MALACCA

LOCAL NAME. Burmese : *hnget-pya-seik.*

IDENTIFICATION. Plate X, fig. 1, p. 212. Length 11 inches. The female is dull blue-green with dark brown primaries and tail and black round the eye. The young male is like the female, but with the feathers of the upper-parts fringed with brighter blue.

VOICE. The call-note is *be quick, be quick, be quick.* It also utters a short, sharp and loud whistle, sometimes followed by a bubbling call.

HABITS AND FOOD. Davison (who collected no less than ninety specimens) describes it as " a bird entirely of evergreen forests and never, so far as I have observed, found in deciduous jungles. It is almost always found in flocks, but occasionally in pairs or even singly. It is a very bright and lively bird, always on the move, hopping from branch to branch, or flying from tree to tree. They live on fruit exclusively, I believe, and are especially fond of figs, and where a fig tree is in fruit great numbers congregate in company with hornbills, green pigeons, fruit pigeons, and numbers of other fruit-eating birds. In the middle of the day they habitually come down to the banks of streams and the smaller rivers to drink and bathe."

NEST AND EGGS. Have been taken by Bingham and Hopwood in northern Tenasserim. The breeding season is from March to May. The nest is built in a tall bush or small sapling in evergreen forest and is a

rather shallow, flimsy cup of roots, fine twigs, tendrils and moss, lined with moss roots. The eggs, 2 in number, are pale grey to reddish-grey or buff in colour with markings of brown, grey and purplish.

STATUS AND DISTRIBUTION. Widespread in the oriental region and resident throughout the foothills of Burma in evergreen forest. Its stronghold is in southern Tenasserim, where Davison found it "excessively abundant," but Wickham found it common also in Arakan, and Stanford mentions large flocks in Putao in December; it is not uncommon in the foothills east of the Sittang (*e.g.* along the Toungoo–Thandaung road) and in the south-eastern Pegu Yomas. It has not been observed above 3,000 feet.

GREAT IORA

Aegithina lafresnayei (Hartlaub), MALACCA
SUBSPECIES: *innotata* (Blyth), ARAKAN

IDENTIFICATION. Length 6½ inches. A larger edition of the common iora, without the double white wing-bars. An arboreal bird of evergreen forest, occasionally entering orchards and gardens, with a fine whistling call like that of *tiphia*, but richer and more powerful (Davison).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malayan species, found in Tenasserim and southern Arakan, but rare north of Tavoy.

COMMON IORA

Aegithina tiphia (Linnaeus), BENGAL
SUBSPECIES: *tiphia* (Linnaeus), BENGAL

LOCAL NAME. Burmese: *shwe-pyi-so.*

IDENTIFICATION. Plate III, fig. 7, p. 36. Length 5½ inches. Breeding males show varying amounts of glossy black on the upper-parts; some have all except the rump this colour, but many have the black confined to the wings and tail and a few feathers on the crown, neck or back. Common in gardens and compounds.

VOICE. A wide variety of calls and notes; the most familiar and striking consists of two notes, of which the first is an extraordinarily long-drawn high, sweet-toned whistle, almost as if the note were produced and held at the same pitch for a very long time by an intake of air, and the second (often omitted) is a short, sharp accentuated whistle, commencing at the same pitch as the first, but speedily gliding down to a lower tone: *weeeeeeeeee-tu.* Another common call is *chi-chi-whit,* dropping slightly in pitch, and it utters a number of other mellow whistles and chirrups.

HABITS AND FOOD. The iora is a familiar garden bird, but like the coppersmith is more often heard than seen. There is no record of more than two birds being seen together in Burma, and it is usually solitary, hopping about trees and tall shrubs and keeping out of sight in the foliage; it also frequents the outskirts of villages and cultivation and the edges of forest and scrub-jungle, dry bamboo forest, *indaing*, and teak and cutch plantations.

NEST AND EGGS. The breeding season extends from April to September. The nest is built either in a horizontal or a vertical fork of a bush or small tree; it is a very neat and delicate cup of fine, soft grass, well plastered outside with cobwebs. The eggs, 2 to 4 in number, are either a beautiful pink with reddish markings or a pale creamy- or greyish-white with a few irregular marks of grey.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is probably found throughout the plains of Burma, from Myitkyina town southwards, and is perhaps most common in the dry zone; it is not found in the hills of northern Burma, but is not uncommon round Maymyo. There is one record from Yunnan.

GREEN IORA

Aegithina viridissima (Bonaparte), SUMATRA

IDENTIFICATION. Length 5 inches. Sexes differ. The adult male has the body plumage dark green, becoming yellow on the abdomen; the female and young male have the under-parts pale greenish-yellow.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, extending north to Mergui as a very rare straggler.

GOLDEN-FRONTED LEAFBIRD

Chloropsis aurifrons (Temminck), CACHAR
SUBSPECIES: *aurifrons* (Temminck), CACHAR
pridii Deignan, N-W. SIAM

LOCAL NAME. Burmese: *hnget-sein* (green-bird).

IDENTIFICATION. Plate III, fig. 9, p. 36. Length 7½ inches. Sexes differ slightly, the male having a broad golden-yellow band surrounding the black of the chin and throat, which is obsolete in the female.

VOICE. This bird has a melodious song, and is also a remarkable mimic, imitating the notes of many other species. One hears a

veritable bird concert coming from some leafy tree, including often the notes of birds that have departed on migration, and eventually out flies a solitary leafbird and the illusion is at an end. A feeding party utters a low *cheep* like that of a young chick, and a loud *che-wit, che-wit* is often heard.

HABITS AND FOOD. This species and the two following are all of wide distribution in Burma, and their habits are very similar; *aurifrons* seems to be the commonest plains species, *cochinchinensis* seems to be more of a forest bird, preferring moist forest, and *hardwickei* is definitely a hill form. They are all birds of the tree-tops, in which their plumage harmonises well with the foliage, so that they are easily overlooked unless they happen to be calling, and few observations have been made on their relative status. In the plains they are partial to flowering *letpan* trees, and their food consists of insects, seeds, fruit, and nectar from flowers.

NEST AND EGGS. Apparently not described from Burma. In Assam the nest is usually a small, shallow cup at the extremity of an outer branch in a tree-top.

STATUS AND DISTRIBUTION. Widespread in the oriental region, in Malaysia confined to Sumatra, and common throughout the plains and foothills of Burma, as far south as Amherst, ascending to 4,000 feet at Maymyo.

ORANGE-BELLIED LEAFBIRD

Chloropsis hardwickei Jardine and Selby, NEPAL
SUBSPECIES: *hardwickei* Jardine and Selby, NEPAL
malayana Robinson and Kloss, MALAYA

IDENTIFICATION. Length 7½ inches. Sexes differ. Easily distinguished from the other species of *Chloropsis* by the orange belly; the female has the orange paler than the male, and young birds have the under-parts green and take over a year to acquire adult plumage.

VOICE. Has not been differentiated from that of the preceding species.

HABITS AND FOOD. See under *aurifrons*.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is the only common *Chloropsis* in Yunnan, where it is found up to 8,000 feet, and is probably resident throughout the higher hills of Burma; in the north it is common from 1,500 feet upwards, but in the south it is not found much below 3,000 feet, and is absent from the Pegu Yomas.

BLUE-WINGED LEAFBIRD

Chloropsis cochinchinensis (Gmelin), COCHIN-CHINA
SUBSPECIES : *cochinchinensis* (Gmelin), COCHIN-CHINA
chlorocephala Walden, TOUNGOO
seri-thai (Deignan), PENINSULAR SIAM

LOCAL NAME. Burmese : *hnget-sein* (green-bird).
IDENTIFICATION. Plate III, fig. 10, p. 36. Length 7 inches. In the female the black of the chin and throat is replaced by bluish-green, and the yellow band from eye to eye encircling the throat is lacking.
VOICE. Has not been differentiated from that of *aurifrons*.
HABITS AND FOOD. See under *aurifrons*.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region. It is probably resident throughout Burma in the forests of the plains and foothills.

[NOTE.—Christison reported the subspecies *jerdoni* from Arakan, but the identification was not confirmed by a museum, and it is unlikely to occur there.]

GREATER GREEN LEAFBIRD

Chloropsis sonnerati Jardine and Selby, JAVA
SUBSPECIES : *zosterops* Vigors, SUMATRA

IDENTIFICATION. Length 9 inches. The largest of the genus ; resembles the blue-winged leafbird but has a bright patch of colour on the wing-coverts. The female and young have no black on the head, and the chin, throat and a ring round the eye are bright yellow.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Ye and fairly common up to Mt. Nwalabo.

LESSER GREEN LEAFBIRD

Chloropsis cyanopogon (Temminck), SUMATRA
SUBSPECIES : *septentrionalis* Robinson and Kloss, PENINSULAR SIAM

IDENTIFICATION. Length 7 inches. Very like the green chloropsis but has a short blue moustachial streak and the outer webs of the primaries are green, not blue.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, which just reaches the extreme south of Tenasserim.

Family PYCNONOTIDAE

BULBULS

Members of this very numerous family are found throughout southern Asia, almost the whole of Africa, and the extreme south-west of Europe. Some species are amongst the most abundant and familiar birds of towns and gardens, whereas others are only seen in the forest. In habits they are arboreal, keeping to the canopy and the top of the undergrowth, and as a rule they are bold and confiding. Young birds resemble the adults, but may be paler and duller or darker and duller.

BROWN WHITE-THROATED BULBUL

Criniger ochraceus Horsfield and Moore, TENASSERIM
SUBSPECIES : *ochraceus* Horsfield and Moore, TENASSERIM
flaveolus (Gould), CACHAR
burmanicus Oates, TOUNGOO
griseiceps Hume, UPPER PEGU
henrici Oustalet, S. YUNNAN

LOCAL NAME. Chinghpaw : *gong-gyeng*, from the call-note.
IDENTIFICATION. Plate IV, fig. 1, p. 92. Length 8½ inches. These crinigers have a long-pointed crest and numerous very long hairs springing from the nape and hind-neck, though these hairs are not visible in the field. The amount of yellow on the under-parts is variable with the subspecies, *griseiceps* and *henrici* being more buff underneath.
VOICE. A noisy bird with a most distinctive bleating, frog-like call-note ; also many other discordant notes, a few sweet calls and a feeble song.
HABITS AND FOOD. The crinigers are more like laughing-thrushes than true bulbuls in habits ; they creep and clamber about cane-brakes and the undergrowth in dense evergreen forest in small parties of half a dozen birds, and in this habitat would be overlooked but for their characteristic note ; they can fly quite well when forced to take wing and are often seen skimming one by one across a forest path. They feed on insects, seeds and fruit, including *zi-byu-thi* (the fruit of *Phyllanthus emblica*) which they swallow whole, although the berries are as large as marbles.
NEST AND EGGS. The breeding season is from March to May. The nest is usually built in a cane-brake or thick tangle of bushes, often near running water, and is a heavily-made cup of leaves, etc., lined

with leaves or roots. The eggs, 2 or 3 (rarely 4) in number, are a beautiful deep pink marked with lines and blotches of blood-red and neutral tint.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending westwards along the Himalayas to Garhwal. It is common throughout the moist and evergreen forests of the foothills of Burma, ascending to about 4,500 feet (as at Thandaung).

[NOTE.—The species *ochraceus* and *tephrogenys* have proved another headache for the taxonomic scholars, who are constantly re-shuffling them. I have followed the latest arrangement proposed by Delacour (1946*b*).]

OLIVE WHITE-THROATED BULBUL

Criniger tephrogenys (Jardine and Selby), MALACCA
SUBSPECIES : *robinsoni* (Ticehurst), YE, N. TENASSERIM

IDENTIFICATION. Similar in size and appearance to those subspecies of *ochraceus* that have the under-parts buff, and probably indistinguishable from them in the field.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, extending northwards to Tenasserim.

CRESTLESS WHITE-THROATED BULBUL

Criniger phaeocephalus (Hartlaub), MALACCA
SUBSPECIES : *phaeocephalus* (Hartlaub), MALACCA

IDENTIFICATION. Length 8 inches. There are long hairs springing from the nape, but no crest. A very noisy forest bird with a distinctive note and the habits of a *criniger*, nearly always seen solitary or in pairs (Davison).

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, extending as far north as Mergui.

HAIRY-BACKED BULBUL

Microscelis criniger (Blyth), MALACCA
SUBSPECIES : *criniger* (Blyth), MALACCA

IDENTIFICATION. Length 6½ inches. Numerous long hairs spring from the back, but these are probably invisible in the field. A brown bird with white chin and throat and yellow under-parts, but no crest. " This little bulbul goes about in small parties of 5 or 6, keeping to the brushwood and following each other about from bush to bush, uttering all the while a soft twittering note. In its habits it resembles the Timaline birds rather than the bulbuls, like them hunting systematically through the foliage. It is a very tame bird and feeds almost exclusively on insects." (Davison).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, extending into southern Tenasserim.

BLACK BULBUL

Microscelis madagascariensis Müller, MADAGASCAR
SUBSPECIES ; *nigrescens* (Stuart Baker), UPPER CHINDWIN
ambiens (Mayr), MYITKYINA Dist.
concolor (Blyth), MOULMEIN
leucothorax (Mayr), SZECHWAN
stresemanni (Mayr), N-W. YUNNAN

IDENTIFICATION. Plate IV, fig. 3, p. 92. Length 10 inches. A variable species, *leucothorax* and *stresemanni* being white-headed forms, whereas *ambiens* is dimorphic with blackish males and lighter females. A bold, noisy bird, in flocks in hill forest.

VOICE. The calls of this bird are one of the most familiar sounds of the higher hills. A common note is a long drawn-out nasal *weeenk*, resembling a kitten in distress ; another is a loud, strident whistle of six notes, resembling *cheeky-cheeky-whee-whay*, sometimes abbreviated to *whee-whay*.

HABITS AND FOOD. This is a bird of the tree-tops, rarely descending to the undergrowth ; it is found in pairs, small parties, or frequently in large parties which may number 100 birds or more, and in eastern Burma may include both black- and white-headed forms. It is a restless bird, seldom remaining long on one tree, the birds of a party flying from one tree to another in a loose, irregular order ; the flight is strong and swift. Fruiting trees and shrubs attract these flocks, but insects are also eaten and individuals may be seen of an evening fly-catching from the tree-tops in the usual bulbul fashion. Like many other birds it is attracted by *letpan* trees in flower and also visits rhododendron blossoms.

NEST AND EGGS. Have been taken in various parts of Burma. The breeding season is from March to June. The nest is cradled in a horizontal fork of a tree, often at a considerable height from the ground ; it is a rather shallow cup of twigs, lichen, moss, roots or leaves, well plastered with cobwebs where it is attached to the fork. The eggs, 2 to 4 in number, are a delicate pinkish-white in ground-colour, profusely spotted or clouded with various shades of red and purple.

STATUS AND DISTRIBUTION. Oriental region and parts of Africa. The white-headed forms *leucothorax* and *stresemanni* are winter visitors to North-East Burma in considerable numbers, one or both coming right down to plains level round Myitkyina town ; they have also been observed in the Shan States, but infrequently. The breeding form of North-East Burma is *ambiens*, while *concolor* is the form in eastern Burma from Bhamo southwards to Mt. Mulayit,

and *nigrescens* in western Burma ; they are birds of the higher hills, and have not been observed in the plains outside North-East Burma.

BINGHAM'S BULBUL

Microscelis thompsoni (Bingham), S. SHAN STATES

IDENTIFICATION. Length 8 inches. An ashy-grey bird with snow-white head and neck, like some forms of the black bulbul, but distinguised at once by the bright chestnut under tail-coverts. Bill and legs coral-red. It has a harsh call-note and the restless arboreal habits of the black bulbul.

NEST AND EGGS. Described by Mackenzie (1929). Breeds in April in the Shan States and Karen Hills ; the nest is usually built in a bank and is a cup made of grass. The eggs are pink in ground-colour, densely speckled with light red.

STATUS AND DISTRIBUTION. This species has a small range, from eastern Burma to north-western Siam. Wickham records it from the Kachin hills, and if this record is correct the Bhamo district is the northern limit of its range ; thence it extends through the Mogok hills, the Shan States, Karen Hills and Karenni to northern Tenasserim, and is not uncommon in these areas. Smith obtained one on the 21st April at 400 feet by the Myitnge river, Mandalay district, so that it must occasionally descend to the plains, but it is not normally seen below 3,000 feet.

BROWN-EARED BULBUL

Microscelis flavala (Blyth), SUB-HIMALAYAN RANGES
SUBSPECIES : *flavala* (Blyth), SUB-HIMALAYAN RANGES
davisoni (Hume), MYAWADI, TENASSERIM
hildebrandti (Hume), YUNZALIN R., SALWEEN Dist.

IDENTIFICATION. Length 8 inches. A dark, ashy bird with a distinctive pattern of dark brown and yellow on the closed wing ; tail brown, under-parts whitish ; there is a slight crest.

VOICE. It has a great variety of notes, mostly pleasant and musical ; common phrases are *keep, keep it going* and *kick me, when-do-we-go.*

HABITS AND FOOD. This is purely a forest bird, found in noisy parties working their way through the lower canopy or the top of the undergrowth and bamboo thickets.

NEST AND EGGS. A nest found at Sinlum Kaba on the 8th May was a flimsy cup of bamboo leaves suspended between some stems of dead bracken. It contained three typical bulbul's eggs.

STATUS AND DISTRIBUTION. Himalayas eastwards to Yunnan, and through Burma to Tenasserim, Siam, etc. In southern Burma it is a bird of the higher hills, but in North-East Burma it is commonest at 2,000–3,000 feet and flocks have been seen at plains level in the Katha and Myitkyina districts from late November to early April.

STREAKED BULBUL

Microscelis virescens (Temminck), JAVA
SUBSPECIES : *macclellandi* (Horsfield), ASSAM
tickelli (Blyth), N. TENASSERIM
binghami (Hartert), S. SHAN STATES
ventralis (Stresemann), MT. VICTORIA
similis (Rothschild), YUNNAN
malaccensis (Blyth), MALACCA

IDENTIFICATION. Length 9½ inches. An olive-green bird with a brown erectile crest, streaked with white, and a white abdomen. In hill forests.

VOICE. This bird has a variety of musical notes and loud, mellow calls, the most characteristic one being a sibilant or sucking *sip-sip-sip* on a monotone ; another call is a whistle of three ascending notes and it also has a mewing call.

HABITS AND FOOD. This bulbul is a bird of evergreen and wet oak forests in the higher hills and is usually seen in noisy parties hunting through the bamboo thickets or the canopy ; it is purely a forest bird and does not enter open country.

NEST AND EGGS. A nest of *tickelli* found on the 14th April at 7,500 feet on Nattaung, Karenni, was suspended with cobwebs between two twigs of bamboo about 10 feet off the ground ; it was a neat cup of moss and dead bamboo leaves lined with tendrils and contained two eggs of the usual bulbul type, whitish in ground-colour with mauve and purple spots over the whole surface. A nest of *similis* with two hard-set eggs, found on the 17th April at 7,000 feet in dense evergeen jungle in the Mogok hills, was composed of a few dead leaves outside, then dried grass and fibre into which a little lichen and cobweb had been woven, and had a lining of fine dried grass with one or two black rootlets.

STATUS AND DISTRIBUTION. Widespread in the oriental region westwards to the central Himalayas. It is resident throughout the higher hills and mountains of Burma, and is locally common.

BLYTH'S OLIVE BULBUL

Microscelis viridescens Blyth, ARAKAN
SUBSPECIES : *viridescens* Blyth, ARAKAN
myitkyinensis Deignan, MYITKYINA Dist.

IDENTIFICATION. Length 7½ inches. An olive-green bird, the wings and tail browner, the under-parts yellower ; under tail-coverts yellow. Iris reddish

or brown is the only definite external character separating this species from its double *charlottae*, which has the iris grey or white ; in general *viridescens* is more golden whereas *charlottae* is more greenish or brownish in plumage.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Assam, Burma, and Siam. It has been recorded from most parts of Burma and is probably resident throughout the forests of the foothills ; common in the Karen Hills and Tenasserim.

[NOTE.—For revision of this species and the next, see Deignan (1948).]

FINSCH'S OLIVE BULBUL

Microscelis charlottae Finsch, S-W. BORNEO
SUBSPECIES : *cinnamomeoventris* Stuart Baker, TENASSERIM TOWN
propinquus (Oustalet), TONGKING

IDENTIFICATION. See under the preceding species. A very nasal or creaking call-note *chwaa* or *jer-wee* is most characteristic and arresting, and is constantly repeated. Typically a bird of the canopy in evergreen forest, where trees festooned with climbers are its favourite haunt, but it may also be seen in *ponzo*.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. An eastern oriental species, in Burma recorded from Kengtung, the Karen Hills, and Tenasserim. Specimens identified by Ticehurst as *propinquus* have also been obtained at Gangaw (Pakokku district), in North-East Burma, and Central Burma (Katha and Mandalay districts). Heinrich obtained two specimens on Mt. Victoria, with the irides greenish-white and greyish, and wing lengths 85 and 87 mm., that may represent an undescribed subspecies localised in the Chin Hills. It goes up to 3,500 feet, and occurs near Maymyo and Thandaung.

STRIATED GREEN BULBUL

Pycnonotus striatus (Blyth), NEPAL
SUBSPECIES : *striatus* (Blyth), NEPAL
paulus Bangs and Phillips, S-E. YUNNAN
arctus Ripley, MISHMI HILLS

IDENTIFICATION. Length 9 inches. This fine bulbul is a conspicuous olive-green bird with a yellow throat, ample crest and streaked plumage ; there is a yellow ring round the eye, and the abdomen and under tail-coverts are yellow. It is a fine songster and also has a number of call-notes, amongst them a mellow whistle and a trisyllabic call *whee-too-wheet* with a drop in pitch on the middle note. It is typically a bird of the tree-tops in evergreen hill forest, occasionally descending to smaller trees or emerging into pine forest ; like other bulbuls it often takes short flights into the air after flies.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan, and through Burma to Siam, etc. It is probably distributed throughout the higher hills of

Burma from about 5,000 feet upwards as far south as Mt. Mulayit, and is locally common (*e.g.* on the Pyepat ridge near Laukkaung, and on Nattaung, Karenni).

RED-VENTED BULBUL

Pycnonotus cafer (Linnaeus), CEYLON
SUBSPECIES: *stanfordi* (Deignan), UPPER CHINDWIN
melanchimus (Deignan), RANGOON

LOCAL NAMES. Burmese: *but-pin-ni*; Chinghpaw: *kataw-u* (a name that applies to most bulbuls).

IDENTIFICATION. Plate IV, fig. 2, p. 92. Length 8 inches. Cannot be confused with any other bulbul; the white tips to the tail-feathers show up in flight. Familiar garden bird.

VOICE. There is something very attractive about the cheerful voice of this bulbul, although it has only one or two call-notes and no song worthy of the name; it is no doubt often credited with the reputation of a famous songster owing to confusion with the bulbul of Persian literature, which, however, is a species of nightingale.

HABITS AND FOOD. Essentially a garden bird attached to the haunts of man, the red-vented bulbul frequents also scrub-jungle, *ponzo*, and quite small clearings in the forest; its habits are too well known to need description. It often collects in large flocks to feed on flowering trees such as *letpan* and *Prunus puddum*.

NEST AND EGGS. Breeds from February to May, with second broods up to August. The nest is usually built in a bush within easy reach, and is a cup of dead leaves, grass or twigs, etc., fairly compact but rather untidy, with a lining of fine roots or horse-hair. The eggs, 2 to 4 in number, are pinkish-white with numerous reddish and purple markings.

STATUS AND DISTRIBUTION. From Ceylon through India to eastern Burma. It is a common resident throughout the plains and foothills of Burma outside high forest.

[NOTE.—See revision by Deignan (1949), who concludes that the bulbuls combined by Stuart Baker into the species *Pycnonotus* ("*Molpastes*") *cafer* really belong to two species:—(*a*) *cafer*, characterised by black-to-brown ear-coverts, black throat and breast, and scarlet-red under tail-coverts, and extending from Ceylon throughout India to eastern Burma; (*b*) *aurigaster*, characterised by whitish ear-coverts, whitish throat and breast, and vermilion, orange, or yellow under tail-coverts, and extending from south-eastern China throughout Yunnan, Indo-China, and Siam to eastern Burma. In western Yunnan, the Shan States, Karenni, Tenasserim and western Siam, these two

species interbreed and the well-known names *nigropileus* Blyth and *burmanicus* Sharpe refer to such hybrids and therefore have no standing in zoological nomenclature.]

WHITE-EARED BULBUL

Pycnonotus aurigaster (Vieillot), CHINA
SUBSPECIES: *latouchei* Deignan, N-W. TONGKING
klossi (Gyldenstolpe), N. SIAM
schauenseei Delacour, S-W. SIAM

IDENTIFICATION. See note under preceding species.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. See note under preceding species. In Yunnan it goes up to 7,000 feet. Hybrids of the *burmanicus* type breed round Laukkaung at 4,000 feet, in the Mogok hills at 5,000 feet, and in and around Maymyo at 3,000–3,500 feet.

[NOTE.—The subspecies in S. Tenasserim may be *thais* (Boden Kloss), BANGKOK.

The WHITE-CHEEKED BULBUL, *P. leucogenys* (Gray), is found in the hill ranges of Assam, but I think that if this obtrusive bird occurred on the Burma side of the border someone would have reported it by now. I saw no sign of it in the Naga hills west of the Ledo road and the Hukawng valley during a period of four weeks spent marching through that area to the Chindwin.]

BLYTH'S BULBUL

Pycnonotus flavescens Blyth, ARAKAN.
SUBSPECIES: *flavescens* Blyth, ARAKAN.
vividus (Stuart Baker), MT. MULAYIT.

IDENTIFICATION. Length 8 inches. A rather nondescript greyish-brown bulbul with yellow under tail-coverts, but a whitish spot in front of the eye shows up well and is diagnostic. Common in flocks in hill *ponzo*.
VOICE. It has no very distinctive notes. Stanford mentions a short song of five notes and a very harsh chatter.
HABITS AND FOOD. This is typically a bird of *ponzo* and scrub-jungle in the higher hills, occasionally entering open high forest. Except that it seems to spend more of its time hunting about inside bushes rather than perched on top of them its habits resemble those of the red-vented bulbul.
NEST AND EGGS. Described from various parts of Burma. The breeding season extends from March to June, but most eggs are laid in April. The nest is usually carefully concealed in a bush and is not easy to find; it is a shallow cup, very neatly made of grass, fine twigs,

etc., mixed with scraps of moss and lichen. The eggs, 2 or 3 in number, resemble those of the red-vented bulbul, though they are often much paler and pinker.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam; there are only two records from Yunnan, and in Malaysia it occurs only in Borneo. In Burma it is found throughout the higher hills as far south as Mt. Mulayit and is probably the commonest of the hill bulbuls.

RED-WHISKERED BULBUL

Pycnonotus jocosus (Linnaeus), CANTON, CHINA
SUBSPECIES *monticola* (McClelland), KHASIA HILLS
peguensis (Stuart Baker), RANGOON
pattani (Deignan), PENINSULAR SIAM

LOCAL NAMES. Burmese: *but-ka-lon*; Chinghpaw: *kataw-nawng*.

IDENTIFICATION. Plate IV, fig. 5, p. 92. Length 8 inches. The red "whisker" is conspicuous in *peguensis*, but almost invisible in the field in *monticola*. A sprightly and common garden bird.

VOICE. Similar to that of the red-vented bulbul, but perhaps louder and more musical.

HABITS AND FOOD. Another familiar bird, whose habits need not be described at length. It is perhaps the most gregarious of the bulbuls, and large parties are commonly seen; Stanford describes many thousands streaming into the jungles west of Kamaing in January to roost, and similar numbers at La-awn-ga on the Fort Hertz road, the jungle resounding with their cheery calls. It avoids high forest, preferring the haunts of men, gardens, *taungyas*, scrub-jungle and the neighbourhood of villages.

NEST AND EGGS. The breeding season is from February to June. Nest and eggs resemble those of the red-vented bulbul, except that the nest is shallower on the average.

STATUS AND DISTRIBUTION. Widespread in the oriental region. Common throughout the plains and foothills of Burma outside high forest; its ceiling seems to be rather lower than that of the red-vented bulbul, but it is a common breeding bird round Mogok and Maymyo.

[NOTE.—I include *pattani* on the assumption that it is the form in Tenasserim; Deignan in his revision includes all Siam and northern Malaya in its range but does not specifically mention Tenasserim.]

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PLATE IV

BLACK-CRESTED YELLOW BULBUL

Pycnonotus dispar (Horsfield), JAVA
SUBSPECIES : *flaviventris* (Tickell), DHOLBHUM, CHOTA NAGPUR
vantynei Deignan, N-W. TONGKING
xanthops Deignan, N-W. SIAM
caecili Deignan, PENINSULAR SIAM

IDENTIFICATION. Plate IV, fig. 4, p. 92. Length 7 inches. Cannot be confused with any other bulbul.
VOICE. A rather quiet bird with a jerky little song, *wheet-tre-trippy-wit*, the last two syllables repeated two or more times.
HABITS AND FOOD. This is typically a forest bulbul, and is a characteristic bird of the teak forests, though it also frequents *ponzo* and scrub on the outskirts of forest ; it lives in bamboos and the undergrowth and is found chiefly in small clearings and along streams. It has been seen on the ground eating wild strawberries, and like other species it feeds on termites during a " flight."
NEST AND EGGS. The breeding season is from March to May. The nest is usually made of dead leaves, with a lining of fine grass stems and moss roots, and is very neat and compact. The eggs, 2 to 4 in number, are pinkish in ground-colour with light purple markings.
STATUS AND DISTRIBUTION. Widespread in the oriental region. It is resident throughout the foothills and better wooded plains of Burma. In the higher hills it is local, but is found up to 4,500 feet on Nattaung, up to 5,500 feet on the crags at Taunggyi, and on Mt. Victoria is common at all elevations to 10,000 feet (Roseveare). There is only one record from Yunnan in the last half-century.

PUFF-BACKED BROWN BULBUL

Pycnonotus eutilotus (Jardine and Selby), SINGAPORE

IDENTIFICATION. Length 9 inches. A brown bird with a crest ; under-parts whitish. Said to be a bird of scrub, usually in pairs.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, just reaching the extreme south of Tenasserim.

YELLOW-CROWNED BULBUL

Pycnonotus zeylonicus (Gmelin), MALAYA

IDENTIFICATION. Length 11 inches, the largest of the bulbuls, and easily recognised by the yellow crown, black cheeks, and white throat ; said to have a rich and powerful song and to frequent open country, avoiding high forest.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim ; not however in Ceylon as the specific name might lead one to suppose.

SCALY-BREASTED BULBUL

Pycnonotus squamatus (Temminck), JAVA
SUBSPECIES : *weberi* (Hume), TONKA I., PENINSULAR SIAM

IDENTIFICATION. Length 6 inches. A small handsome bulbul with a black head, mottled breast, yellow under tail-coverts, and black tail tipped white.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim.

YELLOW-VENTED BULBUL

Pycnonotus goiavier (Scopoli), PHILIPPINE IS.
SUBSPECIES : *personatus* (Hume), N. SUMATRA

IDENTIFICATION. Length 8 inches. A brown bulbul with a dark crown, broad white eyebrow, and yellow under the tail. Resembles the red-whiskered bulbul in habits and frequents open country. The call sounds like *I'm waiting for the people* with the emphasis on the word *waiting* (Baillie).

NEST AND EGGS. Breeds in southern Tenasserim in March and April. Nest and eggs indistinguishable from those of the red-whiskered bulbul.

STATUS AND DISTRIBUTION. Widespread in the eastern part of the oriental region, and found in southern Tenasserim ; it is very common round Mergui.

ANDERSON'S BULBUL

Pycnonotus xanthorrhous Anderson, KACHIN HILLS
SUBSPECIES : *xanthorrhous* Anderson, KACHIN HILLS

IDENTIFICATION. Length 8 inches. Pure white throat contrasting with the black cap is the most noticeable feature, in addition to a pronounced crest and yellow under tail-coverts. A characteristic bird of the Kachin hills everywhere east of the Mali Hka, but particularly in the bramble- and bracken-covered hillsides of the Ngawchang valley ; it avoids high forest.

NEST AND EGGS. Have been taken at Sinlum Kaba, Bernardmyo, and Kalaw from March to May, and Stanford found a nest containing eggs as late as August ; it breeds in brambles, grass or bracken, and the nests are described as resembling those of other bulbuls but more solidly built. The purplish eggs are very beautiful.

STATUS AND DISTRIBUTION. Common in Yunnan, and throughout the eastern higher hills of Burma as far south as Karenni ; there is no record from anywhere west of the Irrawaddy or the Mali Hka, and in Karenni it is rare. It has not been observed round Maymyo.

STRIPED-THROATED BULBUL

Pycnonotus finlaysoni Strickland, MALACCA
SUBSPECIES : *finlaysoni* Strickland, MALACCA
eous Riley, CENTRAL ANNAM
davisoni (Hume), RANGOON

IDENTIFICATION. Length 7½ inches. Another bulbul with yellow under tail-coverts, but the yellow streaks on the grey throat and the pale yellow eye are distinctive. Forehead yellow; crown and nape grey; upper-parts olive-green. Plains bird of scrub-jungle.

VOICE. This bird has a most characteristic loud, melodious call-note, *ding-da-ding-ding-da-ding-ding*, up in a crescendo to the fourth note and then dying away. A liquid bubbling alarm-note is often heard.

HABITS AND FOOD. In Southern Burma this is described by Stanford as a great skulker and difficult to observe; further south in its range it is described by Davison as a very lively bird, frequenting gardens, cleared land, scrub-jungle and the outskirts of forest.

NEST AND EGGS. From February to early June is the usual breeding season, but Stanford noted a pair on the 15th November near Rangoon which he thought were breeding. Nest and eggs are of the usual bulbul type.

STATUS AND DISTRIBUTION. Widespread in the eastern part of the oriental region, extending westwards to Southern Burma; it is said to be the commonest bulbul in Tenasserim, whence it extends to Karenni and the Karen Hills, the Irrawaddy–Sittang plain (including the laterite ridge between Rangoon and Mingaladon) where it seems to be rare, and Arakan.

GREY-BELLIED BULBUL

Pycnonotus cyaniventris Blyth, SINGAPORE
SUBSPECIES : *cyaniventris* Blyth, SINGAPORE

IDENTIFICATION. Length 6½ inches. Another bulbul with yellow under tail-coverts, but the whole head and remaining under-parts are deep slaty-blue; upper-parts greenish-yellow. Said to be a rather shy bird, found solitary or in pairs on the outskirts of forest.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, extending as a very rare straggler to the extreme south of Tenasserim.

OLIVE-BROWN BULBUL

Pycnonotus plumosus Blyth, SINGAPORE
SUBSPECIES : *plumosus* Blyth, SINGAPORE

IDENTIFICATION. Length 8 inches. Similar to Blanford's olive bulbul, from which it is probably indistinguishable in the field. It is described by Davison as an unobtrusive bird of evergreen forest, keeping to the undergrowth and lower canopy, and its note as a chirping chatter like that of a *criniger*.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found as far north as Mergui.

BLANFORD'S OLIVE BULBUL

Pycnonotus blanfordi Jerdon, THAYETMYO
SUBSPECIES : *blanfordi* Jerdon, THAYETMYO
conradi (Finsch), BANGKOK (= *robinsoni* Grant)

LOCAL NAMES. Burmese : *but-sa-mwe*, or *but-chwe*, or *byu*.

IDENTIFICATION. Plate IV, fig. 6, p. 92. Length 8 inches. The plainest of the bulbuls, an untidy ashy-grey bird without distinguishing features ; the slight crest and the brownish-white ear-coverts do not show up well in the field. Common plains bird.

VOICE. The ordinary note is a very harsh, grating call, somewhat like a saw passing through soft wood. It also utters quite a musical trill (Roseveare).

HABITS AND FOOD. This bulbul likes best of all the open, thorny scrub of the dry zone uplands, especially near fields, streams and cultivation, and is a familiar bird in the compounds of bungalows in towns such as Mandalay and Shwebo, and is occasionally seen in Rangoon. It is not a forest bird.

NEST AND EGGS. The breeding season extends from March to August, but an odd nest may be found in almost any month, as with most of the common bulbuls. The nest and eggs are of the usual bulbul type.

STATUS AND DISTRIBUTION. Burma and Siam. It is common all over Central Burma, and extends northwards as far as Katha and the lower parts of the Upper Chindwin. It is common all down the Irrawaddy and Sittang valleys, and continues eastwards through the Karen Hills to Siam ; not recorded from Tenasserim, but probably occurs in the north.

LESSER BROWN BULBUL

Pycnonotus erythropthalmos (Hume), S. TENASSERIM
SUBSPECIES : *erythropthalmos* (Hume), S. TENASSERIM

IDENTIFICATION. Length 6½ inches. Distinguished by small size and bright orange ring round the red eye.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found (but rare) in the extreme south of Tenasserim.

RED-EYED BROWN BULBUL

Pycnonotus brunneus Blyth, MALACCA
SUBSPECIES : *brunneus* Blyth, MALACCA

IDENTIFICATION. Length 7 inches. Resembles *plumosus* in appearance and habits, but is smaller and dull brown without any green tinge, and has no trace of white on the ear-coverts.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found as far north as Mergui.

BLACK-HEADED BULBUL

Pycnonotus atriceps (Temminck), JAVA
SUBSPECIES : *atriceps* (Temminck), JAVA
cinereoventris (Blyth), E. BENGAL

IDENTIFICATION. Length 7 inches. A dimorphic species; in one phase the plumage is olive-yellow with the head, throat and breast black and a broad black band across the tail, and in the other phase the under-parts are blue-grey (for want of yellow pigment).
VOICE. Its ordinary call-note is a lively, sharp, musical chirp, and it also has a very mournful double whistle, something like that of the common iora, but deeper and softer, which it utters only when quietly seated.
HABITS AND FOOD. This bulbul frequents both dense and open forests and scrub-jungle, and is equally at home in the tree-tops and the undergrowth. It is a very quarrelsome bird, found in small or large parties, and feeds on berries, fruit, and small insects; of these last it finds a plentiful supply in flowering *letpan* trees.
NEST AND EGGS. Have been taken in Pakokku and Amherst districts in April. The nest is a strong cup of the usual bulbul type, but the eggs are easily distinguished from the eggs of all other bulbuls; the ground-colour is pale fleshy-pink to lilac freckled with red, pale grey

and lilac, the markings forming a pronounced ring or cap at the larger end.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam, but absent from northern Burma; from Tenasserim and the Karen Hills (where it is abundant) it extends to the Southern Shan States, a little north of Toungoo in the Sittang plain, the Henzada foothills, Mt. Victoria and southern Arakan, but is scarce in these areas. It has been observed in the scrub-jungle between Rangoon and Hlawga, and goes up to 8,000 feet (on Mt. Victoria).

FINCH-BILLED BULBUL

Spizixos canifrons Blyth, KHASIA HILLS
SUBSPECIES: *canifrons* Blyth, KHASIA HILLS
ingrami Bangs and Phillips, MENGTSZ, S-E. YUNNAN

LOCAL NAME. Chinghpaw: *kataw-sit* (green bulbul).

IDENTIFICATION. Length 8 inches. The curious finch-like bill, which is pale yellow, but looks almost white in the field, combined with the chattering note, is diagnostic; in addition, the thin forward-pointing crest (like Punch's cap), blackish head with a pale patch on the ear-coverts, and general green colour with a broad dark terminal band on the tail are noticeable. Common hill bird of scrub.

VOICE. Heinrich describes the alarm-note as a strident, but not unmelodious *purr-purr-prruit-prruit-prruit*, the last three syllables only added when the bird is very excited; another call is described by him as *krrit-krruit . . . tirr-tirr . . . pit* with strong emphasis on the last syllable.

HABITS AND FOOD. This is a characteristic bird of *ponzo* in the higher hills of northern Burma, and of the mass of brambles and "burr"-bearing plants that spring up on the fringes of village clearings. It sometimes collects in large flocks, which may number 50–100 birds.

NEST AND EGGS. It breeds in April to May in the Bhamo hills, nesting in the wild raspberry bushes; the curled tendrils of climbers are largely used in the construction of the nest. The eggs are densely freckled with red.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam; is common in Yunnan and in the higher hills of northern Burma, as far south as the Chin Hills on the west and the Southern Shan States on the east. It is not listed by Wickham from the Shan States, but is common in the Mogok hills and probab[illegible]

extends thence through the higher Shan hills to northern Siam. It is one of the hill birds that drop down to the N'Mai valley in winter and has been observed at Chipwi (1,000 feet), but it normally keeps above 4,000 feet.

[Note.—*ingrami* is of doubtful validity.]

Family CERTHIIDAE

TREECREEPERS

This family is found in most parts of the world. It is represented in Burma by one genus with a greatly graduated tail and a slender bill as long as the head and curved downwards. The young are coloured like the adults, but are somewhat paler and duller, and show signs of cross-bars on the under-parts. The Burmese members of the genus are all birds of the higher hills and mountains, from 4,000 feet upwards.

A treecreeper is a small streaky brown bird, easily recognised by its behaviour. It ascends the trunks or limbs of trees in a succession of little jerks, aided by the stiff-pointed feathers of the tail, which it presses against the bark like a woodpecker. From one tree it flies obliquely downwards to the trunk or to a branch of another tree and again ascends. It often climbs along the under side of boughs and occasionally feeds while clinging tit-like to the small outer foliage. It invariably climbs upwards, neither jerking backwards and downwards as a woodpecker may on occasion, nor running in all directions and positions like a nuthatch. It feeds on insects and their larvae, which it picks out from the crevices of the bark with its long-curved bill, and for which it hunts with tireless energy, pausing only to dislodge some tightly ensconced morsel. Although living solitary or in pairs as regards its own kind, it is sociable with other species and is often seen with a mixed hunting party of tits and warblers, working the trunks while the others hunt the leaves and twigs, so that tree after tree undergoes a thorough scrutiny.

The nest is built in a hole or crevice in a tree-trunk, and frequently behind a loose bulging section of bark ; it is a cup of fine grasses, dry leaves, moss and chips, with a lining of feathers and fur. The eggs, 4 to 6 in number, are broad, regular ovals, fine in texture without gloss ; the colour is white, profusely spotted with various shades of red and brown, the markings tending to collect in a zone about the larger end.

HIMALAYAN TREECREEPER

Certhia himalayana Vigors, HIMALAYAS
SUBSPECIES : *yunnanensis* Sharpe, W. YUNNAN
ripponi Kinnear, S. CHIN HILLS

IDENTIFICATION. Length 6 inches. Distinguished from other species found in Burma by its boldly barred tail.
NEST AND EGGS. Not described from Burma. Heinrich noted fledged young early in May.
STATUS AND DISTRIBUTION. Throughout the Himalayas, and through northern Burma to Yunnan. It seems to be rare in northern Burma, neither Stanford nor Cranbrook having met with it, but I have a sight record (presumably of the form *yunnanensis*) from the Panwa pass at 7,000 feet ; Stuart Baker's record of this form from the Northern Shan States (*F.B.I.*, vol. i, p. 432) requires confirmation. On the west this species is found in the Chin Hills.

EUROPEAN TREECREEPER

Certhia familiaris Linnaeus, SWEDEN
SUBSPECIES : *khamensis* Bianchi, S-E. TIBET

IDENTIFICATION. Length 6 inches. The chin, throat and breast are white in this species, earthy-brown in the next.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Palaearctic. Cranbrook obtained one bird at 13,000 feet in the Adung valley on the 25th June in fir trees. Haringtou observed treecreepers in the Kachin hills which he attributed to this species, but they were more probably *discolor*.

BROWN-THROATED TREECREEPER

Certhia discolor Blyth, DARJEELING
SUBSPECIES : *manipurensis* Hume, MANIPUR (= *victoriae* Rippon)
shanensis Stuart Baker, S. SHAN STATES

IDENTIFICATION. Length 6 inches. See under *familiaris*. The call-note is a shrill *du-wee-teet, du-wee-teet*.
NEST AND EGGS. Have been taken in April to May in the northern Chin Hills and Heinrich noted fledged young on the 31st March on Mt. Victoria. For nest and eggs see the family description above.
STATUS AND DISTRIBUTION. Himalayas to Yunnan and throughout the higher hills of Burma to the Arakan Yomas on the west and Karenni on the east. Probably not uncommon above 5,000 feet throughout its range ; I found it to be so both in North-East Burma and in Karenni.

STOLICZA'S TREECREEPER

Certhia nipalensis Blyth, NEPAL

IDENTIFICATION. Length 6 inches. Distinguished in the field by the ruddy-

brown back and heavily spotted appearance ; the chin and throat are white. Mountains only.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to northern Burma. I found it to be not uncommon in the Chimili pass area above 7,500 feet, and the Vernay-Cutting expedition obtained five. There are no other records from Burma.

Family TROGLODYTIDAE

WRENS

A number of genera hitherto included in this family are now generally considered to be not wrens, but either babblers (*Spelaeornis*, including *Elachura*, *Pnoepyga*, and *Sphenocichla*) or warblers (*Tesia*), leaving only the genus *Troglodytes* in this family.

EUROPEAN WREN

Troglodytes troglodytes Linnaeus, SWEDEN
SUBSPECIES : *talifuensis* Sharpe, TALIFU, YUNNAN

IDENTIFICATION. Length 4 inches. Plump, stumpy build with a short tail usually cocked up, russet-brown colour, paler and more buff below, and a pale buffish eyebrow distinguish this species. The call-note is a hard clicking *tic-tic-tic* often rapidly repeated. In Burma its pet ecological niche seems to be the little *sphagnum* bogs that one often finds on flat ridge tops with thickets of cane or brambles round about, *e.g.* on the heights above the Panwa pass and on the summit of the Fenshuiling pass ; in such habitats it is easily overlooked, but if you sit down and wait awhile at a likely spot and a wren happens to be living there it will soon emerge from cover and give you a good scrutiny, at the same time clicking suspiciously to itself. I have also seen it scrambling about on the bank of a fair-sized stream, and in Nepal in the summer (and probably in Burma too) it is a bird of screes above the tree-line, hopping in and out of the rocks and boulders at anything up to 15,000 feet.

NEST AND EGGS. Not described from Burma, but unlikely to differ from the familiar domed nest of the British bird.

STATUS AND DISTRIBUTION. A holarctic species. I found it to be common in the mountains of North-East Burma at 7,000–9,500 feet and it was obtained in the Adung valley at the rather low altitude of 6,000 feet. The record from the Shan States (*F.B.I.*, vol. i, p. 446) is incorrect.

Family CINCLIDAE

DIPPERS

This family comprises a small group of birds that are specially adapted for an aquatic life ; they are short, rotund, and stoutly

built ; the plumage is everywhere very dense and waterproof, even the eyelids being clothed with feathers. The wing is short and rounded and the tail is very short, but the flight swift. The sexes are alike, and the plumage of the young is barred.

WHITE-BELLIED DIPPER

Cinclus cinclus (Linnaeus), SWEDEN
SUBSPECIES : *przewalskii* Bianchi, E. TIBET

IDENTIFICATION. Length 8 inches. Pearly-grey back and white under-parts distinguish it from the brown dipper.
STATUS AND DISTRIBUTION. Palaearctic. The Vernay-Cutting expedition obtained one and saw another at 9,300 feet in January, on a stream by Imaw Bum ; it is probably a rare winter visitor to the mountains of northern Burma.

BROWN DIPPER

Cinclus pallasi Temminck, CRIMEA
SUBSPECIES : *dorjei* Kinnear, E. BHUTAN

IDENTIFICATION. Length 9 inches. Whole plumage dark brown. Its habits are well described by Whistler (1941), whose account is here summarised. The ordinary note is a loud tuneless *dzchit, dzchit*, shrill enough to be heard easily above the roar of the waters ; it heralds the approach of the small plump brown bird, which flies swiftly with rapid wing-beats a foot or two above the surface of the water, swaying from side to side amongst the boulders and only making a detour over land to avoid some intruder at the water's edge. It delights to perch on a stone or rock protruding from the water, bobbing and curtseying in a characteristic fashion as if hinged on its legs. It feeds mainly on aquatic insects and their larvae, which it captures by wading, swimming, and diving ; it is able to walk about on the bed of the stream under water, and it swims freely on the broader pools, now and again diving and disappearing for a while. In Burma it is an extremely shy and wary bird.
NEST AND EGGS. In North-East Burma it breeds from December to February ; Stanford watched a pair building a nest on the 20th December at Chipwi. The nest is a large globular structure of moss wedged into a hollow or cleft in the rock, and the eggs are white.
STATUS AND DISTRIBUTION. Eastern palaearctic. A common bird of rocky streams in the higher hills and mountains of northern Burma, as far south as the Chin Hills on the west and the Shan States on the east. It is occasionally found at low elevations, Stanford having seen it at Washaung on the edge of the plains ; how high it goes in Burma is uncertain, but I have seen it at 16,000 feet in summer in the Nepal Himalayas. According to Stanford there are no Yunnan records, but it will probably be found to be as common in northern Yunnan as it is in Burma.

Family TURDIDAE

This is a large family and it has been subdivided into a number of sub-families, of which we are concerned with six, namely the robins and their allies, the chats, the forktails, the true thrushes, the whistling thrushes, and the cochoas (or green and purple thrushes); the only character they all have in common is the mottled plumage of the young.

Sub-family ERITHACINAE

ROBINS

SIBERIAN BLUE ROBIN

Luscinia cyane (Pallas), DAURIA

IDENTIFICATION. Length 6 inches. Sexes differ. The adult male has the upper-parts blue and the under-parts white. The adult female has the upper-parts olive-brown, the throat and breast tawny mottled with brown, and the remaining under-parts white. The young male is like the female, but acquires a certain amount of blue at the first autumn moult. Hops about on the ground in thick cover, and the tail keeps quivering up and down in a peculiar way; pale flesh-coloured longish legs noticeable. Davison describes its note as a low *chuck, chuck, chuck*, repeated very quickly.

STATUS AND DISTRIBUTION. Breeds in Siberia and Japan, and in winter migrates to the eastern part of the oriental region, as far west as Assam. It is a not uncommon winter visitor to south-eastern Burma, from the Pegu Yomas and Southern Shan States through the Karen Hills to Tenasserim; there is one specimen in the British Museum from the Arakan Yomas (Thayetmyo district), and Garthwaite obtained five at Gangaw (Pakokku district).

INDIAN BLUE ROBIN

Luscinia brunnea (Hodgson), NEPAL

SUBSPECIES: *brunnea* (Hodgson), NEPAL (= *wickhami* Stuart Baker)

IDENTIFICATION. Length 6 inches. Sexes differ. The adult male has a long broad white supercilium, upper-parts dark blue, and under-parts bright chestnut. The adult female is an inconspicuous olive-brown bird with whitish under-parts except for the tawny breast, which distinguishes it from the female of the preceding species. The young male is like the female but has the back darker and much suffused with blue. According to Livesey it has a sweet little song, a long plaintive *zee-ee-ee* ending up with a quick *whi-hoo*. Heinrich describes the song as commencing with a soft introductory twittering and ending with a quick, rather shrill, trill, *tjiu tjiu-tjitjitjitji*. It combines the habits of a ground bird with those of a tree bird, but it hops and runs in lark-like fashion with such rapidity and is so timid that it is difficult to observe.

On Mt. Victoria it inhabits the alpine zone from 6,700 feet upwards and is a typical bird of forest borders where these are fringed with thick undergrowth.
NEST AND EGGS. Livesey's description of the breeding habits round Haka in the Chin Hills may be summarised as follows :—Breeds April to May in fairly open spaces. The nest is small and well concealed, tucked away in grass or other cover ; it is made of fine roots and grasses lined with black hair. The eggs, usually 4 in a clutch, are a beautiful blue. The cock bird is very fierce and bold in protecting his territory.
STATUS AND DISTRIBUTION. Breeds in the Himalayas, and in winter migrates as far south as Ceylon. In Burma it has been recorded only from the Chin Hills, where it is resident.

BLACK-THROATED BLUE ROBIN

Luscinia obscura Berezowski and Bianchi, KANSU

IDENTIFICATION. Length 6 inches. Sexes differ. The male has the upper-parts slate-blue ; chin, throat and breast black (whether this is retained in winter is unknown) ; remaining under-parts whitish. The female has the upper-parts brown and the under-parts dull yellowish-white.
STATUS AND DISTRIBUTION. Very little is known about this species, which breeds in south-western Kansu and the Tsingling range. In 1936 a single specimen was obtained by Garthwaite at 500 feet in thick undergrowth beside a stream in the Bhamo district ; it was in the Simaw reserved forest at the foot of the mountains running up to Sinlum Kaba ; this is the only record for Burma, so that the species is presumably a rare vagrant to this country.

EUROPEAN BLUETHROAT

Luscinia svecica (Linnaeus), SWEDEN
SUBSPECIES : *robusta* Buturlin, KOLYMA DELTA
weigoldi Kleinschmidt, BAGO, JEHOL

IDENTIFICATION. Plate V, fig. 3, p. 116. Length 6 inches. Sexes differ. The rufous base to the dark brown tail, conspicuous in flight, is distinctive at all ages. The blue and chestnut of the throat and breast vary according to age, and some first winter males are more like the female, which differs in having the whole under-parts whitish with a gorget of brown spots across the breast. Solitary, usually in damp localities.
VOICE. On its breeding grounds the bluethroat is a fine songster and mimic, but in winter it confines itself to an occasional few bars of its beautiful song. The alarm-note and ordinary call is a chat-like *tacc, tacc*, varied by a more plaintive *hweet*.
HABITS AND FOOD. A bird of the lowlands, frequenting open fields and dense patches of boggy grass ; it is particularly fond of the margins of lakes and jheels, where it is easily overlooked in the heavy

cover it prefers, but is typically seen running rapidly over the mud in short bursts, elevating and slightly expanding the tail at each pause; it is also a common bird of the open stubble of the great Irrawaddy–Sittang paddy plain, but is there very shy and appears as a dark brown bird flitting away some distance off.

STATUS AND DISTRIBUTION. Palaearctic. A winter visitor to the whole of Burma as far south as Tavoy, and not uncommon; the return migration takes place in May (once seen on the 27th June in the Minbu district, Roseveare).

Oates found it very abundant in Southern Burma from early November to mid-May, and Rippon found it not uncommon on floating grass in the Inle lake.

[NOTE.—This species needs revision, *vide Ibis*, 1938, p. 227.]

COMMON RUBYTHROAT

Luscinia calliope (Pallas), YENESEI
SUBSPECIES: *calliope* (Pallas), YENESEI

IDENTIFICATION. Plate V, fig. 4, p. 116. Length 6 inches. The female has no scarlet on the chin and throat, which are whitish, and the cheek-stripe is duller.

VOICE. In winter a musical and rather plaintive double note, *chee-wee*, repeated several times as the bird moves about in the undergrowth, is very characteristic, and remarkably difficult to trace to its source. The alarm-note is a harsh churr. Wickham describes a low, pleasant song, which it starts to sing before leaving in April.

HABITS AND FOOD. Dense thickets of *bizat* are this bird's favourite haunt in winter, but it is a great skulker and very rarely shows itself; a few individuals out of the large numbers that winter in Burma behave more like the British robin, and have been observed hunting for insects on garden paths in a Maymyo compound and also hopping about the house compounds and fences of a village in the Mandalay district. On one occasion I watched a male for perhaps half a minute uttering his *chee-wee* note while perched on a bamboo culm in open forest in the Meza valley, Katha district.

STATUS AND DISTRIBUTION. The species breeds in northern and central Asia and in winter is found throughout most of the oriental region, excluding Malaysia. Until we learnt its note we should have described it as a rather scarce winter visitor to Burma, but it unquestionably comes down to this country in very considerable numbers, and it is only necessary to count up the number of parties

that can be heard calling on any day of the cold weather in the scrub between Rangoon and Mingaladon to appreciate this fact. Oates described it as abundant in Southern Burma from November to January. It is not only common throughout the plains in suitable scrub, but is found in the hills as well, in the Karen Hills, Shan States round Maymyo, etc., and on passage evidently reaches a considerable altitude, Stanford having recorded a specimen from 7,800 feet near Kambaiti. Not recorded from Tenasserim.

WHITE-MOUSTACHED RUBYTHROAT

Luscinia pectoralis Gould, HIMALAYAS
SUBSPECIES : *tschebaiewi* Przewalski, KANSU

IDENTIFICATION. Length 6 inches. Differs from the preceding species in having a white tip to the tail. Cranbrook heard a rather metallic call-note, and describes it as a bird of low rhododendron scrub above the tree-line and rather fond of sitting on rocks above scrub level.
NEST AND EGGS. Cranbrook saw a fully fledged young bird, believed to be of this species, on the 12th July.
STATUS AND DISTRIBUTION. Throughout the Himalayas to Kansu, but apparently not Yunnan. The only Burma records are from the Adung valley at 12,000–14,500 feet, where it seems to be resident.

GOULD'S SHORTWING

Brachypteryx stellatus Gould, NEPAL
SUBSPECIES : *stellatus* Gould, NEPAL

IDENTIFICATION. Length 5 inches. Distinguished from other shortwings by its dark chestnut upper-parts ; under-parts grey with minute black cross-bars and numerous white spots on the abdomen.
STATUS AND DISTRIBUTION. Eastern Nepal, Sikkim, Bhutan (*Ibis* 1937, pp. 265–267), once in North-East Burma where the Vernay-Cutting expedition obtained a single specimen at 6,000 feet in dense undergrowth beside the Hpawshi stream, and once at Chapa (Tongking). A rare bird.

BLUE SHORTWING

Brachypteryx montana Horsfield, JAVA
SUBSPECIES : *cruralis* (Blyth), DARJEELING

IDENTIFICATION. Length 5½ inches. Sexes differ. The male of *cruralis* is dimorphic, being found in both indigo-blue and brown phases, which seem to be of equal frequency ; in the brown phase only the white line above the eye distinguishes it from the female. The tail is very short (under 2 inches), and the legs are long and slender. It has a pretty little song, characterised by its compass of high and low notes with odd sucking and popping noises

thrown in. This song is frequently uttered by the bird as a sort of greeting to the human intruder crashing through its prickly haunts, its particular ecological niche being the thickest and thorniest cover it can find, preferably beside a tiny stream in the evergreen forests of the higher hills ; this song was noted in April and may be confined to the breeding season, when the bird seems to be very confiding. Rippon noted that " its movements on the ground resemble those of a rat rather than of a bird. It makes its way very rapidly through thick brushwood, and, having arrived at the edge of an opening, squats behind a small rock or stone, or even a heap of leaves, and makes short runs from its shelter into the open, picking up something and returning."

NEST AND EGGS. Not described from Burma ; in India its nest resembles that of the next species.

STATUS AND DISTRIBUTION. Himalayas from Simla to western Yunnan and the eastern oriental region. Probably resident throughout the higher hills of Burma in small numbers as far south as the Chin Hills on the west and Karenni on the east ; I doubt if it breeds much below 5,000 feet, and a bird obtained by the Vernay-Hopwood expedition at 1,000 feet in the Uyu valley was probably only wintering there. It is a local bird, but common enough on Nattaung.

LESSER SHORTWING

Brachypteryx leucophris Temminck, JAVA
SUBSPECIES : *nipalensis* Horsfield and Moore, NEPAL

IDENTIFICATION. Length 5 inches. Sexes differ. The male is dimorphic, being found in both indigo-blue and brown phases, but in Burma the blue phase is rare (if indeed it occurs at all) ; white chin and throat distinguish this species from *montana* ; the white eyebrow is prominent in the field. A shy secretive bird which skulks in dense thickets, usually near streams or in ravines, but I have also seen it on hillsides and on ridge tops. Easily overlooked except when singing. The song is a pretty musical phrase not unlike the song of some of the blue flycatchers. According to Heinrich it resembles the twitter of *montana* but lacks the diminishing final phrase characteristic of the robin-like song of that bird. The alarm-note consists of a chirp with a final *tack . . . tack . . . tack*, the bird hopping about with tail erect.

NEST AND EGGS. Not described from Burma but in early April I found males with organs enlarging singing in their territories round Htawgaw, and Pershouse is said to have found it breeding in the Bhamo hills. In Assam it makes a globular nest near the ground, in bushes or in the moss growing on a rock or tree, and the eggs are olive-green with innumerable freckles of light reddish, smaller than the eggs of *montana*.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Garhwal. Its distribution in Burma is much the same as that of *montana*, except that it extends to Tenasserim (Mt. Mulayit) ; I found it to be a common breeding bird of the Laukkaung–Htawgaw hills at 4,000–6,000 feet in North-East Burma, and it has been recorded from Mt. Victoria, the Upper Chindwin, Kalaw, and Nattaung (Karenni). Forrest obtained one specimen in western Yunnan.

HODGSON'S SHORTWING

Hodgsonius phoenicuroides (Gray), NEPAL
SUBSPECIES : *phoenicuroides* (Gray), NEPAL
ichangensis Stuart Baker, ICHANG

IDENTIFICATION. Length 7½ inches, including a long tail of 3 inches, which distinguishes this from other shortwings. Sexes differ. The male is dimorphic, being found in both indigo-blue and brown phases, with some chestnut at the base of the tail. The female and the male in the brown phase have the underparts yellowish-white.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Throughout the Himalayas from Kashmir eastwards to Yunnan. In Burma it seems to be rare and the only records are from Mt. Victoria, one specimen from Kambaiti at 6,800 feet, and two obtained by Rippon in the Southern Shan States (hills east of Fort Stedman)

BLUE-FRONTED REDSTART

Phoenicurus frontalis Vigors, HIMALAYAS

IDENTIFICATION. Length 6½ inches. Sexes differ, the male being dull blue and chestnut and the female brown and paler chestnut, but both can be distinguished at once from other redstarts by the black-tipped, black-centred tail. The alarm-note is a grating sound like a pocket watch being wound up slowly, and is freely uttered.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Resident throughout the Himalayas at high elevations, extending through Yunnan and western China. In North-East Burma it is a common and conspicuous roadside bird in winter from 4,500 to 6,500 feet but whether it breeds anywhere in the mountains (as it does in Yunnan) is uncertain. It has also been recorded from the Northern Shan States, and may occur in the Chin Hills, though there seem to be no definite records thence.

WHITE-THROATED REDSTART

Phoenicurus schisticeps (Gray), NEPAL

IDENTIFICATION. Length 6 inches. Sexes differ, but both have a distinctive large white patch on the throat and show much white on the wing (the white extends right up to the shoulder of the wing, which is not the case with *aurorens* and *hodgsoni*, the two other redstarts that have a white wing-patch).
STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Kansu, breeding at high elevations. The Vernay-Cutting expedition obtained two specimens at high elevations in the mountains north-east of Myitkyina, and although there are no other records it may be a winter visitor to northern Burma in small numbers, and it is known to breed on the Likiang range.

DAURIAN REDSTART

Phoenicurus auroreus (Pallas), LAKE BAIKAL
SUBSPECIES : *auroreus* (Pallas), LAKE BAIKAL
leucopterus Blyth, MALACCA

IDENTIFICATION. Length 6 inches. Both this species and *hodgsoni* have white wing patches and are found in the same localities in North-East Burma ; in this species however the white patch is larger and contrasts strongly with the the blackish wing, and the grey crown and nape contrast with the blackish back, whereas in *hodgsoni* the wings and tail are lighter, the white wing patch is smaller and less conspicuous, and the crown and back are a uniform light grey. Females are less easily distinguished. In the N'Mai valley it is common along roadsides and in the *Homonoia* and *Salix* scrub of the river bed, but it also frequents bracken-clad and open country in the higher hills.
STATUS AND DISTRIBUTION. Breeds from south-eastern Siberia through Mongolia to Japan, and in winter migrates south to the greater part of the oriental region as far west as Assam. In Burma it has been recorded from the Chin Hills, North-East Burma (from plains level to about 7,000 feet), Central Burma, Thayetmyo (once), and the Shan States (where Wickham described it as an uncommon and shy bird arriving about November) ; it is common in Yunnan.

HODGSON'S REDSTART

Phoenicurus hodgsoni (Horsfield and Moore), BHUTAN–NEPAL

IDENTIFICATION. See under *auroreus*.
STATUS AND DISTRIBUTION. Breeds in southern and eastern Tibet and western China, and in winter migrates to the southern slopes of the Himalayas from Nepal to Yunnan. In Burma it has been recorded only from North-East Burma, where it has been obtained at plains level and is not uncommon in the higher hills.

BLACK REDSTART

Phoenicurus ochruros Gmelin, PERSIA
SUBSPECIES : *rufiventris* (Vieillot), BENGAL

IDENTIFICATION. Length 6 inches. Absence of a white wing-patch and more black on the under-parts (reaching the abdomen) distinguish this species. Whistler gives the call-note as *tsip*, frequently introducing the alarm-note *tucc-tucc* or *tititicc*.
STATUS AND DISTRIBUTION. Palaearctic, wintering over a wide area from the British Isles to western China. It is probably a winter visitor in small numbers to northern Burma, having been recorded from the Chin Hills, the Upper Chindwin, North-East Burma (where Stanford noticed them passing through in the first week of April), and the Shan States (where Wickham reports seeing them up to April) ; in Central Burma one was obtained by Smith at 600 feet in Mandalay district on the 31st March.

WHITE-CAPPED REDSTART

Phoenicurus leucocephalus Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)

IDENTIFICATION. Plate V, fig. 2, p. 116. Length 7½ inches. It is difficult to do justice in an illustration to this bird's lovely colouring, the shining white cap contrasting with the deep glossy black and the rich chestnut of the plumage. A bird of open streams and rivers in the higher hills and mountains.

VOICE. The loud plaintive *t-e-e-e-e* is clearly audible above the roar of the stream.

HABITS AND FOOD. Whistler, as usual, describes its habits both vividly and accurately. It is essentially a bird of the boulders amongst the rushing water of mountain torrents, a habitat it shares with the plumbeous redstart, but it is stronger in flight than that species and profits by the fact to pay hasty visits to wet, mossy cliffs, steep, marshy hillsides and similar situations ; it is, however, nearly always seen flying swiftly from bank to bank or fly-catching with little erratic flights from stone to stone. As with most redstarts, the tail is an expressive organ ; the bird beats it up and down continually from well above the line of the back down almost to the stone on which it is sitting, and the action is frequently accompanied by a low bow ; this is done with the feathers closed or only partly spread, but as the bird launches into flight or settles on a boulder the tail is spread into a fan, affording a glorious glimpse of the chestnut and black pattern.

NEST AND EGGS. Not described from Burma, but differ little from those of the plumbeous redstart.

STATUS AND DISTRIBUTION. Throughout the Himalayas to western China. It almost certainly breeds in the mountains of North-East Burma, where Cranbrook reports that it is fairly common in the Adung valley in July up to 14,000 feet, and Stanford saw pairs which appeared to be breeding in the Sadon–Kambaiti area in May ; elsewhere in Burma it is a common winter visitor to the foothills (excluding the Pegu Yomas) and higher hills as far south as the Karen Hills and Karenni.

PLUMBEOUS REDSTART

Phoenicurus fuliginosus Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)
SUBSPECIES : *fuliginosus* Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)

IDENTIFICATION. Length 5½ inches. Sexes differ. The male has the whole plumage blackish-slate except for the chestnut tail and tail-

coverts. The female is a grey bird and the only redstart that shows no chestnut on the tail, which is white with a large triangle of brown at the end. Young males resemble the female and retain this plumage for at least a year, and even breed in female dress. Never seen away from running water.

VOICE. The short song is rather sweet and jingling and may be heard occasionally in winter; it is uttered either from a rock in mid-stream or in the air, as the little bird slowly flies with rapidly vibrating wings in a short parabola from rock to rock.

HABITS AND FOOD. When travelling in the hills in winter I never cross a bridge over a river or a mountain burn without looking both upstream and down in the hope of seeing either this bird or the white-capped restart, and am not often disappointed. Sometimes one will see both species, but one will seldom see more than one pair of either, for although they do not seem to mind each other's presence they will not tolerate others of their own species; each pair maintains a well-defined territory, usually $\frac{1}{4}$–$\frac{1}{2}$ mile of stream, from which they drive off any intruders of their own kind. Like the white-capped redstart, this bird spends all its time on boulders in the middle of the rushing water, with occasional excursions to the trees and bushes along the banks. It flits from stone to stone and continually makes erratic fluttering darts into the air after a passing insect, or snatches a morsel from the water's edge; as it settles, the conspicuously coloured tail is slightly fanned and wagged up and down, the two movements being carried out simultaneously with a smooth rhythm and repeated at intervals until the next excursion into the air.

Cranbrook noted that it is still active in the evenings after other birds have gone to roost, and at this time of day has a habit of flying almost vertically up into the air some 15 or 20 feet and then swooping down on a large spiral to its original position. The love flight of the male, seen from February onwards, is very slow and fluttering, with the short, square tail spread out to its fullest extent.

NEST AND EGGS. Have been taken by Harington at Sinlum Kaba. Birds are paired in March and breed in April and May. The nest is built in any sort of hole or hollow near running water, and is always well concealed. It is a neat cup of green moss, sometimes mixed with roots and a few leaves, and lined with rootlets, fibres, wool or hair. The eggs, 3 to 5 in number, are thickly freckled with a pale, dingy yellowish or reddish-brown, the markings tending to form a cap at the larger end; they closely resemble eggs of the white-capped redstart except in size.

STATUS AND DISTRIBUTION. Throughout the Himalayas and through southern China and Yunnan to Formosa. It breeds in North-East Burma and is found throughout the hills in winter (there seem to be no definite records from the Chin Hills and Arakan Yomas, and it does not occur in the Pegu Yomas).

GRANDALA

Grandala coelicolor Hodgson, NEPAL
SUBSPECIES : *florentes* Bangs, TATSIENLU, S-W. SZECHWAN

IDENTIFICATION. Length 9 inches. Sexes differ. The male is a bright purple-blue, brighter still on the upper tail-coverts and darker on the wings and tail. The female is a brown bird with a white patch on the wing and pale streaks on the head and breast. Cranbrook observed a large flock at 6,000 feet in the Adung valley on the topmost branches of a high tree ; occasionally a dozen birds would leave the flock, circle round swooping up and down, then return to the main body and settle again. The crops contained fruits and seeds of *Vaccinium*.

STATUS AND DISTRIBUTION. Himalayas from Garhwal to western China. The birds seen by Cranbrook on the 13th February, which may have been a party on migration, are the only ones so far reported from Burma.

GOLDEN BUSH ROBIN

Tarsiger chrysaeus Hodgson, NEPAL
SUBSPECIES : *chrysaeus* Hodgson, NEPAL

IDENTIFICATION. Length 6 inches. Sexes differ, but the black-tipped black-centred orange tail is diagnostic for both. The male is a lovely golden-orange bird with black cheeks and ear-coverts and the upper-parts from forehead to lower back olive-green. The female is paler and duller, with the black replaced by olive-brown. The alarm-note is a most distinctive rattling churr, but for which this bird would rarely be noticed, for it hides the light of its lovely plumage under a bushel, skulking in thick undergrowth and is painfully shy ; it is fond of coming out to feed in the stubble of *taungyas* of the previous year, and one bird I used to watch near Htawgaw that had its winter quarters near a small *taungya* below the mule road always used to see me coming at least 50 yards away and fly off into thick cover on the far side, from which it refused to re-emerge however long I might sit up and wait for it. In summer it is a bird of high elevations, and was collected at 12,000 feet in forest in the Adung valley, while in the Nepal Himalayas I found it to be common in dwarf rhododendrons at 13,000–14,000 feet.

NEST AND EGGS. Not described from Burma. It builds in holes in the ground, making a compact saucer of moss and grass, lined with hair, wool, feathers, etc. The eggs are a pure pale blue.

STATUS AND DISTRIBUTION. Throughout the Himalayas to western China and Yunnan It winters in the higher hills and mountains of North-East Burma at 5,000–7,000 feet, and probably breeds at higher elevations. Stuart Baker

states that he received a nest from the Chin Hills at 7,000 feet. There is one record by Rippon from Taunggyi, probably a winter visitor.

ORANGE-FLANKED BUSH ROBIN

Tarsiger cyanurus (Pallas), YENESEI
SUBSPECIES: *cyanurus* (Pallas), YENESEI
rufilatus Hodgson, NEPAL
ussuriensis Stegman, MANCHURIA

IDENTIFICATION. Length 6 inches. Sexes differ. The male has the upper-parts deep blue, with a bright blue supercilium and rump; under-parts white with rufous flanks. In the female the blue is replaced by brown. Solitary along mule paths. In early April I noted a short but beautiful song, consisting of a musical phrase of 4 notes rising in pitch to the second note and then falling, in dense undergrowth on the Pyepat ridge. It is a typical robin in habits, flitting along mule paths or hopping under bushes, sometimes perching on them and hawking flies. The alarm-note is a grating sound, like a small clock being wound up.

NEST AND EGGS. Not described from Burma. It nests in a hole or hollow and the eggs are pure white, either unmarked or with a few specks at the larger end.

STATUS AND DISTRIBUTION. Breeds in Central Asia from the Urals to Japan, and through the Himalayas to Yunnan. The Burma population of *rufilatus* probably includes both residents and winter visitors, though no proof of breeding has yet been obtained. It occurs in the Chin Hills (up to the middle of May on Mt. Victoria), North-East Burma (where it is very common in winter above 3,000 feet and was seen at 12,000 feet in the Adung valley in October), and the Shan States (where it is fairly common in winter but is not seen after April).

WHITE-BROWED BUSH ROBIN

Tarsiger indicus Vieillot, DARJEELING
SUBSPECIES: *yunnanensis* Rothschild, LIKIANG Mts.

IDENTIFICATION. Length 6 inches. Sexes differ. Distinguished from the preceding species by absence of rufous on the flanks and by a marked white supercilium. A shy bird of the cane jungles near and above the limit of tree growth; it utters a very distinctive churring titter or deep nightingale-like churr, and also a double note *tuit-tuit*; a typical robin in habits.

NEST AND EGGS. Not described from Burma. Breeds in Assam at 5,000 feet in pine forests.

STATUS AND DISTRIBUTION. Himalayas from Garhwal to Yunnan. It is not uncommon above 9,000 feet in North-East Burma in winter, but has not been recorded elsewhere.

RUFOUS-BELLIED BUSH ROBIN

Tarsiger hyperythrus (Blyth), DARJEELING

IDENTIFICATION. Length 6 inches. Sexes differ. The male is dull blue above and rufous below, with a black patch through the eye; the female is a rich

ochre-brown, paler on the throat, with a smoky-blue rump and tail. Solitary along mule roads.

STATUS AND DISTRIBUTION. Himalayas from Sikkim eastwards, but not Yunnan, wintering in Assam and northern Burma. I found it to be common along mule roads in the far north, especially along the Taron and Tama valleys, in February and it seems to replace *cyanurus* in this area; all those seen were single birds in female plumage. I have also seen two males in adult plumage and a female at 4,500–5,000 feet along the Htawgaw–Hpare road in February, but it seems to be rare so far south. There are no other records, except for birds noted by Baillie west of the Chindwin that may have been of this species.

WHITE-TAILED BLUE ROBIN

Myiomela leucura (Hodgson), NEPAL
SUBSPECIES: *leucura* (Hodgson), NEPAL

IDENTIFICATION. Length 7 inches. Sexes differ, but the triangular white patch at the tip of the tail is diagnostic for both. The male is bluish-black, with a supercilium and a patch on the wing brighter blue. The female is reddish-brown with a rusty ring round the eye. It is said to have a sweet and powerful song in the breeding season. This is a bird of evergreen forest in the foothills and higher hills, often seen near running water; it is less of a ground bird than the bush robins and more arboreal, perching freely on bushes and trees.

NEST AND EGGS. Not described from Burma except that some individuals must breed as late as September, a bird obtained on the 1st January not having completed its full post-breeding moult. In India the nest is either domed or cup-shaped and usually built under a ledge of rock or a fallen tree.

STATUS AND DISTRIBUTION. Himalayas from Simla to Yunnan, and through Burma to northern Siam. It is common in the evergreen forests of northern Burma and local elsewhere, with a considerable altitudinal range (from 1,000 feet in the Mandalay district to 7,500 feet on Nattaung) but has not been observed in the Pegu Yomas, nor south of Mt. Mulayit in Tenasserim.

MAGPIE-ROBIN

Copsychus saularis (Linnaeus), BENGAL
SUBSPECIES: *saularis* (Linnaeus), BENGAL
erimelas Oberholser, KAWKAREIK, AMHERST Dist.
musicus Raffles, SUMATRA

LOCAL NAMES. Burmese: *tha-beik-lwe*; Chinghpaw: *n'rang-hpang-u* or *shawun-u*.

IDENTIFICATION. Plate V, fig. 6, p. 116. Length 9 inches. The female is a duller version of the male. Common and familiar bird of gardens.

VOICE. The male is one of the best songsters in a land where singing birds are somewhat scarce. The alarm-note is a long-drawn hissing

ch-e-e-e-e, and it also utters a loud chat-like note which frequently betrays its presence in the undergrowth; another note is *hweep-hweep*. A bird has been observed imitating persistently the *pretty-dear* call of the spotted babbler.

HABITS AND FOOD. The magpie-robin is one of the most familiar birds all over Burma; almost every garden, compound, cluster of village huts and patch of cultivation has its pair. It is not confined to human habitations and may be seen in the more open parts of the teak forests, especially where there are clearings or plantations, but it avoids both dense forest and the open, bare paddy plains; it is found right down to the sea in the scrub-jungle along tidal creeks, and in northern Burma it goes up into the hills in the bamboo and *bizat* along the mule tracks. It is a confiding bird and never tires of performing the tail-trick; the tail is lowered and expanded into a fan, then closed and jerked up again over the back, past the vertical.

NEST AND EGGS. Breeds from March to July. The nest is built in the roof of a house, in a hole in a tree, bank or wall, or in a bamboo clump; it is made of roots, grasses, fibres, and feathers, and may be bulky or little more than a pad; it is always very roughly and loosely put together. The eggs, 3 to 5 in number, are green with streaks and mottlings of brownish-red, usually dense and tending to collect at the larger end.

STATUS AND DISTRIBUTION. Widespread in the oriental region and a common resident throughout Burma in the plains, foothills, and higher hills to 5,500 feet (Bernardmyo).

WHITE-RUMPED SHAMA

Copsychus malabaricus Scopoli, MALABAR
SUBSPECIES: *indicus* Stuart Baker, BHUTAN DUARS
interpositus Robinson and Kloss, ANNAM

LOCAL NAME. Burmese: *taw-tha tha-beik-lwe*.

IDENTIFICATION. Plate V, fig. 5, p. 116. Length 11 inches., including a long tail of 6 inches. The female is a duller version of the male. As the Burmese name indicates, this is the forest cousin of the magpie-robin.

VOICE. The shama is well-known as one of the famous singing birds of India; the song is loud and beautiful with a varied range of notes. A chat-like note like that of the magpie-robin is also uttered.

HABITS AND FOOD. This is a typical bird of the teak forests, but owing to its shyness and its habit of keeping to the undergrowth it

is not generally known, in spite of its handsome plumage and beautiful song. In the more open parts of the forest its habitat overlaps to some extent with that of the magpie-robin. It feeds mostly on the ground. At dusk the male has a habit of flying across an open space and making a peculiar clicking noise, apparently with the wings, like that made by suddenly pulling taut a piece of narrow tape held in the hands (Davison).

NEST AND EGGS. Breeds from March to May. Nest and eggs resemble those of the magpie-robin except that the eggs are usually more densely spotted and therefore appear browner.

STATUS AND DISTRIBUTION. Widespread in the oriental region and a common resident in Burma throughout the forests of the foothills, preferring the moister types. So far as its status in the higher hills is concerned, all that can be said for certain is that it occurs round Maymyo ; it is listed by Wickham, but no elevations are given, and Stanford only observed it low down. Unlike the magpie-robin it has not been recorded from Yunnan.

Sub-family SAXICOLINAE

CHATS

The chats are easily recognised in the field by their peculiar habit of flirting the tail and at the same time flicking it open fanwise for a moment ; they also bob and flick their wings. They perch chiefly on the tops of bushes, on trees, telegraph wires, rocks, and similar conspicuous positions. They fly low with rapidly moving wings and jerky flight. On the ground they move with rapid hops, and at night they roost on the ground amongst grass and bushes.

PIED STONE CHAT

Saxicola caprata Linnaeus, LUZON, PHILIPPINE IS.
SUBSPECIES : *burmanica* Stuart Baker, PEGU

LOCAL NAME. Burmese : *hnget-kya.*

IDENTIFICATION. Plate IV, fig. 7, p. 92. Length 5½ inches. Sexes differ. In good plumage the male affords a fine contrast of deep jet black and dazzling white ; in flight the pure white upper tail-coverts and lower abdomen give him a more pied appearance. The female is dark brown with a rusty patch at the base of the tail ; the young male is like the female, but much darker, boldly streaked with very

PLATE V

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PLATE V

dark brown, and with the white wing-patch well developed. A conspicuous bird of open country, perching on tall grasses and the tops of bushes.

VOICE. The ordinary note is an insistent hard *tsak-tsak*, as if two pebbles were being struck together (hence the English name), a type of note common to most chats. It also utters a musical plaintive *hweet*, often combined with the last note, *hwee-tsak-tsak*. These notes are uttered at the least provocation, the birds being fussy and suspicious. It also has a short but very sweet and pleasing song.

HABITS AND FOOD. This bird is found in open country and scrub-jungle of all types, though unlike the next species it avoids the open paddy plains and it is never seen in high forest. It takes most of its food from the ground, flying down from some favourite vantage point such as the top of a bush or a telegraph wire, and returning after the capture of each morsel with the self-satisfied spread and flick of the tail that is typical of the genus ; now and then it captures flying insects on the wing. It is frequently seen perched on rushes in jheels in the Shwebo district (Roseveare).

NEST AND EGGS. Breeds more in the hills than in the plains, from March to May. According to Wickham, " whereas some nests are beautifully hidden under a bush, like our English stone chat, an empty tin or the hollow of a bamboo lying out in the open on the ground may be utilised ; again a favourite site is a hole in a bank, the nest just placed in the edge or under a clod. I have seen a nest actually down a hole in the ground and one also in a small grassy hollow in a field, absolutely open and exposed to the weather. I suppose I have taken more cuckoo's (*C. canorus*) eggs out of the nests of this species than of any other bird. One egg in the clutch is, like the house sparrow, as a rule different in coloration to the others." Holes made by the hoofs of cattle are another favourite site. The eggs, 3 to 5 in number, are bluish or pinkish-white in ground-colour with freckles and blotches of reddish-brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending westwards to Transcaspia and Persia ; Forrest did not collect it in western Yunnan, though it occurs in Mengtsz in winter. In northern Burma it has not been observed in the Hukawng valley or the Kachin hills, only in the Myitkyina and Bhamo plains. In the eastern hills of Burma it is ubiquitous in open country, from Mogok all over the Shan plateau and down to the Karen Hills and Karenni, but I noticed a great influx of these birds into the tea estate at Thandaung in April and many birds probably spend part of the year in

the plains, but go up to the hills to breed. It is common throughout the uplands of Central Burma west of Meiktila in late August, and is common in the plains of the drier northern half of the Yamethin district, but scarce in the southern and moister parts of the Sittang valley. Stanford records it as common over the whole Irrawadi plain. Absent in southern Tenasserim.

RUFOUS-BREASTED STONE CHAT

Saxicola torquata (Linnaeus), CAPE OF GOOD HOPE
SUBSPECIES : *stejnegeri* (Parrot), N. JAPAN
yunnanensis (La Touche), S-E. YUNNAN

IDENTIFICATION. Plate IV, fig. 9, p. 92. Length 5 inches. Sexes differ. The male is unmistakable. The female is a small, dull brown bird, similar to the female of the preceding species, but rather paler in colour with the rusty rump-patch less marked, and with traces of a white shoulder-patch. In open country in plains and hills alike.
VOICE. The ordinary notes are those of the British stone chat. I cannot discover that any naturalist has heard the song in Burma.
HABITS AND FOOD. The habits of the British stone chat are too well known to need description. In Burma it is a bird of open country and the paddy plains.
NEST AND EGGS. Not described from Burma, but paired birds of the Yunnan subspecies have been observed apparently breeding at 7,000 feet near the Panwa pass, and Harington thought it bred in the Bhamo hills.
STATUS AND DISTRIBUTION. Palaearctic and ethiopian species. The Yunnan subspecies is probably resident in the mountains of the Yunnan frontier in North-East Burma ; otherwise this species is a winter visitor to Burma and is found throughout the plains in open country from the 18th August to about mid-May. It is found on the Shan plateau, but Wickham's account suggests that it is less common there than the pied stone chat.

[NOTE.—There is no evidence that *indica* Blyth and *przewalskii* PLESKE occur in Burma as stated in *F.B.I.*, vol. ii, pp. 29–30.]

WHITE-TAILED STONE CHAT

Saxicola leucura Blyth, UPPER SCINDE

IDENTIFICATION. The same size as *torquata*, but the outer tail-feathers appear mainly white, and the absence of rufous on the abdomen of the male is also noticeable.

VOICE. Has not been differentiated from that of *torquata*.

HABITS AND FOOD. It frequents similar habitats to the striated marsh warbler, and is typically a bird of extensive areas of *kaing* grass, but also frequents island crops, such as maize, peas, tomatoes, and tobacco that are grown along the banks and on the islands of the Irrawaddy in the low-water season. It is usually seen perched on stalks of *kaing* grass and continually dropping down to the ground to catch insects.

NEST AND EGGS. Harington found a nest with hard-set eggs on the 20th February, and Roseveare found another with young on the 1st March, so that it seems to be an early breeder; the latter nest was at the end of a tunnel at least a foot long in a heap of straw on an island of the Irrawaddy and was unlined; the usual type of nest is a cup of grass and leaves lined with hair or fur, and built in a swamp of *kaing* grass or *thetke*. The eggs, 3 to 5 in number, are pale blue with freckles of light reddish-brown, on some eggs forming a well-defined ring or cap at the larger end.

STATUS AND DISTRIBUTION. Throughout the Himalayan foothills and into Burma, where it has been recorded from Bhamo, the Plains of Southern Burma, Karen Hills (Papun), the Shan States, and Karenni, and is locally common in suitable areas.

[NOTE.—According to Stuart Baker (*Nidf. Ind. Birds*, vol. ii, p. 21) this form breeds in India in the same localities and at the same elevations as *torquata* and therefore cannot be treated as a subspecies of that form.]

JERDON'S BUSH CHAT

Saxicola jerdoni Blyth, PURNEA, BIHAR

IDENTIFICATION. Plate IV, fig. 8, p. 92. Length 6 inches. The male is a beautiful bird with blue-black upper-parts and pure white under-parts. The female has the upper-parts brown, the chin and throat white, and the remaining under-parts tawny. The young male is like the female, but darker and broadly marked above and on the breast with dark edges to the feathers. A bird of *kaing* grass.

VOICE. This seems to be a very silent bird, but the male sometimes utters a low *chit-churr, chit-churr*.

HABITS AND FOOD. In Southern Burma this is a bird of the high *kaing* grass and *thetke* areas of the plains, especially of the drainage of the Myitmaka; in the north, while it also frequents *kaing* grass, it seems particularly partial to a form of wild briar (*Rosa bracteata*, which the Shans call *yezi*) that grows on the sandy islands of the

larger river valleys, and in this type of jungle it can be looked for with certainty.

NEST AND EGGS. The only nest described from Burma seems to be one taken by Harington on the 21st May at Bhamo. The nest is usually built near the ground in thick grass and is very hard to find; it is a compact, stout little cup of roots and fibres lined with fine grass or feathers. The eggs, 3 or 4 (rarely 2) in number, are bright blue.

STATUS AND DISTRIBUTION. From eastern Bihar and Bengal to Burma and there is one record from Yunnan. In Burma it is a local bird of the plains from Myitkyina and the Upper Chindwin through Central Burma to Southern Burma.

GREY BUSH CHAT

Saxicola ferrea (Gray), NEPAL (= *haringtoni* Hartert)

IDENTIFICATION. Plate IV, fig. 10, p. 92. Length 6 inches. The female has a less conspicuous black eye-stripe and is rufous-brown in colour, paler below, with a chestnut tail. The young male resembles the female. In scrub and open forest in the hills.

VOICE. The male has a rather pretty but unsatisfactory little song, *titheratu-chak-lew-titatit*, always just that length, but with a few variants, and with a rising inflection that ends suddenly. Its alarm-note has aptly been described as " geezing," recalling the winding of a watch.

HABITS AND FOOD. This is a familiar bird of open country and open forest in the higher hills, and is fond of gardens and the immediate neighbourhood of man. It has the family habit of perching in conspicuous positions on the tops of bushes, and unlike most other chats it often perches in trees. In the Kachin hills it is commonly seen in the bamboo jungle along mule roads, and is rather shy.

NEST AND EGGS. Described from several parts of Burma, the nests usually being found in roadside banks and containing pale blue or greenish-blue eggs, and often a cuckoo's (*C. canorus*) egg as well.

STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan and China. In Burma it is a common resident throughout the higher hills, excluding Tenasserim, but its status at low elevations needs to be worked out. In northern Burma it does not seem to come down to the plains in winter (Stanford), but in Mandalay district a bird was obtained in remote forest at 800 feet in February (Smith), and it has been observed in the plains of Minbu district in June and August (Roseveare).

Sub-family ENICURINAE

FORKTAILS

The forktails might easily be mistaken for wagtails; they are found only on small streams with perennial, running water, and they are black and white in colour with long tails, which they incessantly sway up and down. In structure, however, they are very different, and this accounts for the fact that they are not even classified in the same family.

All the forktails have much the same habits, which have been accurately described by Whistler. They walk sedately over the stones along the margin of the water, feeding with a quick, pecking motion rather similar to that of a chicken, and on rare occasions they may disappear completely under water like a dipper. They are extremely restless birds, frequently and unexpectedly turning at right angles or from side to side, and now and again advancing with little tripping runs. The flight is fairly fast, but dipping and singularly graceful, and when disturbed they flit ahead for 100 yards or so, uttering a sharp note (which Davison compares with the noise of the stopper being turned sharply in the neck of a glass bottle), before settling again by the water; this is repeated several times till one reaches the limit of their territory, when they leave the stream and by slipping through the forest at the side regain the water lower down, where they again start feeding. Occasionally they may perch on the bough of a tree for a few moments. They feed on insects obtained from the water and the stream bed.

The site chosen for the nest is always very damp, usually on the bank of a stream, but sometimes a short distance away; the nest is generally built on a ledge of rock, between boulders, amongst the roots of a tree, or even in a hollow under a bush. It is a very neat but massive cup of living green moss, mixed with roots and some mud, and is nearly always wet and heavy; it is usually lined with several layers of skeletonised leaves, rarely with roots.

SPOTTED FORKTAIL

Enicurus maculatus Vigors, SIMLA
SUBSPECIES: *guttatus* Gould, SIKKIM

IDENTIFICATION. Length 11 inches, including a long deeply forked tail of 6 inches. White spots on the back distinguish it from other forktails.

VOICE. The alarm-note is a screech so like that of the whistling thrush that it is not easy to distinguish the two, and is usually the first intimation of the bird's presence as it dashes off round the corner of some winding jungle stream.

HABITS AND FOOD. The ecological niche of this particular forktail, in which it is nearly always seen in pairs, and one that it shares at lower elevations with the white-crowned forktail, is undoubtedly the smallest of streams in dense evergreen hill forest, often a mere trickle from which one could hardly fill a kettle, sometimes a bit larger, but rarely a stream too big to wade with ease.

NEST AND EGGS. Wickham records obtaining fresh eggs on the 28th April in the Chin Hills, from a nest on a ledge of rock on a road-side cutting. The eggs of this species are variable in ground-colour, but marked with numerous freckles and spots of reddish-brown.

STATUS AND DISTRIBUTION. Throughout the Himalayas to China and Yunnan, and through Burma to Siam. In Burma it is found throughout the western hills, and extends down the eastern hills to the Southern Shan States. It seems to be confined to elevations above 3,000 feet, and I found it to be common in the Panwa pass area from 6,000–8,000 feet.

SLATY-BACKED FORKTAIL

Enicurus schistaceus (Hodgson), NEPAL

IDENTIFICATION. Length 8 inches, including a tail of 5 inches. Distinguished from other forktails by the grey back.

VOICE. The ordinary note is a single high-pitched note.

HABITS AND FOOD. Wickham describes its habitat correctly when he states that it prefers the larger streams in the valleys and not the small streams up in the hills that the spotted forktail delights in. It is a bird of fair-sized streams flowing through *taungyas* and open country, though it will follow up such streams into dense evergreen forest.

NEST AND EGGS. Wickham found a nest in the southern Chin Hills early in April, in the hollow stump of a tree leaning over a stream, and others have been taken in Tenasserim. The eggs, 3 or 4 in number, are of two types: one resembles a small washed-out egg of the preceding species and the other is pure white with bold spots of reddish-brown.

STATUS AND DISTRIBUTION. Himalayas from Kumaon eastwards to southern China and Yunnan. It is found throughout the higher hills

of Burma, its ceiling being about 7,000 feet, and probably throughout the foothills of northern Burma, having been obtained both in Putao and in the Upper Chindwin at low elevations.

BLACK-BACKED FORKTAIL

Enicurus immaculatus (Hodgson), NEPAL

IDENTIFICATION. Plate V, fig. 1, p. 116. Length 10 inches. The unspotted black back distinguishes this species.

VOICE. The usual call is a two-note whistle, the second note much higher in pitch than the first and with a sharp quality as when a man whistles by inhaling; sometimes the whistle is confined to the first note only. When not alarmed it may utter a short song from a rock.

HABITS AND FOOD. This is a forktail of low elevations and a typical bird of the teak forests wherever there are streams with perennial water.

NEST AND EGGS. Have been described from several areas in Burma. Some nests found in the Pegu Yomas were built into hollows in banks, rocks, tree-roots, etc., in sites similar to those used by the grey wagtail in Britain; they were very compact and solidly built, with thick sides made of moss outside, and lined with skeletonised leaves. The eggs are variable in colour.

STATUS AND DISTRIBUTION. Himalayas from Garhwal to Assam, not in Yunnan, and through Burma to Siam. It is resident throughout Burma, excluding Tenasserim, in the forest streams of the foothills; it is also listed by Wickham from the Chin Hills and Shan States, but no elevations are given; near Maymyo it has been obtained at 2,500 feet.

WHITE-CROWNED FORKTAIL

Enicurus leschenaulti Vieillot, JAVA

SUBSPECIES: *indicus* Hartert, MARGHERITA, ASSAM (= *sinensis* Gould)
frontalis Blyth, MALAYA

IDENTIFICATION. Length of *indicus* 11 inches (including a tail of 6 inches) and of *frontalis* 9 inches (including a tail of only 3 inches). This is the largest and blackest forktail, recognised by the white fore-crown and black breast.

VOICE. Like *maculatus*, this bird has a harsh screech similar to that of the whistling thrush, and as all three may be found on the same stream the unfortunate observer never quite knows which bird to expect.

HABITS AND FOOD. "It frequents, by preference, the tiny forest rivulets, and I have even found them in dark rocky ravines where there was hardly any water beyond a few small shallow pools amongst the rocks here and there. It keeps to the densest and darkest parts of the forest" (Davison). I have only met with it on rocky stre[illegible]ail, in dense evergreen forest on the upper slopes of Nattaung, a[illegible]at seems to be a bird of evergreen forest everywhere.

NEST AND EGGS. The only nest described from Burma seems to be one found by Cook at Thandaung in April. The nest is larger, and the eggs more richly coloured, than those of other forktails.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Sikkim. Stanford describes it as common in the hills west of the Mali valley from 1,000 feet upwards in winter, but east of the N'Mai neither he nor I have seen it. The Vernay-Hopwood expedition obtained three at low elevations in the Upper Chindwin. It has also been recorded from the Chin Hills, Shan States, Thandaung, Karenni (common on Nattaung above 3,500 feet), and Tenasserim.

CHESTNUT-BACKED FORKTAIL

Enicurus ruficapillus (Temminck), SUMATRA

IDENTIFICATION. Length 8 inches, including a comparatively short tail of 3 inches. Sexes differ but both have the crown and nape chestnut; in the female the chestnut extends over most of the back and on to the wing-coverts. The note is shriller or more high-pitched than that of *immaculatus*.

NEST AND EGGS. A nest found by Smith on the 25th February near the head-waters of the Bankachon stream was built under a ledge of rock; it was very neatly and compactly made of green moss outside, then black rootlets, with an inner cup of skeletonised leaves. The eggs, 2 in number, were pure white and slightly blotched with reddish-brown and with underlying markings of purplish-red.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Mt. Nwalabo; it seems to be the common forktail of the Victoria Point subdivision (Smith).

LITTLE FORKTAIL

Enicurus scouleri (Vigors), HIMALAYAS
SUBSPECIES: *scouleri* (Vigors), HIMALAYAS

IDENTIFICATION. Length 5 inches; a black and white forktail readily distinguished by its small size and short tail, which it opens and shuts with a smooth wavy motion very like that of the plumbeous redstart, and in its habits also it resembles the water-haunting redstarts rather than the larger forktails.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan. Not uncommon in northern Burma in winter and found at plains level, but certainly commoner at medium elevations. I once saw three together beside the N'Mai Hka, at about 2,500 feet, where the whole river goes boiling down one of its terrific rapids, but have seen them more often on small streams, especially near waterfalls. It is uncertain whether it is resident or only a winter visitor, and it is not clear from Wickham's notes whether or not he observed them in the Shan States.

Sub-family TURDINAE

THRUSHES

The true thrushes differ from the preceding sub-families principally in their larger size, in often being gregarious in winter, and in eating fruit as well as insects, berries forming a considerable portion of their diet. They feed a great deal on the ground and their long legs enable them to hop with speed and facility. Most of the Burma thrushes are migratory, but we still know very little about their status and movements; the few species that are resident move vertically with the seasons, and as a rule cover a wide extent of country. A Burmese name used for thrushes generally is *mye-lu-hnget*.

EUROPEAN BLACKBIRD

Turdus merula Linnaeus, SWEDEN
SUBSPECIES: *albocinctus* Royle, HIMALAYAS

IDENTIFICATION. Length 10½ inches. Sexes differ. Like the familiar British blackbird but the male has the neck, upper-back, centre of chin and throat white and the female ashy-white.
STATUS AND DISTRIBUTION. Palaearctic. This form breeds at high elevations in the Himalayas and has been recorded once in the Upper Chindwin on the 11th February, in evergreen high forest along the Hukawng valley road. It has not been recorded from Yunnan.

[NOTE.—Some authorities treat this bird as a separate species, the white-collared blackbird, and not as a subspecies of *merula*.]

GREY-WINGED BLACKBIRD

Turdus boulboul (Latham), DARJEELING
SUBSPECIES: *boulboul* (Latham), DARJEELING

IDENTIFICATION. Length 11 inches. Sexes differ. A typical blackbird, distinguished by a patch on the wing, light grey in the male and ashy-brown in the female.
STATUS AND DISTRIBUTION. Throughout the Himalayas as far west as Murree;

once in Yunnan (Mengtsz in January). There are single records from the Arakan Yomas (Mears), Upper Chindwin (seen by Baillie), Sadon (Stanford), Sinlum Kaba (where I have seen it), and Yatsawk, Southern Shan States (one obtained and others seen by Bingham and Thompson). No one has yet succeeded in proving that it breeds anywhere in Burma.

GREY-HEADED THRUSH

Turdus rubrocanus Gray, NEPAL
SUBSPECIES : *rubrocanus* Gray, NEPAL
gouldi Verreaux, W. SZECHWAN

IDENTIFICATION. Length 11 inches. Sexes differ, the female being duller. In the field the red-chestnut appearance of this bird is diagnostic.
STATUS AND DISTRIBUTION. Himalayas to eastern Tibet and Yunnan, where it probably breeds on the Likiang range. In Burma it is a common and characteristic bird of the higher hills along the Yunnan frontier, and has also been recorded from Mt. Victoria, the Hukawng valley, and the Northern Shan States, but no one has succeeded in proving that it breeds anywhere in Burma.

DUSKY THRUSH

Turdus naumanni Temminck, E. EUROPE
SUBSPECIES : *eunomus* Temminck, JAPAN

IDENTIFICATION. Length 9 inches. Sexes differ, the female being paler and duller. Buff supercilium and black on the breast are noticeable ; rump and secondaries chestnut, throat white speckled with black.
STATUS AND DISTRIBUTION. An eastern palaearctic species, migrating south in winter to northern India, Burma and Yunnan ; once in the British Isles. It is probably a winter visitor to Burma in small numbers, having been recorded from the Tamai valley, Sumprabum, and Hpimaw in North-East Burma and once from the Sittang plain.

[NOTE.—A specimen obtained at Sumprabum was intermediate between *naumanni* and *eunomus*.]

[NOTE.—The PALE THRUSH, *Turdus pallidus* Gmelin, was recorded by Oates from Karenni and Mt. Mulayit, but the birds in question are *feae* (Ticehurst, *Ibis* 1939, p. 350).]

RED-THROATED THRUSH

Turdus ruficollis Pallas, DAURIA
SUBSPECIES : *ruficollis* Pallas, DAURIA
atrogularis Jarocki, POLAND

IDENTIFICATION. Length 9½ inches. Nearly always in flocks with a characteristic *tac-tac* note, both subspecies often going about together. In winter rather nondescript ashy-brown birds with a pale eyebrow ; the male of *ruficollis* in good plumage has the throat and breast chestnut, and the tail rufous with a triangular black tip, whereas *atrogularis* has a black throat and

breast and no chestnut in the tail. The alarm-note is a rather harsh *squeetch* not unlike the alarm chuckle of the European blackbird but much softer. The flocks feed on the ground in open park-like country, on snails, beetles and larvae, and fly up into trees when disturbed. At low elevations they seem partial to *letpan* and *ficus* trees in flower, feeding on them a good deal and on the grassy patches under them.

STATUS AND DISTRIBUTION. Breeds in Central Asia and Siberia, migrating south in winter to India, Burma, Yunnan, and west to the British Isles (occasional). In Burma *ruficollis* is the commoner form ; most of the records are in March, but in the first week of February I found considerable numbers in the Panwa pass area, and they did not move during the week I was there, so they probably spend the winter there ; there are no published records of this form outside North-East Burma, whereas *atrogularis* has been obtained in the Southern Shan States (Bingham), Lower Chindwin (Mears), and North-East Burma. Both forms evidently pass through northern Burma in March. In northern Yunnan *ruficollis* is common in winter but the only record of *atrogularis* is one obtained on the Likiang range by Rock.

[NOTE.—TICKELL'S THRUSH, *Turdus unicolor* Tickell, has not been recorded from Burma, but is found in eastern Assam and in Manipur and may be found some day in northern Burma. It is a quiet dull-coloured thrush, which feeds on the ground and flies up into trees when disturbed.]

BLACK-BREASTED THRUSH

Turdus dissimilis Blyth, LOWER BENGAL AND HIMALAYAS

IDENTIFICATION. Length 9 inches. Sexes differ. A small dark thrush with reddish-orange lower breast, flanks and axillaries. The male has the whole head, neck and upper breast black ; the female has the throat and upper breast whitish heavily streaked with brown or black. A shy bird of evergreen forest. The alarm-note is extremely sharp and echoing, *töck, töck, töck, töck* (Heinrich).

NEST AND EGGS. Have been taken in the Chin Hills and Shan States. It breeds from April to early June. The nest is usually built on a small tree or shrub in evergreen forest, but holes in banks are also used ; it is made chiefly of green moss. The eggs, 3 or 4 in number, are very variable in colour.

STATUS AND DISTRIBUTION. This species has a small range from Assam through Burma to Yunnan. Hopwood and Mackenzie reported it as a common breeding bird of the Chin Hills, and it is also found at Sinlum Kaba (where I have seen it) and in the Shan States ; in the Hukawng valley Stanford met with it at low elevations in February and thought it might prove to be resident there.

DARK THRUSH

Turdus obscurus Gmelin, LAKE BAIKAL

SUBSPECIES : *obscurus* Gmelin, LAKE BAIKAL (= *subobscurus* Salvadori)

IDENTIFICATION. Length 10 inches. Sexes differ. The male has a plain greenish back, a whitish eyestreak, a white patch beneath the eye, upper

breast and flanks chestnut, remaining under-parts white. The female differs in having the throat and foreneck white streaked with dark brown. It utters a thin pipit-like *zip-zip* when disturbed. It may be seen solitary along mule paths or in parties, which fly off very swiftly with a straight flight, in pine and oak forests in the hills, and I have seen a solitary bird in the bed of a sandy stream in the Pegu Yomas, where the stream ran through moist teak forests; this particular bird eventually flew up into a tree and sat there motionless for a long time although I was watching it.

STATUS AND DISTRIBUTION. Breeds in Siberia and in winter visits the greater part of the oriental region as far west as Nepal. In Burma it is a regular winter visitor to all parts of the country in small numbers; the Vernay-Cutting expedition found many, which may have been on passage, in the latter half of November at a low elevation up the N'Mai valley along the mule road, and Davison states that they all leave Tenasserim before the end of March.

FEA'S THRUSH

Turdus feae (Salvadori), MT. MULAYIT

IDENTIFICATION. Length 10 inches. Sexes differ. The male is brown above and grey below, with a supercilium and a patch under the eye white; the female has the chin and throat speckled with brown.

STATUS AND DISTRIBUTION. Breeds in the mountains north of Pekin, and is an irregular winter visitor to Burma, where it has been recorded from Mt. Victoria, the Southern Shan States, Karenni and Tenasserim.

[NOTE.—The PIED GROUND THRUSH, *Geokichla wardi* Jerdon, has not been recorded from Burma but is found all along the Himalayas to the extreme east of Assam and winters in southern India. The male is pied black and white, and the female is olive-brown above and white below, heavily barred with blackish.]

SIBERIAN GROUND THRUSH

Geokichla sibirica (Pallas), DAURIA
SUBSPECIES: *sibirica* (Pallas), DAURIA
davisoni Hume, MT. MULAYIT

IDENTIFICATION. Length 9 inches. Sexes differ. The adult male is deep blue-black with a white tip to the outer tail-feathers, a white eyebrow, and the axillaries and under tail-coverts mostly white. The female is brown instead of black, and has a narrow buff supercilium, and the under-parts mostly buff. The young male has the slaty-blue upper-parts of the adult male but otherwise resembles the female. A forest bird, usually in parties, which number few or many individuals.

STATUS AND DISTRIBUTION. Breeds in central Siberia and Japan, migrating south in winter to south-eastern Asia and western Europe. The Siberian race has been obtained at Maymyo, and both have been recorded from Karenni and Tenasserim; they seem to be winter visitors in small numbers to south-eastern Burma. Davison found them common in flocks (up to 60 birds) round the foot of Mt. Nwalabo in April.

ORANGE-HEADED GROUND THRUSH

Geokichla citrina (Latham), CACHAR
SUBSPECIES: *citrina* (Latham), CACHAR
innotata Blyth, MALAYA
gibson-hilli Deignan, PENINSULAR SIAM

IDENTIFICATION. Length 9 inches. Sexes differ. The male has the whole head and under-parts orange-chestnut, except for the under tail-coverts, which are white; upper-parts dark bluish-grey with a conspicuous white wing-spot. The female has olive-brown upper-parts. A ground bird of evergreen forest.

VOICE. The male in the breeding season is said to have a pleasant song. The alarm-note is described as a peculiar, loud whistle, something like the screeching of a slate pencil.

HABITS AND FOOD. This thrush is essentially a bird of evergreen and moist forests, whether in the foothills or higher hills, and it prefers those parts where the undergrowth is dense, as in plantations and bamboo thickets. It rummages amongst leaves and fallen litter for slugs, snails, insects, etc., and when disturbed it flies up to a branch and sits there silent and motionless.

NEST AND EGGS. Described by Oates from Pegu district, where it breeds in May and June. The nest is usually built in a small tree or bush at no great height from the ground; it is a massive cup of roots and strips of soft bark, lined with moss and fern-roots. The eggs, 3 or 4 (rarely 5) in number, differ from all other thrushes' eggs in their glossy surface and hard, close texture and are variable in colour and markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region. In Burma it is a rather scarce resident throughout the evergreen forests of the foothills and higher hills.

SMALL-BILLED MOUNTAIN THRUSH

Zoothera dauma (Latham), KASHMIR
SUBSPECIES: *dauma* (Latham), KASHMIR
aurea (Holandre), METZ, EUROPE

IDENTIFICATION. Length 10½ inches. A brown bird, paler below, with a bold pattern of crescentic black markings; a broad black band on the under side of the wing, with a white band behind it, is conspicuous in flight; there are white tips to the tail-feathers.

VOICE. It is a silent bird in Burma and no one seems to have recorded its note.

HABITS AND FOOD. A shy and solitary bird of evergreen forest, both in the foothills and higher hills, and most often seen along mule tracks or in glades, feeding on the ground and flying up into a bush or tree when disturbed.

NEST AND EGGS. Not described from Burma, but breeds on Mt. Victoria.

STATUS AND DISTRIBUTION. The form *aurea*, usually known as White's thrush, breeds in the eastern palaearctic region and is an irregular winter visitor to Burma, having been recorded from Myitkyina town, the Shan States, and Karenni (?); it has also been obtained in Yunnan. The form *dauma* breeds in the Himalayas, and Heinrich found it breeding high up on Mt. Victoria; it probably breeds elsewhere in the mountains of Burma; it has been recorded from the Arakan Yomas, Chin Hills, Upper Chindwin, North-East Burma, Wuntho (Katha district), Southern Burma (Pegu Yomas and Sittang plain), the Southern Shan States, Karenni, and Tenasserim, and is not uncommon in winter.

LONG-TAILED MOUNTAIN THRUSH

Zoothera dixoni Seebohm, NEPAL

IDENTIFICATION. Length 11 inches. Differs from *dauma* in having plain brown upper-parts. Typically a bird of small streams in hill evergreen, where it feeds in the shadiest spots and flies up to a branch when disturbed.

STATUS AND DISTRIBUTION. The breeding range is imperfectly known. In Burma it has been recorded from the Adung valley at 12,000 feet in August, and there are several winter records from North-East Burma; it has also been obtained in the Southern Shan States and Karenni.

PLAIN-BACKED MOUNTAIN THRUSH

Zoothera mollissima (Blyth), DARJEELING
SUBSPECIES: *mollissima* (Blyth), DARJEELING

IDENTIFICATION. Length 11 inches. Probably not distinguishable from *dixoni* in the field; it has a much shorter tail (3·8–4·2 inches as against 4·7 inches) and the median and greater wing-coverts are very narrowly and indistinctly tipped with fulvous, whereas in *dixoni* there are large and distinct fulvous tips at all ages.

STATUS AND DISTRIBUTION. Breeding range imperfectly known. A single specimen obtained by the Vernay-Cutting expedition in North-East Burma is the only record from Burma, but it occurs in Yunnan.

[NOTE.—This form and *dixoni* may be conspecific, but the breeding ranges are imperfectly known.]

GREATER LONG-BILLED THRUSH

Zoothera monticola Vigors, HIMALAYAS
SUBSPECIES : *monticola* Vigors, HIMALAYAS
atrata Delacour, N. TONGKING

IDENTIFICATION. Length 11½ inches. Bill very strong, powerful and curved near the tip ; general colour dark slaty-brown, paler below.
NEST AND EGGS. Venning found a nest on the 15th May at Haka in the Chin Hills.
STATUS AND DISTRIBUTION. Throughout the Himalayas to northern Burma, but not Yunnan. In addition to the Chin Hills, where it is not common, a single specimen was obtained at 3,000 feet near Laukkaung, Myitkyina district.

LESSER LONG-BILLED THRUSH

Zoothera marginata Blyth, ARAKAN
SUBSPECIES : *marginata* Blyth, ARAKAN

IDENTIFICATION. Length 10 inches. Differs from the preceding species in its smaller size and rufous olive-brown upper-parts. It is a shy bird and like the long-tailed mountain thrush it likes feeding in the headwaters of small shady streams in hill evergreen, flying up to a branch when disturbed.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Sikkim eastwards to Assam, and through Burma to Siam and Annam. It has not been recorded from northern Burma, but Hopwood obtained a single specimen in the Chindwin, and it occurs in the Chin Hills, Arakan Yomas, Southern Shan States, Karenni and northern Tenasserim. It seems to be a rare bird everywhere, but is probably resident.

CHESTNUT-BELLIED ROCK THRUSH

Monticola rufiventris (Jardine and Selby), HIMALAYAS

IDENTIFICATION. Length 9 inches. Sexes differ. The male is a beautiful bird with the upper-parts cobalt-blue, the sides of the head and neck, chin, and throat black, and the remaining underparts chestnut. The female is a black-striped bird with a plain buff throat. The loud chattering alarm note closely resembles that of certain squirrels. A bird of open forest in the higher hills, usually seen perched high up on a tree or telegraph wire and performing its trick of constantly jerking its tail backwards and forwards over its back.
NEST AND EGGS. According to Wickham it breeds in April, building its nests in the cuttings of the hill roads.
STATUS AND DISTRIBUTION. Himalayas from Chamba to western China, breeding throughout its range from 4,000–8,000 feet. In Burma it is widely distributed in the higher hills, but has not been recorded from the Arakan Yomas or Tenasserim.

BLUE-HEADED ROCK THRUSH

Monticola cinclorhynchus (Vigors), SIMLA

IDENTIFICATION. Length 7 inches. The male can only be confused with the preceding species, from which smaller size, chestnut rump, white wing-patch and blue throat distinguish it; the female is brown with a scaled appearance and has a rather conspicuous dark eye.
STATUS AND DISTRIBUTION. Throughout the Himalayas. Christison reports that it is a sparse winter visitor to Arakan, thus confirming Blyth's century-old record.

BLUE ROCK THRUSH

Monticola solitarius (Linnaeus), ITALY
SUBSPECIES: *pandoo* (Sykes), "GHAUTS," INDIA
affinis (Blyth), TENASSERIM
philippensis (Müller), PHILIPPINE IS.

LOCAL NAMES. Burmese: *hnget-thako* or *bo-de-hnget*, from its habit of perching on the roofs of rest-houses.
IDENTIFICATION. Plate V, fig. 7, p. 116. Length 9 inches. The female is a duller and browner bird, and the amount of chestnut on the under-parts varies with the subspecies.
VOICE. It utters a quaint little croak at intervals, much like that of a frog, but very low and soft. On arrival in late September a bird has been observed uttering a short but sweet song from the top of a boulder. "On two occasions I saw it uttering a harsh, grating cry, something like a roller's, while vigorously bobbing its head low, with its tail held high" (Roseveare).
HABITS AND FOOD. This bird delights in perching on the roofs of buildings and often takes up its abode for the winter in the compound of a forest rest-house tucked away in the jungle; it also frequents open country, especially where there are rocky hill-tops and streams littered with enormous granite boulders such as one finds in the tea estate at Thandaung, and it loves to poke about in the stone culverts of hill roads; while running down the Thandaung hill in a car, a whole series of single birds would fly out from successive culverts at certain times of the year. Like the chestnut-bellied rock thrush it has a very erect posture and jerks its tail up and down at intervals.
STATUS AND DISTRIBUTION. This species extends from the Caspian Sea through Tibet and the Himalayas to China and Japan. There is no proof that it breeds anywhere in Burma, but as a winter visitor it is common in suitable localities throughout the country; its arrival in Thandaung was noted on the 24th September, and it seems

to leave the plains of southern Burma in the first week of April (in Arakan seen up to the 5th May); a bird was noted on the rocky summit of the Shwe-u-daung, Katha district, at about 6,000 feet, on the 26th April.

SWINHOE'S ROCK THRUSH

Monticola gularis (Swinhoe), PEKING

IDENTIFICATION. Length 7 inches. Sexes differ, but a white patch on the fore-neck, extending in a narrow line up the throat to the chin, is diagnostic. The male has chestnut under-parts and rump, and the crown and nape blue. The female is barred with black and has a white ring round the eye.
STATUS AND DISTRIBUTION. Breeds in the eastern palaearctic region and migrates south to the Indo-Chinese countries; in Burma it has been recorded from Mt. Victoria, Central Burma, and the Shan States, and is probably an erratic winter visitor in small numbers.

[NOTE.—There is no evidence that the ROCK THRUSH, *Monticola saxatilis* Linnaeus, has ever been seen in either Burma or Yunnan (*vide F.B.I.* vol. ii, p. 177) except for Blanford's record from Ava, which is obviously incorrect, and was not accepted by Oates. Chestnut outer tail-feathers distinguish it from all other rock thrushes.]

Sub-family MYIOPHONEINAE

WHISTLING THRUSHES

Large dark thrushes of Asia and Malaysia, with young only slightly or not at all spotted, in contrast to all other thrushes.

BLUE WHISTLING THRUSH

Myiophoneus coeruleus (Scopoli), CANTON, CHINA
SUBSPECIES: *coeruleus* (Scopoli), CANTON, CHINA
temmincki Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)
eugenei Hume, THAYETMYO–PEGU

IDENTIFICATION. Plate V, fig. 8, p. 116. Length 12 inches. In the field the entire plumage appears a deep blue-black, glistening in certain lights. A bold and conspicuous bird of forest streams.
VOICE. The alarm-note is harsh and screeching, like a pencil on a slate, *screee*, sometimes lengthened to *screee-chit-chit-chit*. Whistler describes a loud and well-sustained song and a loud, melodious whistle.
HABITS AND FOOD. This large, strong "blackbird" is typically found on rocky streams in moist and evergeen forests in the foothills

and higher hills alike, but it is not entirely aquatic in its habits and may be seen beside mule tracks and forest paths ; a little investigation will, however, invariably show that its headquarters are on some nearby stream. It is a characteristic bird of the irrigated terraced fields that are a feature of the middle Ngawchang, Hpimaw and Hpare valleys in North-East Burma. It feeds on berries, water beetles and vegetable matter, turning over leaves and litter and listening with its head on one side for the movements of a hoped-for worm or other prey. Land shells are a favourite item, and large heaps of fragments are often found where the shells have been broken to pieces against a rock.

NEST AND EGGS. The breeding season is from February to April in Tenasserim, later elsewhere, with second broods up to the end of July. The nest is built near water and is usually well protected either by concealment or difficulty of access ; it is usually found in a mossy bank, rocky crevice, or on the face of a precipitous cliff, and is a massive and heavy cup of moss dragged up by the roots ; there is a thick lining of fine grass, roots or moss. The eggs, 3 to 5 in number, are grey to greenish in ground-colour with numerous reddish freckles.

STATUS AND DISTRIBUTION. Throughout the Himalayas and widespread in the eastern part of the oriental region. It is common and resident throughout the forests of Burma and has been collected at 10,000 feet in the Adung valley in October.

Sub-family COCHOINAE

COCHOAS

This sub-family comprises three rare species of tropical Asia and Malaysia ; they are brightly coloured, purely arboreal, fruit-eating birds with a short, broad bill. The young are spotted underneath.

PURPLE COCHOA

Cochoa purpurea Hodgson, NEPAL

IDENTIFICATION. Length 11 inches. Sexes differ. The male is a dark purple blue with black sides to the head, black supercilium and pale blue crown ; tail tipped black. The female has the purple parts replaced by reddish brown. A bird of evergreen forest in the higher hills.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Simla eastwards to the Likiang range in Yunnan. It is a rare bird in Burma, but has been recorded from

North-East Burma (a single bird at 7,000 feet near Kambaiti), Thandaung, Southern Shan States (a single bird obtained by Bingham at 7,000 feet on Loi Maw), Thaungyin valley (Bingham) and Mt. Mulayit (a single bird obtained by Davison).

GREEN COCHOA

Cochoa viridis Hodgson, NEPAL (= *rothschildi* Stuart Baker)

IDENTIFICATION. Length 12 inches. Sexes differ. The male is a green bird with blue on the crown, nape, wings and tail (which is tipped black); the female only differs in having some yellowish-brown on the wings. Like the purple thrush it is usually seen in hill evergreen, feeding on berries in the tree-tops.

NEST AND EGGS. Hopwood found a nest at Thandaung in early June.

STATUS AND DISTRIBUTION. Himalayas from Garhwal to Assam, not in Yunnan, but once in Fokien. Another very rare species in Burma; in addition to Hopwood's record, two birds were collected on Nattaung in April 1940, and de Schauensee obtained it in Kengtung. Hume obtained 20 specimens in eastern Manipur, and it should therefore be not uncommon in the Burmese Naga hills.

Family PRUNELLIDAE

ACCENTORS

This is a group of small birds with a palaearctic and sub-tropical distribution; the British hedgesparrow or dunnock is probably the best-known member of the family. All the Burma records are from the mountains of North-East Burma.

ALPINE ACCENTOR

Prunella collaris (Scopoli), EUROPE
SUBSPECIES: *ripponi* (Hartert), GYI-DZIN-SHAN, YUNNAN

IDENTIFICATION. Length 6 inches. The dark grey upper-parts, double row of white spots on the wing-coverts, and chestnut flanks are distinctive. I watched a party of 6 birds hopping about with the peculiar "creeping hop" of the family, on moss-covered boulders surrounded by deep snow at 11,000 feet near the Chimili pass, apparently collecting food from the moss; they were slow and deliberate in their movements, not at all shy, and hunted repeatedly over the same few boulders for the 15–20 minutes that I watched them; single birds were also seen on short grass near the Hpimaw pass (where I mistook it for a pipit) and beside a footpath. Cranbrook describes "a flock of about a dozen working about in open country and periodically flying all together for a short distance and then scattering and searching the dead grass and bracken, every now and then getting on top of a boulder to have a look round." The crop of one bird he collected contained a good many small seeds.

STATUS AND DISTRIBUTION. Palaearctic. It breeds at high elevations in N. Yunnan, but its status in Burma is uncertain; it has been observed only in the Hpimaw, Chimili, and Adung valley areas, from February to March, at 8,000–11,000 feet.

MAROON-BACKED ACCENTOR

Prunella immaculata (Hodgson), NEPAL

IDENTIFICATION. Length 6 inches. The pale yellow iris is a prominent field character; head and breast slate-grey, rump and under tail-coverts dark chestnut. A very tame bird, typically seen in small parties along mule tracks. It feeds on pupae, grit, seeds, and berries. Cranbrook found it "in small parties in fairly open country, searching under leaves and in low bushes."
STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan and western China, also Tibet. It has been recorded only from North-East Burma, where it seems to be a winter visitor; in February and March it is common along the Laukkaung-Pyepat road, but in early April not a bird remains. It is known to breed in Yunnan.

RUFOUS-BREASTED ACCENTOR

Prunella strophiata (Blyth), NEPAL
SUBSPECIES: *strophiata* (Blyth), NEPAL
multistriata David, MOUPIN

IDENTIFICATION. Length 6 inches. The very dark striped appearance and the rufous on the eyebrow, throat and breast are noticeable when the bird offers a view; on the wing it looks like a dark small pipit with a soft sneaking flight. A bird of open bracken- and grass-covered hillsides, and rather a skulker in bushes; normally not more than 2 or 3 together, but near the Ngawchang headwaters I found them collected into flocks of a dozen or more birds behaving just like little buntings in stubble and brambles. Cranbrook records a chattering alarm-note.
STATUS AND DISTRIBUTION. Himalayas from Garhwal eastwards through Yunnan to China. It is not uncommon in North-East Burma from 6,000 feet upwards as far south as Kambaiti and has been recorded up to the 12th May (Adung valley), so that it may prove to be a resident.

[NOTE.—The ROBIN ACCENTOR, *Prunella rubeculoides* Moore, NEPAL, is a bird of the high Himalayas eastwards to Szechwan, and may occur in the mountains of northern Burma.]

Family MUSCICAPIDAE

FLYCATCHERS

Progressive ornithologists now generally include in the family *Muscicapidae* not only the true flycatchers, but all the old-world

insect-eaters, *e.g.* thrushes, warblers, babblers, whistlers, and many intermediate types ; the European species are merely a few somewhat specialised offshoots of this rich and extremely diversified group, which is best developed in the oriental region and south-western Pacific. Thus the *Timaliidae, Turdidae, Sylviidae, Prunellidae, Pachycephalidae,* etc., can all be treated as sub-families of the flycatcher group, but, as this would involve too radical a rearrangement of this book, I retain them as separate families, using the term *Muscicapidae* to cover the true flycatchers only, while pointing out here the linkage between them.

The true flycatchers are a cosmopolitan group, well represented in Burma ; some species are sedentary, but many are migratory to a greater or lesser degree, and we still know all too little about their status and movements in Burma. They all make much the same type of nest, a cup of moss, sometimes mixed with lichen and roots, lined with rootlets, moss, grass, feathers, etc. It is placed in the fork of a tree or shrub, or in a natural hole or hollow. The plumage of the young is mottled or squamated. The Burma flycatchers can be grouped into three sub-families.

Sub-family MUSCICAPINAE

TYPICAL FLYCATCHERS

The flycatchers of this group have in the past been split up into many genera, but when ornithologists came to study the old-world flycatchers as a whole it was found that many of the criteria used for distinguishing genera, though valid for restricted areas such as India or Burma, broke down over a wider area owing to the existence of linking forms ; authorities therefore now lump most of the species into the genus *Muscicapa,* a procedure that unfortunately involves the discarding of some familiar names (*vide* Deignan, 1947, on " Some untenable names in the old-world flycatchers," *Proc. Biol. Soc.*, Washington, Vol. 60, pp. 165–168).

The typical flycatchers are well represented in Burma. Some species catch insects conspicuously from a perch, whereas others do so under cover of the undergrowth or take insects from the ground ; the latter approach the robins in their habits, but have much feebler legs and feet.

SOOTY FLYCATCHER

Muscicapa sibirica Gmelin, LAKE BAIKAL
SUBSPECIES : *cacabata* Penard, NEPAL
rothschildi Stuart Baker, YUNNAN

IDENTIFICATION. Length 5½ inches. A sooty brown bird with the centre of the throat and abdomen whitish and a white ring round the eye. A bird of open hill forests, quiet and shy as a rule, but has been heard to utter a lively *chi-up, chi-up, chi-up*. It is nearly always seen perched on a dead branch of a tree or a dead and isolated bamboo culm, no doubt because the absence of foliage gives it a better view of passing insects.
STATUS AND DISTRIBUTION. Throughout the Himalayas to Tibet and Yunnan, migrating south in winter through Burma to Siam and Malaya ; the subspecies *rothschildi* is probably resident in the mountains of northern Burma, where Cranbrook found it not uncommon at 12,000 feet in the Adung valley in July and Stanford thought it might breed round Kambaiti. Elsewhere in Burma this species seems to be a winter visitor only, but it is one of the last to leave ; I have seen it at Thandaung up to the 12th May, and Heinrich obtained a female with enlarged ovaries on Mt. Victoria on the 23rd May.

[NOTE.—*sibirica* Gmelin may occur in winter.]

FERRUGINOUS FLYCATCHER

Muscicapa rufilata (Swinhoe), AMOY, CHINA

IDENTIFICATION. Length 6 inches. A reddish-brown bird with a buff ring round the eye and a white patch on the throat. It is typically a shy retiring bird of streams and glades in the densest hill evergreen, but also frequents the more open parts of the forest.
NEST AND EGGS. According to Wickham, a nest was found on the 13th May by Macdonald on Mt. Victoria, the eggs very hard-set.
STATUS AND DISTRIBUTION. Breeds at high elevations from the central Himalayas to western China, and possibly in the mountains of northern Burma ; in winter it has been recorded from North-East Burma, the Sittang valley, Karen Hills, Shan States, and Karenni (common in April).

GREY-BREASTED BROWN FLYCATCHER

Muscicapa latirostris Raffles, BENKULAN, SUMATRA
SUBSPECIES : *latirostris* Raffles, BENKULAN, SUMATRA

IDENTIFICATION. Length 6 inches. A brown bird, dull white below, with spots on the throat and breast and a pale ring round the eye. It is a quiet forest bird, sometimes uttering a soft vibrant *churr*, and is usually seen sitting in a rather upright attitude on a bare branch.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A palaearctic species, breeding in south-eastern Siberia, Manchuria, and Japan, and passing through China and Mongolia

to winter in tropical Asia. Oates thought that some birds stayed in Burma throughout the year; he obtained an adult on the 21st July, quite a young bird on the 30th July, and described it as very common after the 24th September. It has also been recorded from Arakan, Mt. Victoria (latest date the 6th April), Central Burma, Thandaung (one on passage on the 25th September), and Tenasserim.

BROWN-BREASTED BROWN FLYCATCHER

Muscicapa muttui (Layard), CEYLON
SUBSPECIES: *muttui* (Layard), CEYLON

IDENTIFICATION. Length 6 inches. A reddish-brown flycatcher, distinguished from the ferruginous flycatcher by a white spot in front of the eye and a white chin and throat; there is a white ring round the eye.
STATUS AND DISTRIBUTION. India, Ceylon, Burma, and Mengtsz in south-eastern Yunnan. Rippon recorded it as common in the Southern Shan States above 5,000 feet and the only other records are from Central Burma and a single bird at 4,000 feet in the Ngawchang valley on the 13th April. Its status in Burma is uncertain.

ORANGE-GORGETED FLYCATCHER

Muscicapa strophiata Hodgson, NEPAL
SUBSPECIES: *strophiata* Hodgson, NEPAL

IDENTIFICATION. Length 6½ inches. Resembles the next species in tail pattern, but the male has a distinctive small orange patch on the black throat, and the white forehead to the eye is sometimes conspicuous; the adult female (*vide* Deignan) frequently wears a plumage identical with that of the male, but in true female dress she has the gorget pale orange and much reduced in size and the chin and throat are ashy and not black. I noted that birds in late March utter a high-pitched *pink* repeated at the rate of 3 per 2 seconds; a low rather croaky little churr has been recorded. A bird of the higher hills and mountains.
NEST AND EGGS. Breeds at high elevations on Mt. Victoria and the mountains of northern Burma. Heinrich found a nest on the 15th April with 2 hard-set pure white eggs.
STATUS AND DISTRIBUTION. Breeds in the Himalayas to western China and winters in the Indo-Chinese sub-region. I noted an influx of birds in the Chimili pass area in late March, when pairs seemed to be taking up breeding territories at 8,000–10,000 feet. It has been recorded as a winter visitor from Mogok, the Karen Hills, Shan States, and Mt. Mulayit; except for a bird obtained by Stanford in the Mali Hka valley, all records are from the higher hills and mountains.

[NOTE.—*M. s. asema* is probably based upon an aberrant specimen of *strophiata*.]

RED-BREASTED FLYCATCHER

Muscicapa parva Bechstein, E. HOLLAND
SUBSPECIES : *albicilla* (Pallas), DAURIA

IDENTIFICATION. Plate VI, fig. 1, p. 148. Length 5 inches. Sexes differ. A small brown bird with whitish under-parts and in a few individuals (adult males) with the throat and breast pale red ; easily distinguished from all except *strophiata* by the white patches at the base of the blackish tail, conspicuous in flight and also at rest owing to the bird's characteristic habit of jerking the tail upwards at intervals and at the same time quivering the pointed tips of the wings.

VOICE. A distinctive harsh jarring note, sounding like a small, wooden rattle rotated at speed, is commonly uttered. A plaintive piping call, *phwee-phwee-phwee*, repeated at short intervals, is used to express anger or alarm.

HABITS AND FOOD. The habitat of the red-breasted flycatcher in winter is much the same as that of the magpie-robin ; besides being a bold and familiar garden bird it is commonly seen in *indaing* and in the drier and more open parts of the teak forests. Though many individuals may be scattered through a particular piece of jungle, each seems to have its own territory and one rarely if ever sees two together. Though often descending to the ground to capture an insect it is a true flycatcher in habits, keeping fairly low down and changing its perch at frequent intervals.

STATUS AND DISTRIBUTION. This species has a wide breeding range in the palaearctic region, and the subspecies *albicilla*, which breeds in north-eastern Asia, is found throughout Burma from September to mid-April (latest date in Arakan the 30th April) ; Stanford noted its passage up the N'Mai valley between the 15th and the 23rd April ; it winters in the plains and foothills, but may be seen in the higher hills on passage. It takes some time to get down to Rangoon, where the earliest birds in two consecutive years were seen on the 19th and 17th October.

THE BLUE FLYCATCHERS

This artificial group contains a number of species in which the sexes differ in colour, the males being blue on the upper-parts whereas the females are brown or rufous ; the breeding ranges and status in Burma of many species are imperfectly known, and they are a very difficult group in consequence ; the males are difficult, and the

females often impossible, to identify without collecting specimens. The following key does not include all flycatchers that have blue in the plumage, but only those forms that are most likely to be confused with each other.

KEY TO SOME OF THE BLUE FLYCATCHERS

MALES.—*Upper-parts deep blue*

A. Base of tail white.
- *a*. White on tail extending nearly to the tip of the third pair of feathers . . . . . *M. concreta*
- *b*. White on tail confined to base.
  - a^1. Breast orange-chestnut.
    - a^2. No white supercilium . . . . *M. amabilis*
    - b^2. A white supercilium . . . . *M. hyperythra*
  - b^1. Breast white to buff or tawny-grey.
    - c^2. Breast greyish white tinged tawny . . *M. leucomelanura*
    - d^2. Breast pure white . . . . . *M. superciliaris*

B. No white on tail.
- *c*. Crown and rump different blue to back.
  - c^1. Axillaries and under wing-coverts white . *M. sapphira*
  - d^1. Axillaries and under wing-coverts chestnut . *M. vivida*
- *d*. Crown, back and rump same colour.
  - e^1. Chin, throat and breast dark blue . . *M. hainana*
  - f^1. Chin and throat blue, breast rufous . . *M. rubeculoides*
  - g^1. Point of chin black, throat rufous.
    - e^2. Abdomen and under tail-coverts whitish . *M. tickelliae*
    - f^2. Abdomen and under tail-coverts rufous . *M. banyumas*

FEMALES.—*Upper-parts not deep blue*

A. Upper-parts dull blue . . . . . *M. tickelliae*

B. Upper-parts brown except for blue on rump and tail . *M. superciliaris*

C. Upper-parts brown or rufous.
- *a*. Base of tail white . . . . . *M. concreta*
- *b*. No white on tail.
  - a^1. Breast chestnut or rufous.
    - a^2. First primary not less than $\frac{1}{2}$ second. No ring round eye . . . . *M. hainana*
    - b^2. First primary less than $\frac{1}{2}$ second.
      - a^3. Bright tawny ring round eye . . . *M. sapphira*
      - b^3. Pale tawny ring round eye . . . *M. rubeculoides*
        M. banyumas

b^1. No chestnut on breast.
  c^2. Wing always over 90 mm. . . . *M. vivida*
  d^2. Wing always under 85 mm.
    c^3. 2nd primary=9th . . . . *M. hyperythra*
    d^3. 2nd primary shorter than 1st secondary . *M. leucomelanura*
    e^3. 2nd primary between 6th and 7th . . *M. amabilis*

WHITE-TAILED BLUE FLYCATCHER

Muscicapa concreta Müller, W. SUMATRA
SUBSPECIES: *leucoprocta* (Tweeddale), MT. MULAYIT

IDENTIFICATION. Length 7 inches. Large size and white on tail, which is frequently expanded, are distinctive features.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. This species has been found breeding in the hills south of Margherita, and is common in the plains of Assam in winter; thence it extends through Burma to Malaya. It is common in the Upper Chindwin, where the Vernay expedition obtained seven, and has also been obtained in North-East Burma and Tenasserim; it has evidently been overlooked in the intervening areas of Burma and seems to be a bird of the evergreen forests of the foothills.

RUSTY-BREASTED BLUE FLYCATCHER

Muscicapa amabilis Deignan, MOUPIN, CHINESE TIBET

IDENTIFICATION. Length 5½ inches. See key. In the hand some males show a trace of white above the eye. It frequents all types of hill forest from open pine to dense evergreen, but it prefers thick undergrowth and dense bamboo thickets, and is shy.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Sikkim to Yunnan, where it breeds in the Tengyueh district at 6,000–8,000 feet. In Burma it is sparsely distributed throughout the higher hills, and is probably a resident, but no one has yet found its nest.

WHITE-FRONTED BLUE FLYCATCHER

Muscicapa hyperythra (Blyth), NEPAL–SIKKIM
SUBSPECIES: *hyperythra* (Blyth), NEPAL–SIKKIM
oliga Deignan, MALAYA

IDENTIFICATION. Length 4½ inches. See key. In the male the short broad supercilium is a distinctive feature. It has a characteristic little song, almost a wheeze, consisting of four notes; the first, second and fourth are on the same pitch, the third being much lower; there is then a slight pause followed by two notes resembling *see-saw*, the first note being much higher than the second. In its choice of habitat it resembles the shortwings, preferring dense undergrowth or bamboo thickets along small streams in evergreen hill forest, and like them it is usually tame and confiding.
NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Garhwal; in Burma it is probably resident throughout its range and a female about to breed was obtained at Kambaiti on the 2nd May. It has been recorded from Mt. Victoria, Upper Chindwin, North-East Burma, the Shan States, Karenni, and Tenasserim, but seems to be a rather scarce bird of the higher peaks.

SLATY-BLUE FLYCATCHER

Muscicapa leucomelanura (Hodgson), NEPAL
SUBSPECIES: *cerviniventris* (Sharpe), MANIPUR

IDENTIFICATION. Length 4½ inches. See key. A bird of the higher peaks, usually found skulking in thick undergrowth, or in reeds and *kaing* grass along roadsides. Heinrich describes the warning note as a very sharp and high-pitched *zieh ticktictictictick*; the *tick* syllables follow very quickly one after the other and at each one the bird jerks its tail. The short melodious song really consists of 3 chirps, something like *zieh-ti-zietz*.
NEST AND EGGS. Wickham found it breeding in the Chin Hills in late April and early May; the nests were placed in a hole or on a small ledge of a roadside cutting, and were small cups of moss, generally unlined. The eggs look a dark buffy-white.
STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan, and through Burma to Siam. It has been recorded from the Chin Hills, North-East Burma, the Shan States and Karenni; in the Mali Hka valley and the Triangle it comes down to 2,000 feet, but further south is a bird of the higher hills only.

WHITE-BROWED BLUE FLYCATCHER

Muscicapa superciliaris (Jerdon), AJUNTA, HYDERABAD
SUBSPECIES: *aestigma* (Gray), NEPAL

IDENTIFICATION. Length 4½ inches. See key. The pure white streak from the chin to the white of the lower breast is conspicuous. One bird collected was hunting for insects in tit-like fashion in a small tree.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan, where it breeds on the Likiang range. In Burma it has been obtained in Central Burma (two from 500 feet in Mandalay district and one from 3,000 feet in Kyaukse district, Smith), Yatsawk (Southern Shan States), and Karenni; it may also occur in the Chin and Kachin hills as claimed by Stuart Baker, but we know of no published records or specimens from these areas. No one has yet proved that it breeds anywhere in Burma.

LITTLE PIED FLYCATCHER

Muscicapa westermanni Sharpe, PERAK
SUBSPECIES *collini* Rothschild, NEPAL–SIKKIM

IDENTIFICATION. Length 4½ inches. Not included in the key because the male has the upper-parts black and not blue; a broad eyebrow,

a patch on the wing, the basal half of the lateral tail-feathers, and the whole under-parts are white. The female is olive-brown above with a pale patch on the wing; upper tail-coverts rufous; under-parts smoky-white. A bird of hill forests.

VOICE. A thin, high *pi-pi-pi-pi* followed by a low rattle *churr-r-r-r*, or *pi-churr-r-r-pi-pi-pi-pi* is a distinctive call-note that may be heard all day long where this bird is common.

HABITS AND FOOD. This is a very cheerful and lively little flycatcher, ever on the move from one vantage point to another, catching most of its insect food on the wing, but also chasing it along the branches or snatching it from the bark of a tree. It is far from shy and is active on hot, dry ridge-tops in the middle of the day when most other birds have retired to the shady valleys.

NEST AND EGGS. The only nest recorded from Burma is one obtained by Hopwood and Mackenzie in the Chin Hills; the eggs appear uniform olive-brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Garhwal. It is not uncommon, and probably resident, throughout the higher hills of Burma; a few birds drop down to low elevations in winter (Oates obtained one near Pegu).

SAPPHIRE-HEADED BLUE FLYCATCHER

Muscicapa sapphira (Blyth), DARJEELING
SUBSPECIES: *sapphira* (Blyth), DARJEELING
laotiana Delacour and Greenway, LAOS

IDENTIFICATION. Length 4½ inches. See key. The male has the forehead, crown and nape a brilliant light blue, and is perhaps the most beautiful of all the blue flycatchers. A bird of the higher hills, frequenting tall undergrowth or small trees in the forests.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to Yunnan (whence there are four records), Burma, and Indo-China. In Burma it has been recorded only from North-East Burma, the Southern Shan States, and Karenni and is a very local bird of the higher peaks. Stuart Baker claims that it occurs in the Chin Hills. No one has been able to prove that it breeds in Burma, and its status is uncertain

RUFOUS-BELLIED BLUE FLYCATCHER

Muscicapa vivida Swinhoe, FORMOSA
SUBSPECIES: *oatesi* (Salvadori), MT. MULAYIT

IDENTIFICATION. Length 7 inches. See key. The largest of the blue flycatchers and easily confused with the rufous-bellied niltava; the male however has no

blue neck-patch and the female no white throat-patch. A bird of hill evergreen.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. This species ranges from Assam eastwards to Formosa and southwards to Siam and Tenasserim. In Burma it has been recorded from Mt. Victoria, Maymyo, the Southern Shan States, Karenni, and Tenasserim, but is a rare bird of uncertain status.

GRANT'S BLUE FLYCATCHER

Muscicapa hainana (Ogilvie-Grant), HAINAN

IDENTIFICATION. Length 7 inches. See key. The male has no chestnut on the under-parts. Habits unknown.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. This species has a fairly wide distribution in the eastern part of the oriental region, but in Burma it is a rare bird of uncertain status; it has been recorded from the Pegu Yomas (east side), Southern Shan States, and Tenasserim.

PALE BLUE FLYCATCHER

Muscicapa unicolor Blyth, DARJEELING
SUBSPECIES: *unicolor* Blyth, DARJEELING
infuscata Hartert, JAVA

IDENTIFICATION. Length 6½ inches. This bird is not included in the key because the male is a light and not a dark blue, almost as light as the verditer flycatcher which it somewhat resembles; the female is brown above and earthy-brown below. The song is arresting and characteristic, and has been heard in April and May round Maymyo.

NEST and EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Sikkim. In Burma it has been recorded from Mt. Victoria, the Upper Chindwin, North-East Burma (one at 1,100 feet west of the Mali Hka), the Shan States, Karenni, and Tenasserim. The only place where this bird has been described as common is along the northern boundary of the Taungbyo reserve near Maymyo at 4,500 feet in May; it was collected there, and also in the Mogok hills, by Smith. No one has proved that it breeds in Burma, but it is probably resident through the higher hills.

BLUE-THROATED BLUE FLYCATCHER

Muscicapa rubeculoides (Vigors), HIMALAYAS
SUBSPECIES: *rubeculoides* (Vigors), HIMALAYAS
dialilaema Salvadori, N. TENASSERIM
glaucicomans Thayer and Bangs, HUPEH, CHINA
rogersi Kinnear and Robinson, ARAKAN

IDENTIFICATION. Plate VI, figs. 3 and 3*a*, p. 148. Length 6 inches. See key. Closely resembles *banyumas* (*q.v.*).

VOICE. A song commonly heard in the Pegu Yomas in the cold weather consists of about 9 notes, resembling *ciccy, ciccy, ciccy, ciccy see*, the first two *ciccy* higher in pitch than the rest of the song and the fourth *ciccy* sometimes omitted.

HABITS AND FOOD. This is a fairly common bird of the teak forests in the cold weather, frequenting tall undergrowth and the lower canopy in high forest. It generally keeps to the thick foliage, but in the mornings and evenings often comes out into the open beside paths and streams. It is the only blue flycatcher commonly seen at low elevations, and its voice has been heard in bamboo thickets on the outskirts of Rangoon.

NEST AND EGGS. Wickham found nests on the crags at Taunggyi in May and June, but also shot a fully-fledged young male early in March, so that some pairs must breed very early in the year. The nests are described as neat and well hidden against the mossy green trunk of a tree.

STATUS AND DISTRIBUTION. Widespread in the oriental region and represented in Burma by both resident and migratory subspecies, but very little is yet known about the breeding ranges of these subspecies, and of the subspecies of *banyumas*. It seems that *rubeculoides* is a common winter visitor throughout Burma (possibly breeding in the Chin Hills), *dialilaema* is known to breed in parts of Burma and is probably resident throughout its range, whereas *glaucicomans* is a winter visitor to Bhamo and Tenasserim, and perhaps the Shan States.

HILL BLUE FLYCATCHER

" *Muscicapa banyumas* Von Martens, JAVA
SUBSPECIES : *whitei* Harington, BHAMO Dist.
coerulifrons Stuart Baker, PENINSULAR SIAM
magnirostris Blyth, DARJEELING

IDENTIFICATION. Length 6 inches. See key. A wedge of rufous running up to the chin distinguishes it from the preceding species. I have heard an attractive little song in April.

NEST AND EGGS. Have been taken by Harington in the Bhamo hills.

STATUS AND DISTRIBUTION. Widespread in the oriental region and common in Yunnan. In Burma it has been recorded from Mt. Popa, North-East Burma, the Mogok hills, Shan States, and Tenasserim, but the only definite breeding records come from Yunnan and the higher hills of North-East Burma (sub-species *whitei*) ; Lowe found *whitei* very common in northern Tenasserim.

TICKELL'S BLUE FLYCATCHER

Muscicapa tickelliae Blyth, CENTRAL INDIA
SUBSPECIES: *tickelliae* Blyth, CENTRAL INDIA
sumatrensis (Sharpe), SUMATRA

IDENTIFICATION. Length 6 inches. " A blue bird with bright azure forehead, eyebrows and shoulder patches; breast pale rusty, fading to white lower down. The female is paler and duller " (Salim Ali). Probably difficult to distinguish from *banyumas* in the field.
NEST AND EGGS. Stuart Baker states (*Nidf. Ind. Birds*, vol. ii, p. 201) " I have received blue females, with nests and eggs, from Karenni (Cook), Upper Chindwin (Hopwood), and south of Ye (Partridge) . . . The skins, unfortunately, are not in the British Museum and we cannot now trace them."
STATUS AND DISTRIBUTION. Widespread in the oriental region. In addition to the records listed above, Wardlaw Ramsay obtained it in Karenni; Anderson in " Upper Burma," Rippon records it without comment from the Bhamo district and the Southern Shan States, and Wickham states that he obtained a specimen on Mt. Victoria. The subspecies *sumatrensis* is found over most of Siam, and is probably the form in Tenasserim.

PIGMY BLUE FLYCATCHER

Muscicapa hodgsoni (Horsfield and Moore), NEPAL

IDENTIFICATION. Length 4 inches. Sexes differ. The male has the upper-parts dark blue and the under-parts pale orange-yellow. The female has the upper-parts olive-brown and the under-parts pale saffron-yellow. A bird of evergreen forest in the mountains.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Sikkim. It has been recorded from Mt. Victoria, North-East Burma, and the Southern Shan States, and is probably resident where found; it is known to breed in western Yunnan.

VERDITER FLYCATCHER

Muscicapa thalassina (Swainson), INDIA
SUBSPECIES: *thalassina* (Swainson), INDIA
thalassoides (Cabanis), SUMATRA

IDENTIFICATION. Plate VI, fig. 5, p. 148. Length 6 inches. The female is like the male, but much duller and greyer in colour. Perches on exposed situations and hawks insects in the air with active flight.
VOICE. It is a quiet bird in the cold weather and no notes are recorded. In the breeding season it is said to have a loud and pleasant song.
HABITS AND FOOD. This is a bold, confiding bird, frequenting forest

and garden alike. In the cold weather a few may be seen in the heart of the teak forests, where it favours the fringes of the larger streams and appears to be very constant to a perch ; in three successive cold weathers I noted a bird opposite a certain rest-house up the Taungnyo valley (Tharrawaddy district), and believe it was the same bird each year, although this was not proved ; during the rains it would disappear, like others of the same species, to breed somewhere in the higher hills. When feeding, this bird used to confine its attention to a short stretch, about 20 yards, of the stream, swooping into the air after an insect and returning usually to a different perch in one of the trees or shrubs lining the bank of the stream.

NEST AND EGGS. Both Harington and Wickham describe it as commonly breeding in roadside holes ; no doubt it sometimes builds its nest under the eaves of a house as I have seen it do in the Himalayas. The eggs are pinky-white, either unmarked or with a zone or cap of reddish markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is probably resident throughout the higher hills of Burma, and some birds drop down to the foothills and wooded plains for the winter.

WHITE-GORGETED FLYCATCHER

Muscicapa solitaris (Müller), W. SUMATRA
SUBSPECIES : *leucops* (Sharpe), KHASIA HILLS
submoniliger Hume, MT. MULAYIT
arakanensis Deignan, ARAKAN

IDENTIFICATION. Length 5 inches. A brown bird with a white chin and throat (bounded in some forms by a black line) and a short white supercilium. It is said to have a weak but pleasant song in the breeding season. It is a shy retiring bird for a flycatcher, feeding close to the ground in dense bamboo thickets and the undergrowth in hill evergreen and rarely showing itself. It has a habit, when perched, of spreading and jerking its tail up and down like the red-breasted flycatcher.

NEST AND EGGS. Hopwood and Mackenzie took one nest in the Chin Hills ; it was placed in grass growing from holes in a tree-stump. It was a very deep cup of grass, leaves, and a little moss, lined with fine grass, fibres, etc. The eggs were white spotted with reddish-brown. The nest is usually globular.

STATUS AND DISTRIBUTION. This species extends from Sikkim through Burma to Siam, Indo-China, and Malaya. It seems to miss Yunnan and North-East Burma, but elsewhere is probably resident throughout the higher hills of Burma though it seems to be scarce everywhere. There is no definite record from the Northern Shan States, but Rippon obtained it at Kalaw, and the Vernay-Hopwood expedition in the Upper Chindwin.

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SIX INCHES
0 3 6
0 50 100 150
150 mm.

1934

BROOKS'S FLYCATCHER

Muscicapa poliogenys Brooks, SIKKIM TERAI

IDENTIFICATION. Length 6 inches. An olive-brown bird with a grey ring round the eye, ferruginous upper tail-coverts and tail, and orange-buff breast and flanks.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to Assam and parts of Burma. It has been recorded from Arakan, and Stuart Baker states that it is found in the Chin Hills; a specimen obtained near Myitkyina town probably belongs to an undescribed subspecies; finally Stanford obtained one in Henzada district. It would therefore appear to be a species that is thinly distributed in the evergreen forests of the foothills of western and northern Burma.

LARGE NILTAVA

Muscicapa grandis (Blyth), DARJEELING
SUBSPECIES: *grandis* (Blyth), DARJEELING
decipiens Salvadori, SUMATRA

IDENTIFICATION. Length 8½ inches. Sexes differ, but both have the patch of bright blue feathers on each side of the neck that is the distinctive mark of the niltavas. The male is a deep blue bird, with the crown, rump, upper tail-coverts and a patch on the wing brilliant blue, but seldom noticeable in the dark shade in which he is usually seen. The female is a brown bird, paler below. A bird of hill evergreen.

VOICE. The song is a most distinctive whistle of three ascending notes in a minor key; heard close at hand the middle note is actually found to consist of two short notes on the same pitch uttered so quickly after each other that at any distance they sound like one note.

HABITS AND FOOD. This beautiful flycatcher seems to love deep shade and in the evergreen forests of the higher hills its particular ecological niche is the thickest and darkest patches of the forest, where the undergrowth is dense and the sunlight rarely filters through, a habitat shunned by most other birds. Here it is far more often heard than seen, and its voice is more familiar than its plumage.

NEST AND EGGS. Have been taken in the Chin Hills in the latter half of April. The eggs are so densely freckled with pinkish-brown that they appear uniform in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far

west as Sikkim. It is resident throughout the higher hills of Burma, wherever there is dense evergreen forest, and is locally common.

RUFOUS-BELLIED NILTAVA

Muscicapa sundara (Hodgson), NEPAL
SUBSPECIES : *sundara* (Hodgson), NEPAL
denotata Bangs and Phillips, MENGTSZ, S-E. YUNNAN

IDENTIFICATION. Length 6½ inches. Sexes differ. The male somewhat resembles the last species, but has the under-parts from the breast bright rufous. The female is brown with a white patch on the throat. Both have the blue patch on the side of the neck characteristic of the niltavas. A bird of hill evergreen.
NEST AND EGGS. Wickham states that it breeds quite commonly in the Chin Hills at the end of April, often in holes in roadside cuttings at 3,000 feet. The eggs resemble those of the large niltava but are smaller.
STATUS AND DISTRIBUTION. Oriental region, extending as far west as Simla. It is resident throughout the higher hills of Burma, and in northern Burma (where it seems to be common) it is found in the evergreen forests of the foothills, notably in the Hukawng valley and the Jade Mines area, but whether it breeds there is uncertain.

[NOTE.—Yunnan frontier birds are intermediate between these subspecies.]

SMALL NILTAVA

Muscicapa macgrigoriae (Burton), HIMALAYAS

IDENTIFICATION. Length 5 inches. Sexes differ, but both have the small blue patch on the side of the neck common to all the niltavas; it is distinguished from the two preceding species by its much smaller size; the male has no rufous on the underparts. In April I watched a male warbling a 4-note song *twee-twee-ee-twee*, rising in pitch to the second note and then falling; the song was very high-pitched and remarkably thin in tone, and scarcely audible at any distance, the volume of sound being out of all proportion to the effort the bird put into it. This species seems to frequent rather more open habitats than the other niltavas; I have seen them beside the mule track in the undergrowth of pine forest, on the fringe of thickets, along streams running through open forest, but not in dense evergreen.
NEST AND EGGS. Harington took a nest at the end of April in the Kachin hills. I watched a pair building a mossy cup in a bamboo stump beside a stream in Karenni in mid-April, and noted a number of breeding pairs round Htawgaw in early April. The eggs are variable in colour.
STATUS AND DISTRIBUTION. Oriental region (not in Malaysia), extending as far west as Simla. It is probably resident throughout the higher hills of Burma in small numbers, and is not uncommon at a low altitude in North-East Burma from December to March; not recorded from Tenasserim.

JAPANESE BLUE FLYCATCHER

Muscicapa cyanomelana Temminck, JAPAN
SUBSPECIES: *cumatilis* (Thayer and Bangs), HUPEH, CHINA

IDENTIFICATION. Length 6½ inches. Sexes differ. The male has the upper-parts, throat and breast blue, sharply defined against the white belly, and the bases of the outer tail-feathers white. The female is a brown bird with whitish under-parts and has a narrow buff ring round the eye.
STATUS AND DISTRIBUTION. This Japanese species is a winter visitor to south-eastern Asia, including Malaysia and Tenasserim; it is found up to 3,000 feet.

OLIVE-BACKED JUNGLE FLYCATCHER

Rhinomyias olivacea (Hume), S. TENASSERIM
SUBSPECIES: *olivacea* (Hume), S. TENASSERIM

IDENTIFICATION. Above rather similar to Brooks's flycatcher, but below whitish, washed with buff on the breast and flanks.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Eastern part of the oriental region. In Burma it is found only in southern Tenasserim.

GREY-HEADED FLYCATCHER

Culicicapa ceylonensis Swainson, CEYLON
SUBSPECIES: *calochrysea* Oberholser, N. TENASSERIM
antioxantha Oberholser, PENINSULAR SIAM

IDENTIFICATION. Plate VI, fig. 4, p. 148. Length 5 inches. A common forest species, very active and erratic in its movements and rather noisy.
VOICE. The constantly uttered call-note *silly-billy* attracts attention. The song is a loud, clear trill, followed by a prolonged twittering note.
HABITS AND FOOD. This is a forest bird, preferring those ravines and hillsides where shady arcades are chequered with occasional patches of sunlight; in such habitats it flits incessantly from bough to bough hawking insects from the air, now catching the gleams of sunlight and then hidden in the gloom; it continually fans its tail, but not as noticeably as the fantail flycatchers. In the cold weather it is a typical bird of the teak forests of the Pegu Yomas, frequenting the moister parts, and is usually much in evidence round jungle camps on account of its bold and friendly habits. Except when in family parties after the breeding season it is solitary as regards its own kind, but often joins the mixed hunting parties of small birds that are such a feature of the hill forests.

NEST AND EGGS. Wickham describes it as breeding from the end of March into April, building a neat nest into the moss on a rock-face or tree-trunk and covering it with spiders' egg cocoons. The eggs are dingy yellowish-white with greyish spots and blotches, mainly in a zone at the larger end.

STATUS AND DISTRIBUTION. Widespread in the oriental region, a common resident throughout the higher hills of Burma, and common in the foothills during the cold weather. It goes up to 8,000 feet at least in the mountains of North-East Burma, and over 10,000 feet in western Yunnan. Davison describes it as a permanent resident in Tenasserim.

Sub-family MONARCHINAE

MONARCH AND PARADISE FLYCATCHERS

These flycatchers have long ridged bills and usually take insects from branches instead of capturing them on the wing by making sallies from a perch.

MAROON-BREASTED MONARCH FLYCATCHER

Philentoma velata (Temminck), JAVA
SUBSPECIES : *caesia* (Lesson), SUMATRA

IDENTIFICATION. Length 7 inches. Sexes differ. The male has the throat and breast deep maroon and the rest of the plumage indigo-blue or black : the female has the whole plumage indigo-blue. A bird of evergreen forest with a harsh grating metallic-sounding note (Davison).

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim os far north as Mt. Mulayit.

CHESTNUT-WINGED MONARCH FLYCATCHER

Philentoma pyrrhoptera Temminck, BORNEO
SUBSPECIES : *pyrrhoptera* Temminck, BORNEO

IDENTIFICATION. Length 7 inches. Sexes differ. The male has the wings and tail chestnut, the under-parts from the breast pale buff and the rest of the plumage indigo-blue. The female is earthy-brown above and rufous-buff below.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim.

PARADISE FLYCATCHER

Terpsiphone paradisi (Linnaeus), CEYLON
SUBSPECIES : *paradisi* (Linnaeus), CEYLON
saturatior Salomonsen, BUXA DUARS, BHUTAN
indochinensis Salomonsen, CAMBODIA
burmae Salomonsen, LOWER CHINDWIN
incei (Gould), SHANGHAI

LOCAL NAME. Burmese : *sa-byu.*

IDENTIFICATION. Plate VI, figs. 2 and 2*a*, p. 148. Length, excluding the long central tail-feathers, about 9 inches. Males are dimorphic, being found in the red and white phases illustrated, but the ratio of red to white varies with the subspecies as follows (*Ibis*, 1933, pp. 730–745) :—

paradisi	Red and white in equal numbers.
saturatior	White predominating 80–86 per cent.
indochinensis	Red only.
burmae	*White only.
incei	Red predominating 73–76 per cent.

* Not many specimens have been collected, and the occurrence of the red phase is possible.

The female and young male resemble the male in the red phase, but lack the long central tail-feathers.

VOICE. The ordinary call is harsh and disappointing, a sharp, grating note ; it is said to utter a few musical notes in the breeding season.

HABITS AND FOOD. The paradise flycatcher has been aptly named, for the long waving tail-feathers somewhat resemble the ornaments of the true birds of paradise, but it is not related to them. It is typically a bird of the dry *indaing* forests of Central Burma, but is occasionally seen in the moister teak forests of the foothills, and in the evergreen hill forests. When perched, the carriage is noticeably upright.

NEST AND EGGS. Oates found *indochinensis* breeding in evergreen forest in Pegu at the end of April ; Hopwood found a nest of *burmae* in Arakan, while Mears and Oates found it breeding commonly on the Chindwin. In Katmandu, Nepal, one or two pairs used to come regularly in the hot weather to one particular garden, leaving again after rearing a family, and it seems likely that this is a local migrant that returns to the same breeding haunts each year. The nest is usually built on a branch of a tree or bush without any attempt at concealment ; it is a very neat cup of soft grass and moss firmly

plastered together with cobwebs and studded with small cocoons and pieces of lichen. The eggs are pink, more or less thickly spotted with brownish-red.

STATUS AND DISTRIBUTION. Oriental region. In Burma we have four resident subspecies: *paradisi* in northern Arakan, *saturatior* in the Upper Chindwin and North-East Burma, *burmae* in Central Burma and Arakan as far north as Akyab, and *indochinensis* in Southern Burma and Karenni to Tenasserim. The Shan States population is probably intermediate between *saturatior* and *indochinensis*. Much more breeding material is necessary before these subspecies can be fully substantiated and their ranges delimited. To complicate the picture we find that *saturatior* moves south in September through Central and Southern Burma to winter in Tenasserim and Peninsular Siam, while *incei* is a winter visitor to Siam and Malaya, reaching Kengtung and probably Tenasserim. Finally some birds may, as they do in Nepal, migrate to the higher hills for two or three months to breed. Oates described the appearance of paradise flycatchers in large numbers in the plains of Southern Burma in September and October on passage.

BLACK-NAPED MONARCH FLYCATCHER

Hypothymis azurea Boddaert, PHILIPPINE IS.
SUBSPECIES: *styani* (Hartlaub), HAINAN
forrestia Oberholser, MERGUI ARCHIPELAGO

LOCAL NAME. Burmese: *sa-me.*

IDENTIFICATION. Plate VI, figs. 6 and 6*a*, p. 148. Length 6½ inches. The male's black skull-cap is a distinctive character.

VOICE. It is a quiet bird on the whole, with a sharp little call-note.

HABITS AND FOOD. This flycatcher is common throughout the teak forests of the Pegu Yomas, keeping mainly to the bamboos and undergrowth; it is partial to moist bamboo forest near streams, but may also be met with in scrub-jungle or even open country; one individual took up its abode temporarily in a cultivator's hut we were occupying far out on the edge of the mudflats of the Sittang estuary. It is usually solitary, but individuals sometimes join mixed hunting parties of birds and travel with them through the canopy. It occasionally spreads its tail like a fantail flycatcher.

NEST AND EGGS. Have been taken in several areas in Burma, from April to June. The nest is a tiny, deep cup, beautifully made of fine

grass stems and fibres, bound together with cobwebs; the eggs, 3 or 4 in number, resemble those of the paradise flycatcher.

STATUS AND DISTRIBUTION. Widespread in the oriental region, but there seems to be only one record from western Yunnan and one from Myitkyina district (on the 30th August at Myitkyina). In Bhamo district, Harington noted it in the plains, but from the Mogok hills southwards it becomes common in the foothills and higher hills to 4,000 feet, and in the plains where there is suitable cover. It is one of the few flycatchers that breeds in the Pegu Yomas.

Sub-family RHIPIDURINAE

FANTAIL FLYCATCHERS

These flycatchers have small bills and short wings, and are easily recognised by their habit of constantly cocking up and fanning their tails.

YELLOW-BELLIED FANTAIL FLYCATCHER

Rhipidura hypoxantha (Blyth), DARJEELING

IDENTIFICATION. Length 5 inches. Sexes differ slightly. The male has a black line through the eye; the forehead, a broad eyebrow, and the under-parts bright yellow; upper-parts dark olive-brown; all but the central pair of tail-feathers tipped with white. The female only differs in having the part round the eye brownish instead of black. A typical fantail, and an extremely vivacious little bird of hill forest.

VOICE. Heinrich describes the call-note as a very thin, sharp, high chirp and the song as a quick succession of the same sharp, high tones.

HABITS AND FOOD. This is quite the most charming and confiding of the flycatchers; in the way it fans its tail and flutters out after an insect it resembles the larger fantails, but being small it is even more lively and active. Rippon noted that it almost invariably rises from and returns to its perch nearly perpendicularly, and described its favourite haunt as a place where there is a sharp dip on a ridge, both sides of the dip being covered with high evergreen trees, juicy balsams and other undergrowth; here it chooses a perch, frequently the dead branch of a fallen tree, and if there is another pair within fifty yards there will be many fights and chasing of trespassers. Any open glade will, however, suit its purpose, but at all elevations it prefers moist and evergreen forests. Stanford describes a gathering

of more than a dozen, probably on passage, in the Ngawchang valley in April.

NEST AND EGGS. Described by Harington (1909*b*), who found it breeding in the Bhamo hills in mid-April. The nest is a neat cup of moss, etc., and the eggs are creamy in colour with rings of tiny freckles at the larger end.

STATUS AND DISTRIBUTION. Siam, Yunnan, Burma, and the Himalayas as far west as Simla. In Burma it is probably resident throughout the higher hills, and is locally common, but has not been recorded from Tenasserim. In northern Burma many winter in the foothills, but further south it does not seem to come much below 5,000 feet.

WHITE-BROWED FANTAIL FLYCATCHER

Rhipidura aureola Lesson, BENGAL
SUBSPECIES : *burmanica* (Hume), N. TENASSERIM

LOCAL NAME. Burmese : *aung-sa.*

IDENTIFICATION. Plate VI, fig. 7, p. 148. Length 7 inches. A small black and white bird with a charming bar of song, which pirouettes about shady branches incessantly fanning its tail ; it has to be distinguished from the white-throated fantail flycatcher (*q.v.*). The white forehead and supercilia are conspicuous.

VOICE. The call or song is unmistakable ; it consists of 4 ascending and 2 or 3 descending notes, the intervals regular and each note full-toned and melodious.

HABITS AND FOOD. This is a common and characteristic bird of *indaing* and dry forests in the dry zone of Central Burma. It is strictly arboreal in habits and only descends to the ground for occasional momentary visits. Whistler, as usual, describes its actions both vividly and accurately, and his account is here summarised. For liveliness and grace it is only surpassed by the yellow-bellied fantail flycatcher ; it is never still, and all day long it dances and pirouettes, filled with an inimitable *joie-de-vivre.* It turns from side to side with restless, jerky movements, and like a ballet dancer before her mirror it tries out new steps and attitudes : down drop the wings, up jerks the head, and all the time the dainty round fan of the tail is opened and closed and flirted. Now and again it flits amongst the leafy branches or emerges from the shelter of the trees and launches into the air ; it seems to tumble, bent on suicide ; but a rapid snap at some tiny insect invisible to the naked eye, a swift recovery, and it has returned to the cool recesses of the foliage and is once more bowing and dancing.

NEST AND EGGS. Wickham states that he obtained a nest on the 21st March on the crags at Taunggyi, 5,000 feet, and Macdonald mentions that in Myingyan district the nest is never far from the ground. Otherwise no one seems to have bothered to describe its breeding in Burma. The nest is a beautiful little cup, small for the size of the bird, usually attached to the upper surface of a twig or small branch, often at the junction of a fork; it is made of fine fibres and grasses closely bound with cobwebs and lined with fine grass stems. The eggs, 2 to 4 in number, are pure white to pale yellowish-brown, with a broad irregular zone of greyish-brown specks and spots at the larger end.

STATUS AND DISTRIBUTION. This species is resident over most of India, Burma, and Ceylon, extending to south-western Siam. In Burma it is a common resident throughout the forests of the dry zone of Central Burma, including the Shwebo and Lower Chindwin districts. In the irrigated areas of Shwebo district it is uncommon from September to February and absent the rest of the year (Roseveare). Further north there are single records from Pangsi (in Yunnan just across the border from Bhamo district) and from Wuntho (Katha district). Southwards it straggles down the Irrawaddy valley to the plains of Southern Burma, where Stanford describes it as not uncommon; it is doubtful whether it occurs in the Sittang valley anywhere south of Toungoo, but it reappears in the Thaungyin valley (Bingham). In view of the fact that neither Rippon nor Bingham found it in the Shan States, confirmation of Wickham's record from Taunggyi is desirable. In Arakan " sparsely distributed about village gardens " (Christison).

WHITE-THROATED FANTAIL FLYCATCHER

Rhipidura albicollis (Vieillot), BENGAL
SUBSPECIES: *albicollis* (Vieillot), BENGAL

IDENTIFICATION. Length 7½ inches. Easily distinguished from the preceding species by the white throat, sooty-brown under-parts, and much narrower white supercilium.

VOICE. A low harsh note is commonly uttered. The song resembles that of the preceding species, but is much higher in pitch and thinner in tone.

HABITS AND FOOD. This is a bird of higher elevations than the white-browed fantail flycatcher, and it is partial to thick scrub in moist forest,

bamboo thickets, and hill evergreen; though its habitat is different, its actions are the same. It can be seen with almost every hunting party of small birds but rarely more than one individual is seen in each party.

NEST AND EGGS. Wickham states that Mackenzie took its eggs in the Chin Hills at the end of April; nest and eggs do not differ from those of the preceding species.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Murree in the Himalayas. It is common and resident throughout the higher hills of Burma; I have seen it at 10,000 feet near the Chimili pass, and it goes even higher in Yunnan, but such high elevations are rather exceptional; in northern Burma it is common in the foothills and plains, but may not be resident there; further south it is rarely met with at low elevations, but has been collected in the plains of Mandalay district and at 1,000 feet on Mt. Popa; in the irrigated areas of Shwebo district it may be seen throughout the year (Roseveare).

MALAYSIAN FANTAIL FLYCATCHER

Rhipidura javanica (Sparrmann), JAVA
SUBSPECIES: *longicauda* Wallace, SUMATRA

IDENTIFICATION. Length 7 inches. The eyebrow is indistinct, and the underparts are white to buff, which features suffice to distinguish it from the two preceding species. It seems partial to mangrove swamps on the coast.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Extends into Tenasserim from the south-eastern part of the oriental region. Fantail flycatchers noted by Stanford as common in mangrove jungle on the Hanthawaddy coast (in the Zepathwe reserve) may have been of this species or *albicollis*. Lowe obtained it on the Taok plateau at 3,050 feet.

Family PACHYCEPHALIDAE

WHISTLERS

This family comprises a group of bush-dwelling relatives of the flycatchers; they frequent the undergrowth, hunting for insects on the twigs and branches, and are usually seen solitary or in pairs; they have a round, thick head that has earned them the alternative name of "thickheads." The young are not spotted. The family is best developed in Australia and New Guinea, and is represented by only one species in Burma.

MANGROVE WHISTLER

Pachycephala cinerea (Blyth), RAMREE I.
SUBSPECIES : *cinerea* (Blyth), RAMREE I.

IDENTIFICATION. Length 6½ inches. Closely resembles the common wood shrike, from which it is distinguished by absence of an eyebrow and of white in the tail ; upper-parts olive-brown, head and under-parts greyish. Its call is a fine loud whistle, which it repeats 3 or 4 times or prolongs into one long note, followed by another note higher or lower in pitch. A quiet unobtrusive bird of mangrove swamps along tidal creeks.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found in Burma along the coast of Tenasserim, southern Burma, and Arakan ; in the Sittang plain it has been recorded from near Pegu and even further north.

Family LANIIDAE

SHRIKES

Shrikes are found in most parts of the old world and in North America. Generally speaking they are medium-sized, trimly-built birds of predatory habits and fierce aspect, with a hooked and hawk-like bill and a long, graduated tail ; most species have a broad black band through the eye and perch conspicuously in open country slowly swaying their tails (no other birds wave their tails about like the shrikes) ; at intervals they fly down to seize a morsel on the ground, or fly off to another perch with a characteristic harsh, swearing note. Some species have an interesting habit of maintaining a larder, in which surplus food is stuck on to thorns, hence the popular name of " butcher birds." Small mammals and birds, bees, grasshoppers, dragon-flies, beetles, butterflies, and the like may be found firmly lodged in a favourite bush.

BURMESE SHRIKE

Lanius collurioides Lesson, PEGU
SUBSPECIES : *collurioides* Lesson, PEGU

LOCAL NAME. Burmese : *hnget-bilu*.
IDENTIFICATION. Plate VII, fig. 1, p. 164. Length 9 inches. Can only be confused with the black-headed shrike (*q.v.*). In flight the short, rounded wings with a white patch and the long tail tipped white are noticeable.
VOICE. It has a harsh call-note and often collects into noisy parties.

HABITS AND FOOD. This is another bird of the dry zone of Central Burma, where it is seen mostly along roads and around fields and cultivation. In the irrigated areas of Shwebo district they are common most of the year, but begin to disappear in March, and are not seen in May ; in June they reappear in force, and are very noisy and excited on first arrival ; they remain exceedingly common through July and the numbers then fall back to normal till the following March (Roseveare). I have noticed the same influx round Mandalay in June, the birds squatting on the tops of bushes, flapping their wings and screeching.

NEST AND EGGS. Have been taken in several parts of Burma. The breeding season extends from March to early June. The nest is usually built in a small tree and is made of leaves, grass, lichen, feathers, etc., covered with cobwebs and lined with fine grass ; some nests are much larger than others. The eggs, 3 to 6 in number, are very variable in colour.

STATUS AND DISTRIBUTION. Assam, Burma, western Yunnan, Siam and Annam. In Burma it breeds in the Chin Hills, North-East Burma (plains only), Central Burma, and the Shan States. In North-East Burma it winters in the plains in small numbers, and a few pairs breed there, but it has not been seen in the hills ; on the other hand, it certainly occurs in the Mogok hills from December to April, up to 4,000 feet at least ; from there southwards through the Shan States the population probably consists of a few residents and a large number of summer visitors who come up to breed from March onwards, when they largely disappear from the plains of Central and Southern Burma. From June to August there is a constant stream of young birds and adults back to the plains, and during this period the whole of the dry zone is packed with them ; pressure of population drives them down the Irrawaddy valley as far as Henzada, south of which they become uncommon, but they reach Amherst and the Thaungyin valley. The highest record we have is from 6,000 feet (in Karenni). Some pairs remain in the plains to breed.

BLACK-HEADED SHRIKE

Lanius schach Linnaeus, CANTON, CHINA
SUBSPECIES : *tricolor* (Hodgson), NEPAL
longicaudatus Ogilvie-Grant, BANGKOK

IDENTIFICATION. Plate VII, fig. 3, p. 164. Length 10 inches. Distinguished from the Burmese shrike by having the whole upper-part

of the head to the nape black ; the tail is longer and tipped with pale chestnut, not white.

VOICE. This bird has slightly harsher call-notes than the Burmese shrike. In the breeding season it is perhaps the finest of all Burmese songsters ; when the hen is sitting the cock will sing for a quarter of an hour at a stretch from an adjacent branch or post ; the notes are very rich and full, wonderfully modulated and the song itself is varied and sustained. In their breeding quarters they are swearing and chattering at passers-by all day long.

HABITS AND FOOD. This is not a shy bird, and it perches conspicuously on bushes, wires, etc. In habits and actions it does not differ from the Burmese shrike.

NEST AND EGGS. Harington found it breeding at Sinlum Kaba, and a nest with 4 eggs was found by Smith on the 20th May near Bernardmyo ; it was placed in a small isolated bush on a grassy hillside at 5,500 feet. The nest is a large cup of grass and the eggs are even more variable in colour than those of the Burmese shrike.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Garhwal. It probably breeds throughout the higher hills of Burma ; in North-East Burma it is common throughout the plains from late October to March, and a few birds winter in the hills (I noted one individual who did not seem to mind the snow at 7,000 feet near the Panwa pass in the first week of February) ; it does not breed in the plains, except for the large colony which is such a characteristic feature of the Putao plain (1,500 feet) at any time of the year. From the Mogok hills through the Shan States to Karenni it breeds in small numbers, but is much less common than the Burmese shrike. In the plains of Central and Southern Burma it seems to be rare, but there are isolated records of its occurrence in the Myitmaka drainage (the 27th August) and at Kamakalok near the Hanthawaddy coast ; it is interesting to note that in Oates's day it seems to have been not uncommon in Southern Burma, especially during the rains.

TIBETAN SHRIKE

Lanius tephronotus (Vigors), HIMALAYAS
SUBSPECIES : *tephronotus* Vigors, DARJEELING

IDENTIFICATION. Plate VII, fig. 4, p. 164. Length 10 inches. Dark grey back, rufous tail, and rusty flanks are distinctive.

VOICE. Like other shrikes it utters harsh, scolding notes.

HABITS AND FOOD. Usually seen singly on telegraph wires and

similar points of vantage, but a few birds may gather at dusk to roost.

STATUS AND DISTRIBUTION. This species breeds on the Tibetan plateau and the Likiang range in Yunnan. It is a winter visitor throughout Burma, excluding Tenasserim, and is the common shrike of the Kachin hills in the cold weather ; the earliest and latest dates noted by Stanford in the Myitkyina plains are the 27th September and the first week of May, but most birds have gone by mid-March. It has been recorded from Arakan, the Arakan Yomas, Mogok hills (common from 2,000 feet upwards), Shan States, Thandaung (the 11th October), and Kyauknyat.

BROWN SHRIKE

Lanius cristatus Linnaeus, BENGAL
SUBSPECIES : *cristatus* Linnaeus, BENGAL
lucionensis Linnaeus, LUZON, PHILIPPINE IS.

LOCAL NAMES. Burmese : *hnget da-zat* or *wa-yon hnget*.

IDENTIFICATION. Plate VII, fig. 2, p. 164. Length 7½ inches. Young birds have crescentic bars on the under-parts.

VOICE. A low *tck-tck-tck-tck-tck* is often uttered from the midst of a bush, in addition to the usual harsh swearing notes of the family.

HABITS AND FOOD. Those of the family. This is a typical bird of the plains in the cold weather, frequenting gardens, open country, and scrub-jungle, and perching on telegraph wires, railings and other points of vantage ; its harsh swearing note can be heard all day long in and around Rangoon. Lindop observed that they seized small frogs and carried them off alive to a perch on a tree or bush.

STATUS AND DISTRIBUTION. Breeds in eastern Siberia, Mongolia, Manchuria, and parts of China, migrating south in winter. In North-East Burma it is a rare and shy passage migrant, the autumn passage taking place between the 10th September and the 29th October and the return passage from late March to May ; a few birds may winter in the plains. Harington noted their arrival in Sinlum Kaba on the 7th May, and odd birds have been observed in the Sadon hills between the 1st and 25th May ; Forrest obtained adults at 6,000–8,000 feet in June in western Yunnan. In Rangoon in three successive years the first arrivals were noted on the 12th, 12th, and 10th September, and from then on it is common all over the plains of Southern Burma. Common also in Arakan (the 6th September to the 4th May). In the Shan States Wickham noted them up to April.

TIGER SHRIKE

Lanius tigrinus Drapiez, JAVA

IDENTIFICATION. Length 7 inches. Distinguished from the brown shrike by having the crown, nape, upper back and neck dark grey, and the remaining upper-parts chestnut barred with black.

STATUS AND DISTRIBUTION. Breeds in northern China and Japan and migrates south in winter to the eastern part of the oriental region. It is a straggler to the extreme south of Tenasserim.

Family CAMPEPHAGIDAE

WOOD SHRIKES, MINIVETS, AND CUCKOO-SHRIKES

The wood shrikes are shrike-like birds of arboreal habits, as their name implies, and they form a connecting link between the true shrikes (from which their small feet and soft plumage separate them) and such families as the minivets and cuckoo-shrikes. The minivets comprise a large number of species, extending over most of the oriental region, which are remarkable for their brilliant plumage, with red or yellow as the dominant colour in most species. They are essentially birds of the tree-tops and are usually seen in parties, the members of which communicate with soft and mellifluous call-notes as they flit from tree to tree in follow-my-leader fashion and search the foliage for insects. The cuckoo-shrikes are grey birds which probably derive their name from their loud voices, for they are not related to the cuckoos nor to the shrikes ; like the minivets they are birds of the tree-tops.

BAR-WINGED FLYCATCHER-SHRIKE or PIGMY TRILLER

Hemipus picatus (Sykes), DECCAN
SUBSPECIES : *picatus* (Sykes), DECCAN
capitalis (McClelland), ASSAM

IDENTIFICATION. Plate VII, fig. 5, p. 164. Length 5½ inches. Sexes differ, the female having the upper-parts dark brown. In flight the white wing-bar and white tips to the tail-feathers are conspicuous. A forest bird.

VOICE. The call-note is a high-pitched *chir-rup, chir-rup*.

HABITS AND FOOD. This little shrike is like a flycatcher in its actions, catching insects on the wing in little sallies from a perch, but occasionally seizing them from the ground in the shrike manner. Except

in the breeding season it is usually seen in parties working through the canopy of foothill forests.

NEST AND EGGS. Macdonald found two nests on Mt. Popa in April. The nest is usually built on an outer branch of a tree and is a small shallow saucer of roots and fine twigs, neatly and strongly fastened together with cobwebs. The eggs, 2 or 3 in number, are variable in colour and markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is found sparingly throughout the forests of Burma in the foothills and higher hills, up to 6,000 feet.

BLACK-WINGED FLYCATCHER-SHRIKE or PIGMY TRILLER

Hemipus hirundinaceus (Temminck), JAVA

IDENTIFICATION. Length 6 inches. Distinguished from the preceding species by having no white tips to the tail-feathers.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Mergui (according to Blyth, but Davison never met with it).

BROWN-TAILED WOOD SHRIKE

Tephrodornis gularis (Raffles), BENKULAN, SUMATRA
SUBSPECIES : *pelvica* (Hodgson), NEPAL
vernayi Kinnear, W. SIAM
annectens Kloss, PENINSULAR SIAM
jugans Deignan, N-W. SIAM

IDENTIFICATION. Plate VII, fig. 6, p. 164. Length 9 inches. Sexes differ, the female having a brown streak through the eye and the head the same colour as the back. Young birds resemble the female, but are barred with blackish and have white spots on the head and neck. Usually seen in small parties in the tree-tops, moving from tree to tree with a slow dipping flight.

VOICE. The members of a party constantly call and chatter to one another with a harsh *chreek-chreek-chreek* and a softer *tit-tiu* ; at times it sits bolt upright and swears like the true shrikes. A very noisy bird.

HABITS AND FOOD. The wood shrike is a forest species and is fairly common in the teak forests of the Pegu Yomas during the cold weather ; it usually hunts for insects in the foliage or on the branches, occasionally hawking from a perch or descending to the ground.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far

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1. BURMESE SHRIKE (adult) 159
Lanius collurioides collurioides.

2. BROWN SHRIKE (immature) 162
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3. BLACK-HEADED SHRIKE (adult) 160
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5. BAR-WINGED FLYCATCHER-SHRIKE (adult male) . . 163
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8*a*. SCARLET MINIVET (adult female) 165
Pericrocotus flammeus elegans.

9. JERDON'S MINIVET (adult male) 169
Pericrocotus erythropygia albifrons.

10. SMALL MINIVET (adult male) 168
Pericrocotus peregrinus vividus.

PLATE VII

west as Nepal. It is found more or less throughout the foothills and higher hills of Burma, up to 6,000 feet, and is locally common; although the nest has not been found in Burma, it probably breeds throughout its range.

COMMON WOOD SHRIKE

Tephrodornis pondiceriana Gmelin, COROMANDEL
SUBSPECIES: *pondiceriana* Gmelin, COROMANDEL
thai Kloss and Chasen, W. SIAM

IDENTIFICATION. Plate VII, fig 7, p. 164. Length 6½ inches. Usually seen in parties in the tree-tops.

VOICE. The call-note is very sweet and distinctive, and consists of several whistling notes *wheet-wheet*, followed by an interrogative *whi-whi-whi-whi*. The male has a shrill warbling song in the breeding season.

HABITS AND FOOD. This is a bird of open wooded country and scrub-jungle, and seems to prefer *indaing* to other types of forest. In actions it does not differ from the preceding species.

NEST AND EGGS. Breeds from March to July in the Myingyan district (Macdonald). Wickham found a nest at 3,000 feet in the Shan States at the beginning of April; it was built in a small tree standing by itself in scrub-jungle and was a very shallow cup of moss and lichen, lined with hair. The eggs, 2 or 3 in number, resemble the eggs of the true shrikes; they are cream, stone or pale greenish-white in ground-colour, spotted and blotched with yellowish- and reddish-brown mainly in a conspicuous but ill-defined zone round the larger end, intermingled with clouds of pale and dingy purple.

STATUS AND DISTRIBUTION. India, Burma, Siam, and Annam; neither this nor the preceding species have been reported from Yunnan. In Burma it is probably resident throughout the plains and foothills, ascending the higher hills to about 5,000 feet (but not in northern Burma); it seems to be commonest in Central Burma and the Shan States, as one would expect of a bird that prefers dry forests.

SCARLET MINIVET

Pericrocotus flammeus (Forster), CEYLON
SUBSPECIES: *elegans* (McClelland), ASSAM
flammifer Hume, S. TENASSERIM
suchitrae Deignan, N. SIAM

LOCAL NAME. Burmese: *hnget-mintha* (the prince bird).

IDENTIFICATION. Plate VII, figs. 8 and 8*a*, p. 164. Length 9 inches.

Larger size and yellow, not crimson, under wing-coverts and axillaries distinguish it from the short-billed minivet, but it is not easy to do so in the field.

VOICE. Parties have cheery mellifluous call-notes, which do not seem to differ from those of the short-billed minivet.

HABITS AND FOOD. Bright tones harmonise well with the Burmese scene, and the splashes of scarlet and yellow afforded by a party of these birds fluttering about in the tree-tops or winging their way across a clearing are a perpetual source of delight in the teak forests, where they are one of the most characteristic birds.

NEST AND EGGS. Wickham records finding a nest in the Chin Hills, and twelve years later finding another nest in the same tree. The nest is built on a branch and looks like a mere excrescence of the wood ; it is a shallow little cup of fine twigs, roots and grass stems, bound together on the outside with cobwebs and studded with lichen, moss and scraps of bark. The eggs, 2 or 3 in number, are pale green with spots and blotches of pale blue and dark brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is common throughout Burma in the foothills and higher hills and is probably resident where found. It goes up to 6,500 feet in North-East Burma and up to 8,000 feet in Yunnan.

[NOTE.—*speciosus* Latham, DARJEELING, is probably the form in N-W. Burma.]

SHORT-BILLED MINIVET

Pericrocotus brevirostris Vigors, SIKKIM

IDENTIFICATION. Length 7 inches. For distinctions from *flammeus* see under the preceding species. This species cannot be distinguished from its " double " *ethologus* in the field, but Mayr has shown (*Ibis*, 1940, p. 712) that these forms breed together side by side over a large area and must therefore be treated as separate species, although the differences between them are so slight that they would otherwise be considered of merely subspecific value. Of the differences listed by Mayr we may select the following :

MALES

Two or three innermost secondaries with a red margin, 1st primary with a whitish or pink margin along the outer web . . . *ethologus*

Inner secondaries black, without a red margin, 1st primary all black . . . . . *brevirostris*

FEMALES

Feathers round eye white, cheeks whitish, ear-coverts grey . *ethologus*
Feathers round eye yellowish, cheeks and ear-coverts strongly washed with yellow . . . . . *brevirostris*

VOICE. The call is *swisweet-sweet-sweet*, with variants.
HABITS AND FOOD. To appreciate these lovely birds to the full, watch them working through a pine forest, where in bright sunlight the delicate tracery of the pine needles affords the ideal background for the scarlet, black and yellow plumage.
NEST AND EGGS. Wickham records finding a nest with three fresh eggs on the 22nd March, on the Taunggyi hills. The nest and eggs are similar to those of the preceding species.
STATUS AND DISTRIBUTION. Himalayas to Yunnan, Siam, Indo-China. In Burma it probably occurs throughout the higher hills, but previous records are mixed up with *ethologus*; specimens have been obtained in the Chin Hills, North-East Burma, and northern Tenasserim (Taok plateau). There are no records from the foothills, but it may occur at low elevations in winter.

FLAME-COLOURED MINIVET

Pericrocotus ethologus Bangs and Phillips, HUPEH, CHINA
SUBSPECIES: *ethologus* Bangs and Phillips, HUPEH, CHINA
cryptus Mayr, N. SIAM

IDENTIFICATION. See under *brevirostris*.
VOICE. Has not been distinguished from that of *brevirostris*.
HABITS AND FOOD. Same as *brevirostris*.
NEST AND EGGS. Not described from Burma, unless Wickham's nest mentioned above was really of this species.
STATUS AND DISTRIBUTION. A Chinese species, extending as far west as Burma. It has been recorded from the Chin Hills, North-East Burma and the Shan States, and as a winter visitor from Pegu. Its range in Burma may well be wider than the records would indicate.

FIERY MINIVET

Pericrocotus igneus Blyth, MALACCA
SUBSPECIES: *igneus* Blyth, MALACCA

IDENTIFICATION. Length 6½ inches. Oval red spots on the innermost secondaries distinguish the male from the other minivets with black crowns and back. The female has a black and red tail and bright yellow under-parts.

NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, extending to the extreme south of Tenasserim.

YELLOW-THROATED MINIVET

Pericrocotus solaris Blyth, DARJEELING
SUBSPECIES : *solaris* Blyth, DARJEELING (= *ripponi* Stuart Baker)

IDENTIFICATION. Length 7 inches. The male is distinguished by ashy and not black crown and back, and by a yellow patch on the grey throat ; in the female the upper back and lower back are not concolorous.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. This species extends from Nepal eastwards to Yunnan and China. In Burma it has been recorded from the Chin Hills, Upper Chindwin, North-East Burma, and throughout the eastern hills to Tenasserim, but is nowhere common ; it has also been obtained in the Sittang plain near Pegu, and is probably an occasional winter visitor to the plains.

ROSY or ASHY MINIVET

Pericrocotus roseus (Vieillot), BENGAL
SUBSPECIES : *roseus* (Vieillot), BENGAL
divaricatus (Raffles), SUMATRA
cantonensis Swinhoe, CANTON, CHINA

IDENTIFICATION. Length 7–8 inches. The male of *roseus* has the crown and back ashy and the under-parts rosy-red ; the female resembles the female of *brevirostris* but the rump is pale yellow margined with deep yellow, and not all deep yellow. The other two forms have no red or yellow in the plumage and are sometimes known as ashy minivets ; *divaricatus* has the back and rump the same colour, whereas in *cantonensis* the rump is much paler than the back.
NEST AND EGGS. A nest found at Maymyo on the 17th April contained 3 fresh eggs ; other nests have been taken at Maymyo (Osmaston) and in the Lower Chindwin (Hopwood).
STATUS AND DISTRIBUTION. Widespread in the oriental region. The subspecies *roseus* has been recorded from all parts of Burma down to Mergui, but the only breeding records are as given above ; it is common in western Yunnan up to 6,000 feet, and is not uncommon in the moister forests of the Pegu Yomas in the Yamethin district during the cold weather. The subspecies *divaricatus* breeds in Japan, and Oates obtained one near Pegu. The subspecies *cantonensis* breeds in eastern China and has been recorded from Southern Burma and Tenasserim as a winter visitor.

SMALL MINIVET

Pericrocotus peregrinus (Linnaeus), CEYLON
SUBSPECIES : *vividus* Stuart Baker, N. TENASSERIM
thai Deignan, N-W. SIAM
separatus Deignan, S. TENASSERIM

IDENTIFICATION. Plate VII, fig. 10, p. 164. Length 6 inches. A small long-tailed minivet, dull-coloured except for a conspicuous flame-

coloured patch on the rump and wing, and in the male on the breast also. Usually seen in small parties actively hunting insects through the foliage and often making little sallies into the air.

VOICE. The call-notes are low and pleasant.

HABITS AND FOOD. Those of the family. This is mainly a bird of the forests of the foothills, and is partial to the fringing forests of tidal creeks.

NEST AND EGGS. Wickham records that they breed up to 3,500 feet, commencing to lay at the beginning of May ; he found one nest only two feet off the ground. Hopwood found a nest in Maymyo in June. The nest is a beautifully made little cup.

STATUS AND DISTRIBUTION. Widespread in the oriental region. There is no record from northern Burma, but from the Mogok foothills and the Shwebo district southwards it is widely distributed in the drier and more open forests of the foothills, ascending to about 5,000 feet in the Shan States. It is common along the coast of Southern Burma. It is probably resident where found, but the only breeding records are from the Shan States and Maymyo.

JERDON'S MINIVET

Pericrocotus erythropygia Jerdon, S. INDIA
SUBSPECIES : *albifrons* Jerdon, THAYETMYO

IDENTIFICATION. Plate VII, fig. 9, p. 164. Length 6 inches. The pure white forehead, eyebrow, chin and throat of the male and the white forehead and under-parts of the female distinguish this species.

VOICE. Not recorded.

HABITS AND FOOD. This is a typical bird of the dry scrub and thorn jungles of the dry zone of Central Burma. Unlike other minivets it is not a bird of the tree-tops, being usually seen perched on low thorn bushes, long grass, or even on the ground (Roseveare).

NEST AND EGGS. A nest found on the 8th July at Minbu was built in a low bush one foot off the ground ; grass cemented with cobwebs formed a perfect 2-inch circle on a horizontal fork ; it was ornamented outside with bark, and lined with a few pieces of grass, but the three eggs rested directly on the branch (Roseveare). The eggs are greyish-white, marked all over with longitudinal streaks of dark brown and a few underlying streaks of pale blue-grey.

STATUS AND DISTRIBUTION. India and Burma only. It is common throughout the dry zone of Central Burma and straggles south to Toungoo, where Lloyd obtained it.

LESSER CUCKOO-SHRIKE

Delacour (*Amer. Mus., Nov.* No. 1497, April 1951) divides the birds described in the first edition under *Coracina fimbriata* into three species, each with a number of subspecies, of which the Burmese forms are shown below.

Coracina polioptera Sharpe, COCHIN CHINA
SUBSPECIES : *indochinensis* Kloss, S. ANNAM
Coracina melaschistos Hodgson, NEPAL
SUBSPECIES : *melaschistos* Hodgson, NEPAL
avensis Blyth, ARAKAN
intermedia Hume, TENASSERIM
Coracina fimbriata Hume, S. TENASSERIM

IDENTIFICATION. Plate VIII, fig. 1, p. 176, depicts *polioptera*. Length 9 inches. The white tips to the tail feathers are distinctive, especially when the bird is viewed from below. In *melaschistos* the tail is blacker than shown in the plate, and in *fimbriata* the white tips are smaller and often greyer.

VOICE. A loud, melodious call, which may be termed the " three blind mice " call, consisting of three notes dropping in pitch, with a slight pause between each note. A variation, often heard in Karenni where *polioptera* is the common species, contains an introductory note on the same pitch as the first note. Another variation, heard in Maymyo and probably attributable to *melaschistos*, consists of three quick notes after an introductory note, and a final two notes dropping in pitch.

HABITS AND FOOD. An arboreal bird, usually seen calling in the tree-tops or hunting about among the branches. *Polioptera* prefers open forests and gardens, *melaschistos* favours forest, often deep and damp, while *fimbriata* is found both in forests and near cultivation.

NEST AND EGGS. As far as known, those of all three species are the same. They have been taken at Maymyo, Taunggyi and in Tenasserim from late April to July. The nest is usually built high up in a tree, and is difficult to see from below ; it is a shallow saucer of fine twigs, roots, etc., bound together with cobwebs. The eggs, two or three in number, are pale green, profusely marked with brown blotches.

STATUS AND DISTRIBUTION. *polioptera* is resident at low and moderate altitudes from the southern Chin Hills and Southern Shan States to Tenasserim. *melaschistos* breeds at high altitudes from the Himalayas to about lat. 16° N., and winters in the plains and valleys throughout Burma. *fimbriata* is a Malaysian species which breeds in S. Tenasserim.

BLACK-HEADED CUCKOO-SHRIKE

Coracina melanoptera Rüppell, PUNJAB
SUBSPECIES: *sykesi* Strickland, CALCUTTA

IDENTIFICATION. Length 8 inches. The male has the whole head and breast black, the remaining under-parts white; upper-parts grey, the tail white-tipped. I recorded its call at Haldwani, United Provinces, as a distinctive loud call of about 10 notes uttered very rapidly on a monotone, except that the first note is higher in pitch.

STATUS AND DISTRIBUTION. The whole of India. Christison records that it is a winter visitor in small numbers to Arakan, arriving about mid-October and leaving in April. Mackenzie obtained one in the northern Chin Hills and Blyth stated that it occurred in "Upper Pegu," but this record has never been confirmed.

GREATER CUCKOO-SHRIKE

Coracina novae-hollandiae Gmelin, TASMANIA
SUBSPECIES: *siamensis* (Stuart Baker), CENTRAL SIAM
rex-pineti Swinhoe, FORMOSA

IDENTIFICATION. Plate VIII, fig. 3, p. 176. Length 11 inches.

VOICE. The members of a party constantly utter a harsh, grating, disyllabic call-note, which has a slight resemblance to the harsh call of the black-naped oriole.

HABITS AND FOOD. This bird is typically seen in large, noisy parties in the crowns of trees, whether in the teak forests of the Pegu Yomas or the pine and oak forests of the higher hills; it is readily identified at a distance by its characteristic habit of lifting up each wing alternately and calling at the same time. It feeds principally on insects, but also on fruits and berries and is partial to *ficus* trees.

NEST AND EGGS. Wickham records that he took eggs in Maymyo at the end of May, and that Mackenzie took eggs in the Chin Hills at the end of April. It makes a wonderfully neat and small nest for its size, generally high up in a fork of a tree and difficult to see. The eggs, 2 or 3 in number, are green when fresh, but quickly fade to buff if exposed to the light; they are marked with a few bold blotches of inky-purple.

STATUS AND DISTRIBUTION. Widespread in the oriental and Australasian regions. In northern Burma it is a bird of the teak forests of low elevations, and Stanford records that he has never seen it in the hills; on the other hand, Forrest collected it at 7,000 feet near Tengyueh. Elsewhere, however, it certainly ascends the higher hills (we have seen it at 6,000 feet in Karenni), and is not uncommon throughout the forests of the foothills. It occurs in the dry zone

uplands west of Meiktila (in August). Davison described it as rare in Mergui district, but comparatively common from Tavoy northwards, in the less densely wooded areas.

Family ARTAMIDAE

SWALLOW-SHRIKES

The swallow-shrikes or wood swallows resemble the shrikes in having the young barred both above and below, and also in their strong bill, which is gently curved though neither hooked nor notched. Only one member of the family is found in Burma ; another is found in Malaysia, and the rest in Australia.

ASHY SWALLOW-SHRIKE

Artamus fuscus Vieillot, BENGAL

IDENTIFICATION. Plate VIII, fig. 2, p. 176. Length 7 inches. A dull grey bird with a white patch over the tail and broad triangular wings, which looks like a large, heavy swallow ; it soars continually into the air from a perch and constantly utters a harsh cry, which distinguishes it from any of the swallow tribe.

VOICE. The usual note is a harsh nasal call, *pench*.

HABITS AND FOOD. This bird is social in its habits, breeding in colonies and is found in large or small flocks at all times of the year ; the birds settle in rows on a lofty bough, the top of a tall bamboo, or a telegraph wire, and thence sally into the air in pursuit of passing insects ; they fly round for a minute or two in a wide circle and then return to the perch where they shuffle closely together. It is sometimes stated that they are crepuscular in habits and are only found near palm trees, but neither statement is of universal application.

NEST AND EGGS. Round about Myitkyina they breed in trees and stumps from April onwards, and in the Kachin hills they favour dead forest trees standing in *taungya* clearings. In the Chin Hills also they breed in April and May. The nest is a shallow, loose cup of fine grass, roots, fibres and feathers. The eggs, 2 to 4 in number, are white to cream in ground-colour with spots and clouds of reddish-brown, deep purplish-brown and lavender.

STATUS AND DISTRIBUTION. Widespread in the oriental region (not in Malaysia) and found throughout Burma, excluding southern

Tenasserim. It moves about locally a good deal; Stanford reports that it disappears from Myitkyina in the cold weather (not seen from the 20th October to mid-March); on the other hand, it has been seen in Katha district in November and January; in the irrigated areas of Shwebo district it was observed in every month except between the 22nd March and the 14th June, whereas in Minbu district it was uncommon in June and July, and fairly common for the rest of the year (Roseveare). In the higher hills its ceiling seems to be 5,000 feet (North-East Burma and Karenni).

Family DICRURIDAE

DRONGOS

The drongos are easily recognised by their uniform black or ashy plumage, long forked tail of 10 feathers, and long pointed wings. They are not true migrants, but most of them move locally with the seasons and, although they are amongst the commonest birds of Burma, we still know very little about these movements, their cause and extent. The family is widespread in the tropics of the old world.

CROW-BILLED DRONGO

Dicrurus annectens (Hodgson), NEPAL

IDENTIFICATION. Length 11 inches, including a tail of 5 inches. In the field indistinguishable from the next species.

NEST AND EGGS. Not described from Burma, but some eggs collected by Smith in the plains of the Shwele drainage, Prome district, differed from the eggs of other drongos; they were all of the same type, white characteristically streaked with purple, and may have been eggs of this species.

STATUS AND DISTRIBUTION. From Nepal through Burma to Malaysia. It has been recorded from the plains of Southern Burma, Kalaw (Rippon), Karenni, and Tenasserim. Its status is uncertain; seventy years ago Oates described it as sweeping through Pegu every year in October, and his collectors obtained great numbers along the Pakchan estuary from the 13th December to the 10th February.

BLACK DRONGO

Dicrurus macrocercus Vieillot, S. INDIA
SUBSPECIES: *albirictus* (Hodgson), NEPAL
cathoecus Swinhoe, S. CHINA
thai Kloss, S-W. SIAM

LOCAL NAME. Burmese: *lin-mi-zwe*.

IDENTIFICATION. Plate VIII, fig. 4, p. 176. Length 12 inches,

including a tail of 5½ inches. The outermost tail-feathers exceed the central ones by about 1½ inches, whereas in the crow-billed drongo they exceed the central ones by less than 1 inch. Common plains species.

VOICE. It has a great variety of loud and cheerful, though somewhat metallic, call-notes, the commonest being *al-cheet* and *al-ka-chi-ri*. The raucous call is sometimes punctuated at frequent intervals by a beautiful clear whistle—an amazing contrast (Roseveare).

HABITS AND FOOD. The name of king crow sometimes bestowed on this bird is not due to any connection with the crow family, but partly to its colour and partly to its extreme pugnacity and fearlessness in defence of its nest ; it is a common sight to see a pair of these birds chasing a crow through the air, stooping at and around it with a mastery of flight and power only excelled by the falcons, and accompanying the performance with a series of angry calls that attract attention. It is a bird of the plains and of open wooded country and scrub-jungle ; telegraph wires, dead trees and other points of vantage are favourite perches from which it watches vigilantly for every insect that stirs in the air or on the ground, swaying and flicking its long tail meanwhile. It also perches on the backs of grazing cattle and snaps up insects disturbed by the animals' feet. At times it plays the pirate, waiting until an industrious myna or hoopoe has unearthed a tasty morsel and then swooping down to seize the prize.

NEST AND EGGS. Have been described from several areas in Burma. Most eggs are laid in April and May. The nest is suspended from a horizontal fork usually at a considerable height from the ground ; it is a broad, shallow cup of tiny twigs and fine grass stems neatly and strongly woven together and bound with cobwebs on the outside. The eggs, 2 to 5 in number, are very variable in colour. The young are fed by regurgitation (Roseveare).

STATUS AND DISTRIBUTION. Widespread in the ethiopian and oriental regions. It is spread over the whole of Burma in the plains, and is found in the hills in open country, but it is a local migrant. A few birds seem to be sedentary throughout its range, but the majority appear to leave the southern parts of Burma (excluding Tenasserim) in the hot weather to breed in Central and northern Burma and return again in October. Stanford describes it as arriving in the Myitkyina district late in March or early in April and leaving again in mid-October, except for a few stray individuals that winter in the plains. It is common all over the dry zone uplands west of

Meiktila in August. The return migration down the Sittang valley to Rangoon, from the 1st October onwards, is very striking to an observer in either Toungoo or Rangoon, after its absence (except for a few stray individuals) during the rains. In the Irrawaddy valley it seems to be less migratory, and many pairs breed in Henzada, Tharawaddy, and Prome districts, in May and June; but it becomes very silent and self-effacing when breeding and is easily overlooked. It is not typically a hill bird, but it is found over the Shan States, and in Yunnan it goes up to 7,000 feet.

[NOTE.—Birds from north-western Burma are intermediate between *albirictus* and *cathoecus*.]

ASHY DRONGO

Dicrurus leucophaeus Vieillot, JAVA
SUBSPECIES: *mouhoti* (Walden), CAMBODIA
bondi de Schauensee, E. SIAM
hopwoodi Stuart Baker, BENGAL
leucogenis (Walden), YUNNAN
nigrescens Oates, PEGU
salangensis Reichenow, JUNK SEYLON

IDENTIFICATION. Plate VIII, fig. 5, p. 176. Length 10 inches. The form *leucogenis* has the sides of the head white, but the other subspecies resemble the black drongo in general appearance, but with a noticeably longer and more widely and deeply forked tail; the plumage is less black, and the beady red eye is sometimes conspicuous. A forest bird.

VOICE. It has a large range of call-notes, the commonest resembling *drangh-gip* or *gip-gip-drangh*; some notes are musical, others harsh and scolding. The bird is something of a mimic and has a short, pleasant song.

HABITS AND FOOD. This is a forest bird of the footnills and higher hills, keeping mainly to the tree-tops, and is rather shy and difficult to approach; it is a typical bird of the teak forests of the Pegu Yomas in the cold weather. It has much the same habits, and the same powers of flight and pugnacity, as the black drongo; to see a party of these birds snapping up winged termites as they emerge from their nest is to witness a superb display of aerobatics.

NEST AND EGGS. Have been described from Maymyo, Taunggyi and elsewhere. Wickham states that they begin to nest at the end of March in the Shan States, and describes the eggs as squat ovals in shape, unlike the black drongo's, and very much handsomer.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is

resident in moderate numbers throughout the higher hills of Burma up to 8,000 feet (in Yunnan it goes much higher, up to 13,000 feet). There are no breeding records from the plains and foothills, and its status there requires more investigation. The subspecies *leucogenis* and *salangensis* are winter visitors to southern Tenasserim and Malaya from their breeding haunts in eastern Asia; Davison found the former very abundant in Mergui district.

BRONZED DRONGO

Dicrurus aeneus (Vieillot), DACCA, BENGAL
SUBSPECIES: *aeneus* (Vieillot), DACCA, BENGAL
malayensis Blyth, MALACCA

IDENTIFICATION. Plate VIII, fig. 6, p. 176. Length 8½ inches. Distinguished from the black drongo by smaller size; the bronze gloss from which it gets its name is often indistinct, even with the bird in the hand.

VOICE. The usual call-notes are a harsh *crer-reate* or *ger-ler-ger-leek* and a whistle *chir-teu-teu*; it also has a pleasant song.

HABITS AND FOOD. Similar to those of the ashy drongo; it is a forest bird, frequenting the teak forests of the foothills and the pine and oak forests of the higher hills; it keeps mainly to the tree-tops, has a swift and graceful flight, and is partial to telegraph wires running through the forest.

NEST AND EGGS. Described from several areas in Burma, from late March (Taunggyi) to May. The nest is usually built at the tip of a long bamboo, the tip of an outer branch of a jack fruit, or similar site, and is a typical drongo's nest, but smaller than most. The eggs are variable in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and found throughout the forests of Burma, ascending to 6,000 feet; Stanford describes it as the commonest and most typical forest drongo of the Kachin and Naga hills in northern Burma; it is probably resident throughout its range and some birds certainly breed at plains level (*e.g.* round Katha).

HAIR-CRESTED DRONGO

Dicrurus hottentottus, (Linnaeus), S. CENTRAL SIAM
SUBSPECIES: *hottentottus* (Linnaeus), S. CENTRAL SIAM
brevirostris (Cabanis and Heine), CHINA
chrishna Gould, NEPAL

IDENTIFICATION. Plate VIII, fig. 9, p. 176. Length 12 inches. A fine large, glossy drongo with curled-up ends to the tail that resemble the

PLATE VIII

Page

1. LESSER CUCKOO-SHRIKE (adult male) 170
   Coracina polioptera indochinensis.

2. ASHY SWALLOW-SHRIKE (adult) 172
   Artamus fuscus.

3. GREATER CUCKOO-SHRIKE (adult male) 171
   Coracina novae-hollandiae siamensis.

4. BLACK DRONGO (adult) 173
   Dicrurus macrocercus cathoecus.

5. ASHY DRONGO (adult) 175
   Dicrurus leucophaeus mouhoti.

6. BRONZED DRONGO (adult) 176
   Dicrurus aeneus aeneus.

7. GREATER RACKET-TAILED DRONGO (adult) . . . 178
   Dicrurus paradiseus rangoonensis.

8. LESSER RACKET-TAILED DRONGO (adult) . . . 177
   Dicrurus remifer tectirostris.

9. HAIR-CRESTED DRONGO (adult) 176
   Dicrurus hottentottus hottentottus.

PLATE VIII

tail-fins of a Halifax bomber. The long hairs springing from the forehead, from which the bird derives its name, are not easy to see in the field except with glasses in a good light.

VOICE. It has a variety of loud call-notes.

HABITS AND FOOD. This is another typical bird of the teak forests of the Pegu Yomas and, though not gregarious, an unusually ample supply of food will attract many individuals, which feed amicably together; thus a flight of termites or a *letpan* tree in full bloom, with its great red flowers full of insects, will attract many of these birds. They feed largely by searching flowers, leaves and tree-trunks for insects, but also catch these on the wing when they have the opportunity; they do not, however, like the black drongo, spend much of their time on the ground. They are remarkably fearless when breeding, and I have been "dive-bombed" repeatedly by one of a pair when I approached the nest; nose-dives are also a conspicuous feature in the display.

NEST AND EGGS. Breeds, in the plains and hills alike, from late March to May. Wickham describes the nests as very untidy cradles built in a great variety of situations. The eggs are longer and more pointed than those of other drongos, and vary from white to deep pink in ground-colour profusely marked with pale reddish blotches.

STATUS AND DISTRIBUTION. India, Burma, northern Siam, Yunnan, and China. It is a common resident throughout the forests of Burma, but does not ascend much above 4,000 feet.

LESSER RACKET-TAILED DRONGO

Dicrurus remifer (Temminck), JAVA
SUBSPECIES: *tectirostris* (Hodgson), NEPAL
heracensis Baker, MALAYA

IDENTIFICATION. Plate VIII, fig. 8, p. 176. Length 11 inches, the long outer tail-feathers 14–16 inches extra. The symmetrical rackets and absence of a crest distinguish it from the next species.

HABITS AND FOOD. Those of the family. It is typically a bird of hill forests. Its normal flight is slow and dipping, the long tail-feathers undulating as it flies, but it is capable of great speed and activity in pursuit of winged termites.

NEST AND EGGS. Breeds from April to June in the Chin Hills and Shan States. The nest is often built quite low down. The eggs are very broad in shape and in colour resemble richly tinted eggs of the ashy drongo.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Nepal, and resident throughout Burma in suitable forest. In northern Burma it is a bird of the foothills to 4,000 feet, but in Southern Burma it is a rare bird in the Pegu Yomas and apparently confined to the bamboo *ponzos* of the higher Karen areas, whereas in the Karen Hills and Karenni it is quite common from 3,000–6,000 feet. There are only three records from Yunnan.

GREATER RACKET-TAILED DRONGO

Dicrurus paradiseus (Linnaeus), S. CENTRAL SIAM
SUBSPECIES : *paradiseus* (Linnaeus), S. CENTRAL SIAM
rangoonensis (Gould), RANGOON
grandis (Gould), NEPAL
hypoballus Oberholser, PENINSULAR SIAM

LOCAL NAMES. Burmese : *hnget-taw* ; Chinghpaw : *sinwa-u.*
IDENTIFICATION. Plate VIII, fig. 7, p. 176. Length 14 inches, the long outer tail-feathers up to 13 inches extra. Can only be confused with the preceding species.
VOICE. This bird has a number of striking call-notes, one being a peculiar ringing cry, *tse-rung, tse-rung*, preceded by a harsh chuckle ; where the bird is common this call can be heard all day long and is audible for a great distance. A loud and melodious call I heard commonly in the Toungoo district in the rains was *a-hwe-hwe-hwe-hwe-hwe-you*, repeated at short intervals. It is also a very fine mimic.
HABITS AND FOOD. This is an arboreal forest bird, and unlike the preceding species it is a common and characteristic bird of the teak forests of the Pegu Yomas. It is more sociable than other drongos, often going about in small parties of half a dozen birds. It either hunts for food from a fixed station, returning again and again to the same tree, or flies from tree to tree, swooping at insects on the wing and capturing them from branches.
NEST AND EGGS. Have been described from several areas in Burma ; the breeding season is from March to June. According to Wickham the nest, unlike that of the preceding species, is rarely built within reach of the ground. The eggs, 3 or 4 in number, are rather long and pointed, and vary in ground-colour from white to rich cream, with blotches and specks of reddish-brown and purple and secondary markings of pale blue and neutral tint.
STATUS AND DISTRIBUTION. Widespread in the oriental region. It is resident throughout the forests of the foothills and plains, and seems

to be common where the lesser racket-tailed drongo is scarce, and vice versa. In northern Burma it seems to be common only in the Hukawng valley. It has not been recorded from Yunnan, and does not ascend much above 3,000 feet anywhere in Burma.

Family SYLVIIDAE

WARBLERS

This family comprises a large number of birds of small size and, with a few exceptions, plain plumage ; in fact most of them can be described as small brown birds without distinguishing features. Many species are winter visitors to Burma, invading the country in considerable numbers in the cold weather, and others are resident and sedentary. The classification of the family is in a state of flux, some genera having been revised recently whereas the rest have not, and until a general revision of the warbler genera has been published it is impossible to provide a systematic key.

GREAT REED WARBLER

In *J.B.N.H.S.*, Vol. 48, August 1949, Stresemann and Arnold divide the previous species *arundinaceus* into three species, *arundinaceus*, *stentoreus* and *orientalis*. They further divide *arundinaceus* and *stentoreus* into a number of subspecies. The new *arundinaceus* does not occur in Burma. One subspecies of *stentoreus* and the species *orientalis* occur and are here dealt with together.

Acrocephalus stentoreus brunnescens Jerdon, TRICHINOPOLY
Acrocephalus orientalis Temminck and Schlegel, JAPAN

IDENTIFICATION. Length 7½ inches. Large dull olive-brown birds, paler below, most likely to be confused with the thick-billed warbler, which, however, has no trace of a supercilium. Chiefly remarkable in the hand for the rich salmon-red mouth. *orientalis* has a more pointed wing than *stentoreus brunnescens*, which may possibly be noticeable in the field. There are no other field distinctions in appearance between the two species, and no differences in habits, voice or nesting are known. The call-note is a harsh *tack* or *chack* or a deep croaking *churr*, and the alarm note is a harsh shrike-like chatter. The song is described as very distinctive, never forgotten once heard ; the essential burden of the refrain is a loud guttural frog-like *karra-karra-karreet-karreet-karreet*, or *prit-prit-pritik*, which suddenly bursts out of a reed-bed with astonishing vehemence ; this is interspersed with shriller, more piping, creaky, and sometimes churring components. Both birds are typically birds of dense reed-beds and *kaing* grass, though they may also be found in any other thick cover over water, such as mangrove swamps along tidal creeks. Although skulkers, they

are not particularly shy and allow a close approach. At intervals they climb to the top of the reeds, or even into neighbouring trees, and sing a few bars of song before returning to the shady depths of the reed-bed. They feed on aquatic insects, small snails, slugs, and aquatic seeds, and Oates described how they came into bungalows and searched the thatch for spiders.

NEST AND EGGS. *Stentoreus brunnescens* breeds in the rushes on the islands of the Inle lake, Southern Shan States, in May and June. The nest is a large edition of the nest of the British reed warbler, being fastened to two or more reed-stems and made of rush-blades and *ekra* bark. The eggs, 3 or 4 in a clutch, are green in colour, spotted all over with blackish-brown.

STATUS AND DISTRIBUTION. *Stentoreus brunnescens* is resident in Burma, while *orientalis* breeds in N. China and Japan and visits S. Burma in the winter. One or other of them has been recorded from Central Burma, where it is common on some Mandalay jheels, from the Shan States, including a specimen from Taunggyi, from Tenasserim, and from the plains of Southern Burma, where Oates observed it from the 3rd October to the 10th May, and where each small tank in the Sittang plain holds one or two pairs throughout the open season. The specimen from Taunggyi, and probably all the records from Central Burma and the Shan States, are of *stentoreus brunnescens*, while those from Southern Burma and Tenasserim are probably *orientalis*. When the latter is on passage, however, and possibly throughout the winter, the two species may overlap.

SCHRENCK'S REED WARBLER

Acrocephalus bistrigiceps Swinhoe, AMOY, CHINA

IDENTIFICATION. Length 5 inches. A brown bird prettily marked with a pale broad supercilium above which is a short broad streak of black. It cocks the tail in flight and makes a clucking note. On first arrival it is found in the growing paddy, moving to grass-jungle after the paddy has been reaped.

STATUS AND DISTRIBUTION. Breeds in Japan and eastern Siberia, and migrates southwards in winter; in Burma it has only been recorded from the plains of Southern Burma, where it is not uncommon in winter (5th November to 15th April, Oates), and once from Tavoy.

BLYTH'S REED WARBLER

Acrocephalus dumetorum Blyth, INDIA

IDENTIFICATION. Length 5 inches. A miniature of the great reed warbler but lacks the salmon-red mouth. This and the next species differ from Schrenck's reed warbler in having no black streak over the white supercilium; in this species the upper-parts are olive-brown, in the next rufous. The note is a loud *tchik tchik*, but a number of warblers have similar notes. It frequents scrub-jungle and small trees some distance from water as well as paddy fields and swamps, and is often seen working through the foliage in the tree-tops like a willow warbler.

STATUS AND DISTRIBUTION. Breeds in Russia, western Siberia, and the

western Himalayas, migrating to the plains of India, Ceylon, and Burma in winter. It has been recorded from Arakan, the Sittang plain near Pegu, and Karenni ; westwards it extends to the British Isles as a rare vagrant.

PADDY-FIELD WARBLER

Acrocephalus agricola (Jerdon), NELLORE
SUBSPECIES : *agricola* (Jerdon), NELLORE
concinens Swinhoe, PEKING, CHINA
stevensi Stuart Baker, ASSAM

IDENTIFICATION. Length 5 inches. For distinctions from the other two small reed warblers, see under Blyth's reed warbler. It is a great skulker in paddy fields, dry grasslands, etc., and I have obtained it in the higher hills in *ponzo* at 4,000–5,000 feet in the hot weather, when it may have been on passage. It utters a *tschak tschak* call-note like that of the dusky willow warbler.
STATUS AND DISTRIBUTION. The subspecies *agricola* breeds in Central Asia and the Himalayas and has once been obtained at Bhamo. The subspecies *stevensi* breeds in Assam but has never been proved to breed in Burma, though Oates suspected it of breeding near the Pegu Canal ; it is common in the cold weather in the Sittang plain, Karen Hills (March to April), Northern Shan States, Karenni (April), and northern Tenasserim. The subspecies *concinens* probably occurs in Kengtung in winter.

THICK-BILLED WARBLER

Acrocephalus aëdon Pallas, DAURIA

IDENTIFICATION. Length 8 inches. An olive-brown bird, paler below, distinguished from the great reed warbler by absence of supercilium. The ordinary call-note is a *tschak tschak* like that of the dusky willow warbler, which is often found in the same habitat, but distinguished by greater volume and depth of tone. A thin low-pitched song, lacking in power but not unmusical, may be heard when the birds are on passage in May. It skulks in bushes and scrub-jungle, and is very partial to *bizat* along streams or round forest rest-house compounds ; it swarms in wet thickets, scrub-jungle round paddy fields, grazing grounds, and similar habitats.
STATUS AND DISTRIBUTION. Breeds in southern Siberia and winters in Burma in vast numbers. On passage it ascends to 4,000 feet, as at Maymyo and Thandaung, but it does not seem to winter in the hills ; Wickham records their sudden appearance round Maymyo early in May, where they rest a week or two before going on, and Stanford obtained one near Myitkyina on the 17th May and heard others singing into June, so that it is one of the last winter visitors to leave Burma.

[NOTE.—" Russian ornithologists have recognised two forms of this species : *aëdon* from Trans-Baikalia westward, and *rufescens* from Amurland, Ussuriland, and Manchuria. If recognisable, both should occur in Burma in winter." Ticehurst, *Ibis* 1938, p. 421.]

M*

PALLAS'S GRASSHOPPER WARBLER

Locustella certhiola (Pallas), LAKE BAIKAL
SUBSPECIES : *certhiola* (Pallas), LAKE BAIKAL
minor David and Oustalet, PEKING, CHINA

IDENTIFICATION. Length 5¼ inches. Absence of streaks on the under-parts distinguishes it from the next species. It is common in paddy fields, wet thickets, reed beds and *kaing* grass but is a great skulker ; when flushed it flies a short distance and then drops as if shot, after which it creeps away like a mouse and it is almost impossible to flush it a second time. Blackish tip to the tail contrasting with the reddish-brown upper tail-coverts is noticeable as the bird flies away. The call-note is *chir-chirr*.
STATUS AND DISTRIBUTION. Breeds in Siberia and winters in the oriental region, also reaching the British Isles as a rare vagrant. In Burma it has been recorded from Central Burma, the plains of Southern Burma, and the Shan States, and is common in suitable localities, but unlike the next species it seems to disappear after the paddy has been reaped (Oates observed it from the 18th October to the 16th December only).

TEMMINCK'S GRASSHOPPER WARBLER

Locustella lanceolata (Temminck), RUSSIA

IDENTIFICATION. Length 4¾ inches. See under preceding species. The call-note is apparently the same, but the song, which may be heard in October and April, is a rapid and uniform high-pitched trill, long sustained. " On first arrival it goes into the growing paddy, and when this is cut it remains in the stubble until this is burnt or trodden down by cattle. When this stubble ceases to afford it protection it betakes itself to grass, where it stays in the thickest clumps. As long as the paddy fields are wet it feeds from stalk to stalk, but when the ground gets dry it seems to feed habitually on the ground, running about amongst the roots of the herbage and rice " (Oates).
STATUS AND DISTRIBUTION. Breeds in north-eastern Russia and in Siberia, and winters in the oriental region, reaching the British Isles as an occasional visitor. It has been recorded from the plains of Southern Burma (19th October to 28th February, Oates), Shan States (Rippon states that most of them leave in the latter half of April, but obtained one at the end of May), and Tenasserim, and is common in suitable localities. There are no records from northern Burma or Yunnan, but Stanford records having flushed undoubted grass-hopper warblers of some species from marshy corners in the plains of Myitkyina district, and I saw one at the summit of the Panwa pass in the first week of February.

YELLOW-HEADED FANTAIL WARBLER

Cisticola exilis (Vigors and Horsfield), SYDNEY
SUBSPECIES : *tytleri* Jerdon, DACCA, BENGAL
equicaudata Stuart Baker, BANGKOK

IDENTIFICATION. Length 4 inches. The male in summer has the whole head pale straw colour ; upper-parts rufous streaked with black ; tail black with a

whitish tip; under-parts bright rusty; the male in winter and the female have the head rufous broadly streaked with black. The very dark, almost black, winter male is strikingly different from the yellow summer male. I studied the song of *tytleri* in the Kumaon terai; it consists of a melodious note uttered repeatedly in a characteristic song-flight, resembling that of the next species but faster, smoother and less jerky, and terminating in a nose-dive at high speed; the song is aptly described by Lynes as "a very odd little scratchy, hissing sound, then a distinct pause, concluded by a loud, almost explosive liquid bell-like note *scrrrrrrr . . . PLOOK*, repeated *ad lib.* at several seconds interval."

NEST AND EGGS. Oates found two nests on the 28th May, "beautiful little purses made of the softest and whitest vegetable fibres; they were placed in clumps of short grass on the edge of a paddy field about one foot from the ground." Stuart Baker states that it was found breeding near Prome by Mackenzie. The eggs, 4 or 5 (rarely 6) in number, are very beautiful, a bright pale blue spotted and blotched with reddish-brown and purple and black.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as the Kumaon terai. The subspecies *equicaudata* was common in the Sittang plain in Oates's day, but in July 1940 we searched for it in vain in the localities near Myitkyo where Oates found it, and believe that the conversion of the grasslands into paddy fields during the last half-century may have driven it from its former haunts; Mackenzie at Prome is the only observer who has met with it in recent years. The subspecies *tytleri* is reported by Stanford to be common in the grassy plains of the Irrawaddy and Chindwin valleys, and has also been recorded from Arakan.

STREAKED FANTAIL WARBLER

Cisticola juncidis Rafinesque, SICILY
SUBSPECIES: *cursitans* (Franklin), CALCUTTA–BENARES
malaya Lynes, MALAYA

IDENTIFICATION. Plate IX, fig. 2, p. 196. Length 4 inches. A minute, streaked black and brown bird with pale under-parts. Found in paddy fields; skulks till disturbed, then has a distinctive mounting flight.

VOICE. A characteristic clicking or chat-like note is uttered on the wing.

HABITS AND FOOD. Frequents thick cover in wide open spaces, and is a typical bird of paddy fields and snipe grounds; in such cover it skulks and is very retiring, seldom climbing above the stems, and would not come to notice save for its curious habits of flight. When disturbed it jerks itself high into the air and after flying some distance falls headlong again into cover. During the breeding season the male soars in a most erratic fashion, rising and falling in jerks, but keeping roughly above the nest, towards which he falls very quickly at intervals

as if intending to settle ; just as he nears the ground however he shoots up into the air again and resumes his soaring jerks. All the time he utters the clicking note, usually at the top of each rise or on the up-grade.

NEST AND EGGS. Many have been taken in the Myitmaka drainage from June to August, but most eggs are laid in July. A juvenile just able to fly was put up on the 1st March in Minbu district (Roseveare), so that some pairs must breed very early in the year. Overgrown *kazins* in the paddy fields are a favourite site and the nest, which is deep, tubular, made of fine grass and seed-down with an entrance hole near the top, is placed close to the ground in longish grass ; it is woven to several grass stems, and covered inside and out with cob-webs and other fluffy material. The eggs, 3 to 5 in number, are pale blue to white, finely speckled with reddish-brown. Wickham states that in the hills the breeding season extends from May to the end of September, and that it seems to have a habit of making a trial nest or two before making a final approval of the nursery ; he noted it as being cuckolded by *Cacomantis merulinus*.

STATUS AND DISTRIBUTION. Widespread in southern Europe, Africa, and Asia, and a common resident throughout Burma.

[NOTE.—The LONG-TAILED GRASS WARBLER, *Laticilla cinerascens* Walden is found in the Cachar district of Assam and seems likely to turn up in the grasslands of northern Burma.]

LARGE GRASS WARBLER

Graminicola bengalensis Jerdon, CACHAR
SUBSPECIES : *striata* Styan, HAINAN

IDENTIFICATION. Length 6–7 inches. Upper-parts black with bright rufous edges to the feathers, giving a streaked appearance ; under-parts whitish. Frequents grasslands and described as very noisy in the breeding season, soaring into the air and uttering a very harsh and loud little song.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Nepal to Assam, Siam and Hainan ; in Burma so far it has been recorded only from Tenasserim.

[NOTE.—*bengalensis* is found in Cachar and Manipur, and seems likely to be found in northern Burma.]

STRIATED MARSH WARBLER

Megalurus palustris Horsfield, JAVA
SUBSPECIES : *isabellinus* Swainson, ASSAM

IDENTIFICATION. Plate IX, fig. 5, p. 196. Length 10 inches. A

conspicuous bird of grasslands, with a lark-like flight in the breeding season. Perches more erectly than the striated babbler.

VOICE. In the breeding season it utters a loud shrill song, *wheet-wheet-tu-tu-wheet-wheet*, from a conspicuous perch or while soaring 20–40 feet up and then gliding down again.

HABITS AND FOOD. Frequents *kaing* grass, scrub-jungle round jheels, island cultivation in the river valleys, rushy swamps in the hills, and similar habitats, usually but not always near water.

NEST AND EGGS. Breeds from late February to June; in the Myitmaka drainage, where many have been taken, most eggs are laid in May. The nest is usually placed low down in a clump of *kaing* or under a tuft of other grass, and is difficult to find; it is made of coarse, dry *kaing* grass, lined with finer grass. The eggs, 3 or 4 in number, are white to pale cream, speckled with brown and pale blue. Hopwood and Mackenzie took the eggs of *Cuculus canorus* from its nests.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and a common resident throughout Burma in suitable localities; it occurs at Maymyo, and has been seen at Bernardmyo (5,000 feet).

KEY TO THE BUSH WARBLERS

All bush warblers have short wings, with a well-developed first primary; 10 or 12 tail-feathers; upper-parts plain brown, varying from pale olive to dark chestnut, without any markings. Pale supercilia are more or less conspicuous.

A. Rictal bristles very small and inconspicuous . . . *Bradypterus*
B. Rictal bristles well developed and visible . . . . *Cettia*

For a revision of these two genera see Delacour (1942).

CHINESE BUSH WARBLER

Bradypterus taczanowskius (Swinhoe), TRANS-BAIKALIA
SUBSPECIES: *taczanowskius* (Swinhoe), TRANS-BAIKALIA

IDENTIFICATION. Length 6½ inches. A brown bird, paler below, with a short white supercilium; a great skulker in paddy fields, stubble and grass. It feeds much on the ground and frequents the same habitats as the grasshopper warblers.

STATUS AND DISTRIBUTION. Breeds from Lake Baikal to Ussuriland, and winters in northern India, Burma, Siam, and Indo-China. It is not uncommon in the Sittang plain but has not been recorded elsewhere in Burma, except for a single specimen obtained in *indaing* forest in the Yoma foothills of the Yamethin district.

SPOTTED BUSH WARBLER

Bradypterus thoracicus (Blyth), NEPAL
SUBSPECIES : *thoracicus* (Blyth), NEPAL
shanensis (Ticehurst), MAYMYO
przevalskii (Sushkin), UPPER HWANG-HO

IDENTIFICATION. Length 5½ inches. Upper-parts rufous-brown, throat ashy spotted with black ; a whitish supercilium ; chin and throat whitish ; lower throat and breast ashy spotted with blackish.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Breeds in central Asia and the Himalayas. Cranbrook described *thoracicus* as common in July in the Adung valley, in low scrub-jungle above the tree-line, and it may breed there ; the Vernay-Hopwood expedition obtained one on the 21st March above Homalin. The subspecies *shanensis* was described from a single specimen obtained near Maymyo, and Deignan records two from northern Siam ; it is a winter visitor whose breeding quarters are unknown. The subspecies *przevalskii*, to which Deignan attributes one specimen from northern Siam, probably occurs in Kengtung in winter.

[NOTE.—A single specimen from the Upper Chindwin (Vernay-Hopwood expedition) was determined as *stresemanni* Stegmann (?), with the comment that it is impossible to identify with certainty migrant individuals of this species.]

BROWN BUSH WARBLER

Bradypterus luteoventris (Hodgson), NEPAL
SUBSPECIES : *luteoventris* (Hodgson), NEPAL
ticehursti Deignan, ARAKAN YOMAS

IDENTIFICATION. Length 5½ inches. Unspotted white throat distinguishes it from the preceding species ; rufous upper breast, flanks, and under tail-coverts from the Chinese bush warbler. A skulking bird of hill savanna with a very peculiar song ; it consists of the rapid repetition of two notes, *creee-ut-creee-ut* . . . at the rate of 2–3 pairs of notes per second ; very slight pauses are made every few seconds and after such a pause an introductory grace note is often uttered ; Stanford likens it to the noise of a fishing reel, but it differs from the reel of the grasshopper warbler. The alarm-note is a grasshopper-like *tack* . . . *tack*. Its habit, when disturbed, of appearing for a few moments on a grass-stalk or frond reminds one of the reed warbler.
NEST AND EGGS. Venning found a nest with 3 eggs near Haka on the 27th April, and Heinrich found it breeding high up on Mt. Victoria in May and June ; the nests were placed in very sparse vegetation in clearings, and were made of dry grass lined with fine blades of grass, and attached to grass stems like the nest of a reed warbler ; the eggs were reddish-white thickly covered with purple spots. I found it breeding on the open grass-covered hillsides round Htawgaw, and Stanford found it breeding round Kambaiti.
STATUS AND DISTRIBUTION. Breeds in the Himalayas and the mountains of Burma, extending eastwards to China, Indo-China, and the Philippines. I collected the type specimen of *ticehursti*, a winter visitor whose breeding

quarters are unknown, in the Arakan Yomas on the border of the Thayetmyo and Minbu districts at 5,000 feet; *luteoventris* is resident at 5,000–7,000 feet in the Chin Hills and northern Burma, and may be found at low elevations in winter (Stanford records flushing three birds, believed to be of this species, in the Pidaung reserved forest near Myitkyina in the last week of March).

[NOTE.—Delacour rejects *ticehursti*, without having examined the type, in his revision. The type was named *saturatus* by Ticehurst, and renamed by Deignan because *saturatus* was pre-occupied; Deignan identifies a specimen from northern Siam as *ticehursti*, and upholds the validity of the race.]

ABERRANT BUSH WARBLER

Cettia flavolivacea Blyth, NEPAL
SUBSPECIES: *intricata* (Hartert), SHENSI, CHINA
weberi Mayr, MT. VICTORIA
alexanderi Ripley, NAGA HILLS

IDENTIFICATION. Length 4 inches. A yellow supercilium, upper-parts olive, under-parts yellowish. On Mt. Victoria it is a real alpine bird and its home is in the thick jungle of reed-bamboo, bracken and grass at the edge of the forests. The song consists of a short, extremely high, thin piping phrase; the alarm-note is a whirr like that of the grasshopper warbler (Heinrich).
NEST AND EGGS. Breeds on Mt. Victoria and round Sinlum Kaba in May. The nest is usually built in a tuft of grass on the hillside and is a domed structure of grass with a lining of dry leaves or feathers. The eggs are reddish-brown.
STATUS AND DISTRIBUTION.—Throughout the Himalayas to western Yunnan. It has been recorded from the Chin Hills, North-East Burma, and the Shan States, and is resident where found. Harington claimed to have obtained it round Bhamo in the cold weather. The specimen recorded by Stuart Baker from Thayetmyo is an example of *Phylloscopus fuscatus*.

VERREAUX'S BUSH WARBLER

Cettia acanthizoides Verreaux, SZECHWAN
SUBSPECIES: *acanthizoides* Verreaux, SZECHWAN

IDENTIFICATION. Length 4 inches. Upper-parts rufous-brown; a broad buff supercilium; under-parts yellowish. Its note is described as a series of four long-drawn whistles, each higher than the last, followed by a quick series of up and down notes.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas to western China, Manipur, and Lushai hills. A specimen obtained by Rippon in the Southern Shan States is in the British Museum, and was listed in his paper. There are no other records and its status is uncertain.

[NOTE.—*brunnescens* Hume, SIKKIM, is the form in the Manipur and Lushai hills, and may extend over the border into western Burma.]

STRONG-FOOTED BUSH WARBLER

Cettia fortipes (Hodgson), NEPAL
SUBSPECIES : *fortipes* (Hodgson), NEPAL

IDENTIFICATION. A dark brown bird, paler below, with a buff supercilium. The song consists of a sweet long-drawn-out note, much like that of the iora, ending with a short musical phrase *cha-cha-witch-ee* ; a shy skulker in scrub-jungle in the higher hills, easily overlooked except when in song.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas to northern Burma and south-eastern Yunnan (Forrest did not obtain it in western Yunnan). It is very common in North-East Burma, and in the Ngawchang valley in March and April singing birds are met with every few hundred yards. Also recorded from Karenni.

PALE-FOOTED BUSH WARBLER

Cettia pallidipes (Blanford), SIKKIM
SUBSPECIES : *laurentei* (La Touche), S-E. YUNNAN

IDENTIFICATION. Length 4½ inches. Distinguished from the preceding species by the absence of any rufous tinge on the upper-parts. Very shy and skulking, and found only in the higher hills.
NEST AND EGGS. Osmaston found a nest in Maymyo and described the eggs as being a beautiful deep mahogany-red.
STATUS AND DISTRIBUTION. Himalayas from Sikkim eastwards to south-eastern Yunnan, but there is no record from northern Burma or western Yunnan. It has been recorded from Maymyo, Shan States, Karen Hills, and Karenni, and is probably resident in all these areas.

[NOTE.—*Cettia diphone canturians* (Swinhoe), has not been recorded from Burma but is widely distributed in China and has been twice recorded from Assam. Length 6 inches. The crown is a different shade to the back.]

RUFOUS-CAPPED BUSH WARBLER

Cettia brunnifrons Hodgson, NEPAL
SUBSPECIES : *brunnifrons* Hodgson, NEPAL
umbraticus (Stuart Baker), SHWELI–SALWEEN Divide

IDENTIFICATION. Length 4½ inches. In the field the rufous cap, dark olive-brown upper-parts and buff supercilium are noticeable ; under-parts grey. A great skulker, very difficult to see in the dense bramble thickets it frequents. A bird I observed uttered a single sharp note at intervals ; it is also said to have a strange unmistakable call that it constantly repeats, consisting of a few ordinary chirping notes followed by a curious grating mouse-like sound, twice repeated.
NEST AND EGGS.—Stuart Baker mentions that nests, probably of this species, were taken by Harington and Tankard in the Bhamo hills and Shan States.

STATUS AND DISTRIBUTION. Himalayas to western Yunnan. In North-East Burma a specimen is recorded from Kambaiti by Stanford, and I have seen one at 7,500 feet on the way to the Chimili pass, but it seems to be rare; it has also been obtained in the Chin Hills, and Christison reports that it is a common winter visitor to Arakan.

SWINHOE'S BUSH WARBLER

Cettia squamiceps (Swinhoe), CANTON, CHINA

IDENTIFICATION. Length 3½ inches, the tail being only 1 inch. According to Cook (1912*d*), who found them comparatively common in the Pegu Yomas (east side) from the 26th January to the 12th March, they frequent the edges of densely forested streams, but are more partial to those parts where *kaing* grass grows. They make their presence known by their note, a soft low *chip chip* or high shrill *pee-ep*, this note being almost invariably uttered on being disturbed. They feed mostly on the ground creeping about amongst the leaves in the thickest of the scrub, but occasionally coming out into the sandy creeks and hunting for insects amongst the drift-weed. One bird shot had been feeding on very small black beetles found in the sand. The birds were only found singly and were by no means shy; only when approached very closely did they fly, or rather flit, to some other bit of thick scrub.

STATUS AND DISTRIBUTION. Breeds in eastern Siberia and Japan, and winters in the oriental region. In Burma it has been recorded from Mt. Victoria, Central Burma, the Pegu Yomas (east side), Southern Shan States, and Tenasserim.

[NOTE.—The LARGE BUSH WARBLER, *Cettia major* Moore, NEPAL, is found in the Himalayas from Nepal eastwards, and Forrest obtained a specimen on the Shweli-Salween divide in western Yunnan; it is therefore certain to be found one day in the mountains of northern Burma. It resembles *brunnifrons* in having the crown and nape bright rufous-brown and the upper-parts olive-brown, but is distinguished by larger size (length 5 inches).]

DULL SLATY-BELLIED GROUND WARBLER

Tesia cyaniventer Hodgson, NEPAL

IDENTIFICATION. Length 4 inches. Skulks in evergreen forest undergrowth, but draws attention with its loud song. An olive-green tail-less bird with grey under-parts; has to be distinguished from its double, *olivea*, which has a golden crown contrasting with the back and dark grey under-parts, whereas *cyaniventer* has the crown concolorous with the back and light grey under-parts; also *olivea* has the base of the lower mandible more orange, less yellow. It has a very distinctive song which Heinrich describes as consisting of a soft twittering introduction of 2–3 syllables, somewhat hesitatingly linked together, prefacing the real trill composed of three trilled notes in quick succession followed by a short, deeper complementary note, *tsitsi-tjutjutju tjo*. I once listened to and watched a bird at Sinlum in a dense patch of jungle for an hour or more singing the above phrase and a slightly different phrase (ending on a

higher note) in strict alternation, with a considerable pause between each phrase. The song is surprisingly loud for so small a bird, and is uttered as the bird moves about within a foot or two of the ground. Another distinctive call consists of three high-pitched descending notes with a pause of 1 to 2 seconds between each note. An intruder is greeted with an incessant scolding note. This bird's ecological niche is the small wet ravine covered with dense undergrowth that wrinkles the slopes of the higher hills; where the bird is common, as on the Pyepat ridge, every little nullah seems to hold a bird, and a few odd ones will also be found in the bamboo undergrowth along ridge-tops or beside the mule road. Though it normally keeps close to the ground, I have seen it 20 feet up a tree. In the Shan States, according to Rippon, its favourite places are the peculiar hollows that are so numerous in the hills, especially where they are covered with dense undergrowth, consisting largely of nettles from 7 to 10 feet high, shaded by big trees; these hollows vary from cone-shaped holes 30 yards across to valleys half-a-mile or more long without any above-ground exit for their drainage.

NEST AND EGGS. Not described from Burma. According to Stuart Baker, the nest is a beautiful ball of bright green moss, lined with moss roots.

STATUS AND DISTRIBUTION. The relationship between *cyaniventer* and *olivea* has not been fully cleared up, but the evidence points to the conclusion that they are different species; for discussion see *Ibis* 1937, pp. 257–261. They are found together over most of Burma, but in general *cyaniventer* frequents higher elevations in the breeding season. Neither form has been recorded so far from the Pegu Yomas or Tenasserim. Both have been obtained at low elevations in the Upper Chindwin and North-East Burma in winter, but in southern Burma it has not been observed in the foothills.

BRIGHT SLATY-BELLIED GROUND WARBLER

Tesia olivea (McClelland), ASSAM

IDENTIFICATION. Probably indistinguishable from *cyaniventer* in the field.

STATUS AND DISTRIBUTION. See under *cyaniventer*; according to Deignan only *olivea* occurs in Siam.

CHESTNUT-HEADED GROUND WARBLER

Oligura castaneocoronata (Burton), HIMALAYAS
SUBSPECIES: *castaneocoronata* (Burton), HIMALAYAS

IDENTIFICATION. Length 4 inches. A beautiful little bird with a bright chestnut crown and nape and bright yellow under-parts; the upper-parts, wings and tail are dark olive-green. It has a loud single call-note *tweet* by which I could always identify it, and Osmaston describes a shrill call of 4 notes resembling that of the grey-headed flycatcher, probably the same as a call I noted down as *sip, sip-it-up*. According to Heinrich, the song resembles that of the slaty-bellied ground warbler in structure and number of syllables but is not nearly as full-sounding and trilling, being rather thin and twittering. Its ecological niche and its actions are very similar to those of *cyaniventer*.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Garhwal to Yunnan, and the mountains of Burma, where it has been recorded from Mt. Victoria, North-East Burma, Southern Shan States, and Karenni. I found it to be common in North-East Burma from 6,000–9,000 feet and also saw one at Laukkaung, 4,500 feet, in April. Unlike *Tesia* however it has not been recorded from low elevations in Burma, while in Yunnan it goes up to 12,000 feet.

FRANKLIN'S WREN-WARBLER

Prinia hodgsoni Blyth, VINDHYANI HILLS
SUBSPECIES : *hodgsoni* Blyth, MIRZAPUR Dist.
rufula Godwin-Austen, NAGA HILLS AND MANIPUR
erro Deignan, N. SIAM

IDENTIFICATION. Plate IX, fig. 3, p. 196. Length 4–5 inches. In winter the upper-parts become rufous-brown, there is a white streak over the lores (sometimes extending over the eye) and the grey pectoral band is less distinct or absent. A tiny grey bird, found in parties in grassy undergrowth.

VOICE. It has a distinctive call-note, *chew-chew-chew*, recalling the buzzing of a morse key, and also a rapidly trilling note, *twirrrr twirrrr*. In the breeding season the male climbs up the stems of a small bush uttering a low song, which gets louder as he climbs, till he reaches the topmost twig and gives vent to his rather tinkling but musical little song *chiwee-chiwee-chiwee, chip-chip-chip-chip*, the *chips* rising in pitch and ending abruptly.

HABITS AND FOOD. This little warbler is found in energetic parties, which are always on the move, creeping in and out of bushes and running like mice on the ground at their base. It is one of the most typical birds of the teak forests of the Pegu Yomas, where it prefers grassy undergrowth, and it is equally partial to open park-like forest in the hills. In Central Burma it is found mostly in scrub-jungle, also in compounds, *ya* land, and *indaing*, occasionally in paddy fields, both wet and dry, and in swamps or perched on a telephone wire ; when perched it sometimes jerks the tail in all directions as vigorously as it does in flight, and bobs the body up and down (Roseveare). It is weak on the wing, proceeding by curious, jerky little flights, the longish white-tipped tail flicking over its head and looking as if it would over-balance the bird at any moment or drop off.

NEST AND EGGS. The breeding season is from April to June in the hills, June to August in the plains. The nest is sewn into one or more leaves, like that of the tailorbird, and is made of grass very well woven ; a little of the fluffy flower of the *kaing* grass is often included. The eggs, 3 or 4 in number, are very variable in colour.

STATUS AND DISTRIBUTION. Distributed almost throughout India, Ceylon, Burma, Siam, and Annam ; it is a common resident throughout Burma, excluding Tenasserim, at elevations up to 5,000 feet, and is also common in Yunnan.

BEAVAN'S WREN-WARBLER

Prinia rufescens Blyth, ARAKAN
SUBSPECIES : *rufescens* Blyth, ARAKAN
peninsularis Deignan, PENINSULAR SIAM

IDENTIFICATION. Length 4–5 inches. In winter probably indistinguishable from Franklin's wren-warbler, but in summer the crown and nape are a different colour from the back, which is rufous and not ashy, and there is a narrow white supercilium.

VOICE. A continuous, monotonous *chip* and a double note, *chi-wee chi-wee*, not unlike that of the tailorbird, have been recorded, but it is doubtful whether this bird's voice can be distinguished from that of Franklin's wren-warbler.

HABITS AND FOOD. Except that it seems to be the commoner bird of the two at low elevations, its habitat is similar to that of Franklin's wren-warbler.

NEST AND EGGS. Have been taken in several areas in Burma ; they are similar to those of Franklin's wren-warbler.

STATUS AND DISTRIBUTION. This species has much the same distribution as Franklin's wren-warbler, but extends through Tenasserim to Malaya, and in Burma seems to be more a bird of the plains and foothills and less common in the higher hills, though there is little to choose between them. There is only one record from Yunnan.

BROWN HILL WARBLER

Prinia polychroa (Temminck), JAVA
SUBSPECIES : *assamica* (Stuart Baker), SHILLONG
yunnanensis (Harington), TENGYUEH, YUNNAN
cooki (Harington), THAYETMYO

IDENTIFICATION. Plate IX, fig. 8, p. 196. Length 7 inches, including a tail of 4 inches. A small brown bird, streaked above and paler below, with a very long tail ; skulks in grass and bushes, but sits in elevated and exposed positions to sing. The flight is weak, jerky and not sustained.

VOICE. A loud reeling song, *chirr-chu-chu, chirr-chu-chu*, a wheezy scraping series of notes, is repeated to monotony like the sound of a saw. Another song resembles *chew-it, chew-it*, etc.

HABITS AND FOOD. This hill bird avoids forest and keeps either to grassland and the vicinity of cultivation, or else to scrub-jungle on bare, stony hillsides. It is rather a skulker and spends most of its time clambering about in the interior of bushes and tangles of vegetation, threading its way deftly amongst the stems and often descending to the ground. It is one of the characteristic birds of the dry zone of Central Burma, and can be seen all over the uplands west of Meiktila, particularly near cultivation.

NEST AND EGGS. Breeds from April onwards, but most eggs are laid in May. According to Wickham the nest is generally made all of grass, whereas the nest of *atrogularis* contains some moss as well. It is a flimsy, oval, domed structure with the entrance near the top. The eggs are pinkish with a dark ring at the larger end.

STATUS AND DISTRIBUTION. Widespread in the oriental region. In Burma it extends from the Chin Hills across Central Burma to the Shan States; further north it peters out, but was recorded by Anderson near Bhamo and also occurs in Yunnan.

WHITE-BROWED HILL WARBLER

Prinia atrogularis (Horsfield and Moore), DARJEELING
SUBSPECIES: *khasiana* Godwin-Austen, KHASIA AND NAGA HILLS
erythropleura (Walden), TOUNGOO
superciliaris (Anderson), TENGYUEH, YUNNAN

IDENTIFICATION. Length 7 inches, including a tail of 4½ inches. The marked white supercilium and the head darker and greyer than the unstreaked brown upper-parts distinguish this from the other hill warblers. The long tail usually looks very moth-eaten.

VOICE. The song is a loud *cho-ee, cho-ee, cho-ee* . . . very like the song of the tailorbird and sometimes uttered at the same speed (25 per 10 seconds), but usually more slowly, and always from the top of a bush or tall grass stem. The alarm-note is a continuous reel uttered by both sexes near the nest.

HABITS AND FOOD. Its favourite habitat is long grass growing under open park-like forest in the higher hills, or sites cleared on ridges and hill-tops for villages where bracken and brambles have replaced the original forest growth. It is not unduly shy and is easily observed.

NEST AND EGGS. Have been taken in the Chin Hills (of *khasiana*) in late April and early May, and in the Kachin and Shan hills (of *superciliaris*) chiefly in May. The nests are described as like those of *polychroa*, but with the addition of moss on the outside, and the eggs as greenish in ground-colour with red spots.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Sikkim. It is probably resident throughout the higher hills of Burma and is locally common ; there are no records from the foothills.

[NOTE.—The STREAKED WREN-WARBLER, *Prinia gracilis stevensi* Hartert is resident in Assam and may be recorded one day from northern Burma ; it is described as a miniature of the brown hill warbler with streaky brown upper-parts.]

YELLOW-BELLIED WREN-WARBLER

Prinia flaviventris Delessert, BHUTAN
SUBSPECIES : *flaviventris* Delessert, BHUTAN
delacouri Deignan, N. SIAM

IDENTIFICATION. Plate IX, fig. 9, p. 196. Length 5½ inches. Some individuals have a white supercilium. The tail is brown and ragged and the flight weak and top-heavy. A bird of *kaing* grass, conspicuous in the breeding season.

VOICE. The male has a cheery but weak little song, consisting of a sharp chirp followed by a little trill of about five notes. A curious clicking or snapping sound is made as it moves about, probably with the bill.

HABITS AND FOOD. This bird keeps to reed beds, the surroundings of swamps and jheels, and extensive areas of *kaing* grass. It is an active bird, hopping and climbing about the grasses in search of its insect food, and is one of the most markedly characteristic birds of the *kaing* grass areas of the Myitmaka drainage, where its song is heard everywhere in the rains.

NEST AND EGGS. The breeding season extends from June to September, but most eggs are laid in July and August. The nest is usually placed near the ground, either attached low down to *kaing* stalks or well hidden under tufts of other grass, and is not nearly as neatly made as the nest of *inornata* ; it is a cup of coarse, soft, dried grass and seed-down, loosely woven, with a lining of very fine fibres. The eggs, 3 to 5 in number, are a glossy brick-red.

STATUS AND DISTRIBUTION. From Nepal through Burma to Malaysia. It is a common resident in the plains of Burma in suitable localities, but in the higher hills Wickham records that he never saw it and the only definite record is of a bird obtained near the Gelaung reservoir (3,700 feet) at Maymyo.

[NOTE.—The ASHY WREN-WARBLER, *Prinia socialis stewarti* Blyth, is a similar bird in habits, with upper-parts ashy in summer and rufous-brown

in winter and under-parts white to buff ; it is found in eastern Assam, and may turn up in northern Burma.

[The JUNGLE WREN-WARBLER, *Prinia sylvatica* Jerdon, is a similar species, with the upper-parts earthy-brown in summer, rufous-brown in winter ; tail white-tipped and with the outer pair of tail-feathers all white ; supercilium and under-parts buff. It is found in the Manipur and Lushai hills and may turn up somewhere in the western hills on the Burma side.]

PLAIN WREN-WARBLER

Prinia inornata Sykes, DECCAN
SUBSPECIES : *blanfordi* (Walden), TOUNGOO (= *burmanica* Harington)

LOCAL NAME. Burmese : *hnget-letma.*

IDENTIFICATION. Plate IX, fig. 10, p. 196. Length 5 inches, including a tail of 2–3 inches. A very small bird, dark brown above and buff below, appearing rather dingy in the field ; white tips to the tail-feathers and pale flesh-coloured legs are noticeable, and in summer the black bill. Not a forest bird.

VOICE. The song of this bird is a familiar sound in the cultivation where it lives ; it makes up in vigour what it lacks in beauty, consisting merely of a series of loud, jingling, wheezy trills that suggest the shaking of a bunch of keys. It is reminiscent of a grasshopper or cricket, sustained sometimes for ten seconds or more without a pause ; uttered both on a perch (with the head thrown back) and in flight ; only heard during the rains (Roseveare). Other notes recorded are the syllables *chi-up* or *chip* repeated rapidly many times.

HABITS AND FOOD. This is also a common bird in extensive areas of *kaing* grass such as are found in the drainage of the Myitmaka, but it frequents a much wider range of habitats than *flaviventris*, such as standing crops (hill paddy, plains paddy, sugar cane, etc.), scrub-jungle and even waterless grazing grounds ; it avoids bare ground and forest alike. It is weak on the wing and its top-heavy, labouring flight is quite ludicrous (as Wickham aptly puts it, the tail takes charge of the fuselage) ; it makes the same curious clicking sound on the wing as *flaviventris*. To make up for its aeronautical ineptitude it has a strong pair of legs with which it climbs nimbly about the shrubs or works its way to the top of a tall *kaing* stem to warble. It is indifferent to the presence of man and commonly occurs near houses and villages and in gardens.

NEST AND EGGS. The breeding season extends from March to early September, but most eggs are laid in June and July. The nest is usually very conspicuous, little attempt being made to conceal it,

and is usually 3–4 feet off the ground in a clump of *kaing* grass ; it is very neatly woven of fine grass, somewhat resembling in texture the nest of a weaverbird, green when newly made and gradually fading to brown. The eggs are very beautiful and glossy, either greenish-blue or pink in ground-colour with bold markings of deep chocolate and reddish-brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is common throughout the plains of Burma, and goes up to 3,000 feet on the Shan plateau (including Maymyo).

WILLOW WARBLERS or LEAF WARBLERS

This group contains mainly small, active warblers. The genus *Phylloscopus* has been reviewed by Ticehurst (1938), and I follow his arrangement ; the genus contains a group of small, plain-coloured, slim and graceful warblers ; besides white, only yellow, green and brown enter into the colour-scheme ; partly for this reason and partly because they are in constant, active movement the various species are very difficult to differentiate in the field. The most important and useful characters are the songs and notes, but any specimen in the hand, and some species in the field, can be identified with the help of the plumage key below.

The willow warblers spend much of their time amongst the foliage, actively searching leaves and twigs for insects or flying out to take them on the wing ; a few species live on or near the ground and are skulking in their habits. They are not gregarious, but several birds may loosely associate in hunting parties with other species or with other birds such as tits, treecreepers, and flycatchers. The flight is flitting and not sustained. Many species have a habit of flicking their wings as they feed.

The nest is domed with a side entrance and the eggs are white or spotted with shades of brown. Some species are migratory, whereas others are sedentary.

KEY TO THE WILLOW WARBLERS

A. No trace of any wing-bar.
- *a*. Whole of under-parts clear pale yellow . . . *P. affinis*
- *b*. Whole of under-parts pale buffish-yellow . . . *P. subaffinis*
- *c*. Under-parts neither of above.
  - a^1. Under-wing not white, yellowish, or yellow . . *P. fuscatus*
  - b^1. Under-wing white, yellowish or yellow.
    - a^2. Under-parts streaked yellow . . . . *P. armandi*
    - b^2. Under-parts not streaked yellow . . . *P. schwarzi*

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1
2
3
4
5
6
7
8
9
10
THREE INCHES
0 1 2 3
0 25 50 75
75 mm.
1954

B. With wing-bar or bars.
  d. Second primary with no trace of emargination on outer web . . . . . *P. borealis*
  e. Second primary emarginated on outer web.
    c^1. With a broad yellow rump-band.
      c^2. No white in tail . . . . . *P. proregulus*
      d^2. Inner webs of three outer tail-feathers white.
        a^3. Grey throat contrasts with yellow breast . *P. maculipennis*
        b^3. No such contrast . . . . . *P. pulcher*
        c^3. A well-marked mesial coronal streak.
        d^3. Mesial coronal streak absent or slight.
    d^1. With no yellow rump-band.
      e^2. Under tail-coverts bright yellow, remaining under-parts white . . . . . *P. coronatus*
      f^2. No such contrast.
        a^4. Yellow throat contrasts with white breast . *P. cantator*
        b^4. No such contrast.
          a^5. Wing 56–67 mm. (male) . . . *P. reguloides*
          b^5. Wing 51–57 mm. (male) . . . *P. davisoni*
        c^4. Under-parts silky-white, legs pale flesh . *P. tenellipes*
        d^4. Under-parts not silky-white, legs darker.
          c^5. Tip of lower mandible not dark . . *P. trochiloides*
          d^5. Tip of lower mandible dark.
            a^6. Wing not under 68 mm. (male) . . *P. magnirostri*
            b^6. Wing not over 61 mm. (male) . . *P. inornatus*

TICKELL'S WILLOW WARBLER

Phylloscopus affinis Tickell, BORABHUM, BENGAL

IDENTIFICATION. A ground-feeding willow warbler, olive-green above, eyebrow and whole under-parts yellow. Alarm-note *tick-tick* rapidly repeated. Frequents *ponzo*, scrub-jungle, and gardens.

STATUS AND DISTRIBUTION. Breeds at high elevations in the Himalayas and migrates to the foothills and plains in winter. A winter visitor to the hills and plains of Burma as far south as Pegu.

GRANT'S WILLOW WARBLER

Phylloscopus subaffinis Ogilvie-Grant, S-W. KWEICHOW, CHINA

IDENTIFICATION. Similar to the preceding species, but buffish-yellow below. Has a harsh loud call-note *tick-tack* and inhabits open bush-covered country, grass and scrub-jungle.

STATUS AND DISTRIBUTION. Breeds at high elevations in Yunnan and western China and moves to lower elevations (1,500–3,000 feet) in winter. It is common in the mountains of North-East Burma and may breed there.

DUSKY WILLOW WARBLER

Phylloscopus fuscatus (Blyth), CALCUTTA
SUBSPECIES: *fuscatus* (Blyth), CALCUTTA
mariae Ripley, MANIPUR

IDENTIFICATION. Plate IX, fig. 4, p. 196. The absence of yellow and green in the plumage (the plate is too green), no wing-bar, and a ground rather than arboreal habitat distinguish it. The usual note is a harsh *tschak-tschak*, and a low soft *chi-chiree* has been recorded. It inhabits bushes and scrub-jungle in damp situations, paddy fields, and snipe grounds; though rather a skulker, feeding on or near the ground, it is more active than the small reed warblers, with which it might be confused.
STATUS AND DISTRIBUTION. Breeds in Siberia and Central Asia and swarms throughout Burma in winter as far south as Tavoy.

MILNE-EDWARDS'S WILLOW WARBLER

Phylloscopus armandi (Milne-Edwards), PEKING, CHINA
SUBSPECIES: *armandi* (Milne-Edwards), PEKING, CHINA
perplexus Ticehurst, N-W. YUNNAN

IDENTIFICATION. The brown upper-parts, no wing-bar, and yellow in the under-parts should be sufficient guide. The warning note is a slight *click* and the call-note is a bunting-like *zit*, in addition to which it has a *tschak tschak* note like that of *fuscatus*. Inhabits dry scrub-jungle and dry forest.
NEST AND EGGS. Harington recorded it as breeding in the Bhamo hills.
STATUS AND DISTRIBUTION. Breeds in the mountains of western China, north-western Yunnan, north-western Siam, and northern Burma. In winter it is found in the hills and plains alike and has been recorded from the Chin Hills, North-East Burma, Pegu Yomas, and Southern Shan States.

RADDE'S WILLOW WARBLER

Phylloscopus schwarzi (Radde), DAURIA

IDENTIFICATION. Has chiefly to be distinguished from *fuscatus*, which is more ground-loving and has a harsher alarm-note. It utters a nervous *twit-twit* and an alarm-note *tschak-tschak*. Inhabits bushes and tall grass and on passage the undergrowth in hill evergreen from low elevations up to 4,600 feet; being a skulker it keeps well concealed.
STATUS AND DISTRIBUTION. Breeds in eastern and central Asia and migrates to the eastern part of the oriental region. It winters in Tenasserim and has been recorded on passage from Mt. Victoria, Pegu, and the Karen Hills.

ORANGE-BARRED WILLOW WARBLER

Phylloscopus pulcher Blyth, NEPAL
SUBSPECIES: *pulcher* Blyth, NEPAL

IDENTIFICATION. A very distinctive bird and the only *Phylloscopus* that combines a yellow rump with double orange wing-bars and white in the three

outer tail-feathers. The call-note is a thrush-like *zip* ; the song is elaborated from the quickly-repeated call-note, preceded by or ending with a trill. An arboreal bird of hill forests.

NEST AND EGGS. Not described from Burma, but Cranbrook described it as very common in July at 12,000 feet in the Adung valley, and it probably breeds there and elsewhere in the mountains of northern Burma.

STATUS AND DISTRIBUTION. Breeds at 7,000–14,000 feet in the Himalayas, western China and Yunnan. In winter it is common through the higher hills and mountains of Burma to the Chin Hills on the west and Mt. Mulayit on the east, but has not been recorded below 3,500 feet. Heinrich was convinced it was breeding on Mt. Victoria, but it vanished after the 10th May.

YELLOW-BROWED WILLOW WARBLER

Phylloscopus inornatus (Blyth), CALCUTTA
SUBSPECIES : *inornatus* (Blyth), CALCUTTA
mandellii Brooks, SIKKIM

IDENTIFICATION. Plate IX, fig. 6, p. 196. Small size, absence of yellow on rump, conspicuous double wing-bars, and dark tip to lower mandible distinguish this species. The call-note of *inornatus* is *weest* and of *mandellii* is a chirp. It frequents all types of wooded and semi-wooded country and keeps well up in the canopy except in windy weather.

STATUS AND DISTRIBUTION. Breeds in Siberia and western China and migrates to the oriental region in winter, wandering westwards to the British Isles. The subspecies *mandellii* has been recorded from Mt. Victoria and Mt. Mulayit, and I obtained one specimen (identified by Ticehurst) in the Arakan Yomas at 5,000 feet, on the Thayetmyo–Minbu district border. The subspecies *inornatus* is very common throughout Burma, from the plains to 8,000 feet, from mid-October to mid-April.

YELLOW-RUMPED WILLOW WARBLER

Phylloscopus proregulus Pallas, TRANS-BAIKALIA
SUBSPECIES : *chloronotus* (Gray), NEPAL ,

IDENTIFICATION. The small size and lemon-yellow rump (conspicuous as the bird flutters to pick insects off a leaf) suffice to distinguish it from any except *maculipennis* and *pulcher*, but both these show white in the outer tail-feathers, which *proregulus* lacks ; I noted the yellow coronal streak as conspicuous in the field. The call-note is a shrill feeble tinkling on two notes : D to F sharp. It is partial to pine forests at high elevations but avoids dense forest, and in winter frequents also lighter growth and scrub in river-beds. Usually seen in hunting parties with other willow warblers, tits, etc.

STATUS AND DISTRIBUTION. Breeds in southern Siberia and western China and migrates south in winter. It has been recorded from Arakan (?), Mt. Victoria, North-East Burma, Karen Hills, and Southern Shan States, and may breed in some of these localities, but so far no proof of breeding has been obtained.

GREY-FACED WILLOW WARBLER

Phylloscopus maculipennis (Blyth), NEPAL–SIKKIM
SUBSPECIES : *maculipennis* (Blyth), NEPAL–SIKKIM

IDENTIFICATION. The diminutive size, yellow rump, grey head and throat, and white in the three outer tail-feathers at once distinguish this species. The call-note is *zip* constantly repeated. It is a forest bird of the higher hills, frequenting both the tree-tops and the undergrowth.
NEST AND EGGS. Unknown. Heinrich saw fledged young on the 14th May.
STATUS AND DISTRIBUTION. Breeds in the Himalayas and the mountains of Yunnan and western China ; it is common in the Chin Hills, North-East Burma, and Karenni, and has probably been overlooked in the Shan States. It probably breeds at high elevations where found (7,000–10,000 feet), and in winter moves altitudinally down the same hills and is usually found between 2,500 and 7,000 feet.

ARCTIC WILLOW WARBLER

Phylloscopus borealis (Blasius), OKHOTSK SEA
SUBSPECIES : *borealis* (Blasius), OKHOTSK SEA

IDENTIFICATION. The large size and single wing-bar are useful guides ; its call-note is a loud husky *tswee-ep* or *dz-dzit* unlike that of any other species ; it also utters a scolding chatter. Arboreal in habits, favouring mangrove swamps and insect-infested trees such as mango.
STATUS AND DISTRIBUTION. Breeds in arctic Norway, northern Russia and northern Siberia, and migrates a vast distance for so small and fragile a bird to the south-eastern corner of the oriental region ; it is a winter visitor to the whole of Tenasserim, but has not been recorded elsewhere in Burma.

[NOTE.—*examinandus* Stresemann, BALI (LESSER SUNDA IS.), is a poorly defined subspecies that may also occur in Burma.]

LARGE-BILLED WILLOW WARBLER

Phylloscopus magnirostris Blyth, CALCUTTA

IDENTIFICATION. This and *borealis* are the largest members of the genus. The best guide is the very distinct call-note *dir-tee*, the second syllable half an octave higher than the first. A solitary bird of evergreen forest and shady trees, keeping more to the branches than to the foliage.
STATUS AND DISTRIBUTION. Breeds in the Himalayas and the mountains of central Asia. Cranbrook described it as common in the Adung valley at 9,000 feet in June and it no doubt breeds there ; there are doubtful winter records from Arakan and Tenasserim, but it has been obtained in Southern Burma on passage.

DULL GREEN WILLOW WARBLER

Phylloscopus trochiloides (Sundevall), CALCUTTA
SUBSPECIES: *trochiloides* (Sundevall), CALCUTTA
obscuratus Stresemann, N. KANSU
plumbeitarsus Swinhoe, TAKU–PEKING, N. CHINA

IDENTIFICATION. Very like *magnirostris* but with quite different notes. The call-note is *dschiewist* and the warning-note is *errk*; *plumbeitarsus* utters a sibilant double note. An arboreal forest bird of moderate elevations.
STATUS AND DISTRIBUTION. Breeds throughout most of central Europe and Asia. The subspecies *trochiloides* breeds in Siberia and winters throughout Burma to northern Tenasserim, but some specimens are nearer to *obscuratus*; *plumbeitarsus* breeds in north-eastern Siberia and winters throughout Burma as far south as Mergui, but has not been recorded from the Chin Hills.

PALE-LEGGED WILLOW WARBLER

Phylloscopus tenellipes Swinhoe, AMOY, CHINA

IDENTIFICATION. The two indistinct creamy-white wing-bars, no green in the plumage, a golden-brown wash on the rump contrasting with the brown upper-parts, conspicuous white supercilium and pure white under-parts make this an easy species to recognise. It has a very distinct metallic *tic-tic* call-note, and keeps to the undergrowth and the lower branches of trees.
STATUS AND DISTRIBUTION. Breeds in countries round the Sea of Japan and migrates to Indo-China, Siam, and south-eastern Burma. It winters in Pegu (rare), Karen Hills (Salween district), and Tenasserim.

CROWNED WILLOW WARBLER

Phylloscopus coronatus (Temminck and Schlegel), JAPAN
SUBSPECIES: *coronatus* (Temminck and Schlegel), JAPAN

IDENTIFICATION. A large willow warbler with a single narrow wing-bar and a pale coronal streak. It has a simple and very characteristic song which may be heard on passage, and it is found in bushes and tree-tops alike.
STATUS AND DISTRIBUTION. Breeds in Manchuria, Japan, etc., and winters in the eastern part of the oriental region; it has been recorded once from Pegu on passage, and winters in southern Tenasserim.

BLYTH'S WILLOW WARBLER

Phylloscopus reguloides Blyth, CALCUTTA
SUBSPECIES: *reguloides* Blyth, CALCUTTA
assamensis Hartert, KHASIA HILLS
claudiae (La Touche), MENGTSZ, S-E. YUNNAN

IDENTIFICATION. A distinct yellowish coronal band and rather bright yellowish-green upper-parts are guides to this species. The note is difficult to describe, *pit-chew-a-pit-chew-a* . . . the 3 notes slurred into each other to produce

a continuous undulating wave of sound; the alarm-note is *zip-aye* or *cheep-it* repeated. An arboreal bird, found in most types of forest.

NEST AND EGGS. Two nests found on the 13th April at 7,500 feet on Nattaung both contained young almost ready to fly. The nests were compactly built entirely of moss, felt-like in texture, and were placed on the ground under tufts of grass on the hillside. The young were being fed on caterpillars and insects. Both *Cuculus saturatus* and *C. poliocephalus* lay in the nests of this species.

STATUS AND DISTRIBUTION. The subspecies *reguloides* breeds in the eastern Himalayas and the mountains of western China, and has been recorded as a winter visitor once from Bhamo and once from northern Tenasserim; *assamensis* probably breeds throughout the mountains of Burma, and has been recorded from Mt. Victoria, North-East Burma, the Shan States, and Karenni; *claudiae* breeds in Yunnan and winters in south-eastern Burma, from the Southern Shan States and Pegu Yomas to northern Tenasserim.

WHITE-TAILED WILLOW WARBLER

Phylloscopus davisoni (Oates), MT. MULAYIT
SUBSPECIES: *davisoni* (Oates), MT. MULAYIT

IDENTIFICATION. Probably not distinguishable from the preceding species in the field; neither call-note nor habits seem to differ.

NEST AND EGGS. Harington found 3 nests in April in the Sinlum hills.

STATUS AND DISTRIBUTION. Breeds in the higher hills of Burma east of the Irrawaddy and Sittang rivers as far south as Mt. Mulayit, extending east to Indo-China and western China; it is abundant throughout its range in Burma. The Vernay-Hopwood expedition obtained one at Tawmaw, Jade Mines area.

[NOTE.—*disturbans* La Touche, MENGTSZ may occur in eastern Burma.]

BLACK-BROWED WILLOW WARBLER

Phylloscopus cantator Tickell, BORABHUM, BENGAL
SUBSPECIES: *cantator* Tickell, BORABHUM, BENGAL

IDENTIFICATION. Has to be distinguished from the last two species. The wing-bar is single and less conspicuous, and the abdomen white contrasting with the pure yellow throat. Call-note *poi-poi* loud and incessant. Frequents bamboo clumps, the lower branches of large trees, teak plantations, and luxuriant vegetation near water.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. From eastern India through Burma to western China; it apparently breeds in the higher hills and descends in winter to the foothills. It has been recorded from Lonkin, Bhamo, Maymyo, Northern Shan States, Pegu Yomas, and Karen Hills; there are no breeding records from Burma, but Stuart Baker records it as breeding in Assam.

[NOTE.—*P. ricketti* Slater, N-W. FOKIEN, has been recorded from northern Siam and may reach eastern Burma.]

KEY TO THE GENUS SEICERCUS

This genus is very close to *Phylloscopus*, but Ticehurst gives reasons in his monograph on the latter for not uniting the two.

A. Whole under-parts deep yellow.
  a. Lateral bands on crown blackish; median band well defined.
    *a*¹. White ring round eye; sides of head bluish-grey . *S. affinis*
    *b*¹. Yellow ring round eye; sides of head yellowish . *S. burkei*
  b. Lateral bands on head ashy; median band ill-defined *S. xanthoschista*
B. Under-parts not entirely yellow.
  c. Chin grey, crown blackish . . . . . *S. poliogenys*
  d. Chin to upper breast grey, crown chestnut . . *S. castaniceps*

ALLIED FLYCATCHER-WARBLER

Seicercus affinis (Horsfield and Moore), NEPAL

IDENTIFICATION. Length 4½ inches. A surprised-looking little bird, olive-green above and yellow below with a blue-black head; a pale smoke-grey coronal stripe; the white ring round the eye shows more strongly behind the eye than in front. The call-note is a sharp *che-weet*. Most hunting parties of small birds in the mountains north-east of Myitkyina seem to contain one or two *Seicercus* (rarely more), sometimes one species and sometimes another.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Sikkim to Annam. It is not uncommon in northern Burma and was observed by Baillie in the hills west of the Chindwin; a specimen obtained by Stanford at 1,500 feet in the Uyu valley adds to the list of mountain birds that seem to drop down to moderate elevations in the Upper Chindwin in winter.

YELLOW-EYED FLYCATCHER-WARBLER

Seicercus burkei Burton, HIMALAYAS

SUBSPECIES: *burkei* Burton, HIMALAYAS
tephrocephala (Anderson), BHAMO
distincta (La Touche), MENGTSZ, S-E. YUNNAN

IDENTIFICATION. Length 4½ inches. See key. A small unobtrusive bird, found mainly in the undergrowth of hill forests. A *chip-chip* note is uttered when feeding. Usually seen singly or in pairs, often with hunting parties of *Alcippe* and *Stachyris*, and is a typical bird of the dense bamboo thickets that are a feature of the Karen Hills forests; it keeps near the ground and is easily overlooked.

NEST AND EGGS. Have been taken in the Chin Hills and at Sinlum Kaba, in April and May. The nest is usually built on the ground and is a domed structure of coarse grass, lined with moss and down well felted together, and resembles the nest of a *Phylloscopus*. The eggs, 4 or 5 in number, are pure white.

STATUS AND DISTRIBUTION. Throughout the Himalayas, and through Burma

to Yunnan and Indo-China. It breeds in the mountains of northern Burma and in the Chin Hills, but its status in the Karen Hills is uncertain ; it is very common round Thandaung from September to April, but seems to disappear in the rains. It drops down in winter and has been recorded from southern Burma, northern Tenasserim, and Myitkyina district at low elevations. It goes up to 12,000 feet in Yunnan. In Tenasserim not recorded south of the Amherst district.

GREY-HEADED FLYCATCHER-WARBLER

Seicercus xanthoschista (Gray), NEPAL
SUBSPECIES : *tephrodiras* Sick, MT. VICTORIA
pulla Ripley, MISHMI HILLS

IDENTIFICATION. Length 4 inches. See key. Described as noisy and bold, with a rather plaintive call-note *pritt-pritt* or *tyee-tyee* and a loud monotonous song consisting of a trill of several notes.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Throughout the Himalayas to western and northern Burma but not recorded from Yunnan ; like others of the genus it drops down to plains level in winter.

GREY-CHEEKED FLYCATCHER-WARBLER

Seicercus poliogenys (Blyth), DARJEELING
SUBSPECIES : *poliogenys* (Blyth), DARJEELING

IDENTIFICATION. Length 4½ inches. See key. It has a white ring round the eye and a yellow wing-bar.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Yunnan. Though recorded only from the Myitkyina district it will almost certainly be found in the Chindwin mountains as well.

CHESTNUT-HEADED FLYCATCHER-WARBLER

Seicercus castaniceps Blyth, NEPAL
SUBSPECIES : *castaniceps* Blyth, NEPAL
collinsi Deignan, N. SIAM

IDENTIFICATION. Length 4 inches. See key. Chestnut crown, double yellow wing-bar, grey throat and breast, white abdomen and yellow under tail-coverts prevent confusion with other members of the genus.
NEST AND EGGS. Not described from Burma, but a male about to breed was obtained at Kambaiti.
STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to the Shweli-Salween divide in Yunnan, and in Siam. Rather rare in Burma like all *Seicercus* other than *burkei*, but found on Mt. Victoria, in North-East Burma, and the Southern Shan States.

YELLOW-BELLIED FLYCATCHER-WARBLER

Abroscopus superciliaris (Blyth), AMHERST Dist.
SUBSPECIES : *superciliaris* (Blyth), AMHERST Dist.
drasticus Deignan, MARGHERITA, ASSAM
smythiesi Deignan, PAKOKKU Dist.

IDENTIFICATION. Plate IX, fig. 7, p. 196. Length 4½ inches.
VOICE. The call-note is a little tripping run of six or seven notes down and up the scale, and feeding parties keep up an incessant twitter.
HABITS AND FOOD. This bird is ecologically linked to bamboo jungle, and though it may feed in the undergrowth or in the lower branches of trees it is seldom far from bamboos. It is a typical bird of the teak forests of the Pegu Yomas in the cold weather, is usually seen hunting in active parties through bamboos, and is partial to bamboos on the banks of streams ; like some other forest birds it enjoys an evening bathe. It is lively and active in its movements and appears to catch most of its insect food on the wing.
NEST AND EGGS. Bingham found a nest on the 9th March in northern Tenasserim many years ago, but no one else seems to have done so. The nest is nearly always built in a dead bamboo, and consists of a pad of felted green moss. The eggs, 3 to 5 in number, are white in ground-colour, either boldly spotted or minutely freckled with reddish-brown.
STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam. It is found throughout Burma, ascending to about 5,000 feet. There are two records from Yunnan.

[NOTE.—*salwinensis* Stuart Baker is a synonym of *superciliaris* and *contii* de Schauensee SOUTHERN SHAN STATES is not separable.]

BLACK-FACED FLYCATCHER-WARBLER

Abroscopus schisticeps (Gray), NEPAL
SUBSPECIES : *ripponi* Sharpe, GYI-DZIN-SHAN, YUNNAN
flavimentalis (Stuart Baker), MT. VICTORIA

IDENTIFICATION. Length 4 inches. Differs from the preceding species in having the chin and throat bright yellow and the remaining under-parts whitish ; a line across the forehead, round and in front of the eye black.
NEST AND EGGS.—Not described from Burma ; nests in holes in trees or bamboos.
STATUS AND DISTRIBUTION.—Himalayas from Nepal through Burma to Yunnan. It has been recorded from the Chin Hills, Adung valley (where Cranbrook found them common in March at 6,000 feet), and the Shan States, but seems to be a rare bird.

WHITE-THROATED FLYCATCHER-WARBLER

Abroscopus albogularis (Horsfield and Moore), NEPAL
SUBSPECIES: *albogularis* (Horsfield and Moore), NEPAL
hugonis Deignan, N. SIAM

IDENTIFICATION. Length 4 inches. Rufous-brown crown, chestnut supercilium and cheeks, and blackish throat distinguish it; in spite of its name the throat appears more black than white in the field, because the bases of the feathers show through. Stanford notes that "it is very like the British goldcrest in habits, moving about swiftly in small parties, hovering at the tip of a bough, darting after flies and keeping up a shrill twitter. I have on two or three occasions seen this bird spread its tail like *Chelidorhynx hypoxantha* does."

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan and Siam. It has been recorded from the Chin Hills, Upper Chindwin, and North-East Burma, where Stanford found it fairly common along the Myitkyina–Fort Hertz road at 1,000–3,000 feet.

[NOTE.—The YELLOW-THROATED FLYCATCHER-WARBLER, *Abroscopus flavogularis* Godwin-Austen, is a species of which the type and only known specimen was obtained at Sadiya in north-eastern Assam. Distinguished from other members of the genus by ashy-grey upper-parts; it has a white supercilium, yellow chin and throat, and ashy-grey under-parts.]

BROAD-BILLED FLYCATCHER-WARBLER

Tickellia hodgsoni (Horsfield and Moore), NEPAL

IDENTIFICATION. Length 4 inches. In plumage bears a remarkable resemblance to the mountain tailorbird, from which it differs in its shorter bill and the more uniform grey of the throat and breast. Osmaston describes the note as a single long-drawn very shrill whistle, followed after an interval by two notes, the second of which is the lower of the two in pitch. Heinrich describes the song as a very thin shrill twitter. Frequents undergrowth in dense evergreen forest above 6,000 feet.

NEST AND EGGS. Not described from Burma, but Heinrich reported it as a breeding bird on Mt. Victoria.

STATUS AND DISTRIBUTION. Sikkim to the Yunnan border. I saw a solitary example of what I believe was this species at 7,000 feet on the way to the Fenshuiling pass, North-East Burma, and Heinrich obtained specimens on Mt. Victoria.

TAILORBIRDS

Active little warblers of the undergrowth, with a long, straight bill, long tail and a rufous crown, the tailorbirds derive their name from the remarkable way in which they build their nests.

COMMON TAILORBIRD

Orthotomus sutorius (Pennant), CEYLON
SUBSPECIES : *patia* Hodgson, NEPAL
longicauda (Gmelin), CHINA
maculicollis Moore, MALACCA
inexpectatus La Touche, MENGTSZ, S-E. YUNNAN

IDENTIFICATION. Plate IX, fig. 1, p. 196. Length 5 inches. A bird of gardens and undergrowth, more often heard than seen.

VOICE. It has a loud call-note, *chw-ee, chw-ee*, etc., at the rate of 25 times in 10 seconds ; at times it sounds like *chip, chip, chip*.

HABITS AND FOOD. The tailorbird has been immortalised in Kipling's story " Rikki-tikki-tavi " in the *Jungle Book*. In Burma, besides being a familiar garden bird, it frequents the undergrowth in forests and scrub-jungle, and its loud, cheerful note helps to lighten the gloom of the teak forests during the rains. In flight the long tail is flicked energetically far over the back so that the bird appears about to overbalance. It is not shy and is very active, hopping about and investigating creepers and plants for insects, but is seldom seen by the unobservant.

NEST AND EGGS. According to Wickham it breeds from April onwards. The nest is usually built within 6 feet of the ground in a low bush or the hanging branch of a tree ; the only essential is a large, tough leaf. The nest itself is a deep, soft cup of cotton-wool and down, with a slight lining of a few horse-hairs and perhaps a few fine grass stems. For it the bird prepares an aerial cradle by sewing two or more leaves together, the nest being built in the cavity so formed. The sewing is done with threads of cobwebs, silk cocoons, wool or cotton ; the bird pierces a hole in the leaf with its sharp bill and draws the thread through ; the end frays easily and the part that is forced through the tiny aperture issues as a fluffy knob, which looks like a knot and is usually taken for such ; as a matter of fact, the bird makes no knots, relying on the friction between the strands of cotton and the leaf to keep the structure together ; except that each stitch is made separately it would pass for the work of human hands.

The eggs, 3 or 4 (rarely 5 or 6) in number, are very long and pointed in shape and very variable in colour : white, cream, pale pink, pale blue or blue-green with freckles of reddish-brown, brown, black and purplish-black ; on most eggs the markings are sparse and tend to be more numerous at the larger end.

STATUS AND DISTRIBUTION. Widespread in the oriental region and

a common resident throughout the plains and foothills of Burma, here and there ascending the higher hills to about 4,000 feet. It is a common bird of Rangoon gardens.

BLACK-NECKED TAILORBIRD

Orthotomus atrogularis Temminck, BORNEO
SUBSPECIES : *nitidus* Hume, TENASSERIM

IDENTIFICATION. Length 5 inches. Best distinguished from the common tailorbird by voice, the call-note being totally different, a sweet-sounding *kri-ri-ri* with variants ; bright yellow wing-shoulder, axillaries and under tail-coverts are noticeable ; the common tailorbird often shows an ashy patch on the side of the neck, when the black bases of the feathers show through, like the female of the black-necked tailorbird, but the male of the latter has the throat black. A forest bird, frequenting dense undergrowth and bamboo thickets and avoiding gardens and open country.
NEST AND EGGS. Have been taken in Tenasserim ; they are indistinguishable from those of the common tailorbird.
STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Sikkim. It probably extends throughout Burma in suitable localities but there are no records from western Burma. It occurs in Myitkyina district, the Pegu Yomas, Sittang plain, Karen Hills, Shan States, Karenni, and Tenasserim ; it is a common bird in the Pegu Yomas and in Thandaung and may be elsewhere in its range but it is easily overlooked unless its voice is known.

MOUNTAIN TAILORBIRD

Orthotomus cucullatus (Temminck), JAVA
SUBSPECIES : *coronatus* (Blyth), DARJEELING
thais Robinson and Kloss, PENINSULAR SIAM

IDENTIFICATION. Length 4 inches. Best identified by its unmistakable voice, the song consisting of a 4-note whistle, the first two notes on the same pitch, the third a trill (3 or 4 notes uttered very rapidly) and the fourth either higher or lower in pitch than the first two, the whole repeated in a remarkable number of different keys both high and low ; I am not sure whether this song is kept up all the year or whether the bird falls silent in the winter. It has a rufous cap, olive-green upper-parts, ash-grey throat and breast, bright yellow under-parts, and some white in the tail which may show up in flight ; it is probably indistinguishable in plumage from *Tickellia* (*q.v.*). This bird's ecological niche is in the dense bamboo thickets so typical of hill evergreen ; in these it is a great skulker and most difficult to see ; I have always observed it in small parties, and never in any other habitat. Like other small skulkers it occasionally mounts a tall bamboo when feeding. The alarm-note is a low buzz.
NEST AND EGGS. Heinrich found a nest with hard-set eggs at the beginning of July on Mt. Victoria ; the nest was woven from fine blades of grass and attached in the usual way to two pendent leaves. The eggs were bluish, lightly spotted with red.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is probably common throughout the higher hills of Burma ; I noted it as common in the hills west of the Chindwin on the way out to Imphal in 1942, and found it very common in the Laukkaung-Htawgaw area in North-East Burma and also at Thandaung and in Karenni ; it has been recorded also from the Chin Hills and Tenasserim. At low elevations it has been obtained once in Myitkyina district and once in the Pegu Yomas (on the 29th August) and its status is uncertain. At the other extreme we found it up to the summit of Nattaung (8,607 feet). Absence of its favourite bamboo thickets probably excludes it from most of the Shan plateau, whence it has not yet been recorded.

RED-HEADED TAILORBIRD

Orthotomus sericeus Temminck, BORNEO
SUBSPECIES : *hesperius* Oberholser, LINGA I.

IDENTIFICATION. Length 4 inches. Upper-parts ashy-grey, upper part of the head and the tail chestnut ; under-parts white tinged with buff. Said to frequent forest outskirts and scrub-jungle.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, reaching the extreme south of Tenasserim.

ASHY TAILORBIRD

Orthotomus sepium Horsfield, JAVA
SUBSPECIES : *ruficeps* (Lesson), SUMATRA

IDENTIFICATION. Length 4 inches. An ashy-grey bird with the crown and sides of the head bright cinnamon-rufous and the tail brown tipped with whitish.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species found in southern Tenasserim.

[NOTE.—The GOLDCREST, *Regulus regulus* subspecies, has not been recorded from Burma (Stuart Baker's record from the Northern Shan States is obviously incorrect) ; it is found in the Himalayas and parts of Yunnan, but not apparently in western Yunnan. I kept a special look-out for this bird in the mountains of North-East Burma along the Yunnan frontier, but saw no signs of it.

The FIRE-CAPPED TIT-WARBLER, *Cephalopyrus flammiceps* Burton, HIMALAYAS, extends from the Himalayas to Szechwan and Yunnan, and the subspecies *olivaceus* Rothschild was described from Tengyueh ; it is likely therefore to occur in the mountains of North-East Burma. Length 4 inches. The flame-coloured forehead of the adult male is diagnostic ; the female and young male resemble a *Phylloscopus*, being olive-green above and dull whitish below, with some yellow about the throat.]

Family ORIOLIDAE

ORIOLES

This family comprises a number of birds found throughout the tropical and temperate regions of the old world and represented by two genera in America. The orioles are beautiful birds, yellow and black in colour, except for the maroon oriole, which is maroon and black. The females are duller than the males, and the young are densely streaked below and retain traces of these streaks in their plumage for some time, the males till the end of their second year and the females longer still.

They are birds of the tree-tops, rarely descending to the ground, on which they move with rather clumsy hops. The flight is swift and rather heavy, with long undulations and a curious, unstable action. The sweeping, upward curve by which a bird usually reaches the centre of a tree from below is characteristic. They are very active birds, and delight to indulge in aerial games, following each other from tree to tree and darting through the foliage with their bright plumage flashing in the sun.

A typical oriole's nest is built in a large tree, usually at a height of over 20 feet from the ground, and is suspended within a slender fork towards the extremity of a branch, often where no climber can reach it. From below it looks like a round ball of grass wedged into the fork, and the sitting bird is completely hidden from view; but in the hand it proves to be a most beautifully woven cup, rather deep to prevent the eggs rolling out in a high wind, and composed of fine grass and slender strips of tenacious bark fibres, the ends of which are wound round and round the supporting twigs. Some nests contain no extraneous matter, but others have all sorts of odds and ends interwoven into the exterior, such as scraps of newspaper, rags, shavings, snake-sloughs, thread, and the like. There is nearly always a neat lining of fine grass.

SLENDER-BILLED ORIOLE

Oriolus tenuirostris Blyth, ASSAM
SUBSPECIES: *invisus* Riley, SOUTHERN ANNAM

LOCAL NAMES. Burmese: *sanwin-wa*, *hnget-shwe-wa* or *hnget-wa*.
IDENTIFICATION. Plate X, fig. 3, p. 212. Length 10½ inches. The female is much duller, with a tinge of green on the back, and the

young male is like the female, but with no trace of the black eyestripe and nape band, and with the under-parts heavily streaked with black. The width of the nape band is ½ inch.

VOICE. A variety of lovely liquid call-notes, and also a rather harsh mewing note.

HABITS AND FOOD. This bird is found in the drier and more open forests of the foothills and higher hills, where it is seen solitary or in pairs. In the dry zone of Central Burma it frequents compounds, *indaing* and scrub-jungle in open country, and though almost entirely arboreal in habits, young birds have been seen taking caterpillars off the ground into trees to eat (Roseveare). They invade Rangoon annually in mid-October and may be heard screeching in Windermere Park almost daily throughout November.

NEST AND EGGS. Have been taken in the Bhamo hills and at Maymyo in May and June. The nest is as described for the family, and the eggs, 2 to 4 in number, are usually pink in ground-colour with black spots and specks sprinkled over the surface.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It has not yet been recorded from northern Burma (although it is common in Yunnan and goes up to 10,000 feet), and is very rare in Tenasserim, but elsewhere is common in the plains and foothills outside heavy forest, particularly in Central Burma, including Maymyo.

BLACK-NAPED ORIOLE

Oriolus chinensis (Linnaeus), PHILIPPINE IS.
SUBSPECIES: *diffusus* Sharpe, MALABAR

IDENTIFICATION. Differs from *tenuirostris* in the width of the nape band, which is ¾ inch. The bill is heavier, and the back of the male is brighter and more yellow.

STATUS AND DISTRIBUTION. A winter visitor, which breeds in N-E. China and Manchuria, and has been recorded from Arakan, Mandalay, the Irrawaddy-Sittang plain, and Tenasserim (whence it disappears by the end of April).

INDIAN BLACK-HEADED ORIOLE

Oriolus xanthornus (Linnaeus), BENGAL
SUBSPECIES: *xanthornus* (Linnaeus), BENGAL

LOCAL NAMES. Burmese: As for the slender-billed oriole.

IDENTIFICATION. Plate X, fig. 2, p. 212. Length 10 inches. The first winter bird has the forehead yellowish, the black of the upper

head duller and more or less streaked with yellowish, the upper-parts strongly tinged with green and the chin, throat and upper breast yellowish-white streaked with black. The adult female is like the adult male except that the plumage is a trifle duller and the black markings on the tail slightly different.

VOICE. The call-note usually consists of four notes, *yu-hu-a-yu*, answered by three notes, *tu-hu-ee* or *te-hee*. In addition to its varied range of melodious call-notes it sometimes utters harsh, cawing notes and newly fledged young have a churring cry. No one has yet described the difference, if any, between this bird's calls and those of the two preceding species.

HABITS AND FOOD. Those of the family; it is rather more of a forest bird than the slender-billed oriole, and is common all through the teak forests of the Pegu Yomas, and in the *indaing* forests of the Katha district. In the irrigated areas of Shwebo district it was seen only in trees in inspection bungalow compounds and in thin jungle, never in open country or on the ground like the black-naped oriole (Roseveare).

NEST AND EGGS. Typical of the family. Eggs may be laid from February to July, but mostly from April to June; the markings on eggs are brownish and never black.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is a common resident throughout the better wooded plains and foothills of Burma, and Wickham describes it as the commonest oriole of the upper Burma hills, though it does not ascend to any great height.

MALAY BLACK-HEADED ORIOLE

Oriolus xanthonotus Horsfield, JAVA
SUBSPECIES: *xanthonotus* Horsfield, JAVA

IDENTIFICATION. Length 8 inches. Resembles *xanthornus* but has the abdomen white or yellowish-white streaked with black.

STATUS AND DISTRIBUTION. A Malaysian species, reaching the extreme south of Tenasserim, where it is rare.

MAROON ORIOLE

Oriolus trailli (Vigors), DARJEELING
SUBSPECIES: *trailli* (Vigors), DARJEELING

IDENTIFICATION. Length 11 inches. The adult male has the whole head, neck and wings black; tail chestnut-maroon; rest of plumage deep maroon; bill bluish. The female and young have the under-parts greyish-white heavily

PLATE X

Page

1. FAIRY BLUEBIRD (adult male) 79
   Irena puella sikkimensis.

2. INDIAN BLACK-HEADED ORIOLE (adult male) . . . 211
   Oriolus xanthornus xanthornus.

3. SLENDER-BILLED ORIOLE (adult male) 210
   Oriolus tenuirostris invisus.

4. COMMON MYNA (adult) 218
   Acridotheres tristis tristis.

5. GRACKLE (adult) 213
   Gracula religiosa intermedia.

6. BLACK-COLLARED STARLING (adult) 216
   Sturnus nigricollis.

7. JERDON'S STARLING (adult) 217
   Sturnus burmanicus burmanicus.

8. ASHY-HEADED STARLING (adult) 215
   Sturnus malabaricus nemoricola.

9. PIED STARLING (adult) 218
   Sturnus contra superciliaris.

10. INDIAN JUNGLE MYNA (adult) 220
    Acridotheres fuscus fuscus.

PLATE X

streaked with blackish. A bird of hill forests with a great variety of beautiful notes and some harsh ones ; in the spring it is partial to flowering *letpan* trees.
NEST AND EGGS. Breeds in March round Kalaw, where it is very common. The eggs are pink in ground-colour.
STATUS AND DISTRIBUTION. Throughout the Himalayas and the higher hills of Burma (excluding Tenasserim) to Yunnan, Siam, and Annam. It is not uncommon in hill forests from 2,000 feet upwards, and has been recorded from low elevations in the Pegu Yomas, but may not be resident there ; in Yunnan it goes up to 11,000 feet, but in Burma is not often seen above 6,000 feet. Although described as common round Kalaw it has not been observed at Maymyo.

Family STURNIDAE

GRACKLES, STARLINGS AND MYNAS

The grackles or talking mynas are resident birds in the better wooded parts of the oriental region ; the whole plumage is glossy black, but the most distinctive feature is the presence of fleshy wattles on the nape, usually accompanied by bare skin on the sides of the head. All grackles have an immense repertoire of notes, some of which are melodious and others noisy and raucous ; they are also admirable mimics, copying the notes of other birds freely in a wild state and learning to talk well in captivity.

The stares or glossy starlings range from north-eastern India through Burma and Malaysia to Australia. The plumage is intensely glossy and the wing long and pointed. In habits the stares closely resemble some of the mynas.

The starlings and mynas include some of the commonest and most familiar birds in Burma.

GRACKLE

Gracula religiosa Linnaeus, JAVA
SUBSPECIES : *religiosa* Linnaeus, JAVA
intermedia Hay, CACHAR, ASSAM

LOCAL NAME. Burmese : *tha-li-ga.*
IDENTIFICATION. Plate X, fig. 5, p. 212. Length 10 inches. Plumage black except for a white wing-patch. An arboreal forest bird of the foothills.
VOICE. Described above. Perhaps the most distinctive note is a high-pitched sibilant whistle of great power.
HABITS AND FOOD. The grackle, hill myna, or talking myna, is a sociable bird and is usually seen in large parties in the tree-tops ; it

is a characteristic bird of the teak forests of the Pegu Yomas, where its variety concert is a frequent source of entertainment. Owing to its vocal prowess it is a favourite cage bird in India, and there used to be a considerable export trade in these birds from Rangoon, several thousand being shipped at a time under the name of hill mynas; owing to the cruelty involved an attempt was made to suppress the trade by protecting the birds under section 9 of the Wild Life Protection Act.

NEST AND EGGS. Most eggs are laid in April and May, but Hopwood took them in Arakan in June; they are laid in a hole in a tree and are a bright deep blue, blotched and spotted to a varying degree with chocolate and reddish-brown and with underlying marks of pale blue, the colour fading very quickly after the eggs have been laid; there are usually 2 or 3 in a clutch.

STATUS AND DISTRIBUTION. Throughout most of the oriental region. It is well distributed throughout Burma in the forests of the foothills, but is not often seen in the higher hills, although Wickham described it as found in all the upper Burma hills and a single bird has been observed in North-East Burma at 6,800 feet.

GLOSSY STARLING

Aplonis panayensis (Scopoli), PHILIPPINE IS.
SUBSPECIES: *affinis* (A. Hay), E. BENGAL
halictypus (Oberholser), PENINSULAR SIAM

IDENTIFICATION. Length 9½ inches. Whole plumage black glossed with brilliant green. It has a sharp metallic single note and is found in large noisy flocks in the tree-tops in open well-wooded country; in Tenasserim it roosts in coconut palms and pagoda *htees*.

NEST AND EGGS. Hopwood found many colonies breeding round Mergui from March to June and Christison found it breeding in Arakan in May. The nest may be in a hole in a tree, a bridge, the roof of a building, or in a toddy palm at the junction of a leaf with the trunk; it is a rough cup of roots, grass and leaves. The eggs, usually 3 in number, are miniature grackle's eggs.

STATUS AND DISTRIBUTION.—A Malaysian species, common in Tenasserim, very local in Arakan, extending to Bengal and Cachar, whence there are specimens in the British Museum, but there are no authentic records from any other part of Burma.

SPOTTED-WINGED STARLING

Saroglossa spiloptera (Vigors), HIMALAYAS
SUBSPECIES: *spiloptera* (Vigors), HIMALAYAS (= *assamensis* Stuart Baker)

IDENTIFICATION. Length 9½ inches. Sexes differ. The male has black edges to the feathers of the cap and mantle, black sides to the head, a white wing-spot

and rufous under-parts, darker on the chin and throat. The female is browner above and grey-brown below with white edges to the feathers. Found in flocks in the tree-tops ; often in *letpan* trees.

STATUS AND DISTRIBUTION. Throughout the Himalayas ; also in Annam and south-western China. It seems to be an erratic winter visitor to Burma and has been recorded from North-East Burma, the plains of Southern Burma as far south as Elephant Point, Southern Shan States, and Karen Hills, all the records being from December to February.

EUROPEAN STARLING

Sturnus vulgaris Linnaeus, SWEDEN
SUBSPECIES : *poltaratzskyi* Finsch, CHINESE ALTAI

IDENTIFICATION. Length 8½ inches. Plumage black with a purple gloss on the head and foreneck and a green gloss on the upper-parts.

STATUS AND DISTRIBUTION. Palaearctic. A rare winter visitor to northern Burma, one having been obtained at Fort Hertz and two seen near Myitkyina.

GREY STARLING

Sturnus cineraceus (Temminck), JAPAN

IDENTIFICATION. Length 9½ inches. Crown, nape and sides of head black ; ear-coverts white streaked with black ; rest of plumage ashy-brown or dark ashy except for a white band across the rump and the creamy-white abdomen and under tail-coverts.

STATUS AND DISTRIBUTION. Breeds in eastern Siberia and Japan and winters in the eastern part of the oriental region. A rare winter visitor to northern Burma, having been obtained at Kamaing and Bhamo. There is one record from Yunnan.

CHINESE STARLING

Sturnus sinensis (Gmelin), CHINA

IDENTIFICATION. Length 9 inches. General colour white to pale grey, ashy on the neck and back ; tail black broadly tipped with rusty ; primaries black with metallic green gloss.

STATUS AND DISTRIBUTION. Breeds in China, Formosa, and Japan, and winters in the eastern part of the oriental region. A rare vagrant to Burma, recorded only from near Pegu.

ASHY-HEADED STARLING

Sturnus malabaricus (Gmelin), MALABAR
SUBSPECIES : *nemoricola* (Jerdon), THAYETMYO

IDENTIFICATION. Plate X, fig. 8, p. 212. Length 8 inches. A small pale grey starling liable to be confused with Jerdon's starling, but distinguished by smaller size, colour of bill, chestnut under tail-coverts and lighter grey wings.

VOICE. It has querulous, rather high-pitched call-notes and a quite pleasant song.

HABITS AND FOOD. This is the most arboreal and active of the starlings, found in flocks in the tree-tops in open forest and in gardens, small groups of mango trees scattered about the paddy plains, flowering *letpan* trees, etc. On several occasions in the cold weather they have been observed late in the evening or just after dawn huddled close together in rows, like ashy swallow-shrikes, on the bare branches of trees standing out in the open.

NEST AND EGGS. Breeds from April to June. The eggs are laid in hollow trees, including palms, and are 3 to 5 in number and pale green in colour without markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common throughout the plains and foothills of Burma outside deep forest.

DAURIAN STARLING

Sturnus sturninus (Pallas), DAURIA

IDENTIFICATION. Length 7½ inches. Crown, nape, neck and upper back grey with a metallic purple patch on the nape; back, rump and wing-coverts metallic purple; tail metallic green; a ring round the eye white; sides of head and under-parts grey. Said to resemble the preceding species in habits.

STATUS AND DISTRIBUTION. Breeds in eastern Siberia and northern China, and winters in the eastern part of the oriental region, including Tenasserim (*extremely* abundant in April round Tavoy); there is one record from Pegu.

BLACK-COLLARED STARLING

Sturnus nigricollis (Paykull), CANTON, CHINA

IDENTIFICATION. Plate X, fig. 6, p. 212. Length 11 inches. The white rump is conspicuous in flight. A familiar starling of eastern Burma.

VOICE. A great variety of notes and phrases of which *chirr-chu-chu* and *chirr-ta-chu-ta-chu* are the commonest; also a hoarse jay-like *kraak-kraak.*

HABITS AND FOOD. This large starling will be familiar to anyone who has ever been to Maymyo, where it waddles about the lawns and open grassy spaces picking up grasshoppers and crickets. It resembles the common myna in habits and spends most of its time on the ground, flying off in the evening to a common roost.

NEST AND EGGS. The breeding season is from April to June, with second broods into August. It builds a huge, domed, untidy nest of

grass, leaves, and odds and ends, high up in a tree ; several birds sometimes breed in company, and the same site may be used annually. The eggs, 3 to 5 in number, are larger editions of the eggs of the common myna.

STATUS AND DISTRIBUTION. Widespread in the eastern part of the oriental region. A common plains bird in northern Burma, and the northern part of Central Burma (where the Chindwin river seems to be its western boundary). It is found west of the Chindwin further north, at Htinzin north-west of Mawlaik (Baillie). It extends through the Shan States to Tenasserim (where it is rare), but Oates mentions some specimens from the Tenasserim river.

JERDON'S STARLING

Sturnus burmanicus Jerdon, THAYETMYO
SUBSPECIES : *burmanicus* Jerdon, THAYETMYO
leucocephalus Gigli and Salvadori, SIAM

IDENTIFICATION. Plate X, fig. 7, p. 212. Length 10 inches. Whole head and breast dirty white, upper-parts dark grey ; under-parts purplish ; the plumage varies greatly with the seasons, but the red-tipped bill is usually noticeable.

VOICE. It has a chattering note, which parties constantly utter while feeding.

HABITS AND FOOD. Jerdon's starling is a typical dry zone bird, usually seen in large parties feeding on the ground in open grassland, gardens, cultivation, and scrub-jungle. It has the family habit of collecting in a communal roost at night ; the roost may be in reeds, sugar-cane, bamboo clumps, or similar cover.

NEST AND EGGS. Breeds from April to June, with second broods up to August. It builds an untidy nest under the eaves of houses or in holes in trees and in the roofs of thatched huts.

STATUS AND DISTRIBUTION. Widespread in the eastern part of the oriental region, not west of Burma. Its stronghold is the dry zone of Central Burma, and it is the only starling or myna (apart from the common myna round villages) normally seen in the uplands west of Meiktila. Northwards it extends to Myitkyina, where it breeds, but probably not much beyond, and southwards it is a cold weather visitor to the outskirts of Rangoon. Beyond that again we find it (subspecies *leucocephalus*) resident in Tenasserim. It is not found in the higher hills of northern Burma, but is common on the Shan plateau.

PIED STARLING

Sturnus contra Linnaeus, INDIA
SUBSPECIES : *contra* Linnaeus, INDIA
superciliaris (Blyth), BURMA

IDENTIFICATION. Plate X, fig. 9, p. 212. Length 9 inches. A conspicuously pied starling with a distinctive bill. Common in the plains.
VOICE. No details of its call-notes seem to have been recorded.
HABITS AND FOOD. The pied starling is more rural and less urban than the common myna ; it is a bird of open cultivation, where it lives in small parties that spend their time hunting over paddy fields and grassland, and is much in evidence from the train window in lower Burma. During the breeding season family parties are commonly seen in the environs of Rangoon. Like the mynas it roosts in huge, vociferous mobs.
NEST AND EGGS. Similar to those of the mynas. The nest is usually built in a tree out in the open fields ; *kokko* trees along bunded roads are a favourite site.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and a common resident throughout the plains of Burma as far south as Mergui, but it is not found in the higher hills, except perhaps in the Shan States, nor in forest.

GOLDEN-CRESTED MYNA

Mino coronatus Blyth, TENASSERIM

IDENTIFICATION. Length 8½ inches. A remarkable myna, easily recognised by its bright black and yellow plumage, long crest, bare yellow skin round the eye and orange bill ; young birds have the whole head black. An arboreal bird of the plains and foothills. A bird of dry open forest, usually in small parties, occasionally in pairs, very similar in voice and habits to the grackle, but it also utters a harsh metallic note like *Crypsirina temia* (Davison).
NEST AND EGGS. Have been taken in Tenasserim in April.
STATUS AND DISTRIBUTION. From Assam through Burma to Siam and Indo-China. In Tenasserim it seems to be not uncommon as far south as Tavoy but elsewhere in Burma it is rare and its status is uncertain ; it has been recorded from the Mogok foothills (at 500 feet), the Pegu Yomas, and Plains of Southern Burma.

COMMON MYNA

Acridotheres tristis (Linnaeus), CALCUTTA
SUBSPECIES : *tristis* (Linnaeus), CALCUTTA

LOCAL NAME. Burmese : *zayet* (a name applied to all mynas).
IDENTIFICATION. Plate X, fig. 4, p. 212. Length 9 inches. In flight

the rounded white-tipped tail and the large white patch on the wing are conspicuous. Common plains species.

VOICE. A strange mixture of harsh gurglings and liquid notes, *keeky-keeky-keeky, churr-churr, kok-kok-kok;* the last notes are invariably accompanied by a quaint, stiff bobbing of the head, generally close in front of the bird's companion. Other notes recorded are *che-wee, che-wee—che-wer—che-wee* when contented, also quite a cheery nondescript warble, and a harsh screech when worried; if disturbed when feeding the birds rise with a querulous note.

HABITS AND FOOD. This myna shares with the tree sparrow and the house crow the distinction of being the commonest and best-known bird in Burma. The generic name *Acridotheres*, meaning "the grasshopper hunter," is unusually apt, for it strides about on the ground with rapid, determined paces and a slight waddle, peering under the fallen leaves in a comical manner; the specific name *tristis*, however, is somewhat of a misnomer, for the myna is a perky, self-confident bird, always sprightly and vivacious, and perhaps the only one (as Stanford observes) that habitually walks about singing while looking for food. It is also pugnacious, and I once watched a tremendous battle between two birds in a timber yard in Rangoon; how the fight started I do not know, but when I came upon them they were locked in mortal combat on the ground and so absorbed that they ignored my approach; they did not spar after the manner of fighting cocks, but practiced in-fighting; after a fast and furious five minutes they separated and flew off, apparently none the worse, although it seemed inevitable that one of them would be left slain upon the field, so fierce was the encounter.

This myna, more than any of the others, is linked to human habitations, and is rarely seen far from towns and villages; it is usually paired, and there is a very obvious affection between the two birds; they feed together and stop occasionally to preen each other's feathers or to indulge in a few quaint remarks expressive of extreme self-satisfaction. They collect at night at some favourite roosting place, which may be a grove of trees or a sugar-cane plantation, and which they often share with other mynas, house crows, and parakeets; they only go to sleep after the most noisy and quarrelsome proceedings, and at intervals during the night short bursts of chattering are to be heard.

NEST AND EGGS. In the irrigated areas of Shwebo district "the earliest observation of nest building was on the 24th April. One nest in which young were being fed on the 16th July was being relined

with sticks on the 1st August ; on the 21st August the new brood was being fed with caterpillars, continuing to the 2nd September ; on the 29th September fresh sticks were being taken in and by the 7th October the third clutch was apparently being brooded ; by the 16th October the young were being fed, continuing to the 8th November. These dates give an incubation period of not more than 17 days and a fledging period of at least 24 days " (Roseveare). The breeding season therefore extends at least from April to October. The nest is a shapeless mass of straw, twigs, feathers, etc., stuffed under the eaves or in a hole in a wall, tree or well ; the old nest of a kite, crow, or squirrel may be adapted and re-lined. The eggs, 3 to 6 in number, are blue in colour without markings.

STATUS AND DISTRIBUTION. Almost throughout India, Burma, and Ceylon. It is resident throughout Burma wherever there are towns or villages of any size ; in the Kachin hills it is found in small numbers at outposts such as Sumprabum, Laukkaung, and Sadon, and is common in the Fort Hertz plain, but I have not seen it round Kachin villages, and the complete absence of all mynas and starlings from the Ngawchang valley, which appears suited to their requirements, is remarkable. In western Yunnan it goes up to 6,000 feet. Harington stated that it did not ascend the hills in Bhamo district, and I saw no signs of it at Sinlum Kaba ; on the other hand, it breeds at Bernardmyo (5,000 feet) in the Mogok hills, and from there southwards is probably ubiquitous on the Shan plateau.

CHINESE JUNGLE MYNA

Acridotheres cristatellus Linnaeus, CHINA
SUBSPECIES : *cristatellus* Linnaeus, CHINA

IDENTIFICATION. Resembles the next species, but is a larger bird with very thick frontal plumes.

STATUS AND DISTRIBUTION. Breeds in China and Yunnan, and in Burma has only been recorded from Malipa in the east of the Northern Shan States.

INDIAN JUNGLE MYNA

Acridotheres fuscus (Wagler), NEPAL
SUBSPECIES : *fuscus* (Wagler), NEPAL (= *infuscatus* Stuart Baker)
grandis Horsfield and Moore, BANGKOK

IDENTIFICATION. Plate X, fig. 10, p. 212. Length 9 inches. At a distance it can be confused with the common myna, but is distinguished by darker plumage, absence of yellow face-wattle, and

by the tuft of erect feathers above the nostril. In flight the white wing-patches and white-tipped tail are noticeable.

VOICE. No one seems to have bothered to record any notes on the voice of this common bird.

HABITS AND FOOD. In flight, habits, gait, and behaviour it resembles the common myna and is often mistaken for that bird, though it is neither so bold nor such a scavenger. It is not a bird of high forest, as its name might lead one to suppose, but may be found in clearings or in open park-like forest; it is more typically a bird of open country and is frequently seen with cattle and buffaloes, often perched on their heads. It has been observed feeding on the young buds of a *Ficus*, on flowering *letpan* trees, an dround the borders of a jheel where *kaing* grass was mixed with bushes and a few trees. In the breeding season it is a familiar bird in the environs of Rangoon.

NEST AND EGGS. Harington described mixed colonies of jungle and collared mynas and bee-eaters breeding in holes in steep, sandy banks along the Chindwin above Kindat; he was unable to decide whether the holes were originally made by other birds and then enlarged by the mynas or excavated entirely by them. Pieces of snake skin were found in every nest he examined. Normally, however, this myna breeds under the eaves or in holes in trees, etc., like other mynas. In Myitkyina they start on the 20th February.

STATUS AND DISTRIBUTION. Widespread in the oriental region and a common resident in the plains of Burma and on the Shan plateau.

WHITE-COLLARED MYNA

Acridotheres albocinctus Godwin-Austen and Walden, MANIPUR

IDENTIFICATION. Length 9½ inches. Distinguished from the jungle myna by a white collar on the hind-neck and a much smaller tuft above the nostril (very noticeable in a mixed flock); in winter the white collar consists merely of buff tips to the feathers but in spring is very prominent. In habitat, behaviour, etc., there seems to be no difference.

NEST AND EGGS. See under the jungle myna. Large colonies have been noticed in the sandy banks of the Uyu and Chindwin rivers near Homalin (Smith).

STATUS AND DISTRIBUTION. Manipur, Burma, and western Yunnan. It is common in the Chin Hills, northern Burma and the Shan States.

[NOTE.—The relationship between the white-collared and jungle mynas is peculiar; though so similar, the two appear to behave as two distinct species; in almost every locality in which the white-collared myna is found, the jungle myna is also found, but they do not seem to interbreed.]

Family PLOCEIDAE

Sub-family PLOCEINAE

WEAVERBIRDS

THE weaverbirds, or weaver finches as they are often called, have their stronghold in Africa, but a few species are found in India and Burma. They are birds of the paddy plains, open grasslands, cultivation, and very open forest, and often breed near villages and houses provided that there are suitable ponds or swamps nearby, and suitable nesting sites. They derive their name from the skill with which they weave their nests out of strips of grass or leaves. There is a marked difference between the breeding and non-breeding plumage of the males.

BAYA WEAVERBIRD

Ploceus philippinus (Linnaeus), CEYLON
SUBSPECIES : *philippinus* (Linnaeus), CEYLON
infortunatus Hartert, MALAYA
burmanicus Ticehurst, ARAKAN

LOCAL NAMES. Burmese : *sa-gaung-gwet*, *mo-sa*, OR *sa-wadi*.
IDENTIFICATION. Plate XI, fig. 1, p. 228. Length 6 inches. The male in winter loses his golden cap and becomes a plain brown bird streaked on the upper-parts, like the female at all seasons ; " earliest signs of breeding plumage observed on the 17th April ; full breeding plumage observed on the 10th May (earliest) and the 9th September (latest) ; some cocks still with traces of breeding plumage observed on the 17th December (Roseveare).
VOICE. A shrill, wheezing note is uttered all day long by the cocks at the breeding colony.
HABITS AND FOOD. Those of the family. It feeds on both insects and seeds of various kinds.
NEST AND EGGS. Breeds during the rains. The nests are long, graceful, retort-shaped structures of woven grass or leaf strips, with the entrance tunnel vertically below ; they are normally found in colonies, rarely solitary or in company with striated weaverbirds, each nest suspended by a short plaited rope from the eaves of a village hut, the outer branch of a tree or shrub, or hanging like a tassel from the end of a toddy palm leaf ; also reported in plantain trees and suspended from a telephone wire ; the nests generally but

not invariably overhang water. They are built of strips of grass or plantain leaves, which the bird obtains by cutting a notch in the side of the leaf or blade of grass, and tearing off the strip (usually a foot or two in length) above the notch. The strips are cut from green blades, so that new nests can be recognised by their colour, which also betrays old nests that have been repaired and used again.

" New nests are sometimes built on to old nests, either attached directly, giving the appearance of a two-storied dwelling, or with the usual short rope ; in such nests the funnel of the upper ' storey ' is closed by weaving so that it is no longer accessible. Sometimes three-storied nests are seen, and once all three stories were built in the same year, but the upper stories were then badly shaped, without proper egg-chambers " (Roseveare).

The nest is constructed almost entirely by the male, and in June and July he may be seen busily plying between a suitable bed of grass and the nest, trailing a long thin strip of grass which on arrival he weaves into the structure with deft little jabs of his bill. He begins by making the tubular attachment, which may be up to a foot in length, and beneath this, and rather to one side, constructs a strong transverse loop ; round this a circular chamber is built up, leaving a hole at the bottom ; this hole is extended downwards for 12–18 inches in the form of an entrance tunnel.

According to Salim Ali : " When a nest is nearing completion a female arrives and takes possession of it, and thenceforth the two become husband and wife, she assisting to finish off the interior. As soon as the eggs are laid the male commences another nest close by, which in due course is appropriated by a second female. Thus a single cock may have two, three or more nests and wives." When the supply of females runs out the cock still goes on weaving industriously, and these cock nests normally have some mud on the inside, whereas nests in which eggs are laid very rarely have any (Roseveare).

A colony presents an animated scene. The cocks constantly utter a shrill, wheezing note, usually accompanied by a shivering of the wings in display, as they cling to the outside of the nests ; they indulge in constant bickerings and seize every opportunity to filch strips of grass from a near-by nest when the owner is away. The females are more placid, and are typically seen sitting on the " stirrup " and shaping the egg-chamber to their liking ; on the rare occasions that they carry grass to the nest they usually bring very

short pieces, as if they had not mastered the art of tearing off long strips. The beautiful myth that the nest is constructed by the birds in pairs, the male passing the end of the strip through the structure to the female sitting inside, who threads it back to him, was invented by Horne in 1865 ; it is still quoted by authors as a fact, and is, unfortunately, included in Stuart Baker's standard work, but anyone who cares to spend a few minutes watching these birds at work can see for himself that it is not true.

The eggs, 2 to 5 in number, are very hard and stout in texture and pure white in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is abundant throughout the plains of Burma, and is found in suitable localities in the hills up to 4,000 feet (it breeds at this altitude near Maymyo). The Indian subspecies *philippinus* may be a winter visitor to Arakan and Southern Burma, but has been obtained only once (at Prome) ; it is, however, indistinguishable in the field in winter plumage from *burmanicus* and may have been overlooked.

STRIATED WEAVERBIRD

Ploceus manyar (Horsfield), JAVA
SUBSPECIES : *flaviceps* Lesson, PONDICHERRY
peguensis Stuart Baker, PEGU

IDENTIFICATION. Plate XI, fig. 2, p. 228. Length 4½ inches. Both sexes are easily recognised at all seasons by the black streaks on the breast ; the male in winter and the female at all seasons have the crown black with tawny edges to the feathers, giving a mottled appearance.

VOICE. They chatter noisily while building nests.

HABITS AND FOOD. Those of the family. It seldom comes near villages and seems to be mainly a bird of swamps and jheels.

NEST AND EGGS. Breeds during the rains. The nests are built in colonies (rarely solitary) in *kaing* grass, reed beds or rushes ; they are globular structures, woven into the tops of the reeds or rushes, usually with a short entrance tunnel below (rarely an entrance hole at the side). Cock nests are normally plastered with mud or dung along the inside edge, whereas nests in which eggs are laid contain none (once seen with mud plastered on the outside at the bottom). As with the baya weaverbird, the nests are woven almost exclusively by the males (Roseveare).

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is

found throughout the plains of Burma in suitable localities, and probably in the lower valleys of the hills ; it is perhaps rather less abundant than the baya weaverbird, but enormous flocks can be seen round the Inle lake at any time of the year. The status of *flaviceps*, which has been recorded from Arakan and Southern Burma, is uncertain.

GOLDEN WEAVERBIRD

Ploceus hypoxanthus Sparrman, SUMATRA
SUBSPECIES : *hymenaicus* Deignan, CENTRAL SIAM

LOCAL NAME. Burmese : *sa-hpongyi*.
IDENTIFICATION. Plate XI, fig. 4, p. 228. Length 6 inches. The male in winter and the female at all seasons can be distinguished from the baya weaverbird by the buff eyebrow, darker upper-parts, and reddish-brown tinge on the cheeks, throat and breast. Earliest date of full breeding plumage the 25th May, and latest the 15th November ; partial breeding plumage as late as the 17th December (Roseveare).
VOICE. Chatters like the other weaverbirds.
HABITS AND FOOD. Generally seen on vegetation growing in water or swamps, occasionally perched on telegraph wires or in mixed flocks with baya weaverbirds. Sometimes very confiding (Roseveare).
NEST AND EGGS. Breeds during the rains. The nest is a cylindrical structure made entirely of grass with an opening at the side, and the exterior, instead of being smooth as in the nests of other weaverbirds, is very rough, consisting of a series of loops and sharp angles (Oates). " I found that nests were built of much coarser grass or leaf strips than those of other weaverbirds, and lined with softer grass. The entrance was frequently furnished with a small porch of fine grass and was small for the size of the bird " (Roseveare). An interesting colony was found in 1941 at the Rangoon race-course ; about twenty nests were built close together in an almost leafless, clipped shrub about 6 feet high, growing isolated on a lawn near the members' entrance ; the nests looked like small munias' nests with grass heads twisted and projecting over the entrance holes. These birds nest in many Rangoon compounds. The eggs are usually grey and rarely pure white, and some have a few markings.
STATUS AND DISTRIBUTION. Widespread in the south-eastern part of the oriental region. It is a common resident in *kaing* grass areas in Central Burma, Southern Burma, and northern Tenasserim.

Sub-family PASSERINAE

SPARROWS

[NOTE.—The YELLOW-THROATED SPARROW, *Gymnoris xanthocollis* Burton, does not occur in Burma; the record from Kalaw (*F.B.I.*, vol. iii, p. 167) cannot be accepted.]

EUROPEAN HOUSE SPARROW

Passer domesticus (Linnaeus), SWEDEN
SUBSPECIES: *indicus* Jardine and Selby, KARACHI (= *confucius* Bonaparte and *nigricollis* Burton)

LOCAL NAMES. Burmese: *sa*, a name applied to all sparrows; Chinghpaw: *u-tsa* (from the Burmese name).
IDENTIFICATION. Plate XI, fig. 10, p. 228. Length 6 inches. Distinguished from the tree sparrow, which is the common "house sparrow" over most of Burma, by the ashy-grey (not rufous) crown, and the black (not ashy-white) breast, and the fact that the female differs from the male. The female has a pale rufous-white eyebrow; upper-parts pale earthy-brown, streaked with black and rufous on the upper back; under-parts ashy-white.
VOICE. Very noisy, especially in the hot weather. The breeding-note is a rather shrill *chissip*, differing but little from the ordinary *tchirp* of daily life. It also has a hard, rattling twitter, much used at times of excitement, and various other notes.
HABITS AND FOOD. Over most of Burma this is a more rural and less urban species than the tree sparrow, but in Myitkyina it breeds freely and appears to be the commoner bird. In the plains of Southern Burma it is decidedly local, and seems to prefer fishing huts near the river or on the coast. Both species collect in large flocks in the hot weather and rains.
NEST AND EGGS. Breeds all the year round, usually in houses or huts, but not always; "in January 1936 I found birds nesting in holes, probably old sand martins' holes, in the vertical bank of the river Mon (Minbu district)" (Roseveare), and Stanford suspected them of breeding in holes along the Irrawaddy in Southern Burma.
STATUS AND DISTRIBUTION. Widespread in Europe, the greater part of Asia, and northern Africa, and introduced into America and Australia. It is resident throughout the plains of Burma, but in most parts it is distinctly local and greatly outnumbered by the tree sparrow; in the dry zone uplands west of Meiktila, however, it is

the commoner species ; Wickham describes it as ubiquitous in the upper Burma hills, but Stanford notes that he has never seen any in the hills of northern Burma. Accidental in Tenasserim, where Davison obtained one at Moulmein, which Hume thought might have travelled over from Rangoon on the rigging of a vessel.

TREE SPARROW

Passer montanus (Linnaeus), NORTH ITALY
SUBSPECIES : *malaccensis* Dubois, MALACCA

IDENTIFICATION. Plate XI, fig. 9, p. 228. Length 5½ inches. Can only be confused with the house sparrow (*q.v.*).
VOICE. Similar to that of the house sparrow, but it has a distinctive flight-note, a rather hoarse, hard *teck teck*.
HABITS AND FOOD. This perky, bustling little bird is universally known. It is the real " house sparrow " over most of Burma, to be found wherever man has set up his abode, excluding villages in the forest.
NEST AND EGGS. Breeds throughout the year, but chiefly from May to August, under the eaves and roofs of houses or in holes in trees and walls. Almost every rest house, *zayat*, and *hpongyikyaung* has its quota of breeding sparrows. The eggs, 4 to 6 in number, are smaller than those of the house sparrow, browner in tint, and more glossy.
STATUS AND DISTRIBUTION. Almost as wide a range as the house sparrow and abundant throughout Burma, including the higher hills to about 6,000 feet.

CINNAMON SPARROW

Passer rutilans Temminck, JAPAN
SUBSPECIES : *intensior* Rothschild, MEKONG VALLEY
lisarum Stresemann, MT. VICTORIA

IDENTIFICATION. Length 5½ inches. Sexes differ. The male is easily recognised by the cinnamon-red upper-parts, black chin and throat, and yellow under-parts. The female has a broad conspicuous line above the eye, upper-parts ruddy-brown and under-parts pale ashy-yellow. A bird of open forest and *taungyas* in the hills, sometimes found in large flocks ; in the Panwa pass area I noted one flock of at least 50 birds roosting in a bramble patch ; it is a shy bird and feeds a good deal on the ground on old mule camp sites ; has also been observed on flowering *letpan* trees. The note is much sweeter and softer than that of any other sparrow, and it has an effective little chattering song, which it sings from a perch high up on an isolated tree.
NEST AND EGGS. Harington found them breeding commonly at Sinlum Kaba.

A favourite site is a hole in an isolated tree standing in a forest clearing or *taungya*.

STATUS AND DISTRIBUTION. From Nepal eastwards through Burma and Yunnan to Japan. It has been recorded from the Chin Hills, North-East Burma, Karen Hills, Shan States, and Karenni. It is a rather scarce and local bird of the higher hills, though large flocks have been observed in the Ngawchang valley and at Kalaw; a single bird seen by Stanford near Mohnyin constitutes the only record of this species from plains level.

PEGU HOUSE SPARROW

Passer flaveolus Blyth, ARAKAN

LOCAL NAME. Burmese: *sa-wa* (yellow sparrow).

IDENTIFICATION. Plate XI, figs. 11 and 11*a*, p. 228. Length 5½ inches. Young birds are like the female, but buff below.

VOICE. Conspicuously louder than that of the other sparrows.

HABITS AND FOOD. This is not typically a "house sparrow," though it may be found breeding in houses along with tree sparrows; it is a rural species, preferring open country and cultivated clearings on the outskirts of forest, especially where there are a few isolated trees; in the dry zone uplands west of Meiktila it is commonly seen in small parties, usually near cultivation, streams, and tanks.

NEST AND EGGS. Breeds throughout the year, sometimes in mixed colonies with house and tree sparrows.

STATUS AND DISTRIBUTION. This species is found in parts of Burma, extending eastwards through Siam to Indo-China. It is resident in Arakan (very local), the Chin Hills, Upper Chindwin, Central Burma, Southern Burma, the Shan States, and Karenni; it is a local bird and its stronghold appears to be the dry zone of Central Burma. It ascends the hills to 5,000 feet and is a common bird in cultivated country round Maymyo and (according to Rippon and Wickham) all over the Shan States.

Sub-family ESTRILDINAE

MUNIAS

The munias are small sparrow-like birds, strong on the wing, found in cultivation and grasslands, both in the plains and hills; some species are favourite aviary birds. Local names generally applicable are: Burmese: *sa-wadi* or *hnget-padi*; Chinghpaw: *u-byit*.

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11*a*. PEGU HOUSE SPARROW (adult female) 228
Passer flaveolus.

PLATE XI

CHESTNUT MUNIA or MANNIKIN

Lonchura ferruginosa Sparrman, JAVA

SUBSPECIES : *atricapilla* (Vieillot), LOWER BENGAL (= *rubronigra* Hodgson)

IDENTIFICATION. Plate XI, fig. 3, p. 228. Length 5½ inches.

VOICE. A high chatter, usually uttered when the birds are disturbed.

HABITS AND FOOD. This is a common bird in the *kaing* grass areas of the Myitmaka drainage, and also frequents paddy fields and the surroundings of jheels ; it is commonly seen along the railway in Shwebo district where there are reeds and bushes in flooded borrow pits, and very large flocks sometimes assemble to feed on the ripening *mayin* paddy in early June.

NEST AND EGGS. Breeds during the rains, most eggs being laid in July and August, but Davison found nests with eggs, and parents with young, round Mergui in April and May, and Christison found eggs on the 22nd November. The nest seems large for the size of the bird and is shaped like a Rugby football, with an entrance hole in the side ; it is made of fine grasses with an outer cover of coarse grass and is sometimes lined with *kaing* grass flowers. In Rangoon compounds, where it often breeds, the nests are generally placed in clumps of grass. The eggs, 4 to 8 in number, are white in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as the Central Himalayas. In Burma it is a common bird throughout the plains, and ascends the hills where conditions suit it to about 5,000 feet.

WHITE-RUMPED MUNIA or STRIATED MANNIKIN

Lonchura striata (Linnaeus), CEYLON

SUBSPECIES : *acuticauda* (Hodgson), NEPAL (=*subsquamicollis* Stuart Baker)

IDENTIFICATION. Plate XI, fig. 5, p. 228. Length 4½ inches. The white rump is conspicuous in flight. Gregarious, in cultivation.

VOICE. A thin chatter is constantly uttered.

HABITS AND FOOD. This is a cheerful, sprightly little bird, yet one of the wilds rather than of civilisation. It is commonly seen in the paddy fields and *taungyas* of forest villages, feeding both in the growing paddy and in the stubble, in parties that may total fifty or more birds ; the members of such a party tend to keep close together when feeding and fly in a compact bunch like a swarm of bees ; the flight is direct and strong for so small a bird, but seldom long

sustained. Seeding bamboos, such as *kyathaung-wa* and *thaik-wa*, attract it away from cultivation into the forest. It is well known to the Kachins because of the amount of paddy it can consume in a *taungya* and it is to scare away these munias, parakeets and other grain-eaters that they put up an elaborate system of bamboo clappers in each *taungya*; these are all connected to a central platform, raised some 10 feet off the ground, by long ropes of split bamboo, and when the paddy is ripening the platform is occupied throughout the daylight hours by one or more village urchins, who set up a clatter at frequent intervals to scare away the marauders; the more ingenious install an automatic system worked by water-power.

NEST AND EGGS. Breeds during the rains in most localities, but round Tavoy many nests with young were found by Davison in March. The nest may be built in forest far from villages or cultivation; it is a very untidy structure of grass, with the ends projecting round the mouth and often forming a short, rough tunnel; usually there is no lining.

STATUS AND DISTRIBUTION. Widespread in the oriental region and common throughout Burma in suitable localities, ascending to about 5,000 feet.

[NOTE.—Stuart Baker claims (*F.B.I.*, vol. iii, p. 87) that *squamicollis* (Sharpe), SZECHWAN, occurs in the east of the Shan States, but confirmation is desirable.]

WHITE-BREASTED MUNIA or MANNIKIN

Lonchura leucogastra (Blyth), MALACCA
SUBSPECIES: *leucogastra* (Blyth), MALACCA

IDENTIFICATION. Length 4½ inches. A dark chocolate-brown bird with black upper tail-coverts and white breast and abdomen.

NEST AND EGGS. Have been taken in southern Tenasserim in April; it seems to be a forest breeder.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Tavoy.

SPOTTED MUNIA or NUTMEG MANNIKIN

Lonchura punctulata (Linnaeus), JAVA
SUBSPECIES: *lineoventer* (Hodgson), NEPAL (= *subundulata* Godwin-Austen)
topela (Swinhoe), AMOY, CHINA

IDENTIFICATION. Plate XI, fig. 6, p. 228. Length 5 inches. Young birds are a plain brown or buff below. Familiar garden species.

VOICE. When disturbed the birds fly away with a petulant little *chip chip* call, clear and rather loud.

sustained. Seeding bamboos, such as *kyathaung-wa* and *thaik-wa*, attract it away from cultivation into the forest. It is well known to the Kachins because of the amount of paddy it can consume in a *taungya* and it is to scare away these munias, parakeets and other grain-eaters that they put up an elaborate system of bamboo clappers in each *taungya*; these are all connected to a central platform, raised some 10 feet off the ground, by long ropes of split bamboo, and when the paddy is ripening the platform is occupied throughout the daylight hours by one or more village urchins, who set up a clatter at frequent intervals to scare away the marauders; the more ingenious install an automatic system worked by water-power.

NEST AND EGGS. Breeds during the rains in most localities, but round Tavoy many nests with young were found by Davison in March. The nest may be built in forest far from villages or cultivation; it is a very untidy structure of grass, with the ends projecting round the mouth and often forming a short, rough tunnel; usually there is no lining.

STATUS AND DISTRIBUTION. Widespread in the oriental region and common throughout Burma in suitable localities, ascending to about 5,000 feet.

[NOTE.—Stuart Baker claims (*F.B.I.*, vol. iii, p. 87) that *squamicollis* (Sharpe), SZECHWAN, occurs in the east of the Shan States, but confirmation is desirable.]

WHITE-BREASTED MUNIA or MANNIKIN

Lonchura leucogastra (Blyth), MALACCA
SUBSPECIES: *leucogastra* (Blyth), MALACCA

IDENTIFICATION. Length 4½ inches. A dark chocolate-brown bird with black upper tail-coverts and white breast and abdomen.

NEST AND EGGS. Have been taken in southern Tenasserim in April; it seems to be a forest breeder.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Tavoy.

SPOTTED MUNIA or NUTMEG MANNIKIN

Lonchura punctulata (Linnaeus), JAVA
SUBSPECIES: *lineoventer* (Hodgson), NEPAL (= *subundulata* Godwin-Austen)
topela (Swinhoe), AMOY, CHINA

IDENTIFICATION. Plate XI, fig. 6, p. 228. Length 5 inches. Young birds are a plain brown or buff below. Familiar garden species.

VOICE. When disturbed the birds fly away with a petulant little *chip chip* call, clear and rather loud.

RED MUNIA or AVADAVAT

Estrilda amandava (Linnaeus), CALCUTTA
SUBSPECIES : *amandava* (Linnaeus), CALCUTTA
flavidiventris Wallace, TIMOR AND FLORES

IDENTIFICATION. Plate XI, figs. 7 and 7*a*, p. 228. Length 4½ inches. In non-breeding plumage the male resembles the female. A tiny bird found in flocks in the plains. Assumption of the breeding-plumage seems to be erratic. " One bird in a flock seen on the 23rd February had acquired the pink breast of breeding plumage ; the remainder showed no red, even on the rump, and were presumably young birds of the previous year. Again, of a party of five birds seen on the 15th March only one showed red. Ten birds seen on the 27th April all showed red on rump and upper tail-coverts, bill and legs, and nowhere else " (Roseveare).

VOICE. A shrill little call-note, and a beautiful but feeble little song.

HABITS AND FOOD. This pretty little munia is found in flocks in the reeds and grasses of damp and well-wooded localities, and especially in the heavy grassy patches surrounding jheels and the wet thickets that often border and intersect paddy fields ; they perch and sway on the heads of the tall grasses and fly off in a cloud when disturbed ; like the other munias it is a common bird of the *kaing* grass areas of the Myitmaka drainage.

NEST AND EGGS. It seems to breed rather later in the season than other munias, from August to January, most eggs being laid in September and October. The nest is a small, neat replica of the nests of other munias, usually made of finer grasses, and may be lined with seed-down or unlined.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common throughout Burma in suitable localities (but not observed by Davison in Tenasserim) ; the subspecies *amandava* is probably a winter visitor to parts of Burma, and has been obtained in Yunnan and once in northern Siam.

[NOTE.—The JAVA SPARROW, *Padda oryzivora* (Linnaeus), is an introduced species, which Hopwood reported (1912*b*) as thoroughly established in Arakan, and according to Blyth (in Blanford and Oates, *F.B.I.*, ed. 1, vol. ii, p. 182), it is feral in Tenasserim. This well-known aviary bird has the cheeks and ear-coverts white ; rest of head black ; breast, back and wings bluish-grey ; rump and tail black ; abdomen and thighs vinous ; under tail-coverts white.]

Family FRINGILLIDAE

FINCHES

This family comprises a very large number of species, which are easily recognised by their short, massive bills and forked tails; except for the sparrows, most of the finches breed either in high latitudes or at high elevations.

Sub-family CARDUELINAE

BLACK-TAILED HAWFINCH

Coccothraustes migratorius Hartert, E. SIBERIA
SUBSPECIES: *migratorius* Hartert, E. SIBERIA

IDENTIFICATION. Length 8 inches. Sexes differ. The male has the whole head, nape and throat glossy black and the upper-parts greyish; wings and tail black with metallic gloss, the wings with a large white patch at the tip; breast grey, abdomen white, flanks orange-chestnut. The female has the forehead and crown grey; a band round the bill dusky-brown; upper-parts greyish; tail grey in the centre, otherwise black; wings as in the male but with less white; under-parts greyish except for the orange-chestnut flanks.
STATUS AND DISTRIBUTION. A Chinese species, previously recorded from near Tengyueh. Deignan informs me that he has a specimen obtained by an American soldier near Myitkyina; there are no other records and it must be a vagrant to northern Burma.

BLACK-AND-YELLOW GROSBEAK

Mycerobas affinis (Blyth), ALPINE PUNJAB

IDENTIFICATION. Length 9 inches. The adult male looks not unlike a golden oriole in his brilliant black and yellow plumage; the female and young male are ashy-grey. The note is a loud musical twitter, and the alarm-note *kurr* like two stones struck together. Bill greenish-blue and very massive. It may be seen in trees or hopping about on the ground picking up seeds.
STATUS AND DISTRIBUTION. A bird of the higher Himalayas, not uncommon on the Likiang range in Yunnan; it was observed in the Adung valley at 12,000 feet in June and July and may be resident there, and has also been obtained high up on Imaw Bum in winter.

WHITE-WINGED GROSBEAK

Mycerobas carnipes (Hodgson), NEPAL
SUBSPECIES: *carnipes* (Hodgson), NEPAL

IDENTIFICATION. Length 7 inches. Adult male chiefly black and greenish-yellow with a white wing-spot; bill horny-brown above and almost white below. Female similar but duller.

STATUS AND DISTRIBUTION. A bird of the higher Himalayas, and common on the mountains of northern Yunnan, where it probably breeds. Cranbrook obtained two in August in the Adung valley at 12,000 feet.

SPOTTED-WINGED GROSBEAK

Mycerobas melanozanthos (Hodgson), NEPAL
SUBSPECIES : *melanozanthos* (Hodgson), NEPAL

IDENTIFICATION. Length 9 inches. Sexes differ. The male has the head and throat black and the under-parts yellow, whereas the most noticeable feature of the female, as seen from below, is the unmarked yellow throat and under tail-coverts and the striped yellow breast ; the beak is huge and pale. In flight the white and yellow wing-spots show up, and the flight is rather slow and markedly dipping. Heinrich describes the call-note as a very melodious loud whistle consisting of three notes ; the first and second, strongly emphasised, are at the same pitch, while the third is two tones lower.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Throughout the Himalayas to western China and Yunnan. In North-East Burma its status is uncertain ; Stanford records a flock of 20 or 30 at 1,000 feet near the Mali–N'Mai confluence in March and a single bird from Laukkaung, also in March ; I have seen it at Laukkaung in mid-February and at Htawgaw on the 6th April ; at these elevations it is probably a winter visitor, but it may breed on the mountains of the Yunnan frontier, Forrest having obtained it on the Shweli-Salween divide in June at 11,000 feet. Single birds have been twice obtained in April in the Southern Shan States, and Heinrich obtained it on Mt. Victoria.

BEAVAN'S BULLFINCH

Pyrrhula erythaca Blyth, SIKKIM
SUBSPECIES : *altera* Rippon, W. YUNNAN

IDENTIFICATION. Length 6 inches. Orange-red breast of the male is diagnostic ; there is a black band round the base of the bill, and in flight the white rump contrasts with the dark wings and tail. The female has no red on the breast and is browner and duller. The note is a triple whistle of the ordinary bullfinch type. Frequents willow and juniper trees in small parties.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Himalayas from Sikkim to Yunnan, and not uncommon in the mountains of North-East Burma ; it was obtained in the Adung valley at 12,000 feet in June and July and may breed there, and possibly round Hpimaw also. Stuart Baker claims that bullfinches have been seen in the Northern Shan States.

BROWN BULLFINCH

Pyrrhula nipalensis Hodgson, NEPAL
SUBSPECIES : *nipalensis* Hodgson, NEPAL (= *victoriae* Rippon)
ricketti La Touche, N-W. FOKIEN

IDENTIFICATION. Length 6½ inches. The male differs from that of the preceding species in having no red on the breast, and the band round

the base of the bill is brown and not black; the female is not easily distinguished.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Throughout the Himalayas to western China and Yunnan. In Burma it has been recorded from Mt. Victoria and the Adung valley (in April at 6,000 feet), and its status is uncertain. It has not been observed in the Hpimaw mountains, but Forrest collected it further south, on the Shweli-Salween divide.

GOLDEN-HEADED BLACK FINCH

Pyrrhoplectes epauletta (Hodgson), NEPAL

IDENTIFICATION. Length 5½ inches. Sexes differ. The adult male appears completely black except for a golden patch on the crown, and a narrow white line on the wing; the female is chiefly chestnut, tinged with yellow on the head. The call-note is a distinctive high-pitched *peeu, peeu*. Feeds chiefly on the ground on seeds and insects, usually in dense cover.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. Himalayas and Yunnan. It is not uncommon in flocks in the mountains of North-East Burma, most of those seen to date having been in the Laukkaung-Htawgaw area at 6,000–8,000 feet, from February to April; probably a winter visitor.

EUROPEAN CROSSBILL

Loxia curvirostra Linnaeus, SWEDEN
SUBSPECIES: *himalayensis* Blyth, NEPAL

IDENTIFICATION. Length 6 inches. May be recognised at a glance by the peculiar structure of the bill, in which the tips of the mandibles cross one another. The plumage of the male is mainly dull red, that of the female green. Collects in parties and feeds chiefly on the seeds of pine, fir, and alder cones. The note is a loud incisive *chiip chiip*.

STATUS AND DISTRIBUTION. Palaearctic. Probably a winter visitor to the mountains of North-East Burma in small numbers; the Vernay-Cutting expedition obtained it near the Panwa pass and at Black Rock in the Ngawchang valley (4,500 feet).

SCARLET FINCH

Haematospiza sipahi (Hodgson), NEPAL

IDENTIFICATION. Length 7½ inches. The male is a very striking scarlet bird and the female is greenish with a conspicuous yellow rump; usually in small parties with a swift but dipping flight; said to have melodious call-notes.

STATUS AND DISTRIBUTION. Himalayas from Nepal to the Yunnan frontier of Burma. I found it not uncommon at 5,000 feet along the Pyepat road above Laukkaung, where the Vernay-Cutting expedition obtained one, and it has also been recorded from Mt. Victoria. Status uncertain.

RED-HEADED ROSE FINCH

Propyrrhula subhimachala (Hodgson), NEPAL
SUBSPECIES : *subhimachala* (Hodgson), NEPAL
intensior Rothschild, LIKIANG Mts.

IDENTIFICATION. Length 8 inches. Sexes differ. A heavily-built bunting-like finch, decidedly bigger than most rose finches met with. The male has the chin, throat, breast, cheeks and a supercilium crimson ; rest of upper-parts chiefly dull crimson-red ; rest of under-parts brownish-grey. In the female and young male the red is replaced by golden-orange or olive-yellow.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan. Appears to be widely distributed in the mountains of North-East Burma, but its status is uncertain. In Yunnan it goes up to 13,000 feet.

KEY TO THE ROSE FINCHES

The genus *Carpodacus* comprises the true rose finches, the males of which have rose-coloured plumage and the females streaked brown plumage without any green or yellow. Several species have been recorded from Burma and another three may be found some day; the following key may help to distinguish them.

MALES

A. Eyebrow present.
  a. Bill straight, slender and pointed.
    a^1. Forehead and supercilium different in colour and contrasting with the crown . . . . *C. nipalensis*
    b^1. Forehead, supercilium and crown almost uniform [*C. rubescens*]
  b. Bill not as above.
    c^1. Crown broadly streaked with blackish.
      a^2. Forehead and eyebrow rosy-pink with white streaks . . . . . [*C. thura*]
      b^2. Forehead and eyebrow rosy-pink and brown without white streaks . . . . [*C. pulcherrimus*]
    d^1. Crown uniform.
      c^2. Rump rosy-red contrasting with back.
        a^3. Back uniform deep crimson . . . *C. vinaceus*
        b^3. Back crimson-brown with rosy streaks . *C. verreauxi*
      d^2. Rump not contrasting with back . . . *C. edwardsi*
B. Eyebrow absent . . . . . *C. erythrinus*

FEMALES

A. Eyebrow present.
  a. Bill straight, slender and pointed.
    a^1. Upper-parts all brown . . . . . *C. nipalensis*
    b^1. Rump and upper tail-coverts suffused with red . [*C. rubescens*]
  b. Bill not as above.
    c^1. Ground-colour of under-parts not uniform. Abdomen whitish . . . . . [*C. thura*]

d^1. Ground-colour of under-parts uniform.
  a^2. Under-parts ashy-white streaked with brown . [*C. pulcherrimus*]
  b^2. Under-parts yellowish-buff streaked with brown.
    a^3. Wing under 80 mm.
      a^4. Eyebrow very faint . . . . *C. vinaceus*
      b^4. Eyebrow broad and conspicuous . . *C. verreauxi*
    b^3. Wing over 80 mm. . . . . *C. edwardsi*
B. Eyebrow absent . . . . . *C. erythrinus*

[NOTE.—The WHITE-BROWED ROSE FINCH, *Carpodacus thura* subspecies, is doubtfully recorded from the Shan States (*F.B.I.*, vol. iii, p. 126), and is said to be a winter visitor to eastern Assam (*F.B.I.*, vol. iii, p. 125); it seems likely to occur in northern Burma as a winter visitor, but has escaped notice so far.

The BEAUTIFUL ROSE FINCH, *Carpodacus pulcherrimus davidianus* Milne-Edwards, is another species recorded from both Assam and Yunnan and not unlikely to turn up in northern Burma.]

LARGE ROSE FINCH

Carpodacus edwardsi Verreaux, CHINESE TIBET
SUBSPECIES: *saturatus* (Blanford), SIKKIM

IDENTIFICATION. Length 6½ inches. Looks dark in the field but the pale pink supercilium of the male is sometimes noticeable. Usually seen singly, feeding on the ground under cover.
STATUS AND DISTRIBUTION. A rare bird of the eastern Himalayas and Tibet, and probably a winter visitor in small numbers to the mountains of northern Burma, where a few specimens have been obtained.

SHARPE'S ROSE FINCH

Carpodacus verreauxi (David and Oustalet), MOUPIN, CHINESE TIBET

IDENTIFICATION. Length 6 inches. See key. The female is a dark brown bird with a conspicuous buff supercilium and heavily streaked under-parts. I have seen it on a tiny stream in climax forest (the crop contained small seeds), amongst bamboos in forest beside the path, and amongst brambles on an open hillside, all at 7,500–8,500 feet.
STATUS AND DISTRIBUTION. A Chinese species, common on the Likiang range in Yunnan and probably a winter visitor to northern Burma. I have collected it at the headwaters of the Ngawchang and on top of the Fenshuiling pass, and seen it beside the Chimili track; Stanford records a specimen from Hpimaw; and it is said to have been obtained once in Bhamo district and once in the Northern Shan States.

VINACEOUS ROSE FINCH

Carpodacus vinaceus Verreaux, CHINESE TIBET
SUBSPECIES: *vinaceus* Verreaux, CHINESE TIBET

IDENTIFICATION. Length 6 inches. A broad glistening pink supercilium is distinctive in the male, but the supercilium of the female is barely noticeable,

and the under-parts are lightly streaked. Found both solitary and in flocks, in brambles and scrub-jungle on open hillsides.

STATUS AND DISTRIBUTION. Chinese Tibet, Yunnan, and over the border in Burma. I collected it in the Chimili and Hpimaw areas. Stanford records a specimen from Htawgaw, and states that Harington got one at Sinlum Kaba and Wood another in the Northern Shan States. Status uncertain.

COMMON ROSE FINCH

Carpodacus erythrinus (Pallas), KUIBISHEV, RUSSIA
SUBSPECIES : *erythrinus* (Pallas), KUIBISHEV, RUSSIA
roseatus (Blyth), CALCUTTA

IDENTIFICATION. Plate XI, fig. 8, p. 228. Length 6 inches. A dull brown bird streaked darker, with a pale double wing-bar ; a small proportion of the individuals consist of adult males in a dull scarlet dress, as in the plate ; absence of a supercilium and whitish abdomen distinguish it from other rose finches. It has been supposed that first-year males moult to the red dress after the first breeding season, but proof is lacking (*Ibis*, 1938, p. 615).

VOICE. The call-note is a soft *twee-eck*. The song is described as very distinctive, a short sequence of loud, clear, piping notes somewhat like those of the orioles, but shriller and less fluty, *tiu-tiu-fi-tiu* ; but whether this song can be heard in Burma is uncertain.

HABITS AND FOOD. This bird is found in parties in open forest or in cultivation in the hills and plains ; it may be found in such crops as mustard and sugar-cane, in which it feeds mostly on the ground, or in the tiny gardens of hill villages ; it also feeds on flowering trees, such as *letpan* and *kathit* (*Erythrina* sp.), and on budding fruit trees.

STATUS AND DISTRIBUTION. Breeds in eastern Europe and almost the whole of Asia north of the Himalayas, migrating south in winter to the southern parts of Europe and Asia, extending to the British Isles. It is found throughout the higher hills of Burma in winter, and is also common in the plains of northern Burma, but not further south (Oates did not meet with it in Lower Burma, and the only low elevation record seems to be of a pair seen by Smith at the foot of the Pegu Yomas in the Pegu district). It is not clear in which month they come down from the north, but the return migration seems to start in March, in which month Stanford noted them passing through the plains of Myitkyina district ; they are, however, still in evidence as far south as Karenni in mid-April, and Cranbrook noted them as not uncommon in the Adung valley in mid-May.

DARK ROSE FINCH

Carpodacus nipalensis (Hodgson), NEPAL
SUBSPECIES : *intensicolor* Stuart Baker, YUNNAN

IDENTIFICATION. Length 6½ inches. See key. The male is dark crimson with a paler supercilium and a blackish band through the eye ; in the field the dark stripes and blackish-vinous tinge are distinctive ; the female is dark brown and unstreaked. I came on a large flock, which seemed to consist entirely of birds in female plumage, in a *taungya* below the Hpare pass ; when put up the birds circled round and then perched in rows on the bare branches of a dead tree standing in the middle of the *taungya* ; two males were seen elsewhere in bushes by the mule path.
STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan. In North-East Burma I have observed it in the Hpare and Fenshuiling pass areas, Stanford records it from the Hpare area, and there is one record from the Northern Shan States at 8,000 feet. Status uncertain.

[NOTE.—BLANFORD'S ROSE FINCH, *Carpodacus rubescens saturatior* Rothschild, was obtained by Forrest on the Shweli–Salween divide in western Yunnan and may turn up in North-East Burma.]

BLACK-HEADED GREEN FINCH

Carduelis spinoides (Vigors), SIMLA
SUBSPECIES : *ambigua* (Oustalet), YUNNAN
heinrichi Stresemann, MT. VICTORIA

IDENTIFICATION. Length 5 inches. Easily recognised by the pale bill, blackish head, dark upper-parts with some yellow on the tail, and under-parts olive-green washed with yellow. In flight the broad yellow bands from base to tip of wing, dividing it into three roughly equal parts are distinctive.
VOICE. The call-note is a thin rather high-pitched metallic tinkle, quite unmistakable once learnt. The song, which has been described as a very amorous-sounding *screee* or *treeee-tertrah*, is a continuous chittering sound made by a flock in the tree-tops and is not easily distinguished from a similar sound produced by the Tibetan siskin.
HABITS AND FOOD. This bird resembles the minivets in its actions, and is typically seen in flocks in the tree-tops in open hill forests, whether pine or alder or other species, or in open fields dotted with trees, and in *taungyas*. It is more arboreal in its habits than most finches, and I have often seen it perched on the very tip of the leading shoot of a pine tree.
NEST AND EGGS. Have been taken by Cook at Kalaw in April, where they build in the pine trees, making a loosely constructed nest of pine

needles and moss ; the eggs, 3 or 4 in number, are pale greenish-blue in colour, sparingly spotted with black at the larger end.

STATUS AND DISTRIBUTION. Tibet, and throughout the Himalayas to Yunnan. It has been recorded from Mt. Victoria, North-East Burma (very common in the Panwa pass and Ngawchang valley areas), Kalaw (breeds), and Karenni (common on Nattaung). In Yunnan it goes up to 12,000 feet.

TIBETAN SISKIN

Carduelis thibetana (Hume), SIKKIM

IDENTIFICATION. Length 5 inches. The male is a green bird with deep yellow under-parts ; the female is paler and streaked with dark brown. Found on open hillsides in the tree-tops in flocks, which make a chittering sound like that produced by a flock of black-headed green finches. Feeds on *leucospectrum*, alder, and other seeds.

STATUS AND DISTRIBUTION. Sikkim, Tibet, and North-East Burma, where it is not uncommon in flocks in winter at 2,000–7,000 feet, but has not been recorded outside the Myitkyina district.

MOUNTAIN FINCH

Leucosticte nemoricola Hodgson, NEPAL
SUBSPECIES : *nemoricola* Hodgson, NEPAL

IDENTIFICATION. Length 7 inches. A brown bird with white wing-bars. According to Cranbrook, not uncommon in open country and cultivated land in the Adung valley, and always seen in flocks, which rise together, wheel round in the air once or twice and again go down on the ground or settle in a tree for a time ; eats seeds.

STATUS AND DISTRIBUTION. Central Asia, and the Himalayas to western China. In Burma it has been recorded only from the Adung valley, at 6,000 feet in February and early March, and is probably a winter visitor.

Sub-family EMBERIZINAE

BUNTINGS

This is a very large group of birds, found in most parts of the world. In the hand a bunting is distinguished from a finch by the fact that the two mandibles are not in contact throughout their length, but show a gap about midway between the gape and the tips. Except for the crested bunting all the species found in Burma are winter visitors.

GREY-HOODED BUNTING

Emberiza fucata Pallas, S-E. SIBERIA
SUBSPECIES : *fucata* Pallas, S-E. SIBERIA
arcuata Sharpe, SIMLA

IDENTIFICATION. Length 6 inches. Crown to nape ashy-grey, back tawny, rump dull chestnut ; chestnut ear-coverts and scapulars conspicuous ; underparts whitish streaked with black. A shy and inconspicuous bird with a weak flight, found chiefly in wet stubble, rushes, and long grass, usually solitary.
STATUS AND DISTRIBUTION. The subspecies *fucata* breeds in south-eastern Siberia, northern China, and Japan, and migrates south in winter to the oriental region as far west as Assam ; in Burma it has been recorded from all parts of the country in the plains as far south as Moulmein, and is common in Southern Burma to the end of April. The subspecies *arcuata* breeds in the Himalayas and seems to keep to the hills in winter, having been recorded in Burma only from Mt. Victoria and twice from North-East Burma at 4,000–5,000 feet.

LITTLE BUNTING

Emberiza pusilla Pallas, DAURIA

IDENTIFICATION. Length 5½ inches. The rufous sides of the head, grey streaked back and small size distinguish this bunting ; underparts greyish-white with fine black streaks. Usually in flocks.
VOICE. The note is distinctive, a high, quiet *pwick*, rising slightly and abruptly curtailed. The alarm-note is a low *tick, tick, tick*.
HABITS AND FOOD. In the hills a bird of cultivation and short grass, nearly always seen in flocks of about a dozen birds, but sometimes up to several hundred ; it can be looked for wherever seeding grasses occur. In the plains it is a bird of the stubble and often visits the tiny patches of flowers and seeds in rest-house gardens along main roads.
STATUS AND DISTRIBUTION. This little bird has an enormous breeding range from north-eastern Europe across Siberia to Manchuria and Mongolia, and as a winter visitor extends from the British Isles to China. It reaches Burma late in October and leaves in April and early May. It winters in enormous numbers in the higher hills of northern Burma and is fairly common in Central Burma, but becomes scarcer further south and does not reach southern Tenasserim.

MEADOW BUNTING

Emberiza cia Linnaeus, W. EUROPE
SUBSPECIES : *yunnanensis* Sharpe, TALIFU, YUNNAN

IDENTIFICATION. Length 6½ inches. The reddish rump is rather conspicuous in flight, and the large size and blue-grey head are distinctive when perched ; it has blackish coronal streaks above a broad grey eyebrow.

STATUS AND DISTRIBUTION. Palaearctic. A few birds winter in open country on the Panwa pass at 7,000–7,500 feet in North-East Burma, and there is one record from Lashio, Northern Shan States. It breeds in Yunnan, but its status in Burma is uncertain.

YELLOW-BREASTED BUNTING

Emberiza aureola Pallas, IRTYSH

LOCAL NAME. Burmese: *sa-ni.*

IDENTIFICATION. Length 6¼ inches. Sexes differ, but in flight both show conspicuous white wing-patches and some white in the tail at all seasons. The male in winter has a distinct yellow supercilium, streaked dark brown upper-parts and bright yellow under-parts; in breeding plumage, acquired just before leaving in April, the forehead, face and throat are black, and the upper-parts and a band across the breast are chestnut. The female is boldly streaked on the back and plain yellow below.

VOICE. It utters a short *zipp* as it flies up into a tree and also has a soft, trilling note, *trssit.*

HABITS AND FOOD. On first arriving in Burma it is noticed chiefly in the large plains of grass; but as soon as the rice begins to ripen it comes down in immense flocks and feeds on this grain, to the sorrow of the unfortunate cultivator; after the rice has been reaped they continue picking up grain in the stubble, and even after this has been burnt they steadily search the ground, and the numerous cracks caused by the sun baking the soil, for the half-burnt grains of rice. Towards March this supply fails them, and they then adjourn to the neighbourhood of villages, where they pick up what food they can find (Oates). Large numbers of birds may be seen at dusk flighting to roost in a favourite clump of bushes fringing a stream.

STATUS AND DISTRIBUTION. This bunting also has a very wide breeding range, from northern Russia through Siberia to Japan, and a winter range from the British Isles (where it is a rare vagrant) to China. It misses most of India, but is an abundant winter visitor to the plains of Burma, arriving in October and leaving in May. It is also found in the hills up to 4,500 feet, chiefly on passage. It reaches the extreme south of Tenasserim and straggles down to Malaya.

[NOTE.—"It is practically impossible to identify subspecifically winter specimens of this species," Mayr, *Ibis* 1938, p. 300.]

BLACK-FACED BUNTING

Emberiza spodocephala Pallas, DAURIA
SUBSPECIES : *sordida* Blyth, NEPAL

IDENTIFICATION. Length 6½ inches. A greenish bird with a very dark greenish head, black spots in front of the eyes, and yellow under-parts ; it shows a white outer tip to the tail. A rather shy bunting and easily overlooked ; it is partial to small village gardens and to bushes near running water, and also frequents wet stubble, sugar-cane, crops such as mustard and peas, and *kaing* grass.
STATUS AND DISTRIBUTION. Breeds from Europe to China ; it is a not uncommon winter visitor to North-East Burma from November to March and has also been recorded from Mt. Victoria and the Upper Chindwin.

CHESTNUT BUNTING

Emberiza rutila Pallas, MONGOLIA

IDENTIFICATION. Length 6 inches. Sexes differ. The male is a handsome bird with the whole upper-parts, chin, throat and breast deep chestnut, the feathers edged with ashy in winter, giving a streaked appearance ; rest of under-parts yellow. The female has the upper-parts olive-brown boldly streaked with black ; chin and throat greyish, darker at the sides ; rest of under-parts yellow. Unlike the buntings so far described, this species has no white in the tail. It utters a thin high *teseep* when disturbed, and its habits are similar to those of *aureola* except for its partiality for trees. It may be seen in small clearings in the forest feeding on the seeds of grasses and bamboos or in the bushes surrounding the paddy fields of a jungle village.
STATUS AND DISTRIBUTION. Breeds in eastern Siberia and northern China and winters in the oriental region as far west as Sikkim. It seems to miss northern Burma, but has been obtained as far north as the Mogok hills and Mears described it as general throughout the Chindwin (the Vernay-Hopwood expedition did not meet with it in the Upper Chindwin) ; elsewhere it is a scarce visitor to the better-wooded areas of the plains. I have seen it at Thandaung (4,300 feet), on passage, and Stanford found several hundred roosting in bushes at 2,400 feet on the Prome–Taungup road on the 11th April. Davison collected a number in the Thaton and Salween districts, but did not observe it in Tenasserim ; Bingham however obtained it in the Thaungyin valley, and Lowe found it very common on the Taok plateau in flocks of 50 or more, often with crested buntings, on burnt grass.

YELLOW-HEADED BUNTING

Emberiza elegans Temminck, JAPAN
SUBSPECIES : *elegantula* Swinhoe, HUPEH, CHINA

IDENTIFICATION. Length 6 inches. A rather large bunting with a most distinctive black and yellow head, a semi-erectile crest, yellow throat and black back with brown edges to the feathers. The female is duller than the male.
STATUS AND DISTRIBUTION. A Chinese species, not uncommon as a winter visitor to the mountains of North-East Burma along the Yunnan frontier at 6,000–7,000 feet.

TRISTRAM'S BUNTING

Emberiza tristrami Swinhoe, AMOY, CHINA

IDENTIFICATION. Length 5½ inches. A small nondescript bunting, easily confused with the little bunting but distinguished by the white and not rufous coronal streak, black and not pale rufous throat, and black not rufous lores and ear-coverts; upper tail-coverts plain rufous contrasting with the back. A white moustachial streak.

STATUS AND DISTRIBUTION. A Chinese species, of which one specimen was obtained by Stanford at 5,000 feet on the Laukkaung–Pyepat road in November; there is one record from Yunnan, and it is probably a rare winter visitor to Yunnan and North-East Burma.

CRESTED BUNTING

Melophus lathami Gray, CANTON, CHINA
SUBSPECIES: *subcristata* Sykes, DECCAN

IDENTIFICATION. Plate XII, fig. 4, p. 252. Length 6 inches. The female is paler with cinnamon-tinged wings and tail.

VOICE. It has a characteristic call-note, *tweet-twe-twe-too*, the last note lower in pitch, and a rather monotonous song of one or two notes constantly repeated.

HABITS AND FOOD. The crested bunting avoids both bare plains and forests and is essentially a bird of rocky slopes and open cultivation on hillsides, where the stony ground and thatching grass or low scrub-jungle suit its requirements. It feeds on the ground at all times of the day, collecting small grass seeds, but perches and sings on the tops of bushes; it is a vivacious, lively, bold little bird and the crest is usually carried erect. Flocks have been seen hawking flies or flying ants like flycatchers.

NEST AND EGGS. I cannot find any observations on its breeding habits in Burma, but Wickham states that they are "very nicely described" in the *F.B.I.*; the nest is usually built in a bank or wall, or on the ground under the shelter of a stone, clod or bush; it is rather variable and may be a loosely constructed shallow saucer of grass roots without a lining or a neat cup of grass and moss, lined with fine grass, fibres, and rootlets. The eggs, 3 or 4 in number, vary from pale greenish-white to pale stone, with spots and blotches of red, brown, and purple.

STATUS AND DISTRIBUTION. Throughout the outer Himalayas to Yunnan and China. In Burma the only resident bunting; it has been recorded from most parts of the country except southern Tenasserim, but is local and capricious in its distribution. It is

probably a cold-weather visitor only to the plains and foothills, and is common at low elevations in northern Burma from February to April; further south there are no records from Central Burma (excluding the Shan plateau) and only two from a low elevation in Southern Burma (Yoma foothills of the Toungoo district in December and the plains of Thaton district on the 11th February). Wickham described it as a very universal bird in the upper Burma hills, I found it common round Kutkai, Wardlaw Ramsay in the central plain of Karenni, and Lowe on the Taok plateau.

Family HIRUNDINIDAE

MARTINS AND SWALLOWS

The members of this family are so well known that little description is necessary; they can only be confused with the swifts and swiftlets, which have much narrower sickle-shaped wings. House martins can always be distinguished from swallows by their conspicuous white rumps.

ASIATIC HOUSE MARTIN

Delichon dasypus Bonaparte, BORNEO
SUBSPECIES: *cashmeriensis* (Gould), KASHMIR

IDENTIFICATION. Length 5½ inches. Distinguished from the next species by browner upper-parts, smoky or greyish-white under-parts, and weaker flight. STATUS AND DISTRIBUTION. Southern and eastern Asia. This subspecies breeds in the western Himalayas as far east as Sikkim, and wanders south and east in winter. It has been observed several times in winter in the Myitkyina district and I obtained one out of a flock seen at 5,000 feet in the Arakan Yomas on the borders of the Thayetmyo and Minbu districts in early December.

EUROPEAN HOUSE MARTIN

Delichon urbica (Linnaeus), SWEDEN
SUBSPECIES: *lagopoda* Pallas, E. SIBERIA

IDENTIFICATION. Length 5½ inches. Distinguished from other house martins by its pure white under-parts and from swallows by a white rump. The usual note is more chirping than a swallow's, a slightly hard *chirrp* or *chichirrrp*. STATUS AND DISTRIBUTION. Palaearctic. It is a winter visitor to Burma, arriving in October or early November and leaving early in May. We have observed or collected it on numerous occasions in the Pegu Yomas, Karen Hills, and Karenni, nearly always in flocks over high ridges and up to late April; a century ago Tickell observed it at Moulmein. Further north it has

been observed at Taunggyi (Livesey), in Central Burma (Roseveare), and in North-East Burma, and is probably a regular winter visitor in considerable numbers.

NEPAL HOUSE MARTIN

Delichon nipalensis (Horsfield and Moore), NEPAL
SUBSPECIES: *nipalensis* (Horsfield and Moore), NEPAL
cuttingi Mayr, MYITKYINA Dist.

IDENTIFICATION. Length 4½ inches. Easily recognised by the black chin, throat and under tail-coverts, and by the square tail.
NEST AND EGGS. Hopwood reported it (1912*b*) as breeding on the cliffs of the Kyaukpandaung hills (Arakan) in April and May; it may also breed in North-East Burma.
STATUS AND DISTRIBUTION. Central and eastern Himalayas. Recorded from Arakan (Hopwood), the Upper Chindwin (Mears), and North-East Burma, where the Vernay-Cutting expedition met with large flocks at 4,000–5,000 feet in the eastern hills; and others have been recorded from Sumprabum.

GORGETED SAND MARTIN

Riparia riparia (Linnaeus), SWEDEN
SUBSPECIES: *ijimae* (Lönnberg), SAKHALIN I.

IDENTIFICATION. Length 5 inches. Distinguished from the next and commoner species by the well-defined collar across the breast.
STATUS AND DISTRIBUTION. Holarctic. In Burma, though it may be widespread, the only records appear to be from Arakan (a few in winter), Central Burma, the Irrawaddy at Minbu (a flock of several hundred seen, Roseveare) and the valleys of the Sittang and Salween rivers. Its status is uncertain, but it is known to breed in Assam.

BROWN-THROATED SAND MARTIN

Riparia paludicola (Vieillot), S. AFRICA
SUBSPECIES: *chinensis* Gray, CHINA (= *brevicaudata* Horsfield)

IDENTIFICATION. Plate XII, fig. 2, p. 252. Length 4½ inches. Easily distinguished from swallows and house martins by its very small size, almost square tail, and brown upper-parts, palest on the rump. Always seen in flocks, rarely far from water.
VOICE. A rippling, chirruping twitter and a harsher alarm-note.
HABITS AND FOOD. This sand martin is very gregarious at all times; it feeds chiefly over water with a fluttering and erratic flight that lacks the sweep and grace of a swallow on the wing, and perches freely on telegraph wires, branches, projecting roots, or vegetation. Breeding birds cling freely to the faces of pits or banks containing their nests, and out of the breeding season flocks will often behave in the same way, with no apparent object. When not at the breeding colonies

they roost in reed beds and are early astir in the mists of dawn, flitting hither and thither like phantom moths and welcoming the day with their loud, harsh squeaks ; they have no objection to the presence of man, and hawk freely about the houses of waterside villages. A forest fire with its wholesale dispersal of insect life is sufficient to draw them from their usual haunts, in company with other insectivorous birds, to share the feast.

NEST AND EGGS. Breeds from November to June, perhaps earlier, in colonies in sandy river banks, occasionally in the banks of lakes and ponds ; a slight pad of grass and feathers is placed at the end of a narrow tunnel, 1–4 feet in length, which is excavated by the bird itself. The eggs, 3 to 5 in number, are pure white.

STATUS AND DISTRIBUTION. Widespread in the oriental and ethiopian regions. It is a common resident and local migrant throughout the plains of Burma, but not in southern Tenasserim. Stanford records it as far north as Fort Hertz and as far up as 4,000 feet.

[NOTE.—The CRAG MARTIN, *Riparia rupestris* Scopoli, is a species of wide range, occurring on the Tibetan plateau and in northern Yunnan, which may turn up in Burma. Distinguished from the next species by larger size (length 6 inches) and by having the under tail-coverts much darker than the abdomen.]

DUSKY CRAG MARTIN

Riparia concolor Sykes, DECCAN
SUBSPECIES : *sintaungensis* (Stuart Baker), SINTAUNG, S. SHAN STATES

IDENTIFICATION. Length 5 inches. A dark sooty-brown martin with white spots on the tail-feathers, noticeable when the bird spreads its tail on turning. A bird of rocky hill-tops.

STATUS AND DISTRIBUTION. India and Burma. Many years ago crag martins, probably of this form, were seen in Tenasserim. Wickham observed crag martins on the crags at Taunggyi, but did not collect any ; some specimens were later collected by Livesey at Sintaung, south of Taunggyi, and by Smith on Mt. Byingye. Others were seen round the rocky summit of the Ubye taung, north of Madaya in the Mandalay district. I noted a single bird flying round a rocky peak at 6,000 feet, near Kutkai, Northern Shan States. It seems likely that this bird breeds in the Shan States.

EUROPEAN HOUSE SWALLOW

Hirundo rustica Linnaeus, SWEDEN
SUBSPECIES : *gutturalis* Scopoli, PHILIPPINE IS.
tytleri Jerdon, DACCA, BENGAL

LOCAL NAMES. Burmese : *pyan-hlwa* or *mo-swe-hnget* are names applied to all swallows.

IDENTIFICATION. Plate XII, fig. 1, p. 252. Length up to 8 inches according to the length of the outer tail-feathers, which vary from $2\frac{1}{2}$–5 inches. Forehead, chin and throat often appear blackish in a poor light or on the wing, and the under-parts much less pink than the illustration. The white spots on the tail are visible only when fully expanded. The under-parts are chestnut in *tytleri*.

VOICE. The usual note, especially on the wing, is *tswit-tswit-tswit*, often run together into a regular twitter, with variant *titswee*, the second syllable higher than the first. When excited or alarmed a loud, high-pitched *tswee*, usually single.

HABITS AND FOOD. The swallow is too well known to need much description. It goes about in flocks and spends much of its time on the wing, hawking insects over paddy fields or stretches of water, but (unlike house martins in Burma) settling freely on telegraph wires, buildings, bridges, and sometimes trees. Its flight is marked by graceful irregularity, with constant swerving or banking, but always with a sweep and elegance that are characteristic. The wing-beats are easy and regular, with frequent interludes of gliding with extended or nearly closed wings. It often hovers or skims low over water, picking insects off the surface or sipping water as it skims. At other times it flies over the paddy fields, usually low down, but sometimes wheeling at a great height in the air. It is seldom on the ground, but large flocks roost on the bare sandbanks of the larger rivers, where they may be seen at dawn and dusk.

STATUS AND DISTRIBUTION. A holarctic species. The subspecies *gutturalis* breeds in Baikal, northern China, and Japan, and *tytleri* breeds further north in Kamchatka and north-eastern Siberia. Both are winter visitors to Burma, but *tytleri* is erratic, being much more abundant in some years than in others (it has been reported from Arakan, North-East Burma, Central Burma, Southern Burma, the Northern Shan States, and Karenni).

The subspecies *gutturalis* may be seen in every month of the year, but there is a great diminution in numbers in June. What apparently happens is this: the first arrivals in July are adults that have finished breeding very early; whereas the juveniles, which arrive rather later, do not moult their wings until the following February-May and may not leave Burma for the north until June, the adults having mostly left in mid-May (when Stanford noted large flocks passing through Myitkyina district). In Minbu district they are occasionally seen in June and become common in early July (Roseveare), while a few birds can be seen in the Pegu plain in the first week

of July. Thus we picture the northward migration as taking place chiefly in May, with a few juveniles hanging on till late in June, and the southward migration beginning in the first week of July and continuing through August. Some individuals may remain in Burma throughout the summer, but there is no proof that they do so. No signs of breeding in Burma have ever been observed.

[NOTE.—Stuart Baker claims that *rustica* Linnaeus, occurs over the whole of Burma in winter, but there is no evidence to support this view (see *Ibis*, 1938, p. 623).]

SMALL HOUSE SWALLOW

Hirundo javanica Sparrman, JAVA
SUBSPECIES : *abbotti* Oberholser, ANAMBA IS.

IDENTIFICATION. Length 5 inches. Distinguished from other swallows by having the chin, throat and upper breast chestnut and the remaining under-parts pale ashy-brown, almost white on the abdomen. Found chiefly on the sea coast.

NEST AND EGGS. Have been taken in Arakan and Tenasserim, from March to May. The nest is usually built on a ledge of a sea cliff, and is a shallow half-saucer of mud, lined first with fine roots and then with many feathers. The eggs are white with spots of reddish-brown and deep purple-brown and secondary marks of lavender and grey.

STATUS AND DISTRIBUTION. A Malaysian species, extending to southern India and the Philippines. Hopwood found it breeding near Kyaukpyu in Arakan, but was uncertain whether it was resident there throughout the year, as it probably is in Tenasserim.

WIRE-TAILED SWALLOW

Hirundo smithi Leach, W. AFRICA
SUBSPECIES : *filifera* Stephens, INDIA

IDENTIFICATION. Plate XII, fig. 3, p. 252. Length 5 inches, with a lengthened wire-like shaft to the outer pair of tail-feathers 7 inches extra. At close range the wires in the tail afford easy identification, but at a distance the glossy blue-black upper-parts and pure shining white under-parts are unmistakable. Usually near water.

VOICE. The twittering note and short, sweet song are similar to those of other swallows.

HABITS AND FOOD. This beautiful swallow is nearly always found near water, especially big rivers, lakes and jheels, and it is also partial to wet paddy fields. It perches freely on telegraph wires and the parapets of bridges, but does not as a rule perch on trees, and only descends to the ground to gather mud for its nest. It is usually seen in pairs or small parties, not in large flocks like the house swallow.

NEST AND EGGS. Breeds chiefly from March to May, but (according to Wickham) goes on throughout the rains. The nest is nearly always built under a bridge or culvert, a shelf of rock or the roof of a building, and if not immediately over water is always close to it. It is a rather shallow cup of mud pellets and is lined with feathers or dried grass, and the eggs, 3 or 4 in number, are white with reddish-brown spots.
STATUS AND DISTRIBUTION. Africa, India, and Burma. A resident and local migrant throughout the plains and higher hills of Burma in suitable localities. Stanford records it at 6,500 feet in December in Myitkyina district near the Yunnan border, but it has not been recorded from Yunnan.

LESSER STRIATED SWALLOW

Hirundo daurica Linnaeus, SIBERIA
SUBSPECIES : *japonica* Temminck and Schlegel, JAPAN
nepalensis Hodgson, NEPAL

IDENTIFICATION. Very similar to *striolata* (*q.v.*).
STATUS AND DISTRIBUTION. Owing to confusion in the past between this species and *striolata*, the range is imperfectly known. Breeds in the Himalayas and recorded as a winter visitor from Arakan, North-East Burma, Central Burma, Southern Burma (common), and the Karen Hills ; it is probably found in the hills only on passage.

GREATER STRIATED SWALLOW

Hirundo striolata Temminck and Schlegel, JAVA
SUBSPECIES : *substriolata* (Hume), KHASIA HILLS
stanfordi Mayr, MYITKYINA Dist.

IDENTIFICATION. Length 7 inches. This and *daurica* are the only swallows with a chestnut rump ; seen from below the uniform creamy under-parts, with no black or chestnut on the throat, are distinctive. As regards *striolata* and *daurica*, Mayr states (*Ibis*, 1941, p. 368) that it is impossible to give an exact diagnosis that would keep the two species apart, since most of the characters are variable ; *striolata* is larger, more heavily streaked underneath, and the rufous collar is broadly interrupted on the hind-neck.
VOICE. The flight-note, a plaintive *pin*, or long-drawn *quitsch*, differs from that of the house swallow.
HABITS AND FOOD. Often associates with house martins in the hills or with house swallows ; in its actions it resembles the latter, but is rather more deliberate in flight. In the plains it favours jheels and sandy river beds, or cultivation, *indaing*, and scrub-jungle.

NEST AND EGGS. Stanford reports that they are back in their breeding haunts in North-East Burma and paired in early March, and have been seen collecting mud on the 14th March. Most eggs are laid from April to June. The nest is a remarkable structure of fine mud pellets, collected by the birds a mouthful at a time from the edge of puddles, and it takes several weeks to build ; it is usually described as retort-shaped and resembles a glorified termite gallery with a bulge at one end, the bulge containing the egg-chamber, which is usually lined with a few pieces of dry grass or feathers. According to Wickham, in the Shan States it makes its nests against the ceilings of rooms and verandahs of buildings or up against the roofs of limestone caves, in which a few pairs may be found nesting together. Bridges and culverts are also commonly used. The eggs, 3 or 4 in number, are pure white without markings.

STATUS AND DISTRIBUTION. From Africa and southern Europe through southern Asia to China. In Burma it breeds in North-East Burma, at Maymyo, in the Karen Hills and Shan States ; elsewhere its distribution has been confused with that of *daurica*.

Family MOTACILLIDAE

WAGTAILS AND PIPITS

Members of this large family are to be found over the whole of Europe, Asia, and Africa. All the wagtails found in Burma, except perhaps *alboides*, are winter visitors. The actions of all wagtails on the ground and in the air are similar. The gait is a brisk walk or run, with a backward and forward motion of the head and a constant up and down movement of the tail ; little flutters are frequently made into the air after a passing insect. The flight is strongly undulating, in long curves. Wagtails perch freely on fences, bushes, and trees. On first arrival in Burma and just before they leave again the plumage is close to the full breeding plumage, whereas during the greater part of the time they spend in Burma they are in winter dress, which may differ markedly from the breeding plumage ; hence they are not easy birds to study in the field.

The pipits, with two exceptions, are also winter visitors, and as they are all streaky-brown birds their calls and habits are at least as important for field identification as their plumage.

PIED WAGTAIL

Motacilla alba Linnaeus, SWEDEN
SUBSPECIES : *personata* Gould, BENGAL
baicalensis Swinhoe, LAKE BAIKAL
ocularis Swinhoe, AMOY, CHINA
alboides Hodgson, NEPAL
leucopsis Gould, INDIA

LOCAL NAME. Burmese : *mi-nyaung-hnget*, applicable to all wagtails.

IDENTIFICATION. Plate XII, fig. 5, p. 252. Length 7 inches. The pied wagtails are not easy to differentiate in winter dress, but the following notes may help.

The subspecies *leucopsis* has the ear-coverts and sides of the neck white ; the back is grey in winter and black in breeding plumage.

The pair *personata* and *alboides* have the ear-coverts and sides of the neck black at all seasons ; the former has the back grey at all seasons, but the latter has it black in breeding plumage.

The pair *baicalensis* and *ocularis* are not easy to distinguish except in March and April, when the former has a black head, contrasting sharply with a pale grey back, and the latter has a streak through the eye.

VOICE. The call-note *chiz-zit* is constantly uttered on the wing.

HABITS AND FOOD. Those of the family. The pied wagtails are small, dainty birds of black, white and grey plumage, which walk about the ground, usually near water, incessantly wagging their long tails up and down ; they also frequent open grassland and cultivation, perching freely on the parapets of bridges and culverts, but not on trees. The food consists entirely of insects.

NEST AND EGGS. Hopwood recorded a nest containing four fresh eggs on the 13th March, found on a sandbank of the Upper Chindwin, which was attributed to *leucopsis* ; this form, however, breeds from the middle Amur southwards over a large part of China, and northern Burma would be a very great extension of its known breeding range ; the record requires to be substantiated. The subspecies *alboides*, on the other hand, may well breed in Burma ; Rippon obtained one in the Bhamo hills on the 21st July, and Bingham one in post-nuptial moult at Kamauli on the Salween on the 23rd July ; moreover, Stanford observed pairs that were apparently breeding in April and May in the Myitkyina foothills and noted immature (and a very few adult) birds in May and early June along the river from Myitkyina southwards, and non-breeding adults from the 6th to the 18th July. Breeding (?) pairs were observed in March at 7,000 feet.

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PLATE XII

STATUS AND DISTRIBUTION. A palaearctic species, represented in Burma by five subspecies.

The subspecies *personata* (or the masked wagtail) breeds in Turkestan, Afghanistan and eastern Persia, and is common in the plains of India in winter, but a specimen from Tamu in the N'Mai valley is the only record from Burma.

The subspecies *baicalensis* breeds in Baikal and northern Mongolia and winters in southern China to Yunnan and Burma ; it has been recorded from North-East Burma, Pakokku (Baillie), the Shan States, and Karenni, and as *dukhunensis* from the Sittang valley and northern Tenasserim.

The subspecies *ocularis* (or the streak-eyed wagtail) breeds in Siberia and winters over most of the oriental region as far west as Bengal ; it has been recorded only from Pakokku and Gangaw (Baillie), Upper Chindwin, North-East Burma, Kyaukmyaung (Shwebo district, one seen, Roseveare), the plains of Southern Burma (common from the beginning of November to the end of April, Oates), Papun, and Thaungyin valley (Bingham).

The subspecies *alboides* breeds in the Himalayas, south-western Tibet, and probably northern Burma. It is common in North-East Burma and has been recorded from Shwebo district (twice seen, Roseveare), Minbu district (thrice seen, Roseveare), Allanmyo district (once seen, Baillie), and Kamauli on the Salween.

The subspecies *leucopsis* (or the white-faced wagtail) breeds from the middle Amur southwards over a large part of China and winters in southern China, Formosa, Burma, and India as far west as Nepal ; it is by far the commonest form in Burma and is found throughout the country except in southern Tenasserim.

[NOTE.—" Records of *dukhunensis* in Burma probably relate to *baicalensis*," Ticehurst, *Ibis*, 1935, p. 268.]

GREY WAGTAIL

Motacilla cinerea Tunstall, GT. BRITAIN
SUBSPECIES : *melanope* Pallas, DAURIA

IDENTIFICATION. Plate XII, fig. 6, p. 252. Length 8 inches. Differs from all other wagtails in the comparatively longer and more slender tail and in the blue-grey colour of the upper-parts ; it has a conspicuous buff eyebrow, and in flight the long tail and sulphur-yellow abdomen and under tail-coverts are conspicuous. Solitary along streams and gritty paths.

VOICE. The common note is a rather shrill *tzit-zee* uttered on the wing ; frequently a single somewhat tremulous *tchipp*.

HABITS AND FOOD. This bird's ecological niche is damp, gritty sand and gravel, whether in a stream bed or along a mule path or on a hard tennis court ; except for the forest wagtail it is the only wagtail seen along the jungle streams of the teak forests of the Pegu Yomas, where it is a characteristic species in the cold weather. In the hills it is commonly seen along mule roads, and in the plains it may be found on the sandy margins of lakes and jheels ; rarely will more than one bird be seen at one time.

STATUS AND DISTRIBUTION. Palaearctic. Widespread, chiefly about mountain streams, in Europe and northern Asia, migrating south to Africa and southern Asia in winter. Common throughout Burma in winter ; earliest dates the 29th August at Thandaung and the 31st August in the Pegu Yomas (Tharrawaddy district). It disappears from Thandaung on or soon after the 30th April ; Rippon saw one in July in the Southern Shan States.

YELLOW WAGTAIL

Motacilla flava Linnaeus, SWEDEN
SUBSPECIES : *angarensis*(Sushkin), TRANS-BAIKALIA
macronyx (Stresemann), VLADIVOSTOK
taivana (Swinhoe), FORMOSA

IDENTIFICATION. Plate XII, fig. 7, p. 252. Length 7 inches. Typical wagtails, found in mixed flocks containing two or three subspecies, of which a small proportion are in adult plumage, greenish above and yellow below, while most are in dull nondescript plumages. Distinguished from the grey wagtail by the very dark upper-parts and pale outer feathers to the tail.

VOICE. It has the usual shrill *chiz-zit* call-note.

HABITS AND FOOD. Those of the family. On first arrival these birds frequent marshes and tidal flats, but later they are found chiefly on dry grassy uplands or far out on a dried-up paddy plain. They are found singly or in parties, mingled irrespective of subspecies, and spend their time feeding on the ground ; they often accompany herds of cattle and feed round the legs of the grazing animals. At night they roost in reed-beds, which they often share with other wagtails.

STATUS AND DISTRIBUTION. Palaearctic. Common in the plains of Burma in winter, from September (early date the 4th September at Wetlet, Shwebo district) to the end of April (when they disappear from Rangoon). In Arakan, Christison noted single birds on passage

in April (one in November); *taivana*, which winters in the Indo-Chinese countries and Malaya, has been obtained in the Upper Chindwin, Monywa, and Southern Burma.

YELLOW-HEADED WAGTAIL

Motacilla citreola Pallas, SIBERIA
SUBSPECIES: *citreola* Pallas, SIBERIA
calcarata Hodgson, NEPAL

IDENTIFICATION. Length 7 inches. The male in breeding plumage has the whole head yellow; at all ages and seasons this species can be distinguished from the yellow wagtail by the broad yellow supercilium and by a certain amount of yellow on the forehead. The subspecies *calcarata* is easily recognised in breeding plumage by the black (as opposed to ashy-grey) back and rump.

VOICE. Not recorded.

HABITS AND FOOD. This is the real "water" wagtail of Burma, a bird of jheels and rivers and streams, rarely seen far from water. Its favourite haunt is short *dhoob* grass wherever this occurs along steams (a habitat it shares with the yellow wagtail), and it is also partial to the islands of large, round stones that are such a feature of the upper Irrawaddy.

STATUS AND DISTRIBUTION. An eastern palaearctic species. The subspecies *calcarata* breeds in Kashmir and Central Asia, and winters in northern India; it has been recorded only from Arakan, the Adung valley (late April and early May), Minbu district (Paunglin lake, Roseveare), and from Papun, Salween district; Kaulback obtained it on the 3rd September in the Tamai valley and thought it might breed there. The subspecies *citreola* breeds in parts of Russia and through Siberia to south-eastern Mongolia; in winter it is found over most of India and all over Burma, arriving in September and leaving in late April and early May (birds on passage seen near the Meiktila lake on the 19th April, large numbers seen in the Irrawaddy plain on the 25th April, latest date in Myitkyina district the 16th May, and in Arakan the 14th May).

FOREST WAGTAIL

Dendronanthus indicus Gmelin, INDIA

IDENTIFICATION. Plate XII, fig. 8, p. 252. Length 8 inches. The prominent buff spots on the closed wing are a useful guide. A forest bird with a distinctive habit of slowly swaying the whole body and tail stiffly from side to side.

VOICE. The notes are a loud chirrup, frequently repeated when flying, running or perching, and a faint single note, difficult to locate.
HABITS AND FOOD. This curious bird, half wagtail, half tree pipit, is found only in evergreen and moist forests, where it frequents open glades, forest paths, and sandy stream beds, flying up into trees when disturbed. It is a typical bird of Pegu Yoma streams and elephant paths in the cold weather, and Stanford observed it in bamboo jungle, dry deciduous jungle, and mango clumps. It feeds on small slugs, snails, tiny worms, and all kinds of insects.
NEST AND EGGS. Not described from Burma. Stuart Baker found it breeding in north Cachar in May, in evergreen forest, the nest being built on a branch near running water ; neither nest nor eggs resemble those of other wagtails.
STATUS AND DISTRIBUTION. Breeds in eastern Siberia and the hills of northern China and Assam, and winters in most parts of the oriental region. It has not been observed in northern Burma, which is surprising if it really breeds in Assam ; Wickham described it as occurring sparingly in the hills, and it is common in the Pegu Yomas and the plains of Southern Burma, even in the neighbourhood of Rangoon ; a number of birds seen at Thandaung on the 24th September may have been on passage. Davison saw none in Tenasserim after April, except for one which came aboard his ship in the gulf of Martaban on the 1st May.

[NOTE.—Delacour unites this genus with *Motacilla* ; as Ticehurst pointed out (JBNHS, vol. 34, p. 913) it exactly bridges *Motacilla* and *Anthus*, and therefore all three should be united, or all kept separate.]

KEY TO THE PIPITS

A. Hind claw not exceeding hind toe in length.
  a. Pale tips to tail-feathers white . . . . *A. hodgsoni*
  b. Pale tips to tail-feathers pale rufous . . . *A. similis*
B. Hind claw exceeding hind toe in length.
  c. Sides of body plain or with obsolete streaks only.
    a^1. Under-parts sandy or buff . . . . *A. novae-seelandiae*
    b^1. Under-parts vinous . . . . . *A. spinoletta* ad.
  d. Sides of body with coarse dark streaks.
    c^1. Under wing-coverts yellow . . . . *A. palopus*
    d^1. Under wing-coverts whitish or brownish.
      a^2. Throat and breast cinnamon-red . . *A. cervinus* ad.
      b^2. Throat and breast whitish or fulvous.
        a^3. Upper-parts very dark with fulvous margins . . . . . *A. cervinus* juv.
        b^3. Upper-parts clear brown with olive-brown margins . . . . . *A. spinoletta* juv.

TREE PIPIT

Anthus hodgsoni Richmond, NEPAL
SUBSPECIES : *hodgsoni* Richmond, NEPAL
berezowskii Sarudny, S-W. KANSU
yunnanensis Uchida and Karoda, YUNNAN

IDENTIFICATION. Plate XII, fig. 9, p. 252. Length 6 inches. In parties in open wooded country.

VOICE. A short, plaintive, high-pitched *zeep-zeep-zeep* is uttered as it rises. The song, heard in its breeding haunts, is similar to that of *trivialis*, a single phrase repeated and delivered in descending flight from a tree, as the bird floats down from a height.

HABITS AND FOOD. This pipit is found in small parties at all elevations, frequenting open country with plenty of shady trees ; it is partial to gardens and the shade of tamarind trees in the plains, and to the smooth grass and bracken found in pine forests and round village clearings in the hills, and similar habitats ; on migration many birds may be seen along mule paths. It feeds quietly on the ground in sparse herbage, collecting small insects and the seeds of grass and weeds ; when disturbed it flies up into a tree and walks about the boughs in a manner unusual among small passerine birds, at the same time wagging its tail with dignity ; the flight is wagtail-like, slow and dipping.

NEST AND EGGS. Not described from Burma. Stanford found a number of birds (*berezowskii*) paired and singing on alpine meadows at 8,000–10,000 feet near the Hpimaw pass in mid-April and thought they were about to breed.

STATUS AND DISTRIBUTION. Himalayas and Central Asia to Yunnan and Formosa, migrating south in winter ; the subspecies *berezowskii* is common in western Yunnan and probably resident in the mountains of North-East Burma along the Yunnan border ; it does not move far in winter, and I noticed tree pipits believed to be of this form on the Hpimaw pass in the first week of March and at 9,000 feet on an alpine meadow above the Lagwi pass on the 21st February when there was much snow about. It has also been obtained on Mt. Victoria. The subspecies *hodgsoni* is common throughout Burma, from the plains to about 6,000 feet, from October–April. Its arrival at Thandaung was noted on the 8th October. Stanford described it as leaving Southern Burma in early April, and noted parties of migrants from March onwards in the foothills of Myitkyina. In Karenni it is very common in mid-April at 4,000–6,000 feet.

[NOTE.—For a note on the name of this bird, see *Ibis*, 1947, pp. 492–494.

For a revision of this species see JBNHS, 1948, pp. 622–27. Ripley prefers to let *hodgsoni* and *trivialis* stand as separate species, but remarks that "they are presumably allopatric members of a superspecies." The distribution in Burma requires working out afresh.]

BROWN ROCK PIPIT

Anthus similis Jerdon, NILGIRIS
SUBSPECIES : *jerdoni* Finsch, KOTEGARH, INDIA

IDENTIFICATION. Length 9 inches. See key. A large pipit, stronger and quicker on the wing than most, with uniform greyish-brown upper-parts, a pale supercilium, and sandy-brown under-parts. Perches on rocks rather than bushes and trees, both when resting and when disturbed from feeding on the ground. A bird of open grass country where rocks and boulders are plentiful ; the barren hills of the dry zone and areas in scrub *indaing* forest where erosion has been particularly heavy appear to be its favourite haunts.
NEST AND EGGS. A nest containing eggs was found by Smith in Central Burma on the 25th June, and another containing young on the 4th August ; the first was placed under a projecting piece of rock between the deep ruts of a cart track, and the second in a hollow in a bank ; the nest is described as a cup of dry grass and the eggs as whitish in ground-colour, heavily marked with brown spots and blotches, especially at the larger end, with underlying marks of neutral tint and purplish brown ; 3 were laid in each nest.
STATUS AND DISTRIBUTION. Africa and southern Asia. In Burma it has been recorded only from the dry zone of Central Burma, where it is locally common, and the drier parts of the Shan plateau.

PADDY-FIELD PIPIT

Anthus novae-seelandiae Gmelin, NEW ZEALAND
SUBSPECIES : *richardi* Vieillot, FRANCE
thermophilus (Jerdon), NEPAL
rufulus Vieillot, BENGAL
malayensis Eyton, MALAYA

IDENTIFICATION. Plate XII, fig. 10, p. 252. Length 6–7 inches. The subspecies *richardi* and *thermophilus* are conspicuously large and long-legged pipits with strong undulating flight like that of a wagtail ; *rufulus* and *malayensis* are smaller and weaker in flight. Some white shows on the tail in flight.
VOICE. On leaving the ground *richardi* utters a loud, rapid and harsh note, *r-r-ruup* ; *rufulus* utters a quieter and more plaintive note, and the male in breeding display has a jangling bunting-like song.
HABITS AND FOOD. This is typically a pipit of short grass, such as is

found on maidans, golf courses, grazing-grounds, etc. It also frequents cultivation with low crops, short paddy stubble, and the grassy margins of lakes and jheels. It feeds on the ground and during the breeding season perches freely on bushes and tufts of grass, but never in trees. In the breeding display the male rises in the air in one ascending succession of dipping curves, uttering his jangling song; having arrived at the highest point in the air he then falls to earth again, in an abrupt curve, with stiff partly extended wings. When disturbed suddenly from the nest the female usually flutters along the ground as if wounded, a trick also practised by the brown rock pipit.

NEST AND EGGS. In the Tharrawaddy district eggs have been taken from March to August, but most eggs are laid in April. The nest is built on the ground, under a tuft of grass or clod of earth, and the eggs, 3 or 4 in number, are brownish or greenish-stone in colour, thickly streaked, clouded and spotted with dull brownish-red or various shades of brown and purplish-grey; the markings tend to form a cap at the larger end.

STATUS AND DISTRIBUTION. Widespread in Asia, migrating west and occasionally reaching the British Isles. In Burma the larger forms are found throughout the country as winter visitors, from October to May, but it is not possible to say whether *richardi* and *thermophilus* are equally common. In Myitkyina district *richardi* arrives in late September and passes through on the spring migration in April and May (latest date the 2nd June in the Sadon hills). The smaller forms are residents, *malayensis* in Tenasserim and *rufulus* over the rest of the country to 4,000 feet.

[NOTE.—Reasons for uniting *rufulus* and *richardi* are given by Stresemann, *Journal of Ornithology*, 1931, p. 131.]

RED-THROATED PIPIT

Anthus cervinus (Pallas), SIBERIA

IDENTIFICATION. Length 6 inches. See key. This pipit is not difficult to recognise; in April the pale rusty-red of throat and breast are distinctive; at other times it resembles the tree pipit in size and plumage, but frequents the edges of ponds, lakes and jheels, tidal estuaries, and similar aquatic habitats, and when disturbed rises with a full musical rather abrupt *chup chup*, different in tone from the note of any other pipit. Out on the great Sittang plain in March and April it is frequently seen in large flocks on burnt stubble, and the constant stream of birds coming to drink at scattered tanks indicates the immense numbers in the area.

STATUS AND DISTRIBUTION. Palaearctic, with a wide winter range from northern Africa to Malaysia. In Burma it has been recorded from Arakan, Central Burma, the plains of Southern Burma (where it is common from October to April), and Tenasserim; it seems to miss northern Burma and possibly migrates down the Arakan coast; the only Yunnan record is from Mengtsz in April.

HODGSON'S PIPIT

Anthus palopus Hodgson, NEPAL

IDENTIFICATION. Length 6½ inches. See key. A very dark pipit, which in spring looks almost black in the field. It frequents the sides of jheels, patches of *dhoob* grass, and bare grassy hillsides such as are found near hill villages and outposts. Large flocks are sometimes seen.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Breeds throughout the Himalayas to Yunnan and migrates south in winter; in Burma it may breed in the mountains of northern Burma and was obtained in the Adung valley in June and July at 12,000 feet, where it was described as fairly common in alpine meadows above the tree-line, but proof of breeding was not obtained; there is no evidence that it breeds in the Shan States as claimed by Stuart Baker. As a winter visitor it occurs in Arakan, North-East Burma (where it is probably the commonest pipit in the area from November to April), Central Burma, and the Northern Shan States.

ALPINE PIPIT

Anthus spinoletta Linnaeus, ITALY
SUBSPECIES: *japonicus* Temminck and Schlegel, JAPAN

IDENTIFICATION. See key. A dark pipit with vinous-buff under-parts, boldly streaked and spotted on the breast; probably difficult to distinguish from *palopus* in the field.

STATUS AND DISTRIBUTION. Palaearctic, visiting the oriental region in winter. In Yunnan it has been collected in the Talifu valley and on the Likiang range, but the only authentic record from Burma is a specimen obtained by Stanford on the Panwa pass; reasons for rejecting the statements made in the *F.B.I.* about this bird's distribution in Burma are given by Stanford (*Ibis*, 1938, p. 629).

[NOTE.—This bird is more generally called the water pipit or the rock pipit, but I use Seebohm's trivial name as being more appropriate.

The UPLAND PIPIT, *Oreocorys sylvanus* Hodgson, is found in the Himalayas and parts of Yunnan (Mekong valley, Likiang range, Mengtsz plateau) and breeds on bare rocky or grass-covered mountains. In the hand it is distinguished from all other pipits by the sharply-pointed tips to the tail-feathers. In the breeding season it has a loud and distinctive call-note and is then not easy to overlook.]

Family ALAUDIDAE

LARKS

Larks closely resemble pipits, but can generally be distinguished by their heavier build, less nimble and more crouching gait, less slender bills, and weaker flight. The flight over short distances is rather fluttering and wavering, but when more prolonged it is strong and undulating, several wing-beats alternating with sudden closure ; the wing action is perceptibly slower and more floppy than that of other small birds of open country. Dust baths are often taken on roads or light soil.

EUROPEAN SKYLARK

Alauda arvensis Linnaeus, SWEDEN
SUBSPECIES : *inopinata* Bianchi, TIBET
vernayi Mayr, MYITKYINA Dist.
gulgula Franklin, CALCUTTA–BENARES
weigoldi Hartert, YANGTSE VALLEY, YUNNAN
herberti Hartert, BANGKOK, SIAM

LOCAL NAME. Burmese : *bi-lon.*

IDENTIFICATION. Plate XIII, fig. 1, p. 276. Length 6½–7 inches. Feeds and settles on the ground in open country, but sings in a characteristic soaring flight. The crest is often very distinct.

VOICE. A liquid bubbling chirrup is uttered when disturbed. The male has a well-sustained though rather monotonous song, into which imitations of other birds' calls may be introduced. In the song-flight (described by Witherby) the bird mounts vertically or obliquely with a vigorous fluttering action to a great height in the air, the song commencing a few feet from the ground. The bird remains poised, head to wind, the wing-beats momentarily interrupted at brief intervals. It presently sinks gently downwards with wings inclined upwards till it suddenly completes the descent by an abrupt drop to the ground, or near it, with wings closed. The song is also occasionally uttered on the ground, and may be heard from October to April at all times of the day, but especially at dawn, long before it is really light. To hear this song at its best one must travel to the Panwa pass and listen to *vernayi*, for the song of the common plains form *gulgula* is much weaker and thinner in tone.

HABITS AND FOOD. The subspecies *gulgula* is typically a bird of the vast paddy plains of Southern Burma, though it seems to prefer rough grasslands, *dhoob* grass, and pea crops to the paddy stubble ; on the coast it is commonly seen over the mudflats and saltings. It lives and feeds on the ground, picking up seeds, insects and fallen grains of rice, and if disturbed springs into life with its *chirrup* call and flies low over the ground with a fluttering, undulating flight.

NEST AND EGGS. Breeds from March to July, two broods being reared as a rule. The nest is built on the ground in a shallow depression, sheltered by a clod of earth, a tuft of grass or a small, stunted bush ; it is a shallow cup of dry grass, usually lined with finer grass. The eggs, 3 to 5 in number, are thickly freckled with pale yellowish-brown to inky-purple.

STATUS AND DISTRIBUTION. Palaearctic and oriental regions. The subspecies *gulgula* is a common resident throughout the plains of Burma as far south as Moulmein, while *vernayi* is at present known only from the Panwa pass at 7,500 feet, where it is common in flocks. Wickham took some nests at 8,000 feet in the Chin Hills, but unfortunately the birds were not identified. The remaining subspecies listed are winter visitors.

[NOTE.—" No migrant larks can be identified with certainty until the systematics of the central Asiatic and western Siberian breeding birds is better known " (Mayr, *Ibis* 1941, p. 377).]

SHORT-TOED LARK

Calandrella cinerea (Gmelin), CAPE OF GOOD HOPE
SUBSPECIES : *dukhunensis* (Sykes), DECCAN

IDENTIFICATION. Length 5½ inches. A small rather pale sandy-coloured lark with under-parts nearly white ; tail conspicuously darker than rest of plumage in flight, appearing blackish with a whitish border. Found in large flocks feeding in stubble and open barren country. They perch only on the ground, where owing to their small size and protective coloration they are almost invisible ; when approached the birds of a flock rise irregularly, a dozen or two at a time, and when all are in the air they join into a compact flock, which flies with a peculiarly free and swinging motion. The call-note is low and harsh, a short chirruping note.

STATUS AND DISTRIBUTION. Widespread in Asia, northern Africa, and Europe, reaching the British Isles as a rare vagrant. Flocks have been twice observed in the Myitkyina district (the 6th and 8th April) and a specimen was obtained near Pegu on the 25th September 1880. It is probably a casual passage migrant

through Burma. On the 5th June, eight to ten birds believed to be of this species, were seen running about an island near Minbu, Southern Burma (Roseveare).

COMMON SAND LARK

Calandrella rufescens (Vieillot), TENERIFFE
SUBSPECIES: *kukunoorensis* Przewalski, KOKONOR

IDENTIFICATION. Length 5 inches. A very pale, almost whitish bird, similar in appearance to the next species. The note is a single musical chirp.
STATUS AND DISTRIBUTION. A central Asian subspecies, of which one specimen was obtained by Stanford on the 19th November on the N'Mai valley mule road between Seniku and Shingaw, at 1,000 feet.

GANGES SAND LARK

Calandrella raytal (Blyth), LUCKNOW
SUBSPECIES : *raytal* (Blyth), LUCKNOW

IDENTIFICATION. Plate XIII, fig. 3, p. 276. Length 5 inches. A bird of river sandbanks. A distinct crest is often visible, especially when the male is displaying.
VOICE. It utters a few pleasing and musical notes as it flits from one sandbank to another, and sings persistently on the wing. " In March it sings better than a bush lark, once seen singing high in the air after the manner of a skylark, and in October heard uttering a plaintive two-syllabled call " (Roseveare).
HABITS AND FOOD. This bird's ecological niche is the sandbanks of the larger rivers ; it is a typical and extremely tame bird of the Irrawaddy and may be observed scavenging among the debris outside fishermen's huts ; it is sometimes seen in pea fields, but normally only on the barest and most open stretches of sand. Parties of twenty or thirty birds are sometimes seen in the cold weather.
NEST AND EGGS. Breeds from mid-February to May on sandbanks. The nest is a flimsy affair of grass placed in a small, natural hollow, usually under a tuft of grass, a piece of driftwood, or similar shelter to protect it from the sand-storms that sweep the Irrawaddy at intervals during the hot weather. The eggs, 2 or 3 in number, are pale grey or yellowish-white in ground-colour, speckled with sandy-grey or brown.
STATUS AND DISTRIBUTION. Confined to northern India and Burma, where it is found on the Irrawaddy from Yandoon island in the delta as far north as Katha, on the Chindwin as far north as Kani, and on some of the larger streams of the dry zone.

SINGING BUSH LARK

Mirafra javanica Horsfield, JAVA
SUBSPECIES : *williamsoni* Stuart Baker, BANGKOK

IDENTIFICATION. Length 6 inches. A very dark bird, with lateral tail-feathers mainly white and no dark streaks on the hind-neck.
NEST AND EGGS. Wickham found it breeding in the Shan States at about 3,000 feet in grassy plains in April. He describes the nest as similar to that of *Anthus rufulus*, and states that it sings and soars in the air like an English skylark. Stuart Baker states that he received skins with nests and eggs from east of Myawaddy in northern Tenasserim.
STATUS AND DISTRIBUTION. South-eastern Asia to Australia, but not in Malaya. In Burma, in addition to the breeding records given above, a migrant was obtained by Smith in Central Burma (Wetlet, Shwebo district) on the 4th September ; " the bird was amongst numbers of other bush larks, pipits and wagtails which had obviously only just arrived on migration."

RUFOUS-WINGED BUSH LARK

Mirafra assamica Horsfield, ASSAM
SUBSPECIES : *assamica* Horsfield, ASSAM

IDENTIFICATION. Plate XIII, fig. 2, p. 276. Length 6 inches. Easily recognised by pinkish upper surface of the wings in flight, and distinguished from the preceding species by brown outer tail-feathers.
VOICE. A single high-pitched note uttered at intervals, and a thin, high-pitched, shivering note or trill are notes I recorded at Mandalay ; it also has a sweet song, uttered from a bush or tall patch of grass, or as it flutters a little way into the air and then sails down on outstretched wings (not the true soaring flight of a skylark, though it occasionally soars quite high).
HABITS AND FOOD. This is a characteristic bird of the dry zone of Central Burma, where its favourite habitat is dry scrub-jungle near cultivation. It is a tame and familiar bird and is easily observed on the outskirts of towns such as Mandalay ; it feeds on the ground, but perches freely on bushes and small trees. In display the male walks slowly sideways, shivering his wings, or runs about excitedly, bowing and singing (Roseveare).
NEST AND EGGS. Breeds from April to early October, the nest being built on the ground, usually concealed by a tuft of grass or a clod of earth. The eggs, 2 or 3 in number, are whitish with freckles of yellowish- or purplish-brown, tending to collect in a zone at the larger end.
STATUS AND DISTRIBUTION. Most of India, Ceylon, Burma, and Siam.

In Burma it was recorded by Hopwood as very common and resident in Arakan, and is common throughout the dry zone of Central Burma from the southern end of the Katha district to the southern end of the Prome district. Wickham describes it as found sparingly at low elevations in the hills, in dry and arid land. The specimen collected by Armstrong at " Kyouk Phyon " in Tenasserim, and referred by Stuart Baker to *marionae*, is *assamica* (Kinnear *in litt.*).

Family ZOSTEROPIDAE

WHITE-EYES

This is a large family, spread over Africa, southern Asia and Australia, the members of which are small arboreal birds, chiefly olive-green and yellow in colour, and easily recognised by a conspicuous white ring round the eye.

INDIAN WHITE-EYE

Zosterops palpebrosa Temminck and Schlegel, CUTTACK, ORISSA
SUBSPECIES : *palpebrosa* Temminck and Schlegel, CUTTACK, ORISSA
mesoxantha Salvadori, KARENNI
auriventer Hume, TAVOY
joannae La Touche, MENGTSZ, S-E. YUNNAN

IDENTIFICATION. Plate XIII, fig. 4, p. 276. Length 4½ inches. Bright yellow under tail-coverts and sharp little black bill are noticeable features, in addition to the white eye-ring.
VOICE. A rather monotonous querulous *chee-chee-chee* or *tseer-tseer*, like the cheeping of a one-day-old chick, is constantly uttered by the members of a party and at once attracts attention. In the breeding season the males sing freely. The song is described as short and rather pretty, beginning so low that it is almost inaudible and increasing in volume until it is almost harsh at the end, and repeated again and again without variation.
HABITS AND FOOD. The white-eye is purely arboreal, found in active parties hunting busily through the foliage, seldom remaining long in any particular tree and never descending to the ground. It frequents all types of country where there is sufficient tree growth and is partial to gardens and hill forests close to cultivation, where it finds a mixture of trees and flowering shrubs and consequently a variety of food ; for it feeds on insects, weevils, ants and their eggs

and larvae, and on vegetable matter such as small buds, seeds, and wild fruits.

NEST AND EGGS. Breeds in Maymyo from mid-April to mid-July, two broods being reared as a rule. The nest is a delightful little cup suspended, like an oriole's nest, from two twigs in a shrub or tree, and composed usually of fine grass stems coated with cobwebs. The eggs, 2–4 in number, are pale blue without markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is found over most of Burma in the foothills, and higher hills to 5,000 feet, but in Southern Burma it seems to be rare at low elevations, the only records being from Thayetmyo and Pegu (possibly a few birds drop down from the hills in the cold weather). In Yunnan there are several records from near Tengyueh.

JAPANESE WHITE-EYE

Zosterops japonica Temminck and Schlegel, JAPAN
SUBSPECIES: *simplex* Swinhoe, S. CHINA (=*peguensis* Stuart Baker)

IDENTIFICATION. Probably not distinguishable from *palpebrosa* in the field. The throat and under tail-coverts are a very pale lemon yellow, the upper-parts are greener, less yellow, and the size is larger.

NEST AND EGGS. Several naturalists have described the breeding of this bird in Burma, but the species has been confused with *palpebrosa*.

STATUS AND DISTRIBUTION. Breeds in the eastern part of the oriental region, and is a winter visitor to northern Siam and eastern and southern Burma; it has been recorded from Pegu, the Shan States, and northern Tenasserim.

YELLOW-BELLIED WHITE-EYE

Zosterops siamensis Blyth, TENASSERIM

IDENTIFICATION. Easily recognised by having the whole under-parts bright yellow. It seems partial to mangrove swamps, but also ascends the hills to 5,000 feet, and is sometimes seen solitary.

NEST AND EGGS. Have been taken in Tenasserim in late March and on the 13th May; they are typical of the family.

STATUS AND DISTRIBUTION. Although named *siamensis*, Deignan informs me that it has not been recorded from Siam. In Burma it occurs in the Chin Hills, lower Chindwin, on Mt. Popa, in Southern Burma, Karenni and northern Tenasserim, but seems to be scarce throughout its range, although Oates described it as very abundant from Rangoon to Pegu.

CHESTNUT-FLANKED WHITE-EYE

Zosterops erythropleura Swinhoe, SHANGHAI

IDENTIFICATION. Chestnut patches on the flanks diagnostic.

STATUS AND DISTRIBUTION. A Manchurian species, visiting eastern Burma in

winter. It is not uncommon in flocks in the Karen Hills (Thandaung) and Karenni, from the 2nd November to April, and has also been recorded from Kengtung.

Family NECTARINIIDAE

Sub-family NECTARINIINAE

SUNBIRDS

From their habits and the brilliant metallic plumage of the males the sunbirds are an easy group to recognise; the females are dull olive-green or yellow, and the females of a number of different species resemble each other very closely. The tongue is long and almost tubular in structure and capable of extrusion beyond the bill, which in most species is long, slender and markedly curved.

The sunbirds feed largely at the blossoms of various flowering trees and shrubs, including coconut palms (which are almost always in flower), taking from them not only the nectar, but also the various small insects that they attract, and in return undoubtedly assisting to pollinate many species. They usually perch on the twigs and stems, flitting actively with shrill call-notes from flower to flower and often hovering on rapidly vibrating wings in front of a blossom, but only for a short time. When perched on a branch they have a curious habit, which they share with the spiderhunters, of rhythmically stretching and contracting their necks and at the same time swaying the body from side to side.

I do not know whether Burma's rhododendrons or her sunbirds are the more beautiful, but I do know that a sight of the two together is sufficient reward for many a day of arduous travel; if you would see a vision that will remain fresh and vivid in your memory to your dying day, take the trail to that little-known but lovely corner of Burma, the Panwa pass, and spend a day or two watching *Aethopyga gouldiae* sipping at the flowers of *Rhododendron delavayi*, or travel yet further and watch *Aethopyga nipalensis* at some of the lovely rhododendrons that adorn the Adung valley.

The various species all build much the same type of nest. It is usually found hanging beneath the leaves at the end of a branch, and is a pear-shaped or oval structure with a small round or oval entrance at one side, often sheltered by a projecting porch. Fibres,

rootlets and vegetable down are the chief materials used, some species favouring one more than the others, and cobwebs are extensively used to bind the structure together. The interior of the nest is usually lined with down.

The local names of these birds are as follows :—Burmese : *nan-pyi-sok* or *pan-yi-sok* (nectar-sucker) ; Chinghpaw : *htingra-kai-set* or *shingra-tung*.

KEY TO THE GENUS AETHOPYGA (Males Only)

This genus contains a group of sunbirds, the males of which have yellow rumps and the central tail-feathers lengthened and narrow on the terminal halves. Both sexes have long slender bills, well curved downwards. The females cannot be differentiated with any certainty in the field, but the following key may help to distinguish the males ; it should be remembered that they lose much of their metallic colouring when moulting and are then often puzzling to identify.

A. Chin and throat crimson . . . . . *A. siparaja*
B. Chin and throat dark, not crimson.
  a. Central tail-feathers red . . . . . *A. ignicauda*
  b. Central tail-feathers green . . . . . *A. nipalensis*
  c. Central tail-feathers purple-blue
    a^1. Plumage mainly black . . . . . *A. saturata*
    b^1. Plumage brightly coloured . . . . . *A. gouldiae*

YELLOW-BACKED SUNBIRD

Aethopyga siparaja (Raffles), W. SUMATRA
SUBSPECIES : *cara* Hume, TENASSERIM
seheriae (Tickell), BORABHUM, BENGAL

IDENTIFICATION. Plate XIII, fig. 5, p. 276. Length 5 inches. See key. The female is olive-green. At certain times of the year the male loses most of the crimson colour on head and breast, but as this is the only low-elevation member of the genus, it is unlikely to be confused with other species.

VOICE. The usual note is a sharp trill, surprisingly loud, uttered on the wing.

HABITS AND FOOD. Those of the family. In the garden it visits cannas and cherry blossom.

NEST AND EGGS. Have been taken at Maymyo by Osmaston and Wickham, who describes how a pair bred in three successive years in a creeper on his house ; he also mentions a nest found in the

jungle hanging from a bracken frond, and described the eggs he took as white with dark spots at the larger end. Hopwood took nests in January and February at Tavoy. This bird is frequently cuckolded by the emerald cuckoo.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is found throughout the plains and foothills of Burma where there is sufficient tree growth, and ascends the hills to about 4,500 feet; in western Yunnan it goes up to 6,000 feet.

[NOTE.—"It is probable that some of the populations of easternmost Burma must be included with *tonkinensis* Hartert=*viridicauda* Rothschild," Mayr, *Ibis* 1938, p. 302.]

FIRE-TAILED SUNBIRD

Aethopyga ignicauda (Hodgson), NEPAL
SUBSPECIES: *flavescens* Stuart Baker, MT. VICTORIA
exultans Stuart Baker, SHWELI–SALWEEN DIVIDE

IDENTIFICATION. Length 5 inches. See key. The male has an eclipse plumage during the winter. In breeding plumage the crimson nape, back, upper tail-coverts, and tail are diagnostic. Heinrich describes the song as consisting of a very high, sharp piping, the two last notes of which are somewhat slowed down, *tsitsitsitsi . . tsi . . . tsi . . . . tsi.*

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan. In Burma it is found on Mt. Victoria and the mountains of North-East Burma. Cranbrook found it very common amongst the scrub rhododendron, juniper, etc. above the tree line in the Adung valley at 13,000 feet. It is not uncommon further south, the lowest records being from Punlumbum (4,000 feet) and Htawgaw (5,500 feet).

MRS. GOULD'S SUNBIRD

Aethopyga gouldiae (Vigors), HIMALAYAS
SUBSPECIES: *gouldiae* (Vigors), HIMALAYAS (= *isolata* Stuart Baker)
dabryi (Verreaux), TATSIENLU, S-W. SZECHWAN

IDENTIFICATION. Length 6 inches. See key. The eye is usually too dazzled by this bird's beautiful colouring to take in the details, with metallic blue and crimson on the head and breast, yellow rump and under-parts; the female is inseparable from the female of *saturata* in the field.

NEST AND EGGS. Described by Robinson (1924*a*).

STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan, and through the higher hills of Burma to Mt. Mulayit in Tenasserim. It is generally distributed from 4,000 feet upwards and reaches 12,000 feet in Yunnan; it is not uncommon at Mogok, Taunggyi, and Thandaung, but has not been observed at Maymo.

BLACK-THROATED SUNBIRD

Aethopyga saturata (Hodgson), NEPAL
SUBSPECIES : *assamensis* (McClelland), SADIYA
sanguinipectus Walden, KAREN HILLS
petersi Deignan, TONGKING

IDENTIFICATION. See key. The male appears almost black in the field except for the abdomen (*sanguinipectus* has a broad yellow rump band and the breast yellow streaked with red). The female is olive-green. Found in all types of hill forest, but prefers evergreen, and in the middle of the day on Nattaung was commonly seen feeding amongst the vegetation fringing the banks of shady streams.

NEST AND EGGS. Described by Robinson (1924*b*), who found a nest at Thandaung on the 24th April.

STATUS AND DISTRIBUTION. Himalayas to Yunnan and in Burma fairly common throughout the higher hills ; in northern Burma it is common in the foothills also, down to 1,000 feet.

GREEN-TAILED SUNBIRD

Aethopyga nipalensis (Hodgson), NEPAL
SUBSPECIES : *koelzi* Ripley, MISHMI HILLS
victoriae Rippon, MT. VICTORIA
karenensis Ticehurst, KARENNI

IDENTIFICATION. Length 5½ inches. See key. Can only be confused with *gouldiae*, from which it is distinguished by green crown, upper tail-coverts and tail. A bird of high elevations.

STATUS AND DISTRIBUTION. Himalayas from Garhwal to Burma and northern Siam. It is resident on Mt. Victoria, the mountains of North-East Burma and the Shan States, and Nattaung in Karenni. It is locally common (particularly in the Adung valley at 6,000 feet in February and March, and on the summit of Nattaung in April), but has not been recorded below 6,000 feet.

MACKLOT'S SUNBIRD

Nectarinia chalcostetha (Jardine), JAVA
SUBSPECIES : *chalcostetha* (Jardine), JAVA

IDENTIFICATION. Length 5½ inches. Sexes differ. The male has the chin, throat and breast metallic copper, head chiefly black, upper-parts brilliant metallic green. The female has the upper-parts olive-green, tail black broadly tipped with white, chin, throat and breast grey, remaining under-parts yellow. The note is a shrill trill. Described as frequenting evergreen forest, gardens, and rubber plantations.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim but said to be scarce.

PURPLE SUNBIRD

Nectarinia asiatica (Latham), INDIA
SUBSPECIES : *intermedia* (Hume), E. BENGAL

IDENTIFICATION. Plate XIII, fig. 7, p. 276. Length 4 inches. The male in breeding plumage is black with a metallic blue or purple gloss when seen in sunlight ; there is a brilliant tuft of crimson and yellow feathers under each wing, which is ordinarily concealed, but which projects when the bird is settled for repose and is displayed when courting. In non-breeding plumage, apparently assumed during the rains and early cold weather (up to December), he resembles the female, but retains his dark wings and also has a broad stripe of dark metallic violet from the chin to the abdomen. The female is brown above and yellow below.

VOICE. A shrill, chirping note is uttered on the wing. At times the male perches on the topmost twig of a tree with several repetitions of the sharp chirp and then breaks into a loud full song.

" A male seen in May chasing a female was calling loudly and continuously like a tailorbird, and another note recorded was a loud, harsh, monotonous whistle " (Roseveare).

HABITS AND FOOD. This minute active bird attracts notice by the boldness of its visits to the flowers that line verandahs or grow over porches or in the garden. It is equally at home in the more open parts of the teak forests, and is a typical bird of the scrub-jungles of the dry zone in Central Burma, where parties may be seen in sessamum crops in flower, on *Acacia pennata* when in bloom, and on toddy palms that are being tapped.

NEST AND EGGS. Have been taken in several areas in Burma, and eggs may be found from February to May. Wickham describes one nest suspended from a rose bush that collapsed under the weight of the second brood being reared in it and fell to the ground. Another nest, found in the Pegu Yomas, is described as resembling a *prinia's* nest in shape and size " but made of lichen, wood chips, small dead leaves, cobwebs, and caterpillar's frass ; fine grass heads projected in twisted fashion over the entrance after the manner of a munia's nest ; a tail of small leaves and cobwebs hung down below the nest ; the eggs were greyish in colour with darker markings."

STATUS AND DISTRIBUTION. Widespread in the oriental region and resident throughout Burma in the plains and foothills, and also found in the Shan States.

VAN HASSELT'S SUNBIRD

Nectarinia sperata (Linnaeus), PHILIPPINE IS.
SUBSPECIES : *phayrei* (Blyth), ARAKAN

IDENTIFICATION. Length 4 inches. Sexes differ. The male has the forehead to nape metallic golden-green ; rest of upper-parts black with metallic purple-blue gloss towards the tail ; chin and throat metallic amethyst ; breast deep maroon ; rest of under-parts black. A bird of brilliant metallic hues to which no description can do justice. The female is chiefly olive-green above and dull yellow below. Frequents gardens, coconut groves, thin forest, and mangrove swamps.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found as far north as Assam ; it is not uncommon in Arakan and Tenasserim, but rare in the Pegu Yomas. Davison found it very common from Mergui to Victoria Point.

YELLOW-BELLIED SUNBIRD

Nectarinia jugularis (Linnaeus), PHILIPPINE IS.
SUBSPECIES : *flammaxillaris* Blyth, TENASSERIM

IDENTIFICATION. Length 4½ inches. Sexes differ. The male is a very handsome little bird, with a maroon band on the breast, the throat metallic purple, and the remaining under-parts bright yellow. Female not distinguishable from that of *asiatica*. The mating call of the male resembles the word *pease* uttered eight times on a descending scale and is repeated incessantly, while the call of the female is *tseep* or *sweet*, also uttered persistently. Frequents gardens and open forest.

NEST AND EGGS. In Southern Burma eggs were taken by Oates in March, July and August, while Smith found a nest under construction in late September ; the female seemed to do all the work. Hopwood states that in southern Tenasserim the breeding season is from December to March, and that the nest is often built in gardens ; trees such as limes and guavas or a prickly bush are favourite sites, and the eggs are usually 2 in number.

STATUS AND DISTRIBUTION. Widespread in the eastern part of the oriental region, and not found west of Burma ; it has been recorded from southern Arakan, Central Burma (Mandalay district and Mt. Popa), Southern Burma (Pegu Yomas and plains), Shan States (at low elevations, probably 3,000 feet, according to Wickham), and Tenasserim ; it no doubt occurs also in the Karen Hills and Karenni, but has not been recorded.

PURPLE-RUMPED SUNBIRD

Nectarinia zeylonica (Linnaeus), CEYLON

IDENTIFICATION. Length 4 inches. General colour metallic purple, with the under-parts from the breast bright yellow ; back dull crimson.

STATUS AND DISTRIBUTION. Ceylon and Peninsular India; reported by Christison to be fairly common in Arakan.

BLUE-NAPED SUNBIRD

Nectarinia hypogrammica S. Müller, SUMATRA
SUBSPECIES: *lisettae* Delacour and Jabouille, ANNAM
nuchalis Blyth, SINGAPORE

IDENTIFICATION. Length 5½ inches. Sexes differ, but both have streaked under-parts and an almost straight bill. The male has a collar on the hind-neck and the rump and upper tail-coverts metallic blue; rest of upper-parts olive-green; tail black, the outer feathers tipped white. A bird of evergreen forest, sometimes entering gardens.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, recorded from the Upper Chindwin (by the Vernay expedition), Bhamo, Mandalay district, and southern Tenasserim, with a doubtful record from Akyab. It is curious how no one has observed it in Southern Burma, the Shan States or Karen Hills, where (judging by its distribution) it presumably occurs.

RUBY-CHEEKED SUNBIRD

Anthreptes singalensis (Gmelin), JAVA–MALACCA
SUBSPECIES: *interposita* Robinson and Kloss, PENINSULAR SIAM
assamensis Kloss, CACHAR, ASSAM

IDENTIFICATION. Length 4 inches. Sexes differ. The name is derived from the colour of the cheeks and ear-coverts, but they are not always conspicuous in the field. The male appears black above but is a brilliant metallic green in sunlight, the throat and breast are rusty, and the remaining under-parts olive-yellow. The female is green above with black wings and tail and similar to the male below, but duller and paler. When flying from one bush to another the call is a shrill and rather loud chirp. A small active sunbird of the plains and foothills, found chiefly in moist and evergreen forests, occasionally entering gardens and compounds; it is typically seen hunting amongst flowering climbers along the banks of streams where the vegetation is luxuriant. Davison nearly always observed it in flocks of 5–10 birds, moving and working together in concert like a flock of tits or white-eyes, unlike the other sunbirds which sometimes collect together on one tree but do not behave as a flock.

NEST AND EGGS. Described by Oates from Southern Burma, where it breeds from mid-May to July, two broods probably being reared. The nest is a typical sunbird's nest, a pear-shaped domed affair with a porch over the entrance, and the eggs, usually 2 in number, are cream in colour much mottled and clouded with purplish-grey.

STATUS AND DISTRIBUTION. A Malaysian species, extending along the Himalayan foothills to Sikkim. It is probably thinly distributed throughout the moist and evergreen forests of Burma at low elevations but has not been recorded from any of the hill areas; Hume considered its headquarters to be in Southern Burma and Tenasserim.

PLAIN-THROATED SUNBIRD

Anthreptes malacensis (Scopoli), MALACCA
SUBSPECIES : *malacensis* (Scopoli), MALACCA

IDENTIFICATION. Length 5 inches. Sexes differ. The male has the upper-parts metallic purple-blue ; sides of the head greenish-yellow ; chin and throat cinnamon-brown with a purple stripe on each side ; remaining under-parts bright yellow. The female is olive-green above and yellow below. Davison reported it as rare from Amherst to Mergui, but " southwards from Mergui it is one of the most common of all the sunbirds, occurring in numbers in every garden and coconut plantation, amongst the mangroves that fringe the shores, and almost wherever flowers are to be seen ; only it seems to shun the denser portions of the forest and the dense scrub-jungle. Both this species and *hypogrammica* differ somewhat from the other sunbirds in feeding more largely on insects and less on nectar, and in making more use of their feet and less of their wings when moving about among the flowers and foliage. The male of this species occasionally utters a feeble song, a few twittering notes, but very distinctly more of a song than the chirruping of an *Aethopyga*."
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found in Arakan and Tenasserim from Amherst southwards. Hume noted that " it seems to me to be a sea-coast-loving bird, and hence probably does not get above Amherst, the most northerly point on the Tenasserim coast to which the pure sea extends ; above that the whole head of the Gulf of Martaban is just a great common estuary of a number of large rivers. Again, the whole southern coast of Pegu is a mere network of the mouths of the Irrawaddy, and it is not until you round the corner at Cape Negrais, that you get real pure sea again, and not till then that you again meet with this pretty species. Such at least is my present theory, and I propound it *tamquam valeat*."

SHELLEY'S SUNBIRD

Anthreptes rhodolaema Shelley, MALACCA
SUBSPECIES : *rhodolaema* Shelley, MALACCA

IDENTIFICATION. Length 5 inches. Differs from the preceding species in having the sides of the head rufous.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim but said to be scarce.

PLAIN-COLOURED SUNBIRD

Anthreptes simplex S. Müller, SUMATRA

IDENTIFICATION. Length 4½ inches. Sexes differ. In the male only the forehead is metallic, the rest of the plumage being olive-green to olive-yellow, and in the female the forehead is not metallic. Frequents mangroves and betel palms along the coast and said to be more of an insect-eater than a honey-sucker.

NEST AND EGGS. A nest taken by Hopwood on the 17th March at Maungmagan in Tenasserim resembled a munia's nest with no porch over the entrance, and was made of grass and fibres with the ends sticking out in all directions and lined with thickly felted down.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim. Davison considered it to be a very rare bird.

Sub-family ARACHNOTHERINAE

SPIDERHUNTERS

The spiderhunters are distinguished from the sunbirds by their generally larger size, relatively longer bills, and the non-metallic plumage of the males.

YELLOW-EARED SPIDERHUNTER

Arachnothera chrysogenys (Temminck), JAVA

IDENTIFICATION. Length 7 inches. Distinguished from the next species by smaller size, a short supercilium, and a tuft of brilliant yellow feathers on the sides of the head.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim as far north as Mergui, chiefly in gardens and villages.

[NOTE.—*copha* Oberholser, SUMATRA, and *intensiflava* Stuart Baker, PENINSULAR SIAM, are doubtfully separable.]

STREAKED SPIDERHUNTER

Arachnothera magna (Hodgson), NEPAL
SUBSPECIES : *magna* (Hodgson), NEPAL
aurata Blyth, PEGU

IDENTIFICATION. Plate XIII, fig. 6, p. 276. Length 7 inches. The orange feet are noticeable in the field.

VOICE. The usual note is a loud musical trill, uttered both on the wing and from a perch, and can be heard from a great distance ; a continuous loud and rather metallic *chip-chip-chip-chip* is also kept up as it hunts about.

HABITS AND FOOD. Habitual noisiness and sunbird-like actions draw attention to this bird, which is not uncommon in the teak forests of the Pegu Yomas, and also frequents oak and evergreen forests in the higher hills ; it is attracted to village gardens and the compounds of

forest bungalows by flowering trees and shrubs, and has been observed probing the flowers of a papaya tree in full bloom. In the Kachin hills it is particularly fond of plantain gardens and the wild plantains that grow up in road clearings. It feeds to some extent on insects and spiders, which it seizes from their webs, but Hume believed their staple food to be nectar.

NEST AND EGGS. Have been taken by Mackenzie in the Pegu Yomas in April, July and August. The nest is fastened to the under side of a large leaf, plantain leaves being preferred. It is compactly made of fibres and skeleton leaves very strongly bound together with cobwebs and suspended by numerous little threads ; some nests have a scanty lining of vegetable down. The eggs, 2 or 3 in number, vary greatly in colour, but most appear a uniform chocolate-brown. This species is frequently cuckolded by *Cuculus sparverioides*, which lays a similar type of egg.

STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan, and throughout the forests of Burma to 6,000 feet. Wickham described it as very local in the Shan States, no doubt owing to the lack of suitable forest over most of the area. Very rare in Tenasserim, but Davison obtained a single specimen at Tavoy.

GREY-BREASTED SPIDERHUNTER

Arachnothera affinis (Horsfield), JAVA
SUBSPECIES : *modesta* (Eyton), MALACCA

IDENTIFICATION. Length 7 inches. Distinguished from the preceding species by absence of streaks on the upper-parts.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found throughout Tenasserim as far north as Mt. Mulayit, but rare.

LITTLE SPIDERHUNTER

Arachnothera longirostris (Latham), ASSAM
SUBSPECIES : *longirostris* (Latham), ASSAM

IDENTIFICATION. Length 6 inches. Upper-parts unstreaked olive-green, chin and throat greyish, under-parts yellow ; legs blackish. The ordinary notes are a single bleat, uttered on the wing, and a *chat-chat-chat-chat* uttered frequently when feeding ; a restless noisy bird like *magna*, but the flight is perhaps more direct. Hume noted that " Davison always found it in Tenasserim as elsewhere most numerous in plantain gardens, where it may be seen generally upside down clinging to the purple bract leaves of the young plantain bunches, its head turned up inside the bract, and thus hidden from sight, busily sucking the nectar from the inflorescence concealed beneath the purple

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PLATE XIII

sheath." Davison also " found it not uncommon in coconut plantations, and the undergrowth on the outskirts of forest, and in scrub-jungle."
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and also in Burma; Hume described it as rather common throughout Tenasserim; elsewhere it seems to be rather rare but is found up to 5,000 feet. There is one record from Yunnan (Hokow).

[NOTE.—*antelia* Oberholser, PENINSULAR SIAM, is doubtfully separable.]

Family DICAEIDAE

FLOWERPECKERS

The flowerpeckers are small birds that resemble the sunbirds in habits and appearance, but in general are distinguished by their shorter and less curved bills, stumpy tails and minute size. Some species have brightly coloured males with metallic plumage and dull-coloured females, whereas others have both sexes similar and plain-coloured.

SCARLET-BACKED FLOWERPECKER

Dicaeum cruentatum (Linnaeus), BENGAL
SUBSPECIES: *cruentatum* (Linnaeus), BENGAL
ignitum (Begbie), MALACCA
siamense Kloss, E. SIAM

IDENTIFICATION. Plate XIII, fig. 8, p. 276. Length 3½ inches. The under-parts are buff in both sexes. The steel-blue gloss on the wings of the male is sometimes conspicuous. The female is olive-brown above, the wings and tail darker with a patch of crimson on the rump. A tiny, stumpy bird with a short tail and bill, keeping much to the tree-tops, with a strong and swift, though dipping and erratic, flight.
VOICE. This is a noisy bird and a stream of chicking, staccato notes, *tchik-tchik-tchik*, issuing from a tree-top or as the bird flies from one tree to another, frequently draws attention to its presence. Other notes are a loud, shrill chirp and a constant twitter when feeding.
HABITS AND FOOD. This little bird frequents the tree-tops in forest, though also visiting gardens and cultivation in which there are trees or shrubs; it is partial to the masses of parasitic plants (*Loranthus*)

that grow on some trees and look like bunches of mistletoe. Small insects form its main food supply, varied with small berries and seeds, especially those that are enclosed in jelly-like substances. It is usually seen in pairs or family parties.

NEST AND EGGS. Have been taken by Oates in Southern Burma in March and April. The nest is cunningly concealed under the drooping leaves of a tree, mango trees often being chosen, and is usually high up ; it is a tiny egg-shaped affair of cotton-down, held together with cobwebs and strengthened where attached to the supporting twig by fine strips of grass or rootlets. The eggs, 2 or 3 in number, are greyish-white without markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Nepal ; not in Yunnan. It is a common bird throughout Burma in the plains and foothills, ascending to 4,000 feet.

ORANGE-BELLIED FLOWERPECKER

Dicaeum trigonostigma (Scopoli), MALACCA
SUBSPECIES : *rubropygium* Stuart Baker, MERGUI

IDENTIFICATION. Length 3½ inches. Sexes differ. The male has the upper-parts deep grey-blue except for the back and rump, which are orange-red ; chin, throat and breast pale grey ; rest of under-parts bright orange. The female is olive-green above with yellow on the rump ; chin, throat and breast ashy ; rest of under-parts yellow.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region, as far west as Assam. It extends from Tenasserim through the Karen Hills and Karenni to the plains of Southern Burma (one record from near Pegu) and Arakan, but is rare outside southern Tenasserim.

YELLOW-VENTED FLOWERPECKER

Dicaeum chrysorrheum Temminck, JAVA
SUBSPECIES : *chrysochlore* Blyth, ARAKAN

IDENTIFICATION. Length 3½ inches. Upper-parts olive-yellow, the primaries and tail black ; under-parts whitish with dark streaks ; under tail-coverts orange. The very short tail, rather broad wings and arrow-like flight give it a ba*-like appearance on the wing. Like other flowerpeckers it utters a series of loud staccato notes.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Nepal. It is found throughout Burma in the plains and foothills, ascending locally to 5,000 feet, but is nowhere common. Not recorded from Yunnan.

FIRE-BREASTED FLOWERPECKER

Dicaeum ignipectus (Blyth), NEPAL–BHUTAN
SUBSPECIES : *ignipectus* (Blyth), NEPAL–BHUTAN

IDENTIFICATION. Length 3 inches. Sexes differ. The male has the upper-parts metallic green-blue ; under-parts buff with a scarlet patch on the breast and below this a patch of black. The female is olive-green above and buff below. A loud clicking note is uttered on the wing and from a perch, and I have heard the male utter this note rapidly for a prolonged period from a tree-top. It keeps entirely to the tree tops and is found in all types of hill forest.
NEST AND EGGS. Have been taken by Cook at Kalaw (the 26th February) and by Mackenzie in the Upper Chindwin in April. Wickham took a nest in May on the Taunggyi crags. Trees in rocky ravines running through dense forest are often selected. The nest and eggs resemble those of other flowerpeckers.
STATUS AND DISTRIBUTION. Widespread in the oriental region and found up to 11,000 feet in Yunnan. In Burma it is distributed throughout the higher hills and is locally common, but rarely descends below 3,000 feet.

PLAIN-COLOURED FLOWERPECKER

Dicaeum concolor Jerdon, MALABAR
SUBSPECIES : *olivaceum* Walden, KAREN HILLS

IDENTIFICATION. Length 3 inches. A tiny olive-green bird, buff below, with a dark bill. Usually seen in pairs, which attract attention by their restless activity. It utters the usual twitter of the family and a constant *chip-chip-chip* on the wing.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region to the western coast of India, and goes up to 11,000 feet in Yunnan. Although not listed by Wickham it is widely but thinly distributed in Burma, having been recorded from Arakan, the Upper Chindwin, Bhamo district, Mogok foothills, Mandalay district, including Maymyo, Karenni, and Tenasserim ; it probably occurs elsewhere but is so small that it has been overlooked. Christison found it common on the coastal islands of Arakan, from Myebon to Ruywa.

TICKELL'S FLOWERPECKER

Dicaeum erythrorhynchos (Latham), BOMBAY
SUBSPECIES : *erythrorhynchos* (Latham), BOMBAY

IDENTIFICATION. Length 3 inches. Upper-parts ashy-olive, the wings and tail darker ; under-parts ashy-white ; bill yellowish. Typically not a forest bird, breeding in open cultivated country round towns and villages.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in India. In Arakan " not common, a few pairs seen in May in gardens " (Christison) ; in the Upper Chindwin, Baillie found it common ; Rippon obtained one in the Southern Shan States ; Blyth described it (1875) as " exceedingly abundant in the jungles near

Moulmein " but Davison never saw it during four years of constant collecting, and Bingham obtained only one in Tenasserim.

THICK-BILLED FLOWERPECKER

Dicaeum agile (Tickell), BORABHUM, BENGAL
SUBSPECIES: *modestum* (Hume), S. TENASSERIM

IDENTIFICATION. Length 4 inches. Upper-parts olive-green; under-parts yellowish; distinguished from other olive-green flowerpeckers by larger size and short thick bill. Mainly a forest bird.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Bengal. In Burma the only records are from Maymyo, Pegu Yomas (east side), Sittang valley near Pegu, Shan States, and Tenasserim. It is found up to 4,000 feet but seems to be rare.

YELLOW-BELLIED FLOWERPECKER

Dicaeum melanozanthum Hodgson, NEPAL

IDENTIFICATION. Length 4½ inches. Sexes differ. The male has the upper-parts black, centre of chin and throat and the breast white, remaining under-parts bright yellow. The female has the upper-parts olive-brown and the under-parts similar to the male but paler and duller. Said to make sallies from a perch.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Yunnan, where Forrest obtained it on the Shweli–Salween divide, and northern Siam. Rippon found it not uncommon in the Southern Shan States from 5,300–8,000 feet and breeding on Loi Mai in April. It was also recorded from the Southern Shan States by Bingham but seems to have eluded every other observer in Burma. It will probably turn up one day in northern Burma.

CRIMSON-BREASTED FLOWERPECKER

Anaimos percussus Temminck, JAVA
SUBSPECIES: *ignicapillus* (Eyton), MALACCA

IDENTIFICATION. Length 4 inches. Sexes differ. The male has the upper-parts dull blue with a crimson patch on the crown; under-parts yellow with a crimson patch on the breast. The female has the upper-parts green with an orange patch on the crown; under-parts dull ashy-green, yellow towards the tail.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species found in southern Tenasserim.

YELLOW-THROATED FLOWERPECKER

Anaimos maculatus (Temminck), BORNEO
SUBSPECIES: *septentrionalis* Robinson and Kloss, PENINSULAR SIAM

IDENTIFICATION. Length 4 inches. Sexes differ. The male has the upper-parts green with a fiery red patch on the crown; under-parts yellow heavily streaked

on the breast. The female resembles the male but has the patch on the crown yellow.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species found in southern Tenasserim as far north as Mergui.

Family PITTIDAE

PITTAS

The pittas are plump forest birds with long legs and short tails that live on the ground and obtain their food by scratching about amongst the leaves and hunting for worms, lizards, ants, small beetles, and insects of all kinds ; though they can fly quite well, they usually progress by immense bounds, often several feet long, repeated at great speed ; this habit makes them easy to recognise in the field. Some pittas keep entirely to the densest evergreen forests, whereas other species are found also in bamboo jungle and *ponzo* ; in this cover they are easily overlooked, but their loud, double whistles often betray them. The nest is a large ball-like structure, often elongated like a Rugby football, placed on or near the ground with the entrance at the side ; it is constructed of bamboo leaves, grass, and roots, carelessly and untidily assembled, and may have a lining of fibres and rootlets. The eggs are white to pale cream in ground-colour, speckled and streaked with various shades of red and purple. Burmese names applicable to all pittas are the following : *taung-ngon* (hill quail), *mye-ngon* (ground quail), or *mye-kon*.

PHAYRE'S PITTA

Pitta phayrei Blyth, TOUNGOO

SUBSPECIES : *phayrei* Blyth, TOUNGOO

IDENTIFICATION. Length 9 inches. Distinguished from all other pittas by having the feathers at the side of the nape long and pointed, forming conspicuous aigrettes.

NEST AND EGGS. The only nest on record was found by Bingham many years ago on the 27th April near the Karen village of Hporrlai in the headwaters of the Meple river, northern Tenasserim (not in the Karen Hills as stated by Stuart Baker, *F.B.I.*, vol. iii, p. 443). It was built on a bank covered with evergreen bushes in deep forest.

STATUS AND DISTRIBUTION. South-eastern Burma and Siam. A specimen obtained at 1,400 feet in the Upper Madaya reserved forest, Mandalay district, is the most northerly record of this species. It is listed by Wickham from the

Shan hills, and extends through the Karen Hills and Karenni to northern Tenasserim, but is rare everywhere.

BLUE-NAPED PITTA

Pitta nipalensis (Hodgson), NEPAL
SUBSPECIES: *nipalensis* (Hodgson), NEPAL

IDENTIFICATION. Length 9½ inches. Sexes differ. The male is chiefly tawny or tawny-rufous, washed with grass-green on the back, rump, and tail; the back of the crown, nape, and hind-neck are bright blue. The female has green on the hind-neck instead of blue. Frequents both dense and open forest, and round Myitkyina is partial to the outskirts of teak forest where there is a dense undergrowth of dock leaves mixed with *bizat*. It is said to have a magnificent double whistle, uttered both on the ground and when on a tree, and most often heard in the early mornings and late evenings.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayan foothills from Nepal to northern Burma; doubtful in Yunnan. Judging by the number obtained by the Vernay Chindwin expedition it must be very common in northern Burma, and extends through the western hills to Arakan and the Arakan Yomas. It goes up to 6,000 feet.

[NOTE.—Burma birds are intermediate in size between *nipalensis* and *heudeei*, the form in Tongking, *vide Ibis*, 1938, p. 303.]

FULVOUS PITTA

Pitta oatesi (Hume), E. PEGU YOMAS
SUBSPECIES: *oatesi* (Hume), E. PEGU YOMAS

IDENTIFICATION. Length 10 inches. Resembles the preceding species very closely, but is slightly larger and has no blue at all on the nape and hind-neck. Deignan describes the note as "a melodious *bong-bong*, nearly always answered at once by a similar call at a lower pitch," commonly heard on moonlight nights.
NEST AND EGGS. Have been taken near Bassein in April and May, and in Tenasserim in March and April.
STATUS AND DISTRIBUTION. Burma, Siam, and Indo-China. Except for a single specimen obtained by the Vernay-Cutting expedition in the Myitkyina district, all records are from the south: Pegu Yomas (east side), Bassein, Rangoon, Karen Hills, Southern Shan States, Karenni, and Tenasserim; Davison described it as excessively numerous in thin tree jungle at the base of Mt. Mulayit, but it does not seem to be common anywhere else in Burma.

GREATER BLUE PITTA

Pitta caerulea (Raffles), SUMATRA
SUBSPECIES: *caerulea* (Raffles), SUMATRA

IDENTIFICATION. Length 11½ inches. Much the largest of the pittas, and easily recognised by the bright blue upper-parts and tail, and tawny under-parts.

Described by Davison as extremely shy and unlike other pittas in that when disturbed it rises and flies off low but rapidly for about 200 yards.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Tavoy. Davison considered it to be a summer visitor, arriving in late March and leaving in July.

LESSER BLUE PITTA

Pitta cyanea Blyth, ARAKAN
SUBSPECIES : *cyanea* Blyth, ARAKAN

IDENTIFICATION. Length 9 inches. Sexes differ. The male has the top of the head and the nape scarlet ; a coronal streak, a band through the eyes, and moustachial streaks black ; sides of the head greenish-grey ; rest of plumage blue, boldly marked with black on the under-parts. The female is more brown and less blue. Davison found it impossible to distinguish its whistle from that of *oatesi*. It keeps to evergreen and moist forests and feeds chiefly on ants and termites.

NEST AND EGGS. Have been taken by Bingham at Kawkareik in May.

STATUS AND DISTRIBUTION. Oriental region (excluding Malaysia) as far west as Bhutan. It has been recorded from Arakan, Chin Hills(?), Arakan Yomas, Pegu Yomas, Southern Shan States, Karen Hills, and Tenasserim as far south as Tavoy. It is mainly a bird of the plains and foothills but ascends to 6,000 feet, and in Burma it is a local migrant of uncertain status.

BLUE-WINGED PITTA

Pitta moluccensis P. L. S. Müller, TENASSERIM
SUBSPECIES : *moluccensis* P. L. S. Müller, TENASSERIM
megarhyncha Schlegel, BANKA

IDENTIFICATION. Plate XIII, fig. 10, p. 276. Length 8 inches. A black coronal streak meets the black bands through the eyes on the nape and forms a collar on the hind-neck. When flying away it appears dark blue with conspicuous white wing-patches.

VOICE. Davison noted that both subspecies " have a fine, clear, double note, which may constantly be heard in the morning and evening ; they are decidedly noisy and often call all day, and on moonlight nights a great part of the night also."

HABITS AND FOOD. It is a typical bird of the teak forests of the Pegu Yomas during the rains, and keeps less exclusively to deep forest than some pittas ; I have seen it on the outskirts of villages in scrub-jungle and Davison noted that " it seems to frequent most commonly thin tree jungle where there is not much underwood, and the mangrove swamps, but also occurs abundantly in gardens and plantations." Though not gregarious, a number of birds often

collect together, and Davison noted that "they are very fond of perching on trees; you may continually see them high up upon high trees calling vociferously. They are not at all wild or shy birds; they feed freely on ants and their larvae, all insects, grubs, and land shells."

NEST AND EGGS. Have been taken in Southern Burma and Tenasserim by a number of collectors, from the 17th April to the 5th August. The nest is often built on the bank of a forest stream, and the eggs are more richly and profusely coloured than those of other pittas.

STATUS AND DISTRIBUTION. Widespread in Africa, southern Asia, and Australia. The subspecies *moluccensis* has been recorded from southern Arakan, the Pegu Yomas, Karen Hills, Southern Shan States, and Tenasserim; most birds are summer visitors only, and Davison noted the annual influx round Tavoy towards the end of April, the birds remaining abundant till July or later; at the same time he thought a few were permanent residents in the mangrove swamps of southern Tenasserim, and noted them from January to July. I have seen it in the Pegu Yomas in winter, but they are much more abundant in the rains. Wickham records a pitta on the crags at Taunggyi, which he thought was a bird of this species on passage. The subspecies *megarhyncha* accompanies *moluccensis* to Tenasserim, Southern Burma, and Arakan, but is much rarer; longer bill (1·6 inches from the gape as compared with 1·2 inches) separates it.

GARNET PITTA

Pitta granatina Temminck, BORNEO
SUBSPECIES: *coccinea* Eyton, MALACCA

IDENTIFICATION. Length 7 inches. Easily recognised by small size, scarlet crown and nape, purple upper-parts, blackish throat and breast and remaining under-parts deep crimson.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Mt. Nwalabo.

HOODED PITTA

Pitta sordida Müller, PHILIPPINE IS.
SUBSPECIES: *cucullata* Hartlaub, MALACCA

IDENTIFICATION. Length 8 inches. Forehead to nape rufous-brown; rest of head, sides of neck, throat, and a broad collar on the hind-neck black; back

and rump dark green ; upper tail-coverts bright blue ; tail black tipped with dull blue ; breast pale green ; under tail-coverts crimson. Less restricted in its habitat than other pittas, and frequents scrub-jungle and grasslands as well as evergreen forest. It has a habit of turning up in unexpected places ; one flew into an office in Myingyan town on the 29th September and another was found on the 7th April in a compound in Shwebo civil station being mobbed by crows.

NEST AND EGGS. Hopwood and Mackenzie obtained a clutch of 3 eggs in the northern Chin Hills in June, and Davison found a nest on the 12th July at Amherst.

STATUS AND DISTRIBUTION. From Nepal through Assam and Burma to Malaya. It has been recorded from Arakan, the Chin Hills, Bhamo district (Salvadori), Central Burma (including one at 3,000 feet in the crater of Mt. Popa), the Pegu Yomas (east side), Karen Hills, Shan States, and Tenasserim. It is mainly a bird of the foothills and is nowhere common ; in Southern Burma it was observed by Oates only from April to August, and in Tenasserim by Davison from April to July.

GURNEY'S PITTA

Pitta gurneyi Hume, S. TENASSERIM

IDENTIFICATION. Length 8½ inches. Black under-parts from the breast distinguish the male from other pittas, and close yellow and black barring on the breast and flanks distinguish the female. Davison records that " the note is quite that of a pitta, but yet differs notably from that of other species. When suddenly come upon or otherwise alarmed it utters a peculiar note—a sort of *kir-r-r*. One bird attracted my attention by the peculiar short double note it was uttering, quite unlike its ordinary note, and every time it uttered it, it flapped its wings and jerked up its tail. During the morning and evening they call, and may then be heard answering one another. The bird confines itself to the evergreen forests, favourite resorts being the narrow valleys lying between the hills ; these, though densely wooded, contain little or no undergrowth. It is shy and retiring, and when disturbed it hops rapidly away till it gains the cover of a tangled cane-brake or other refuge. It has a habit of jerking up its tail and dropping its wings as it hops along, which I have never observed in its congeners. It is usually found singly, occasionally a couple together."

NEST AND EGGS. " They do not breed, I think, within our limits, but go probably to Siam or into the higher portions of the hills dividing Siam from Tenasserim. Specimens dissected in April, May, and June showed no signs of breeding " (Davison).

STATUS AND DISTRIBUTION. Tenasserim and Peninsular Siam. Davison considered it to be a passage migrant through southern Tenasserim as far north as Laynah ; he noted its arrival about the 10th February, but it remained scarce until mid-April, after which it became more numerous until the break of the monsoon, when most birds rapidly disappeared ; a few remained till July.

Family EURYLAIMIDAE

BROADBILLS

This is a Malaysian family, of which nine species are found in Burma, but only five of them occur outside Tenasserim and the Karen Hills. As their name indicates, they can be recognised by their very broad bills, and most of them are beautiful birds of striking plumage. They are typically birds of evergreen forest, though one or two species frequent more open forest as well, and occasionally enter shady gardens. During the day they are lethargic, most of their feeding being done in the early mornings and evenings, and at all times they are unwary birds and show no fear of man.

The members of the family build a similar type of nest ; it is usually suspended from the tip of a branch in a shady ravine in evergreen forest, and nearly always hangs over a stream or pool of water. It is shaped like a gigantic pear with a long drawn-out neck attaching it to the supporting branch, and usually has a large porch over the entrance ; it is made of grass, leaves, moss, roots, and various other vegetable odds and ends, and is lined with green leaves. Below the nest proper hangs a long tail of oddments fastened on with cobwebs, and the outside of the nest is often decorated with lichen, cocoons, etc.

BANDED BROADBILL

Eurylaimus javanicus Horsfield, JAVA
SUBSPECIES : *pallidus* Chasen, PENINSULAR SIAM

IDENTIFICATION. Length 9 inches. Sexes differ. The name is derived from the narrow blackish band across the breast, but this is lacking in the female ; whole head and under-parts purplish-red ; upper-parts and tail black, the latter with subterminal whitish spots. Found in forests and well-wooded open country in the plains and foothills. It utters a few single notes at short intervals ending with a rolling metallic *churr-r-r* ; " one commences, then another takes it up, and then another, till you have a dozen calling in the woods around, and the note is one that can be heard a long distance." It seldom climbs or hops about the branches but seizes insects on the wing and makes short flights from one perch to another.

NEST AND EGGS. A nest was taken by Davison in Tenasserim on the 21st March. The eggs are white or creamy-white, speckled with deep purple or dark reddish-brown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim and the Karen Hills.

BLACK-AND-YELLOW BROADBILL

Eurylaimus ochromalus Raffles, SINGAPORE
SUBSPECIES : *ochromalus* Raffles, SINGAPORE

IDENTIFICATION. Length 7 inches. Easily recognised by small size, black head with a white collar round the neck, broad black band across the pink breast, and remaining plumage black and yellow. The note resembles that of the preceding species, but is " shriller and finer drawn " (Davison).
NEST AND EGGS. A nest found by Mackenzie in the Ngawun reserved forest, at the headwaters of the Little Tenasserim river, was supported in a loop of cane, and was made of moss, fungus mycelium, and skeleton leaves, with a lining of grass roots, bamboo leaves and leaf stalks. It contained two eggs resembling those of *Serilophus*.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim.

DUSKY BROADBILL

Corydon sumatranus Raffles, SUMATRA
SUBSPECIES : *laoensis* de Schauensee, N. SIAM
morator Deignan, PENINSULAR SIAM

IDENTIFICATION. Length 11 inches. Easily recognised by large size and black plumage, with a white bar on the wing and another across the ends of the tail-feathers. Bill and bare skin round eye reddish. The call is an oft-repeated mellow note, and a clear whistle is uttered as it flies from tree to tree. Frequents both dense and open forest.
NEST AND EGGS. Breeds from March to June. The nest is often very large, one found by Hopwood measuring 7 feet from top to bottom. The eggs, 2 to 4 in number, are so covered with blotches and freckles of reddish-brown that the dull cream or reddish ground-colour is almost obscured.
STATUS AND DISTRIBUTION. A Malaysian species found in Tenasserim and the Karen Hills, and ascending to 5,000 feet.

BLACK-AND-RED BROADBILL

Cymbirhynchus macrorhynchus (Gmelin), BORNEO
SUBSPECIES : *affinis* Blyth, ARAKAN
siamensis de Schauensee and Ripley, S-W. SIAM

IDENTIFICATION. Length 10 inches. Upper-parts, wings and tail chiefly black and the under-parts crimson except for a broad black band across the breast. Eye emerald green shot with gold, upper mandible blue, lower mandible yellowish, legs and feet bright blue. Said to be a familiar broadbill, frequenting gardens and the environs of towns and villages as well as evergreen forest. According to Davison, the note resembles those of *ochromalus* and *javanicus* but can be distinguished by a practised ear.
NEST AND EGGS. Breeds from March to August. The nest is typical of the family and the eggs are very variable.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim, the Irrawaddy delta, Arakan Yomas, and southern Arakan. It is a bird of the plains, not ascending the hills to any height, and is commonest on small islands and along the coast; Davison found it "excessively abundant" south of Tavoy, especially in the gardens and fruit plantations on the island of Mergui.

GOULD'S BROADBILL

Serilophus lunatus (Gould), PEGU YOMAS
SUBSPECIES: *lunatus* (Gould), PEGU YOMAS
atrestus Deignan, W. YUNNAN
intrepidus Deignan, S-W. SIAM
stolidus Robinson and Kloss, PENINSULAR SIAM

IDENTIFICATION. Length 7 inches. Sexes differ. The male has a broad black eyebrow contrasting with the ashy-rufous of the crown; upper-parts ashy-brown turning to chestnut on the rump; wings black and white; tail black with white tips to the outer feathers; under-parts grey; eye dark brown; bill blue, yellow at the base. The female differs in having a gorget of silvery-white feathers across the upper breast. The note is a soft, rather musical whistle and a low *chir-r-r* is uttered both on the wing and from a perch. In their stolid behaviour and thick-set appearance these birds somewhat resemble the shrike-babblers.

NEST AND EGGS. Two nests found near the Shweli river in April and in the Mogok foothills in June were attributed by Smith to this species "but might possibly have been those of *rubropygius*." Nests have been taken in Tenasserim by a number of collectors, from March to July, usually in clearings in evergreen forest. The nest is typical of the family, but smaller and neater than most. The eggs, 4 or 5 in number, are whitish in colour, sparsely speckled with reddish-brown, chiefly at the larger end.

STATUS AND DISTRIBUTION. Widespread in the oriental region, from Burma eastwards and southwards. In Burma it seems to be confined to the area south of the Shweli river and east of the Irrawaddy, except for Hopwood and Mackenzie's record from the Chin Hills; it has not been observed in North-East Burma, the most northerly record being a specimen obtained at 3,700 feet near Mogok.

HODGSON'S BROADBILL

Serilophus rubropygius (Hodgson), NEPAL

IDENTIFICATION. Resembles *lunatus* but has the back and crown darker with no rufous tinge. Stanford notes that "like all broadbills it shows no fear of man, and is easy to overlook when it sits, after the manner of its family, motionless and as if stupified. The bill, skin round the eyes, legs, and feet present a most remarkable contrast of colours, and in some birds I have seen the bill of four colours—dark blue, light blue, white, and green."

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. From Nepal eastwards to Assam and western Burma; it is found all over the foothills of North-East Burma, to 4,000 feet,

and extends thence west of the Irrawaddy to Arakan. There is no record from Yunnan.

[NOTE.—Reasons for treating *lunatus* and *rubropygius* as separate species are given by Garthwaite and Ticehurst (1937).]

LONG-TAILED BROADBILL

Psarisomus dalhousiae (Jameson), HIMALAYAS
SUBSPECIES: *dalhousiae* (Jameson), HIMALAYAS

LOCAL NAME. Chinghpaw: *u-sumpyi* (flute-bird), a name also applied to Hodgson's broadbill.

IDENTIFICATION. Plate XIII, fig. 9, p. 276. Length 10 inches. It is difficult in an illustration to convey the brilliance of this bird's plumage, or the brightness of the blues and yellows that offset the general green colour; there is a bright blue patch on the crown and the wings and tail appear mainly light blue in flight. A bird of evergreen forest.

VOICE. It has a not unmusical, rather shrill, loud whistling call of five to eight notes all on the same pitch; a soft churring note when feeding, an occasional single *weet* call, and several harsh tin-kettley notes when annoyed or disturbed have also been recorded.

HABITS AND FOOD. Those of the family. This is a bird of evergreen forest, collecting into good-sized flocks in the cold weather and occasionally visiting the civil stations of Bhamo and Myitkyina at that season; Wickham describes how a flock suddenly appeared round the court-house in Bhamo and entered the rooms, disturbing the magistrates with their whistling calls. In the forest some birds I watched resembled parakeets in their actions, alighting at the extreme end of a creeper or pendant branch and thence climbing cautiously up it, searching the leaves for insects as they climbed. Stanford describes others that were very like sibias in their actions, continuously on the move, and jerking their long tails up over their backs and down again while uttering a whistling note and a sort of whistling *churr*.

NEST AND EGGS. Hopwood found nests in Tenasserim in April and May, and I found them on Nattaung in April. The nest is typical of the family (one found by Stanford in the Arakan Yomas was made largely of black hair and fibrous roots) and larger than any except that of the dusky broadbill. The eggs, 4 to 8 in number, are very variable.

STATUS AND DISTRIBUTION. From the Central Himalayas to Malaysia,

but not in Yunnan. In Burma it is found throughout the evergreen forests of the foothills and ascends up to 5,500 feet; it is locally common.

GREEN BROADBILL

Calyptomena viridis Raffles, SUMATRA
SUBSPECIES: *continentis* Robinson and Kloss, PENINSULAR SIAM

IDENTIFICATION. Length 7½ inches. Differs from all other broadbills in having the greater part of the bill concealed by plumes. Sexes differ. The male has a large spot behind the ear and three broad bands across the wing black; rest of plumage green. The female is paler than the male and has a bright green ring round the eye. Found usually in evergreen but sometimes in thin forest. It has a soft pleasant whistle and keeps much to the tops of tall trees, feeding almost entirely on fruits and berries. It is not shy, and at the same time not stupid like the other broadbills, with which it has little in common in the way of voice and habits.

NEST AND EGGS. Have been taken in Tenasserim by Hopwood and Mackenzie in March and April, and by Smith in February and April. Some nests were near streams, others in thick jungle far from water. Some were made of grass and fibres, others of dead bamboo leaves kept together by fibres, and a lining of green leaves was found in only one nest. The tail under the nest may be long or absent. The eggs, 2 or 3 in number, are a uniform pale yellow-cream without markings.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim, rare in the north but common enough in the south.

Order PICIFORMES

Family PICIDAE

THIS family comprises the true woodpeckers, the pigmy woodpeckers or piculets, and the aberrant woodpecker known as the wryneck.

Sub-family PICINAE

WOODPECKERS

Woodpeckers are found in most parts of the world, and are easily recognised by their actions. A woodpecker flies by noisily flapping its wings for a few strokes and then gliding with them closed; this causes it to dip deeply and results in a heavy, undulating flight; one bird often follows another from tree to tree, usually uttering loud, discordant call-notes. It usually alights on the trunk or on a

main branch and then works its way up with a series of jerks, always resting with the body in a perpendicular position with the head upwards ; when it wishes to descend a foot or two to search a likely spot it moves down backwards with the same awkward jerks. Though it is unable to move down a tree-trunk head-first like a nuthatch, its structure is otherwise admirably adapted for its needs. The toes are arranged in two series, the first and fourth pointing backwards and the second and third forwards ; the strong claws grasp the crevices of the bark and from their position automatically tilt the body backwards on to the stiff, graduated tail, which is pressed into the bark by the bird's own weight. In this position the long neck affords a swing for the blows of the pickaxe bill, which is stout and modified into a cutting weapon with the end of the upper mandible vertical and chisel-shaped. It is used to extract the larvae of wood-boring insects from inside and under the bark and to expose the ends of insect galleries, which are then searched by extruding the long tongue with its barbed tip sticky with saliva. At the same time it is interesting to note that many woodpeckers feed largely on ants, which they obtain either on tree-trunks or on the ground, and for capturing which no specialised structure is necessary.

The " drumming " of a woodpecker is a loud vibrating sound produced by an extremely rapid rain of blows (about eight to ten per second) of the bill on a dead tree-trunk or hollow branch ; for a long time this drumming was a subject of controversy, some writers maintaining that the sound was vocal, but most authorities are now agreed that it is purely mechanical. In its search for insects a woodpecker frequently makes a loud tapping noise, slow or fast according to the size of the bird, but always much less rapid than, and quite distinct from, the drumming, which has nothing to do with the feeding habits of the bird and the significance of which is obscure. Information as to which of the woodpeckers found in Burma drum, and which do not, is remarkably scanty.

The economic value of woodpeckers is great. The bee-hole borer of teak, which causes a serious degrade in the value of timber in many parts of Burma, would cause even more damage were its numbers not kept down by woodpeckers, and it is only one of the wood-boring insects on which these birds feed.

For nesting purposes a hole is bored in a tree-trunk or branch at almost any height from the ground, and trees with unsound hearts are invariably chosen. Normally the entrance runs in horizontally for a few inches until the unsound wood is reached, and then turns

downwards into a large oval chamber in which the eggs rest on chips and debris ; but when tunnelling the birds often hit upon a natural cavity in the wood, which is then utilised, however deep or large it may be. The eggs are broad ovals in shape and glossy white in colour without markings.

Local names applied to woodpeckers are :—Burmese : *thit-tauk-hnget* ; Chinghpaw : *gumdi-kalak.*

LITTLE SCALY-BELLIED WOODPECKER

Picus xanthopygaeus (Gray), NEPAL

IDENTIFICATION. Length 12 inches. See under the next species.
NEST AND EGGS. Have been found by Macdonald in Central Burma in May and June.
STATUS AND DISTRIBUTION. Widespread in India and Ceylon, and found in parts of Burma : Arakan (?), Chin Hills, Upper Chindwin, and the Arakan and Pegu Yomas as far south as Prome and Toungoo. It ascends the higher hills to 5,000 feet.

BURMESE SCALY-BELLIED WOODPECKER

Picus viridanus Blyth, ARAKAN
SUBSPECIES : *viridanus* Blyth, ARAKAN

IDENTIFICATION. Plate XIV, fig. 1, p. 300. Length 13 inches. There are three closely allied species, distinguished as follows :

A. Chin and throat boldly striped or squamated like the rest of the plumage ; moustachial streak faint . *P. xanthopygaeus*
B. Chin and throat immaculate or weakly striped ; breast squamated like the abdomen ; moustachial streak dark . . . . . *P. viridanus*
C. Chin, throat and upper breast immaculate and not squamated like the abdomen ; moustachial streak very pronounced . . . . . *P. vittatus*

The scaly-bellied woodpeckers have green upper-parts with bright yellow rumps, and the crown and crest are crimson in the male and black in the female ; they are distinguished from other green woodpeckers by the white eyebrow with a black line above it, and the scaly black markings (squamations) on the under-parts.
VOICE. The ordinary note is a loud, wild *tcheu-tcheu-tcheu-tcheu*, a softer version of which is kept up while feeding.
HABITS AND FOOD. Those of the family. It feeds much on the ground and on moss-covered trees and fallen boulders, and ants constitute a large portion of its diet.

NEST AND EGGS. Have been found by Hopwood in Tharrawaddy district from February to April, and by Smith in Amherst district in April.

STATUS AND DISTRIBUTION. A south-eastern oriental species, not found west of Burma. It has been recorded from Arakan, Central Burma, Southern Burma, Karenni, and Tenasserim.

LACED GREEN WOODPECKER

Picus vittatus Vieillot, W. JAVA
SUBSPECIES : *eisenhoferi* Gyldenstolpe, N. SIAM

IDENTIFICATION. Length 13 inches. See under the preceding species.
STATUS AND DISTRIBUTION. Indo-China and Malaysia. It has been recorded from Kawkareik, Amherst district, and probably occurs throughout Tenasserim.

BLACK-NAPED GREEN WOODPECKER

Picus canus Gmelin, NORWAY
SUBSPECIES : *gyldenstolpei* Stuart Baker, SADIYA, ASSAM
hessei Gyldenstolpe, N. SIAM
sordidior Rippon, YANGTZE R., W. YUNNAN

IDENTIFICATION. Length 12½ inches. Distinguished from the last three species by the black nape, black line down each side of the throat from the base of the lower mandible, and plain olive-green under-parts ; bill blackish. The crown and nape are crimson in the male, black in the female. A forest woodpecker, seldom seen in open country.

VOICE. The commonest note is a four-syllabled musical whistle, reminiscent of the call of a greenshank.

HABITS AND FOOD. Those of the family. It is a typical bird of the teak forests, frequenting the drier and more open parts by preference ; in the cold weather it is often seen in parties of four to six birds feeding on the ground or in the understorey.

NEST AND EGGS. Have been found by several collectors from April to June in several parts of Burma.

STATUS AND DISTRIBUTION. Widespread in Europe and Asia, and a common resident throughout the forests of Burma in the plains and foothills, ascending to about 5,000 feet. In the mountains of the Yunnan frontier the subspecies *sordidior* is found ; in Yunnan it goes up to 11,000 feet.

[NOTE.—It is doubtful whether *gyldenstolpei* and *hessei* are separable ; even if they are, the Burma population is intermediate (see *Ibis* 1939, p. 2).]

LESSER YELLOW-NAPED WOODPECKER

Picus chlorolophus Vieillot, BENGAL
SUBSPECIES : *chlorolophus* Vieillot, BENGAL
burmae Meinertzhagen, PEGU

IDENTIFICATION. Length 11 inches. Easily distinguished from all other woodpeckers other than the greater yellow-naped woodpecker (*q.v.*) by the conspicuous golden-yellow crest on the back of the head. Sexes differ. The male has the forehead, eyebrow, and moustachial streak crimson; back dark olive-green; under-parts mottled brown. The female has the crimson restricted to a short broad line from the eyebrow to the nape.

VOICE. It utters a shrill, wailing call, typically from the tip of the highest branch of some dead tree standing in a forest clearing; the wailing is often kept up for a long time, especially late in the evening.

HABITS AND FOOD. Those of the family. This is also a typical bird of the teak forests and is partial to bamboo and scrub-jungle. It is usually seen in the lower canopy, but occasionally feeds on the ground like the other green woodpeckers, and though normally solitary or in pairs as regards its own species it often feeds in mixed parties with other forest birds such as jays and magpies. Davison at Myawadee " met with huge troops of woodpeckers consisting of this species (and nine others) all moving about, as if working in concert, mixed up with a lot of laughing-thrushes, etc. Such a paradise of woodpeckers I never saw. It was open bamboo jungle, interspersed with teak and other trees, with here and there cleared patches in which there are always numbers of dead trees standing or lying on the ground." It is not shy and has a curious habit of " freezing " when being watched.

NEST AND EGGS. Have been found in the Upper Chindwin in March and April.

STATUS AND DISTRIBUTION. Widespread in the oriental region, not in Yunnan. It is a common resident throughout the foothills and higher hills of Burma.

[NOTE.—*chlorolophoides* Gyldenstolpe is an unstable intermediate between *burmae* and *laotianus* Delacour, *vide* Deignan 1945, pp. 235–236.]

CRIMSON-WINGED WOODPECKER

Picus puniceus Horsfield, JAVA
SUBSPECIES : *continentis* Robinson and Kloss, PAKCHAN ESTUARY

IDENTIFICATION. Length 11 inches. Distinguished from other green woodpeckers by the crimson on the wings. A bird of evergreen forest with a curious

plaintive call-note, " a very peculiar note, not in the least resembling any of the varied notes of other woodpeckers. In the dusk of the evening it gets very noisy " (Davison).

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim.

RED-RUMPED GREEN WOODPECKER

Picus erythropygius (Elliot), LOWER COCHIN-CHINA
SUBSPECIES: *nigrigenis* (Hume), PA CHAUNG, SALWEEN Dist.

IDENTIFICATION. Length 13 inches. The crimson rump and the black sides of the head contrasting with the bright yellow of the chin and throat distinguish this from all other green woodpeckers; the barred black and white primaries show up on the closed wing. The crown of the male is crimson, that of the female black. The ordinary call is a loud double note, a sort of garrulous *quitch-quatch, quitch-quatch*; sometimes a high-pitched staccato phrase *cha-cha-cha, cha-cha-cha*, rapidly repeated with the stress on the first note in each phrase. This fine woodpecker is typically a bird of open scrub country, but it also frequents open forest such as *indaing*; it is usually seen in noisy parties, often associated with jays or treepies. It keeps to the tree-tops and understorey and has not been seen feeding on the ground; it is shy, restless, and continually on the move.

NEST AND EGGS. A nest was found by Bingham on the 18th March in a *pyinkado* tree on the bank of the Meple river, northern Tenasserim.

STATUS AND DISTRIBUTION. Indo-China, Siam, Malaysia, and south-eastern Burma as far north as the Maymyo foothills, whence it extends southwards through the Shan States, Karen Hills and Karenni to Tenasserim; west of the Sittang river we have only met with it in the Pegu Yomas of the Toungoo district.

GREATER YELLOW-NAPED WOODPECKER

Picus flavinucha (Gould), DARJEELING
SUBSPECIES: *marianæ* Biswas, MT. VICTORIA
lylei (Kloss), S-W. SIAM
archon Deignan, N. ANNAM

IDENTIFICATION. Plate XIV, fig. 3, p. 300. Length 13 inches. Distinguished from the lesser yellow-naped woodpecker by the absence of crimson on the head, which is of a peculiar triangular shape unlike that of any other woodpecker; the lemon-yellow chin and throat of the male are also distinctive, but the female has this part rufous-brown.

VOICE. A hesitant *chup-chup* with a long interval between the notes, followed by a quick, high-pitched, staccato roll, is the usual call.

HABITS AND FOOD. This fine woodpecker is found in all types of forest, and is a typical bird both of the teak forests of the foothills and of the oak and evergreen forests of the higher hills. Like most of the family it probably pairs for life, and the two birds usually go

about together. It feeds both in the understorey and the tree-tops, but seldom if ever descends to the ground.

NEST AND EGGS. Heinrich noted one female hammering out her nest-hole on the 9th February and collected another about to lay on the 14th March.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as the Central Himalayas, but not in Yunnan. It is well distributed throughout Burma, and goes up to 9,000 feet. *Mariance* occurs throughout Burma excluding Tenasserim; *lylei* is found in Tenasserin; *archon* intergrades with *mariance* in the S. Shan States. Birds of the Pegu Yomas, Karen Hills and Karenni are intergrades between *mariance* and *lylei*.

CHEQUERED-THROATED WOODPECKER

Picus mentalis Temminck, SUMATRA
SUBSPECIES: *humei* (Hargitt), MALACCA

IDENTIFICATION. Length 11 inches. Sexes differ. Distinguished from the preceding species by the red upper surface of the wings; the cheeks, chin and throat are dark brown spotted with white in the male, but immaculate brick-red in the female (except for the centre of the throat, which is the same as in the male). A bird of evergreen forest.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim up to Mergui.

BANDED RED WOODPECKER

Picus miniaceus (Pennant), JAVA
SUBSPECIES: *perlutus* Kloss, S-W. SIAM

IDENTIFICATION. Length 10 inches. Sexes differ. The male has the upper part of the head and the crest crimson; mantle chiefly crimson; back barred with dark brown and buff; chin and throat brownish. The female has the sides of the head, chin and throat black speckled with white. A bird of evergreen forest and mangrove swamps, usually solitary. Davison never saw it on the ground.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim up to Tavoy.

PALE-HEADED WOODPECKER

Picus grantia (Horsfield), ASSAM
SUBSPECIES: *grantia* (Horsfield), ASSAM

IDENTIFICATION. Length 10 inches. Looks very red in the field and the pale bill is noticeable. Sexes differ. The male has the forehead and sides of the head pale olive-brown; a patch on the crown crimson; sides of neck, occiput and nape golden olive-yellow; upper-parts dull red; under-parts dull olive. The female lacks the crimson on the crown. Its call is said to be unlike that of

most woodpeckers, a curious querulous squeaking note, seldom uttered. NEST AND EGGS. Hopwood found a nest in the Chin Hills on the 21st March. STATUS AND DISTRIBUTION. From Nepal eastwards through Burma to Indo-China. Found in western, northern, and Central Burma. In northern Burma, Stanford describes it as a common bird of the foothills, ascending to 4,000 feet.

GREEN BAMBOO WOODPECKER

Picus viridis Blyth, TOUNGOO
SUBSPECIES : *viridis* Blyth, TOUNGOO

IDENTIFICATION. Length 10 inches. Sexes differ. The male differs from *grantia* in having the whole crown and occipital crest crimson ; upper-parts golden, with traces of crimson on the rump and upper tail-coverts. The female resembles the male but has no crimson on the head. Partial to bamboo jungle. Davison never saw it feeding on the ground.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. South-eastern Burma, Siam, and Malaya. It is found from the Shan States southwards, and is not uncommon in the Pegu Yomas and Tenasserim.

KEY TO THE PIED WOODPECKERS

The genus *Dendrocopos* contains a number of small pied woodpeckers not easily differentiated in the field from one another; the following key may help.

A. Central tail-feathers all black.
- *a*. Back all black.
  - a^1. Under-parts not streaked . . . . . *D. major*
  - b^1. Under-parts streaked.
    - a^2. Smaller. Crimson patch on breast . . . *D. cathpharius*
    - b^2. Larger. No crimson on breast . . . *D. darjellensis*
- *b*. Back barred with white.
  - c^1. Whole under-parts bright rufous . . . *D. hyperythrus*
  - d^1. Whole under-parts not bright rufous.
    - c^2. Under tail-coverts not crimson . . . *D. hardwickei*
    - d^2. Under tail-coverts crimson.
      - a^3. Larger. Under-parts boldly streaked . . *D. atratus*
      - b^3. Smaller. Under-parts not streaked . . *D. m. macei*

B. Central tail-feathers barred or spotted with white.
- *c*. General colour of head straw yellow . . . *D. mahrattensis*
- *d*. General colour of head black and white . . { *D. m. analis* / *D. m. longipennis*

RUFOUS-BELLIED PIED WOODPECKER

Dendrocopos hyperythrus (Vigors), DARJEELING
SUBSPECIES : *hyperythrus* (Vigors), DARJEELING
heinrichi (Stresemann), MT. VICTORIA

IDENTIFICATION. Length 9 inches. See key. Chestnut-buff cheeks and bright rufous under-parts are diagnostic. Crown and nape crimson in the male.

spotted black and white in the female, but neither sex has a crest. A quiet bird with a querulous call, seldom heard. The female drums, but her roll is softer and less sustained than that of the male (Heinrich).

NEST AND EGGS. Found by Hopwood at Kalaw and by Cook at Maymyo, nesting in rotten tree stumps in April and May.

STATUS AND DISTRIBUTION. Throughout the Himalayas to Yunnan and Siam. It is found in the Chin Hills, North-East Burma, Maymyo, and the Shan States, and seems to be common at Kalaw, although it is usually a bird of the mountains and goes up to 12,000 feet in Yunnan. There are specimens in the British Museum labelled " Tonghoo," but see remarks under *darjellensis*.

GREATER PIED WOODPECKER

Dendrocopos major (Linnaeus), SWEDEN
SUBSPECIES : *stresemanni* Rensch, SZECHWAN
mandarinus Malherbe, S-E. CHINA

IDENTIFICATION. Length 8 inches. See key. White scapular patches, forming a white band parallel to the body, more conspicuous in flight than in other species. A mountain species.

NEST AND EGGS. According to Stuart Baker, Cook took one clutch on the 3rd April in the Kachin hills at 8,000–9,000 feet and thought breeding began in March ; Livesey found them not uncommon in the Southern Shan States at about 6,000 feet, where they were breeding in open forest during April.

STATUS AND DISTRIBUTION. Palaearctic. In Burma it is found in the Chin Hills, North-East Burma, and the Shan States, generally from 6,000 feet upwards though a few have been obtained down to 4,000 feet in the Shan States.

DARJEELING PIED WOODPECKER

Dendrocopos darjellensis (Blyth), DARJEELING
SUBSPECIES : *darjellensis* (Blyth), DARJEELING
fumidus Ripley, NAGA HILLS

IDENTIFICATION. Length 9½ inches. See key. The orange or golden wash on the sides of the neck behind the ear-coverts is a good field character, together with large size and streaked under-parts. Near the Chimili pass, where it frequents the silver fir forest at 10,000 feet, I noted a loud rattling call uttered at intervals.

NEST AND EGGS. Not described from Burma. Heinrich obtained a juvenile on the 14th May.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan and Szechwan. It has been recorded from Mt. Victoria and North-East Burma, where it is locally common at high elevations, and Stuart Baker states that it occurs in the Shan States. There are specimens in the British Museum from " Tonghoo " ; Kinnear informs me that these were purchased by Hargitt between 1890 and 1897 from a dealer called Whitley in Toungoo ; there is nothing to show that Whitley obtained them from Toungoo, or even from the Toungoo district,

and they probably came, likewise his skins of *hyperythrus*, from the Shan States ; neither species was found by Wardlaw Ramsay or by us in the Karen Hills or Karenni.

CRIMSON-BREASTED PIED WOODPECKER

Dendrocopos cathpharius (Blyth), DARJEELING
SUBSPECIES : *tenebrosus* Rothschild, SHWELI–SALWEEN DIVIDE

IDENTIFICATION. Length 7 inches. See key. Crimson patch on streaked breast diagnostic. A bird of the mountains and higher hills ; I have heard it utter a sharp single note, and Cranbrook states that " the call is loud for the size of the bird and is a rather monotonous *chip*, uttered at intervals when searching a tree and rather more quickly when flying."
NEST AND EGGS. Known only from Sikkim.
STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan and western China. In North-East Burma it is the commonest of the pied woodpeckers in the higher hills and mountains from 4,000–9,000 feet, but there is only one record from Yunnan ; it has also been collected at Bernardmyo (Smith) and in the Southern Shan States (Craddock and Rippon).

[NOTE.—*pyrrhothorax* Hume, E. MANIPUR, will probably be the form in the mountains west of the Chindwin.]

FULVOUS-BREASTED PIED WOODPECKER

Dendrocopos macei (Vieillot), BENGAL
SUBSPECIES : *macei* (Vieillot), BENGAL
longipennis (Hesse), BANGKOK
analis (Bonaparte), E. JAVA

IDENTIFICATION. Length 7–7½ inches. See key. The subspecies *longipennis* and *analis* have spots on the breast, whereas *macei* has faint black streaks. Crown and occiput crimson in the male, black in the female ; under tail-coverts crimson. According to Stuart Baker it is a quiet bird, with a curious squeaking voice, preferring open well-wooded country to thick forest.
NEST AND EGGS. Macdonald found it breeding in February and March in the Myingyan district.
STATUS AND DISTRIBUTION. Widespread in the oriental region and throughout the forests of Burma, ascending to 4,000 feet.

[NOTE.—For reasons for uniting these forms see Deignan 1945, p. 246.]

STRIPED-BREASTED PIED WOODPECKER

Dendrocopos atratus (Blyth), TENASSERIM

IDENTIFICATION. Length 8 inches. Differs from *macei* in having the under-parts except the chin boldly streaked with black ; the head and neck are purer white and the abdomen yellower.

NEST AND EGGS. Not described from Burma. Heinrich obtained juveniles in May.

STATUS AND DISTRIBUTION. East Manipur and Naga hills, Burma, and Siam. It probably occurs in most parts of Burma except the plains and foothills of Central and Southern Burma, and is common in the Karen Hills and Karenni at 4,000–7,000 feet.

YELLOW-FRONTED PIED WOODPECKER

Dendrocopos mahrattensis (Latham), BELGAUM, S. INDIA
SUBSPECIES : *aurocristatus* (Tickell), BORABHUM (= *blanfordi* Blyth)

IDENTIFICATION. Length 7½ inches. See key. A small dingy woodpecker with a straw-yellow head, spotted sooty-brown and white on the upper-parts, and with the centre of the abdomen and the under tail-coverts crimson. A dry zone bird of the plains and foothills. Its call is a feeble *peek* or a sharp *click*, *click* or *click-r-r-r-r* uttered at short intervals ; a shrill note, quite unlike a woodpecker's, and drumming have been recorded. A bird of open country and dry forest, including *indaing*.

NEST AND EGGS. Have been found by Hopwood in the Lower Chindwin district in March and April.

STATUS AND DISTRIBUTION. The greater part of India and Ceylon, extending eastwards through Central Burma to Indo-China. In Burma it seems to be almost confined to the dry zone of Central Burma, but straggles down the outskirts of the Pegu Yomas as far as Toungoo on the east and the north of the Tharrawaddy district on the west (a bird I collected in the Taungnyo va[illegible] seems to be the most southerly record on this side). Christison found it [illegible] common in Arakan.

PIGMY PIED WOODPECKER

Dendrocopos hardwickei (Jerdon), S. INDIA
SUBSPECIES : *canicapillus* (Blyth), ARAKAN
obscurus La Touche, HOKOW, S-E. YUNNAN

IDENTIFICATION. Plate XIV, fig. 2, p. 300. Length 6–7 inches. See key. Small size, grey crown, and absence of crimson under the tail are distinctive features. The scarlet on the head of the male is restricted to a narrow bar.

VOICE. It has a shrill, squeaking note, a short, sharp *cheep* or *chip-chip*.

HABITS AND FOOD. This little woodpecker is very active and quick in its movements, flying about more than the other pied woodpeckers. A bird I watched for some time at the top of a tree near Laukkaung preened its feathers and drummed alternately, while another bird was often watched by Smith drumming on one of the wooden pinnacles of a timber-built house in Shwebo.

NEST AND EGGS. The boring out of a nest hole has been observed at

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PLATE XIV

the end of February in Mogok, while both Wickham and Harington found young birds in April, in the Shan States and Bhamo hills respectively; most eggs are therefore probably laid in March, though another bird was shot at an unfinished nest-hole in Tharrawaddy district on the 26th April.

STATUS AND DISTRIBUTION. Widespread in the oriental region and found throughout the forests of Burma at all elevations.

GREATER BAY WOODPECKER

Blythipicus pyrrhotis (Hodgson), NEPAL
SUBSPECIES: *pyrrhotis* (Hodgson), NEPAL

IDENTIFICATION. Length 12 inches. General colour rufous barred with black; the male has a crimson collar, and the head of the female appears paler than the rest of the plumage; these features together with the large pale bill, large size, and unmistakable voice, distinguish it from the other rufous woodpeckers. It has two distinctive calls. One resembles *churra-cha-churra-cha-churra* . . . somewhat like a railway engine starting off; the other is a loud screaming call of 7 or 8 notes which drop in pitch and also accelerate towards the end; in cadence it is not unlike one call of the plaintive cuckoo, though deeper in pitch and slower in pace, and when I first heard it I thought some form of cuckoo was making it. Apart from the pied woodpeckers, this is the only species commonly met with in the higher hills, where it skulks in dense thickets and seems to feed largely on the ground, rarely ascending trees.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Nepal; in Burma it is not uncommon throughout the higher hills to about 7,000 feet, but has not been recorded from Yunnan. It is rare at low elevations but has been obtained in the Pegu Yomas (Toungoo district), where its status is uncertain.

LESSER BAY WOODPECKER

Blythipicus rubiginosus (Swainson), MALACCA
SUBSPECIES: *rubiginosus* (Swainson), MALACCA

IDENTIFICATION. Length 9 inches. Smaller size and absence of bars on the back distinguish it from the preceding species.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim up to Mergui.

BUFF-NECKED BARRED WOODPECKER

Meiglyptes tukki (Lesson), SUMATRA
SUBSPECIES: *tukki* (Lesson), SUMATRA (= *brunneus* Eyton)

IDENTIFICATION. Length 8 inches. Curved bill distinguishes the genus. This species resembles the next but is larger and duller with no pale patch on the

back ; there are wide buff stripes on the sides of the neck. A bird of dense forest.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, confined to the extreme south of Tenasserim.

FULVOUS-RUMPED BARRED WOODPECKER

Meiglyptes tristis Horsfield, JAVA
SUBSPECIES : *grammithorax* Malherbe, MALAYA

IDENTIFICATION. Length 6½ inches. General colour barred black and buff, with the lower back fulvous-white ; the male has crimson moustachial streaks. Davison describes it as restricted to dense forest, generally seen in pairs hunting the branches and trunks of trees and not descending to the ground.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, not rare in Tenasserim as far north as Mt. Nwalabo.

BLACK-AND-BUFF WOODPECKER

Meiglyptes jugularis Blyth, ARAKAN

IDENTIFICATION. Length 7½ inches. Differs from the preceding species in having the back, upper tail-coverts and tail plain black without bars or spots ; there is a buff collar on the back and sides of the neck. " Like *tristis* in voice and habits, but not nearly so much of a forest bird, being often found in large clearings and open jungle, and even in bamboo jungle " (Davison).

NEST AND EGGS. Hopwood found one nest on the 2nd March in Tenasserim.

STATUS AND DISTRIBUTION. Burma, Siam, and Indo-China. It has been recorded from Arakan, the Pegu Yomas (east side), Southern Shan States, Karenni, and Tenasserim as far south as Tavoy. It is not uncommon in the plains and foothills of Tenasserim, but elsewhere it is rare.

RUFOUS WOODPECKER

Micropternus brachyurus (Vieillot), JAVA
SUBSPECIES : *phaioceps* Blyth, CALCUTTA (= *williamsoni* Kloss)
squamigularis (Sundevall), MALACCA

IDENTIFICATION. Plate XIV, fig. 4, p. 300. Length 10 inches. The female lacks the crimson line below the eye. For distinctions from the red-eared bay woodpecker see under that species.

VOICE. The call is a high-pitched yaffle, like that of the green woodpeckers, but softer and lower and seldom used. The alarm-note is a quick, low *qu-uk*.

HABITS AND FOOD. This bird is often seen in the teak forests and also frequents well-wooded open country. It feeds on all kinds of ants,

and especially on those of the genus *Crematogaster* ; to get at them it perches on a branch adjoining their nest and pecks the latter with its bill ; as the ants swarm out to investigate they are picked off one after another ; it also hunts for them on the ground. Male and female drum, a few single taps being added to the roll (Heinrich).

NEST AND EGGS. Breeds from April to June. The rufous woodpecker is remarkable for habitually using the carton-like nests of the *Crematogaster* ants ; these nests are very tough and stand an immense amount of rough usage, although they are very light. The bird cuts an entrance in the middle of one side, works in for a few inches, and then hollows out a chamber for its eggs ; the nest selected is nearly always a live one, containing ants (in spite of the fact that they have a painful bite), pupae and eggs, on which the birds feed, both while cutting out the nest and while incubating, as long as the supply holds out. The eggs are quite unlike those of other woodpeckers ; the shells are thin, glossless, and translucent ; though white when first laid, they soon become stained a uniform pale brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region and resident throughout the forests of Burma in the plains and foothills ; it seldom ascends above 3,000 feet, but may be seen at Maymyo. It is fairly common throughout.

KEY TO THE GOLDEN-BACKED WOODPECKERS

Five woodpeckers with golden or olive-yellow backs and wings occur in Burma, and they are distinguished as follows :

A. Nape and hind-neck white. Toes 4. Length 13 inches .	*Chrysocolaptes*
B. Nape and hind-neck black. Toes 4. Length 11½ inches .	*Brachypternus*
C. Hind-neck black. Toes 3. Length 11 inches.	
a. No black line down centre of throat	*D. rafflesi*
b. A single black line down centre of throat . . .	*D. javanense*
c. Two black lines down centre of throat, divided by a narrow brown space.	*D. shorei*

GOLDEN-BACKED WOODPECKER

Brachypternus benghalensis (Linnaeus), BENGAL
SUBSPECIES : *benghalensis* (Linnaeus), BENGAL

IDENTIFICATION. Length 11½ inches. The male has the forehead and crown black, the feathers tipped with crimson ; occipital crest crimson ; back and wings golden-yellow ; under-parts white streaked with black. The female has the crown black spotted with white.

STATUS AND DISTRIBUTION. India. Reported by Christison to be common in Arakan.

GOLDEN-BACKED THREE-TOED WOODPECKER

Dinopium javanense Ljungh, W. JAVA
SUBSPECIES : *intermedium* (Blyth), RAMREE I., ARAKAN

IDENTIFICATION. See key.

VOICE. The call-note is a loud, discordant scream of several syllables, uttered both on the wing and from a tree, and perhaps the harshest of all woodpecker noises.

HABITS AND FOOD. Those of the family. This bird is found in well-wooded country and is a typical bird of the teak forests, where it is perhaps the commonest of all the woodpeckers, and is usually seen in pairs.

NEST AND EGGS. Have been found by several collectors in March and April in Southern Burma and Tenasserim, and by Macdonald in Myingyan district in May and June. Smith collected fresh eggs on the 2nd August from a tree in flooded jungle in the Myitmaka drainage, Tharrawaddy district, and Wickham mentions a young bird observed in the middle of April in the Shan States. Thus the breeding season seems to extend from March to August.

STATUS AND DISTRIBUTION. A south-eastern oriental species, extending as far west as Assam. It has not been observed in northern Burma, the furthest north being a specimen shot at Tagaung, Katha district, but elsewhere is a common bird of the plains and foothills, ascending to 5,000 feet.

HIMALAYAN THREE-TOED WOODPECKER

Dinopium shorei (Gould), HIMALAYAS

IDENTIFICATION. See key. Seldom possible to distinguish it from the preceding species in the field.

NEST AND EGGS. A nest was found (according to Stuart Baker) by Mackenzie in the first half of April on the " Pasok plateau, south Burma " (? =Taok plateau, northern Tenasserim).

STATUS AND DISTRIBUTION. From the Central Himalayas to Burma and Siam. Owing to its similarity with *javanense* its distribution in Burma is not properly known, but it is found all through western Burma and has also been recorded from the Bhamo hills and Pegu Yomas; and there is the doubtful record from northern Tenasserim quoted above.

OLIVE-BACKED THREE-TOED WOODPECKER

Dinopium rafflesi (Vigors), SUMATRA
SUBSPECIES : *peninsulare* (Hesse), MALACCA

IDENTIFICATION. See key. The rump is either golden-olive or tinged with crimson, not crimson as in the other species.

NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, "confined to the dense evergreen forests along the bases of the southern and central portions of the outer Tenasserim range" (Hume).

CRIMSON-BACKED WOODPECKER

Chrysocolaptes lucidus (Scopoli), PHILIPPINE IS.
SUBSPECIES: *guttacristatus* (Tickell), BORABHUM

IDENTIFICATION. Plate XIV, fig. 5, p. 300. See key.
VOICE. It has a harsh, loud, prolonged call, uttered both in flight and from a tree, incessant and strident, such as might be made by a giant cicada.
HABITS AND FOOD. This is another typical woodpecker of the teak forests, but it also frequents any type of well-wooded open country. It feeds both on the ground and in trees. It drums (Baillie).
NEST AND EGGS. Hopwood found 2 eggs on the 30th May in the Tharrawaddy district, but Heinrich collected a juvenile with fully grown primaries on the 18th February.
STATUS AND DISTRIBUTION. Widespread in the oriental region and common throughout the forests of Burma, ascending to 4,000 feet.

GREY-BREASTED WOODPECKER

Hemicircus concretus (Temminck), JAVA
SUBSPECIES: *sordidus* (Eyton), MALACCA

IDENTIFICATION. Length 5½ inches. The male has the forehead and crown crimson, behind which is a long grey crest; the female has the forehead and crown grey like the rest of the head; upper-parts black, grey and buff; under-parts olive-grey.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found in the extreme south of Tenasserim.

HEART-SPOTTED WOODPECKER

Hemicircus canente (Lesson), PEGU
SUBSPECIES: *canente* (Lesson), PEGU

IDENTIFICATION. Length 6½ inches. The male has a long black crest, forehead and crown black with white streaks, upper-parts black except for the white rump; chin, throat and sides of neck buffy-white; remaining under-parts blackish; shoulder of wing, a patch on the hind-wing near the body, and the under wing-coverts buff. The female has more buff on the wings, and the forehead and fore-crown are buffy-white. Both sexes of this species and the preceding one "bear tufts of bristly feathers in the middle of the back,

usually covered with a gummy substance, which has a very strong, peculiar, somewhat resinous, but decidedly pleasant smell" (Davison). It has a shrill piercing cry and is generally found in pairs, both in forests and in open country, keeping much to the tree-tops. Davison says it has a peculiar note, a sort of long-drawn grating *chur-r*.

NEST AND EGGS. Breeds from December to March and again in July; two broods are probably reared.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam. In Burma it has been recorded only south of lat. 20 degrees, and seems to be rare.

GREAT SLATY WOODPECKER

Mulleripicus pulverulentus Temminck, JAVA
SUBSPECIES: *pulverulentus* Temminck, JAVA
harterti Hesse, ASSAM

IDENTIFICATION. Plate XIV, fig. 7, p. 300. Length 20 inches. In its noisy flight it appears dark grey with the head and neck paler.

VOICE. It has a peculiar and quite distinctive whinnying note.

HABITS AND FOOD. This magnificent woodpecker is found in open well-wooded country, and typically in teak and *indaing* forests; it is usually seen in parties of four to six birds (family parties ?), which follow one another at intervals from the top of one tall tree to another, calling as they fly. It is not unduly shy, and drums with great power (Baillie).

NEST AND EGGS. Have been taken in April in several parts of Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and resident throughout Burma in the foothills, but is somewhat local and does not ascend the higher hills (Wickham records it from the Shan States, without elevation).

GREAT BLACK WOODPECKER

Dryocopus javensis (Horsfield), JAVA
SUBSPECIES: *javensis* (Horsfield), JAVA
feddeni (Blyth), PEGU
forresti Rothschild, YUNNAN

IDENTIFICATION. Plate XIV, fig. 8, p. 300. Length 16 inches. The female has the forehead and the fore-crown black and has no crimson on the cheeks, but otherwise resembles the male.

VOICE. A bird I watched in the Pegu Yomas uttered a powerful single note while perched, and Stanford records a very loud, very distinctive double note for *forresti* at Hpimaw. Smith notes that two single birds in the Lower Chindwin uttered a loud laughing call.

Feilden likened its note to that of a jackdaw with a nasal twang. Baillie records a soft *quuk* note.

HABITS AND FOOD. Those of the family. Solitary birds seem to be the rule. Like some of the other large woodpeckers it often rests in a commanding position at the top of a tree and moves the head, neck, and upper part of the body from side to side with a swaying motion, until it finally makes up its mind to fly to another tree. It drums (Baillie).

NEST AND EGGS. This bird seems to breed early ; Smith found a nest in the Pegu Yomas on the 19th February with three young just ready to fly, and Cook found nests in February 15 miles east of Thayetmyo. Grant, on the other hand, is said to have taken eggs on the 23rd May (locality not stated).

STATUS AND DISTRIBUTION. A Malaysian species, not found west of Burma. In northern Burma Stanford considered it to be a dry zone bird that straggles as far north as the Namti valley (*i.e.* about Mogaung), except for *forresti* which occurs in the Hpimaw mountains ; elsewhere it is well distributed, but rather scarce, in suitable forests.

Sub-family PICUMNINAE

PICULETS

The piculets are distinguished by their very small size and short tail-feathers. They are found principally in South America, but extend to Africa and Asia, and three species are found in Burma. The flight is straighter and less dipping than that of most woodpeckers.

SPECKLED PICULET

Picumnus innominatus Burton, HIMALAYAS
SUBSPECIES : *innominatus* Burton, HIMALAYAS
malayorum Hartert, MALAYA

IDENTIFICATION. Length 4 inches. Upper-parts olive with an orange tinge ; under-parts white with bold black spots ; a black band behind the eye, with narrow white bands above and below it.

VOICE. Not described from Burma.

HABITS AND FOOD. This tiny woodpecker frequents the undergrowth in forests or on the outskirts thereof, and is partial to dense bamboo thickets. Its presence is usually revealed by its quiet

tapping, and it is a tame little bird, continuing its search for insects within a few feet of human beings. It is usually solitary, but often accompanies a mixed hunting party of small babblers; it has not been observed actually on the ground, but feeds close to it, often on bamboos growing out of short grass. It drums occasionally.

NEST AND EGGS. A bird was seen feeding a fully grown young one near Kalaw on the 29th April.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as the central Himalayas. In northern Burma it is not uncommon in the foothills as well as in the higher hills, but further south it is found in the higher hills only.

WHITE-BROWED RUFOUS PICULET

Sasia ochracea Hodgson, NEPAL

SUBSPECIES: *ochracea* Hodgson, NEPAL
reichenowi Hesse, BURMA (= *querulivox* Stuart Baker)
hasbroucki Deignan, S. TENASSERIM.

IDENTIFICATION. Plate XIV, fig. 6, p. 300. Length 4 inches. General colour rufous with a short black tail and greenish wings; there is a white eyebrow behind the eye and a ring of bare red skin round the eye.

VOICE. Its note is a high, sharp *tsick*, like that of *Ceyx* or *Pnoepyga* (Heinrich).

HABITS AND FOOD. Similar to those of the speckled piculet. Cranbrook described it as "like any woodpecker, tapping slowly and then tearing off slivers with its beak. Mainly seen on dead bamboo and tall grasses." Stanford watched one bird sliding tail foremost down a bamboo and another drumming on a hollow bamboo in mid-March, the noise produced being "amazingly loud." Its favourite habitat is dense bamboo jungle, in which it feeds very low down as a rule and occasionally on the ground. I doubt whether there is any important difference between its habits and those of the speckled piculet, except that it is more often seen at low elevations.

NEST AND EGGS. Harington found it breeding in April in Bhamo district.

STATUS AND DISTRIBUTION. From the central Himalayas through Burma to Indo-China and Malaysia; there are only two records from Yunnan. In Burma it is widely distributed throughout the bamboo forests, from the plains up to 6,000 feet, and unlike the speckled piculet it is not uncommon in the Pegu Yomas.

TEMMINCK'S RUFOUS PICULET

Sasia abnormis (Temminck), JAVA
SUBSPECIES : *everetti* Hargitt, BORNEO

IDENTIFICATION. Differs from the preceding species in having no white eyebrow.
NEST AND EGGS. Stuart Baker states that he received a skin with eggs from Ye.
STATUS AND DISTRIBUTION. A Malaysian species. Riley states that it occurs in southern Tenasserim but does not give any authority, and Davison never observed it. Confirmation of Stuart Baker's record is desirable.

Sub-family JYNGINAE

WRYNECKS

The wrynecks are peculiar woodpeckers with long, soft tails and skulking habits. One species visits Burma in winter.

WRYNECK

Jynx torquilla Linnaeus, SWEDEN
SUBSPECIES : *chinensis* Hesse, PEKING (= *intermedia* Stegmann)

IDENTIFICATION. Plate XIV, fig. 9, p. 300. Length 8 inches. A rather slim, elongated grey-brown bird, with the upper-parts delicately streaked and mottled like those of a nightjar and the underparts profusely mottled. A black line from the crown ending in a black patch on the back is usually conspicuous, and a black line through the eye down the side of the neck sometimes so.
VOICE. The call-note is a loud shrill *quee-quee-quee-quee* constantly repeated and the alarm-note is a short *tuck*, repeated several times.
HABITS AND FOOD. In general appearance and habits this bird differs considerably from the true woodpeckers ; it is usually solitary, frequenting scrub-jungle in open country, thickets round fields and cultivation, and bungalow compounds, and feeds much on the ground. It is also found in the forest, where it keeps mainly to the crowns of trees, sometimes perching and sometimes clinging to the trunk like a woodpecker. The flight is slow, hesitant and undulating, and resembles that of a large warbler. It does not bore for food, but picks ants and other insects off the bark and leaves, or up from the ground, with exceedingly rapid movements of the long worm-like tongue. It derives its name from its habit of twisting its head into extraordinary positions when feeding.
STATUS AND DISTRIBUTION. A palaearctic species, wintering in

tropical Africa and Asia. It winters in parts of Burma in small numbers, arriving in September (earliest noted the 12th, Roseveare) and leaving in April ; it has been recorded from Arakan, the Chin Hills, North-East Burma, Central Burma, the Pegu Yomas, Rangoon, Shan States, and Karenni ; it seems indifferent to elevation, and I have seen it from sea-level near Rangoon to 7,000 feet near the Panwa pass.

Family CAPITONIDAE

BARBETS

This family has a wide range in the tropics of Asia, Africa and America. Except for the brown barbet, the members of this family found in Burma are mainly green in colour, usually with gaudy markings of blue and scarlet about the head and neck, and have strong, massive bills adorned with bristles. Like the woodpeckers they have two toes directed forwards and two backwards, but they are fruit-eaters rather than insect-eaters, their food including berries, seeds, figs, buds, and the nectar of flowers, and are essentially birds of the tree-tops, in which they sit and utter monotonous call-notes for hours on end ; owing to their colour they are difficult to pick out from the foliage, and owing to their sluggish habits they are seldom seen on the wing ; it is not surprising therefore that though their voices are among the commonest bird sounds to be heard in a Burma forest, few people know the birds by sight. They are not, however, difficult to differentiate, either by sight or sound.

In their nesting habits the barbets resemble the woodpeckers ; like them they excavate holes in the trunks and branches of trees with their powerful bills, and lay their pure white eggs on chips and debris at the bottom of the hollow.

BROWN BARBET

Calorhamphus fuliginosus Temminck, S. BORNEO
SUBSPECIES : *hayi* (Gray), MALACCA

IDENTIFICATION. Length 7 inches. Upper-parts brown, under-parts pale, sides of head, chin, and throat reddish. " For a barbet this species has a most extraordinary note, a low soft whistle. It is generally found in small parties of three or four, sometimes in pairs and occasionally singly, hunting about the leaves, branches and trunks of trees, peering into every crevice and cranny

in the bark, and clinging about in all sorts of positions far more like a tit than a barbet. Its food consists quite as much of insects as of fruits. It is a forest bird and I have never seen it in gardens " (Davison).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in the extreme south of Tenasserim, but rare.

GREAT BARBET

Megalaima virens (Boddaert), CHINA

SUBSPECIES : *virens* (Boddaert), CHINA
magnifica Stuart Baker, MANIPUR
clamator Mayr, SHWELI–SALWEEN DIVIDE

IDENTIFICATION. Plate XV, fig. 1, p. 324. Length 13 inches. In spite of the gaudy plumage when closely examined, in the forest it appears a dark, dully coloured bird, chiefly conspicuous for the large yellow bill, dark head, under-parts streaked green and yellow, and the red patch under the tail. Size and voice distinguish it from all other barbets.

VOICE. The call-note is a mournful, loud, musical *pyi-woo* uttered monotonously from high up in a shady tree ; at first the call often sounds very hoarse, but the bird gradually finds its voice and is then audible half a mile away or more. Two or three birds often call to one another from different trees and duets are commonly sung, one bird uttering the above call while another answers with a repetition of a staccato note (female answering male ?), *piou-piou-piou*, uttered rapidly at the rate of 25 per 10 seconds and kept up for several minutes at a stretch. I have several times heard a (young ?) bird utter a loud, harsh screech *karr-r-r* while feeding.

HABITS AND FOOD. This is typically a forest bird of the higher hills, a frequenter of wild and difficult country, where its voice carrying across the precipitous ravines is always a welcome sound ; it is a wary bird, keeping much to the tree-tops and difficult to approach. Like all barbets it is a great fruit eater, and is very partial to wild figs ; the larger kinds are torn into pieces before being swallowed, but the smaller ones are gulped down whole.

NEST AND EGGS. Have been found in several parts of Burma, from February to April ; one nest near Maymyo contained young birds on the 10th July.

STATUS AND DISTRIBUTION. Throughout the Himalayas, extending eastwards to Yunnan and China. It is common and resident throughout the higher hills of Burma, and a few birds come down to 2,000 feet (*e.g.* east of Maymyo).

LINEATED BARBET

Megalaima zeylanica (Gmelin), CEYLON
SUBSPECIES : *hodgsoni* (Bonaparte), NEPAL (= *intermedius* Stuart Baker)

LOCAL NAME. Burmese : *hpo-gaung*.
IDENTIFICATION. Plate XV, fig. 4, p. 324. Length 11 inches.
VOICE. Like the great barbet, this bird commonly utters two call-notes, but whether they are uttered by different sexes or not is uncertain. One call is *po-gaung, po-gaung*, etc., two not unmusical notes, low-high ; the other is *hoo-hoo-hoo* or *hoo-hoo-hoo-hoo*, uttered rapidly and repeated for minutes on end, and preceded by a rattling run up the scale, *tur-r-r-r*. These are the usual call-notes and are among the most characteristic sounds of the teak forests ; they may be heard at all times of the day and sometimes at night, but the bird is most persistent in the afternoon and evening. A single, harsh, guttural *whirrp* is sometimes heard.
HABITS AND FOOD. Those of the family. It frequents gardens where these adjoin forest, but avoids the towns and villages of the paddy plains, although in Rangoon birds may be heard calling occasionally during the rains.
NEST AND EGGS. The breeding season is prolonged. Wickham took eggs at the end of February, and others have been taken in several parts of Burma from March to May, once on the 23rd July.
STATUS AND DISTRIBUTION. Oriental region and Australia. It is common and resident throughout the better wooded parts of the plains and foothills, excluding the Mergui district, but in the dry forests of the northern Pegu Yomas and the dry zone uplands west of Meiktila it becomes scarce. It breeds in Maymyo, and its ceiling is about 4,000 feet (in northern Burma it does not seem to go much above 2,000 feet).

GAUDY BARBET

Megalaima mystacophanes Temminck, SUMATRA
SUBSPECIES : *mystacophanes* Temminck, SUMATRA

IDENTIFICATION. Length 9 inches. Resembles all the following species in having bright colours on the head and neck, but distinguished by the rather long black bill. The male has the throat crimson with a blue patch, and a crimson spot on the side of the neck ; the female differs in having the forehead and sides of the head greenish-blue and the throat yellow. The call-note is described by Davison as *tok-toktok-tok-toktok* uttered incessantly by day and also on moonlight nights. A bird of evergreen forest, fond of clinging to the trunks of trees and tapping away like a woodpecker.
NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim, where it is common in the Mergui district but rare further north.

INDIAN BLUE-THROATED BARBET

Megalaima asiatica (Latham), INDIA
SUBSPECIES: *asiatica* (Latham), INDIA (= *rubescens* Stuart Baker)
davisoni (Hume), TENASSERIM

LOCAL NAME. Burmese: *kok-ka-laung*.
IDENTIFICATION. Plate XV, fig. 2, p. 324. Length 9 inches.
VOICE. The call-note is *took-a-rook, took-a-rook*, uttered very rapidly, harsh and loud, for minutes at a time.
HABITS AND FOOD. Those of the family. It is another characteristic barbet of the teak forests, and so regular and persistent are the calls of this bird and those of the lineated barbet that the ear of the jungle dweller soon learns to class them with the shrilling of cicadas and the croaking of frogs as part of the general background of sound in a tropical forest and ceases to be conscious of them, except when they suddenly cease, as they are apt to do at the approach of a thunderstorm.
NEST AND EGGS. Have been taken by Davison in March in northern Tenasserim, and in the Shan States it nests at the end of April according to Wickham.
STATUS AND DISTRIBUTION. Widespread in the oriental region and extending westwards along the Himalayan foothills to Kashmir. This bird is found throughout Burma, and has a greater altitudinal range than the lineated barbet; it is abundant in the hills at 2,000–4,000 feet, and a few individuals go up to 6,000 feet.

MANY-COLOURED BARBET

Megalaima rafflesi (Lesson), SUMATRA
SUBSPECIES: *malayensis* (Chasen), near SINGAPORE

IDENTIFICATION. Length 10 inches. Forehead and crown deep crimson; supercilium, chin and throat blue; a crimson spot below the eye; a yellow patch behind the gape; rest of plumage green.
STATUS AND DISTRIBUTION. A Malaysian species, which reaches the extreme south of Tenasserim (Abbott obtained one at Bok Pyin).

HUME'S BLUE-THROATED BARBET

Megalaima incognita (Hume), YE, N. TENASSERIM
SUBSPECIES: *incognita* (Hume), YE, N. TENASSERIM

IDENTIFICATION. Length 9 inches. Blue-green crown, yellow eye-ring, marked black supercilium, and moustachial streak distinguish this species; a narrow

red line across the forehead joining crimson spots in front of the eyes and a red patch on the hind-crown are other features. " Its note is very similar to that of *asiatica* and so are its habits " (Davison).

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. Tenasserim, from Tavoy in the south to Amherst and the Thaungyin river in the north ; thence eastwards to Tongking.

LITTLE BARBET

Megalaima australis (Horsfield), JAVA
SUBSPECIES : *cyanotis* (Blyth), ARAKAN
stuarti Robinson and Kloss, PENINSULAR SIAM
invisa Deignan, N. SIAM

IDENTIFICATION. Length 6½ inches. Readily distinguished from other blue-throated barbets by small size and bright grass-green under-parts ; in addition the forehead and fore-crown are black, the posterior crown blue, and the ear-coverts blue with a patch of crimson above and below. The call-note is the word *koo-turr* or *turruk* repeated incessantly and sometimes ending with a rolling *rrrrooo*. A bird of evergreen and moist forests.

NEST AND EGGS. Have been taken by Bingham on the 12th February and by Darling (no date) in Tenasserim.

STATUS AND DISTRIBUTION. Widespread in the oriental region and along the Himalayas. Little is known about its distribution in Burma at the present day ; Smith obtained one in the Madaya drainage, Mandalay district, Mears listed it from the Chindwin without comment, and Christison reports that it is fairly common in hill jungle in Arakan ; nothing else seems to have been recorded about it since Oates' day. Davison found it very common indeed south of Mergui and on islands of the Mergui Archipelago, but rare further north, although he saw it in the town of Moulmein ; Oates found it common on the eastern slopes of the Pegu Yomas, especially on the higher spurs, and Wardlaw Ramsay obtained it in the Karen Hills.

[NOTE.—The THICK-BILLED BARBET, *Megalaima robustirostris* Stuart Baker, is said to have been obtained by Rippon in Karenni (*F.B.I.*, vol. iv, p. 123) but the record was not published by Rippon and no skin is traceable in the British Museum. It is a little known bird, found in the Cachar hills of Assam. Length 5½ inches, no larger than the coppersmith ; whole plumage green ; found in flocks in winter.]

GOLDEN-THROATED BARBET

Megalaima franklini (Blyth), DARJEELING
SUBSPECIES : *franklini* (Blyth), DARJEELING
ramsayi (Walden), KARENNI

IDENTIFICATION. Length 9 inches. The yellow chin and throat, bordered with grey, are diagnostic ; in addition, the forehead and

hind-crown are crimson and the centre of the crown is yellow. A bird of the higher hills.

VOICE. The call-note is a loud resonant shout, *look-'igh-up, look-'igh-up*, the first syllable very short, and the second higher in pitch. A single *tonk* is sometimes uttered and I observed a pair on Nattaung uttering a harsh, shrill chatter when mating.

HABITS AND FOOD. Those of the family. A characteristic bird of hill forests.

NEST AND EGGS. Have been taken in April or May in the Chin Hills, Shan States, and Tenasserim.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan, and through Burma to Siam, Indo-China, and Malaya. Throughout the higher hills of Burma, and common in most areas, though not observed at Maymyo or Kalaw. Its ceiling is about 7,000 feet in Burma, though it goes up to 8,000 feet in western Yunnan, and it does not descend much below 3,500 feet.

CRIMSON-BREASTED BARBET

Megalaima haemacephala P. L. S. Müller, PHILIPPINE IS.
SUBSPECIES : *indica* (Latham), CALCUTTA.

LOCAL NAME. Burmese : *hnget-padein*.

IDENTIFICATION. Plate XV, fig. 3, p. 324. Length 6 inches. A small heavily-built barbet with yellow chin and throat, crimson patch on breast and remaining under-parts yellowish-white boldly streaked with green.

VOICE. The note is a loud but mellow *took* or *tonk*, like the tap of a small hammer on metal (hence the name of coppersmith sometimes given to this bird) ; this note never changes or varies, and is repeated indefinitely at regular intervals, but not at night. The bird calls persistently in the hot weather and intermittently in the rains and cold weather.

HABITS AND FOOD. This is a common bird of the plains, and the only barbet that habitually frequents the larger towns ; it is also found in open well-wooded country and is common throughout the teak forests.

NEST AND EGGS. Breeds from February to May. Wickham remarks that he found nests " in the thin, rotten branches of trees, often so thin you would think a bird could hardly turn round in the hole."

STATUS AND DISTRIBUTION. Widespread in the oriental region (extending westwards to Persia) and common throughout Burma, ascending to 3,000 feet (as at Maymyo).

Family INDICATORIDAE

HONEYGUIDES

This is a small family of about fifteen species, of which one is found in Malaysia, one in India and northern Burma, and the remainder in Africa. They are closely related to the barbets, and their nesting habits and eggs are similar, but they differ considerably in their external appearance. They derive their name from the behaviour of the African species, which are said to guide men to the nests of bees in order to share in the spoil; but there is so far no evidence that the Asiatic species behave in this manner.

YELLOW-BACKED HONEYGUIDE

Indicator xanthonotus Blyth, DARJEELING
SUBSPECIES: *fulvus* Ripley, NAGA HILLS

IDENTIFICATION. Length 6 inches. Centre of lower back lemon-yellow and centre of rump orange, contrasting with blackish upper-parts; forehead and cheeks orange-yellow; under-parts grey. Bill short and finch-like. The only bird I have seen was fly-catching in rather clumsy fashion over a sunlit stretch of stream flanked by climax forest on one bank and a *taungya* on the other; a single note was uttered at intervals. The bird worked over about 100 yards of stream, normally returning to a different perch each time and at intervals resting for some minutes in an upright position on a branch.
STATUS AND DISTRIBUTION. Hitherto known only from Abbottabad, Murree, and Sikkim, and once seen at Margherita (Assam); I obtained a specimen of this very rare and little known species at 7,500 feet below the Hpare pass, North-East Burma.

Order CUCULIFORMES

Family CUCULIDAE

THE Burmese cuckoos fall into two general groups, the one arboreal and parasitic (sub-family *Cuculinae*) and the other terrestrial and non-parasitic (sub-family *Phaenicophainae*). Like the barbets, the parasitic cuckoos are birds with loud, noisy call-notes, or more properly "songs", as they are heard only during the breeding season, and are far more familiar to the ear than the eye; it may therefore serve a useful purpose to list out briefly the calls of the various species.

SUMMARY OF CUCKOO CALL-NOTES AND SONGS

European cuckoo : *Coocoo* (male) ; water-bubbling note (female).
Himalayan cuckoo : A dull booming four syllables, *hoo-hoo-hoo-hoo*, similar in tone to the call of a hoopoe.
Small cuckoo : *Who-who-whar, who-who-wha*, rather like a cackling hen, with the stress on the third syllable.
Indian cuckoo : *Yauk-hpa-kwe-kaw*, melodious.
Common hawk-cuckoo : *Brain-fever*.
Large hawk-cuckoo : As the last, but less shrill.
Horsfield's hawk-cuckoo : *Gee-whizz, gee-whizz*, repeated.
Plaintive cuckoo : Cadence call up and down the scale, with variants.
Banded bay cuckoo : Thin, shrill version of *yauk-hpa-kwe-kaw*.
Violet cuckoo : Not recorded.
Emerald cuckoo : A whistling call of three notes uttered rapidly.
Drongo-cuckoo : Five or six whistling notes on an ascending scale.
Pied crested cuckoo : A wild metallic double note.
Red-widged crested cuckoo : A loud, harsh screech and a hoarse whistle.
Koel : *You're ill, you're ill*, etc., louder and shriller each time.

Sub-family CUCULINAE

CUCKOOS

This sub-family comprises the true cuckoos, all of which are parasitic, laying their eggs in the nests of other species. The following description of the habits of the European cuckoo (*Cuculus canorus*) will suffice to indicate how these birds achieve their object.

Each hen confines herself to a limited locality and shows a decided preference for some particular fosterer. She finds nests by watching birds in the process of building, and her egg is often laid on the same day as the fosterer's first egg. Whether she lays directly into the nest or inserts the egg with her bill has for long been a subject of controversy, but all reliable evidence goes to prove that the European cuckoo lays directly into the nest, or when the entrance is too small raises herself with outspread wings and tail against the opening and ejects her egg into it, though not invariably with success ; if it falls to the ground or rests on the edge of the nest it is left lying there, and no attempt is made to insert it with the bill. The possibility that some species do insert their eggs with the bill cannot be ruled out, but so far there is no proof that they do so.

It seems to be the rule for a cuckoo to remove an egg of the fosterer's before laying her own. Sometimes she removes the egg first and then sits on the nest to lay, holding the fosterer's egg in her

bill meanwhile ; after a very short time she flies off with the egg in her bill and either swallows it or breaks it up on alighting ; it is reasonable to suppose that the egg is removed to make room for the cuckoo's own egg. At other times, however, she removes a single egg from a nest without depositing one of her own, possibly to test whether the fosterer's eggs are fresh ; for obvious reasons the cuckoo does not want to deposit her egg in a nest containing eggs on the point of hatching.

The number of eggs laid by one bird in a normal season is probably twelve or fewer ; two, or exceptionally three, cuckoo's eggs are sometimes found in a nest, but these are nearly always laid by different hens whose territories overlap.

The young cuckoo usually hatches out before the fosterer's family, the incubation period for the European cuckoo being only 12½ days, and then proceeds to eject the other eggs or newly hatched young by getting them on its back and pushing them gradually over the side one by one ; a curious hollow formation of the back in the early days of the cuckoo's life is obviously adapted to this nefarious purpose ; when two cuckoos hatch out in the same nest, each tries to evict the other, but if neither succeeds they settle down amicably together after about four days. The great bulk of the cuckoo compared with the size of the foster-parents requires all the food they can bring ; so great is the disproportion in size that they frequently have to perch on the back of the young cuckoo to place food in its mouth.

Readers who wish to study the habits of cuckoos in detail should consult books by Stuart Baker and Chance, and several papers by Livesey, references to which will be found in the bibliography.

The larger cuckoos (*Cuculus*) are mostly grey or brown birds with barred under-parts and are not easy to distinguish in the field by their plumage, though readily recognised by their call-notes ; the following key may help :

KEY TO THE GENUS *CUCULUS*

A. Wings long and pointed, falcon-like. Secondaries in closed wing scarcely exceed half the length of the primaries.

a. No subterminal black band to tail.

a^1. Wing under 7 inches . . . . . *C. poliocephalus*

b^1. Wing over 8 inches.

a^2. Edge of wing mixed brown and white . . *C. canorus*

b^2. Edge of wing white . . . . . *C. saturatus*

b. A broad subterminal black band to tail . . . *C. micropterus*

B. Wings shorter and more rounded. Secondaries in closed wing at least two-thirds the length of the primaries.
c. No distinct dark cheek-band from eye.
*c*¹. Wing over 8 inches. Abdomen banded . . *C. sparverioides*
*d*¹. Wing under 8 inches.
*c*². Abdomen banded . . . . . *C. varius*
*d*². Abdomen not banded . . . . . *C. fugax*
d. A distinct dark cheek-band (Tenasserim) . . *C. vagans*

EUROPEAN CUCKOO

Cuculus canorus Linnaeus, SWEDEN
SUBSPECIES : *bakeri* Hartert, SHILLONG, ASSAM

LOCAL NAME. Chinghpaw : *puk-dun.*
IDENTIFICATION. Length 13 inches. See key. Upper-parts and breast blue-grey, remaining under-parts whitish with dark bars ; tail rather long. Chiefly seen on the wing when it appears not unlike a sparrow-hawk, though the pointed wings and graduated tail with the feathers marked and tipped with white at once distinguish it. Young birds have the upper-parts either grey-brown and little marked or reddish-brown strongly barred ; the under-parts in both types are buffish-white barred black, with a white patch on the nape. The flight is direct and hurried, with the wings moving rapidly, often with a long glide on extended wings before settling.
VOICE. The song of the male, *coocoo*, carries a long distance ; *coo-cooc-co* and *cooc-cooc-coocoo* are variants sometimes heard. The female has an entirely different water-bubbling chuckle. Rare instances of the same bird giving both bubble and cuckoo notes have been recorded in the British Isles. A number of less familiar notes are also known. It calls from mid-March to the break of the rains and occasionally in June ; its call is seldom heard in the plains.
HABITS AND FOOD. The cuckoo frequents all types of wooded country, but prefers open forest and cultivation surrounded by scrub-jungle. As it is shy and keeps largely to leafy trees its presence is usually heralded by its well-known voice long before the bird itself is seen. It is nearly always solitary and does not pair in the ordinary sense, mating being promiscuous in the breeding season. It usually perches on trees, but also on bushes, walls, rocks, posts, etc., often alighting in a clumsy fashion with a crash and steadying itself with wings and elevated tail. On the ground it proceeds with a waddling gait or a succession of awkward hops. Its food consists chiefly of injurious insects, and it is partial to large, hairy caterpillars.

NEST AND EGGS. The eggs are laid in the nests of a great variety of species, but perhaps the commonest are the paddy-field pipit, striated marsh warbler, streaked fantail warbler, brown hill warbler, and stone chat. The eggs are broad, blunt ovals in shape, with the shell very heavy and thick in texture (thus lessening the risk of breakage when the egg is squirted into an inaccessible nest). The colour is very variable and as a rule the egg imitates closely the colour of the fosterer's eggs, from which it can often be distinguished only by its greater size. Thus one bird specialises in stone chats and lays a pale yellowish-white egg with light red markings closely resembling the stone chat's egg ; another bird specialises in bush chats and lays a pale blue egg without markings, admirably adapted to the pale blue eggs of the bush chat. It sometimes happens that the bush chat specialist cannot find enough nests in the season and then lays in one or two stone chat's nests, where the pale blue egg affords a violent contrast. Other individuals specialise in other species.

STATUS AND DISTRIBUTION. The cuckoo is a migratory bird found at one season or another throughout the greater part of the old world, and even in Australia. In Burma it is widely distributed, though not common, and its breeding range is imperfectly known ; the problem is complicated by the fact that it is a local migrant, but it probably breeds throughout the higher hills of northern Burma and in the Shan States.

[NOTE.—*telephonus* Heine, JAPAN, is said to wander over the whole of the oriental region in winter (*F.B.I.*, vol. iv, p. 137) but there are no satisfactory records from Burma.]

HIMALAYAN CUCKOO

Cuculus saturatus Blyth, NEPAL
SUBSPECIES : *saturatus* Blyth, NEPAL

IDENTIFICATION. Length 13 inches. See key. Probably indistinguishable in the field from *canorus* except by voice. " Hepatic " females, with upper-parts barred chestnut and blackish-brown, have been recorded. The song consists of four dull booming notes on a monotone *hoo-hoo-hoo-hoo*, not unlike the call of the hoopoe, preceded by an introductory grace note only to be heard close to the bird.

NEST AND EGGS. It lays in the nests of willow warblers, bush chats, tailorbirds, etc.

STATUS AND DISTRIBUTION. Breeds in central and eastern Siberia and throughout the Himalayas, migrating south in winter ; it probably breeds throughout the higher hills of northern Burma, but has been overlooked. I found it to be common round Sinlum Kaba in March and April, and noted its call on both sides of the Pyepat ridge near Laukkaung ; Mackenzie claimed to have taken

its eggs in the Chin Hills, and Stuart Baker (*F.B.I.*, vol. iv, p. 141) states that its range extends south to Toungoo. Forrest obtained it on the Likiang range in Yunnan.

SMALL CUCKOO

Cuculus poliocephalus (Latham), INDIA
SUBSPECIES : *poliocephalus* (Latham), INDIA

IDENTIFICATION. Length 10 inches. See key. A miniature edition of the European cuckoo. It has a loud shrill call, repeated at short intervals for hours, syllabified by Osmaston as *that's your smoky pepper*, repeated several times, each time in a lower key. The same call is described by Stanford as a loud, shrill, six-syllabled note, rather like a cackling hen, with the stress on the prolonged third syllable, *who-who-whār-who-who-wha*. It is an unmistakable call, but not easily described.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Found throughout the Himalayas, and through the mountains of China to Japan. In Burma it has been recorded from Mt. Victoria, North-East Burma, Maymyo (Osmaston), and Thandaung, but seems to be a scarce and local bird of the higher hills.

INDIAN CUCKOO

Cuculus micropterus Gould, HIMALAYAS (SIMLA–ALMORA Dists.)
SUBSPECIES : *micropterus* Gould, HIMALAYAS (SIMLA–ALMORA Dists.)

LOCAL NAME. Burmese : *yauk-hpa-kwe-kaw* (brother-in-law, call the dog).
IDENTIFICATION. Plate XV, fig. 7, p. 324. Length 13 inches. See key.
VOICE. The Burmese name syllabifies the loud, melodious song of this bird ; though re-iterated with great persistence it never becomes a nuisance like the " songs " of some of the other cuckoos. It may be heard from the end of January to June.
HABITS AND FOOD. Those of the family. This bird's voice is a familiar sound in the forests, both of the foothills and the higher hills, in the late cold weather and hot weather. At other times of the year it eludes observation. It is purely a forest bird, avoiding open country.
NEST AND EGGS. One type of egg closely resembles the pale blue egg laid by *canorus*, and is found in the nests of species that lay blue eggs, such as the various chats.
STATUS AND DISTRIBUTION. Widespread in the oriental region and found throughout the forests of Burma, but it seems commoner in the higher hills than at low elevations. To what extent it is a local migrant is unknown.

LARGE HAWK-CUCKOO

Cuculus sparverioides Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)
SUBSPECIES : *sparverioides* Vigors, HIMALAYAS (SIMLA–ALMORA Dists.)

IDENTIFICATION. Length 16 inches. See key. Even more like a hawk than the European cuckoo, the wings being broader and less pointed.
VOICE. A three-note call, *pi-pee-ha, pi-pee-ha,* each repetition louder and shriller than the last. The call is often syllabified as *brain-fever* ; it is repeated at intervals throughout the day and often at night, frequently for an hour or more at a stretch. It is heard chiefly from the beginning of February to the end of June, most persistently in the hot weather, and very occasionally at other times of the year. The call is neither so loud nor so shrill as that of the next species. A peculiar squeal uttered every fifteen seconds or so has been noted in December.
HABITS AND FOOD. Those of the family. A shy forest bird.
NEST AND EGGS. Two types of egg are known. One type is pale bright blue, and is laid in the nests of various laughing-thrushes, babblers, and the whistling thrush, all of which lay blue eggs with or without sparse markings. The other type is brown in colour and imitates closely the eggs of the streaked spiderhunter, in whose nests it is laid. These two types differ not only in colour to suit the fosterer, but also in size.
STATUS AND DISTRIBUTION. Throughout the oriental region as far west as the central Himalayas. It is distributed throughout the forests of Burma at all elevations, but is much more abundant in the higher hills than in the plains and foothills.

COMMON HAWK-CUCKOO

Cuculus varius Vahl, INDIA

IDENTIFICATION. See key. Indistinguishable in the field from the preceding species, except perhaps by voice, the *brain-fever* call being shriller and more crescendo.
STATUS AND DISTRIBUTION. India and Ceylon. Listed by Christison from Arakan with the remark " less common in winter. Heard in April." Two eggs taken in the northern Chin Hills by Mackenzie were attributed by him to this species.

HORSFIELD'S HAWK-CUCKOO

Cuculus fugax Horsfield, JAVA
SUBSPECIES : *fugax* Horsfield, JAVA
nisicolor Blyth, NEPAL

IDENTIFICATION. Length 11½ inches. See key. A medium-sized cuckoo with a rufous-tipped tail. The bird has two notes : (1) *Gee-whizz, gee-whizz* . . .

repeated up to 20 times in a very sibilant and insistent manner ; (2) a staccato stuttering screech up the scale and half-way down again, getting faster and suddenly dying out. It is partial to evergreen and dense forests and keeps mainly to the understorey.

NEST AND EGGS. Flycatchers and shortwings seem to be the usual fosterers.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Nepal, but there are few records from Burma. Mackenzie states that he took two eggs in the northern Chin Hills ; Oates obtained two specimens in the Sittang valley, Cook records it from Kalaw, I obtained one at Thandaung, and Davison one near Thaton.

DWARF HAWK-CUCKOO

Cuculus vagans S. Müller, JAVA

IDENTIFICATION. Length 11 inches. See key. Said to be confined to evergreen forest.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim and the Mergui Archipelago. Davison found it not uncommon in April in the forests round Mt. Nwalabo.

PLAINTIVE CUCKOO

Cacomantis merulinus Scopoli, PHILIPPINE IS.
SUBSPECIES : *passerinus* (Vahl), MALABAR, S. INDIA
querulus Heine, NEPAL

IDENTIFICATION. Plate XV, fig. 6, p. 324. Length 9 inches. The back is ashy-grey, the tail blackish with a white tip, and the belly not always as red as shown in the plate. A white wing-patch is noticeable in flight. The under-parts of the female are barred with brown. Eye ruby-coloured, gape pillar-box red. Young birds resemble the female and are difficult to distinguish from adults of the banded bay cuckoo. A small, active, hawk-like bird.

VOICE. This bird has a variety of calls :

(1) The cadence call, *tee-tee-tee-tee-tita-tita-tita-tita-tee*, the first four notes are plaintive, uttered fairly slowly, the next four notes are double ones uttered twice as fast, and the last note is again mournful ; the whole forms a cadence down the scale.

(2) The ascending call, *tay-ta-ta-tay, tay-ta-ta-tay, tay-ta-ta-tay*, each phrase higher than the last. This call often ends off with the cadence call. It may be heard from November onwards.

(3) A harsh screech, usually uttered in thick cover, *tchree-tchree.*

(4) A run of two, three or four trilled notes, dying away, *prrreee-prree-pree-pre.*

HABITS AND FOOD. This cuckoo is found in all types of lightly

wooded country, scrub-jungle, gardens, and cultivation; it is typically seen at or near the top of an isolated tree, though it is much more familiar to the ear than to the eye. In the breeding season it seems to retreat to the higher hills, and its voice is the most characteristic of all the bird sounds to be heard along the Mawchi road in April. At other times it favours marshland and the environs of jheels.

NEST AND EGGS. The eggs are usually laid in the nests of small warblers, such as the tailorbird, fantail warbler, hill warbler, and wren-warbler; they are usually white or pale blue, marked with light reddish blotches.

STATUS AND DISTRIBUTION. Widespread in the oriental region and common almost throughout Burma in the plains, foothills and higher hills alike, according to season, but in North-East Burma it seems to be scarce in the hills.

BANDED BAY CUCKOO

Cacomantis sonnerati (Latham), BENGAL
SUBSPECIES: *sonnerati* (Latham), BENGAL
malayanus Chasen and Kloss, MALAYA

IDENTIFICATION. Length 9½ inches. Upper-parts barred brown and rufous; under-parts whitish with fine wavy bars of brown; distinguished from the young plaintive cuckoo by larger size. The call is a very high-pitched and shrill version of *yauk-hpa-kwe-kaw*, sometimes preceded by a cadence call, which may consist of three ascending notes or of a more elaborate sequence of two notes on the same pitch, followed by three notes on the same pitch, followed by three notes on a higher pitch and finally three more notes on a still higher pitch.

NEST AND EGGS. A large number of fosterers have been recorded in India, amongst them various bulbuls and small babblers.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It probably occurs throughout Burma, but there seem to be no records from the western side. Rippon described it as quite common in open country near Kalaw, and its voice is commonly heard in the Pegu Yomas from mid-January onwards; elsewhere it has been reported from Thayetmyo, northern Burma, Katha district, and central Tenasserim.

VIOLET CUCKOO

Chalcites xanthorhynchus Horsfield, JAVA
SUBSPECIES: *limborgi* (Tweeddale), MT. MULAYIT

IDENTIFICATION. Length 6½ inches. Sexes differ. The male has the whole head, upper-parts and breast glossy violet, and the remaining under-parts heavily barred; the orange-red bill is noticeable in the field. The female is

PLATE XV

1. GREAT BARBET (adult) 3
Megalaima virens virens.

2. INDIAN BLUE-THROATED BARBET (adult) . . . 313
Megalaima asiatica asiatica.

3. CRIMSON-BREASTED BARBET (adult) 315
Megalaima haemacephala indica.

4. LINEATED BARBET (adult) 312
Megalaima zeylanica hodgsoni.

5. RED-WINGED CRESTED CUCKOO (adult) 326
Clamator coromandus.

6. PLAINTIVE CUCKOO (adult) 323
Cacomantis merulinus querulus.

7. INDIAN CUCKOO (adult) . . . . . [illegible]
Cuculus micropterus micropterus.

8. KOEL (adult male) 327
Eudynamys scolopaceus malayana.

8*a*. KOEL (adult female) 327
Eudynamys scolopaceus malayana.

9. GREATER GREEN-BILLED MALCOHA (adult) . . . 328
Phoenicophaeus tristis longicaudatus.

10. GREATER COUCAL (adult) 330
Centropus sinensis intermedius.

1
2
3
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5
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7
8
8a
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10
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100
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150 m.m.

bronze-green above and barred below, with a dull yellow bill. Young birds are barred rufous and brown above and white with brown bars below. Often seen sitting sluggishly on a bare tree in or near evergreen forest.

NEST AND EGGS. The eggs are usually laid in the nests of the little spiderhunter, whose eggs they closely resemble, being pure white to pink in ground-colour with a ring of reddish markings at the larger end.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Assam. In Burma it is confined to evergreen forest and is either scarce or has been overlooked; it has been recorded from the Arakan Yomas near Thayetmyo, Pegu Yomas, Karenni, and Tenasserim; once at Htinzin in the Upper Chindwin (Baillie).

EMERALD CUCKOO

Chalcites maculatus (Gmelin), PEGU

IDENTIFICATION. Length 7 inches. Sexes differ. The male in breeding plumage has the whole head, upper-parts and upper breast brilliant metallic green; remaining under-parts heavily barred; in winter the upper-parts are bronze and the head and upper breast are barred like the rest of the under-parts. The female has the crown and nape rufous, the upper-parts light copper-green, and the under-parts heavily barred. Young birds are barred rufous and brown above, and dull white and brown in alternate bars below except for the chin and throat, which are dull rufous simply marked with black. Davison noted that it has a very fine clear whistling call, loud for the size of the bird, of three notes rapidly uttered; this call is heard at intervals throughout moonlight nights, as well as by day. Baillie describes the call as a series of sibilant screaming notes. The only note I have heard is a quick high-pitched rattle of 5–6 notes, descending in pitch, uttered by members of a party. Seen flying from tree to tree in a *taungya* with its emerald plumage flashing in the sun it is a beautiful bird, but it is normally very sluggish, keeping to the tops of leafy trees in dense evergreen forest and sitting motionless for long periods. Feeds on insects only (Davison).

NEST AND EGGS. The eggs are usually laid in the nests of various species of sunbird and warbler in addition to the little spiderhunter, and usually resemble closely the eggs of the fosterer.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as the central Himalayas. In Burma it is sparingly distributed throughout the evergreen forests of the country, and ascends the hills to 8,000 feet.

DRONGO-CUCKOO

Surniculus lugubris (Horsfield), JAVA
SUBSPECIES: *brachyurus* Stresemann, PAHANG
dicruroides (Hodgson), NEPAL

IDENTIFICATION. Length 10 inches. Like the black drongo, but distinguished at once by the square tail; in addition it has white bars under the tail, a white bar on the under-side of the wing, and white spots on the primaries.

VOICE. It has a distinctive very human song of five or six whistling notes on an ascending scale, ending abruptly, and also a clear, loud *whee-wheep*, the second note higher than the first. It calls much at night.

HABITS AND FOOD. This bird is typically seen calling from the topmost branches of a tall tree, but I have also heard it calling at night from the undergrowth ; it is a bird of open forest and bamboo jungle.

NEST AND EGGS. The eggs are laid in the nests of the black drongo, various shrikes, bulbuls, Leschenault's forktail, and the striated marsh warbler ; they are cream-coloured with blotches of reddish-brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and sparingly distributed throughout Burma ; it has been recorded from Yunnan, where it goes up to 7,000 feet, but in Burma it has not been observed much above 4,000 feet.

PIED CRESTED CUCKOO

Clamator jacobinus (Boddaert), COROMANDEL COAST
SUBSPECIES : *jacobinus* (Boddaert), COROMANDEL COAST

LOCAL NAMES. Burmese : *hkwe-hkaw-yeik* or *mo-hsaung-hnget.*

IDENTIFICATION. Length 13 inches. Easily recognised by the long-pointed crest (as in the next species), black upper-parts, black wings with a white patch, and white under-parts. The usual note is a metallic and arresting *ple-ue*. A characteristic bird of the dry zone during the rains ; noisy, restless and usually seen chasing each other in pairs. The flight is rather laboured with the tail pointing slightly upwards.

NEST AND EGGS. The eggs are laid in the nests of babblers and laughing-thrushes ; both in colour (blue) and in shape they resemble the eggs of *Turdoides gularis* and *earlei*, which are the usual fosterers.

STATUS AND DISTRIBUTION. Africa, India, Ceylon, and parts of Burma. It is common in Central Burma during the rains, straggling down as far south as the Tharrawaddy district, and has been observed from May to the 9th November ; it seems to leave Burma altogether in winter, possibly migrating to Africa.

RED-WINGED CRESTED CUCKOO

Clamator coromandus (Linnaeus), COROMANDEL COAST

IDENTIFICATION. Plate XV, fig. 5, p. 324. Length 18 inches, including a tail of 10 inches. There are white tips to the tail-feathers and the wings appear mostly chestnut in flight, reminding one of a small coucal.

VOICE. It has a loud, harsh screech, *creech-creech-creech*, and a hoarse whistle, as if something had stuck in its throat. Stanford mentions

a very soft *too-too*, not unlike that of a bullfinch, and on moonlight nights in the hot weather a loud, clear whistle is sometimes uttered.

HABITS AND FOOD. This bird frequents teak forest, *indaing*, hill forest, and scrub-jungle, and is sometimes seen in Rangoon gardens. It is a wary, active bird, usually seen flying swiftly through the trees or dodging about in thick foliage.

NEST AND EGGS. The eggs are laid in the nests of quaker babblers, laughing-thrushes (especially the necklaced laughing-thrushes), ground thrushes, and magpie-robins; they closely resemble the eggs of the necklaced laughing-thrush.

STATUS AND DISTRIBUTION. Widespread in the oriental region and found throughout Burma, frequenting chiefly the plains and foot-hills, but occasionally ascending the higher hills (Sinlum Kaba, 6,000 feet, is the highest record I have seen). Stanford describes it as arriving in Myitkyina district between the 7th and 18th May and disappearing again in mid-October, and it is clearly a local migrant, but its movements have not been worked out.

KOEL

Eudynamys scolopaceus (Linnaeus), BENGAL
SUBSPECIES: *chinensis* Cabanis and Heine, CANTON, CHINA
malayana Cabanis and Heine, SUMATRA

LOCAL NAME. Burmese: *ok-aw*.

IDENTIFICATION. Plate XV, figs. 8 and 8*a*, p. 324. Length 17 inches. The crimson eye is conspicuous and in flight the long tail and short, rounded wings are noticeable.

VOICE. The unpleasant shrieking call must be known to every one in the plains; it consists of two syllables, *you're ill, you're ill*, repeated several times, louder and shriller each time till it reaches a feverish pitch and breaks off abruptly; this call is uttered by both sexes all day long, and often at night, and is an unmistakable token of the hot weather. Another call, *ho-y-o*, is apparently uttered by the male alone, and a third call of the water-bubbling type is probably common to both sexes. The female utters a sharp *kik-kik-kik* as she flies from tree to tree. These are all breeding-notes and the bird is comparatively silent at other times of the year, but may be heard calling in any month, especially at dawn and dusk in the cold weather or when the sun is shining during the rains (Roseveare); these off-season calls are very half-hearted efforts as a rule.

HABITS AND FOOD. A common garden bird, but seldom seen owing to its habit of hiding in the thick foliage of tall trees.

NEST AND EGGS. It lays its eggs in nests of the house crow as a rule ; it is not unusual to find two or three koel's eggs in one crow's nest, and as many as eight have been recorded. Harington recorded its eggs in nests of the magpie (*Pica pica sericea*). The female koel is said often to feed her offspring after they are fledged, an unusual trait in a parasitic cuckoo. The eggs resemble those of the house crow except that they are considerably smaller.

STATUS AND DISTRIBUTION. Its range is probably co-extensive with that of the house crow. It seems to be a local migrant, but little is known about its movements. In Tenasserim it is abundant from March to July, absent from August to November, and very rare from December to February (Davison).

Sub-family PHOENICOPHAINAE

MALCOHAS

This sub-family contains a group of non-parasitic cuckoos represented in America, Africa, and the oriental region. The Burma species are poor flyers and live amongst thick foliage ; most of them have thick and brightly coloured bills.

RED-BILLED MALCOHA

Phoenicophaeus javanicus (Horsfield), JAVA
SUBSPECIES : *pallidus* Robinson and Kloss, MALAYA

IDENTIFICATION. Length 18 inches, including a tail of 11 inches. Easily recognised by red bill, small patch of blue skin round the eye and very long white-tipped tail ; upper-parts grey and under-parts cinnamon, washed with grey on the breast.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Tavoy, but rare.

GREATER GREEN-BILLED MALCOHA

Phoenicophaeus tristis (Lesson), BENGAL
SUBSPECIES : *tristis* (Lesson), BENGAL
saliens Mayr, TONGKING
longicaudatus (Blyth), MOULMEIN

LOCAL NAME. Burmese : *wapale.*

IDENTIFICATION. Plate XV, fig. 9, p. 324. Length 24 inches, including a tail of 16 inches. A forest bird, usually appearing very dark in the field except for the white tips to the tail-feathers.

VOICE. The usual note is a low *cook . . . cook . . . cook* sometimes ending with a run *co-co-co-co-co*. A characteristic whistle of four notes was uttered, chiefly in the mornings, by a nesting pair in Maymyo.

HABITS AND FOOD. This is typically a forest bird, though often seen in scrub-jungle on the outskirts of towns and villages; it seldom flies and is usually noticed in a thick bush or amongst the foliage of a climber-clad tree, hopping up the branches in corkscrew fashion and manipulating its long tail with dexterity.

NEST AND EGGS. Have been taken in various parts of Burma from early March to September, and one nest in the Ataran valley, northern Tenasserim, contained young birds on the 1st March. The nest is like that of a treepie or dove, but may be lined with green leaves, and the eggs, 2 or 3 in number, are white, like pigeon's eggs.

STATUS AND DISTRIBUTION. A Malaysian species, but ranging to the central Himalayas and Yunnan. It is common throughout Burma in suitable localities, ascending the hills to about 5,000 feet.

LESSER GREEN-BILLED MALCOHA

Phoenicophaeus diardi (Lesson), SUMATRA
SUBSPECIES: *diardi* (Lesson), SUMATRA

IDENTIFICATION. Length 14 inches, including a tail of 9 inches. Similar to the preceding species, but much smaller and darker.

NEST AND EGGS. One nest was taken by Hopwood near Tavoy on the 27th April.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim up to Tavoy.

RUFOUS-BELLIED MALCOHA

Phoenicophaeus sumatranus (Raffles), SUMATRA

IDENTIFICATION. Length 16 inches, including a tail of 9 inches. Differs from *diardi* in having the abdomen dark rusty-red instead of grey, and the facial skin orange.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim and very common round Mergui.

CHESTNUT-BREASTED MALCOHA

Phoenicophaeus curvirostris (Shaw), W. JAVA
SUBSPECIES: *erythrognathus* (Hartlaub), SUMATRA

IDENTIFICATION. Length 19 inches, including a tail of 10½ inches. Distinguished by chestnut under-parts and dark metallic blue-green mantle, wings

and tail, the latter with broad purplish-chestnut tips. The iris of the male is pale blue, of the female usually bright yellow, and of the young of both sexes a deep red-brown (Davison).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Ye, and very common in Mergui district.

RAFFLES'S MALCOHA

Phoenicophaeus chlorophaeus (Raffles), SUMATRA
SUBSPECIES : *chlorophaeus* (Raffles), SUMATRA

IDENTIFICATION. Length 13 inches, including a tail of 7 inches. The only malcoha with head, mantle, and wings chestnut. It has a peculiar cat-like mew, frequents cane-brakes and similar thick cover in evergreen forest, and feeds entirely on insects (Davison).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Ye, but nowhere very common.

Sub-family CENTROPODINAE

COUCALS or CROW-PHEASANTS

These birds are confined to the old world tropics, from Africa to Australia. They are non-parasitic cuckoos of terrestrial habits.

GREATER COUCAL

Centropus sinensis (Stephens), NINGPO, CHINA
SUBSPECIES : *intermedius* (Hume), THAYETMYO

LOCAL NAME. Burnese : *bok*.

IDENTIFICATION. Plate XV, fig. 10, p. 324. Length 18 inches. A big black bird with chestnut wings, which from its size and voluminous tail is often mistaken for a game-bird (hence the name " subaltern's pheasant "). The fine white streaks shown in the plate are not prominent in the field. Albino and pied varieties have been reported.

VOICE. It has a distinctive, dull, booming call down and up the scale, usually ending with about a dozen notes all on the same pitch, and the whole full-toned and melodious, if somewhat lugubrious. It also utters a variety of croaks and chuckles, and a long drawn-out swearing call is sometimes uttered from an exposed perch.

HABITS AND FOOD. This crow-pheasant is a common bird of cultivation and waste land wherever dense scrub-jungle is to be found ;

it keeps much under cover and may be seen walking about sedately on the ground with its tail carefully lifted, picking up beetles and grasshoppers or catching lizards, snakes, and similar food; when disturbed it flies into thick cover, with a remarkably slow and leisurely flight. In the Pegu Yomas it penetrates into the heart of the forests where *bizat* and *kaing* grass replace trees along the banks of streams, and out of such cover it frequently pops during a beat, to the disappointment of the sportsman who is keyed up for a jungle-fowl. It certainly prefers cover beside streams and swamps, but I have seen odd birds far from water or in dry jungle. It ascends bushes and trees by hopping up from branch to branch, and is fond of basking in the sun on the tops of bushes or bamboo clumps after rain. "Continually seen prowling about on mud banks of rivers just above the water's edge" (Davison).

NEST AND EGGS. Breeds during the rains, commencing in April in Tenasserim. Some nests are solidly constructed of *kaing* grass and attached to the stems of growing *kaing*; others are built in a bush or tree, and may be a large globular-domed structure or merely a rough saucer. The eggs, 3 to 5 in number, are dull white without markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region and common throughout Burma, ascending the hills to about 4,000 feet.

LESSER COUCAL

Centropus bengalensis (Gmelin), BENGAL
SUBSPECIES: *bengalensis* (Gmelin), BENGAL

LOCAL NAME. Burmese: *bok-hnan*.

IDENTIFICATION. Length 15 inches. A miniature of the preceding species, but the wings are paler chestnut and the mantle is black (brown in winter) striped with buff, and not chestnut. The call is quite distinct. It consists of 4 or 5 whoops, accelerando and dropping in pitch, followed by a ringing high-pitched staccato call *kok-kok, kok-kok, kok-kok, kok-kok, kok-kok-oo, kok-kok-oo*. Typically a bird of extensive areas of *kaing* grass or *thetke*.

NEST AND EGGS. Breeds during the rains. Many nests have been taken in the *kaing* grass areas of the Myitmaka drainage, where the nest is usually built entirely of *kaing* leaves and is domed with a side-entrance; some nests are lined with green leaves. Wickham states that it nests in *thetke* in the Shan States at about 3,000 feet.

STATUS AND DISTRIBUTION. Widespread in the oriental region and found throughout Burma in the plains and lower valleys, but rarely seen and much more local than the greater coucal; it is also found on the Shan plateau, and I have seen it as high as 6,000 feet in Karenni. Both species have been recorded from Yunnan.

Order PSITTACIFORMES

Family PSITTACIDAE

PARAKEETS AND LORIKEETS

THE great family of the parrots is found throughout the tropics and in all the continents except Europe ; it is represented by seven species in Burma, of which one occurs only in Tenasserim and the others have all been illustrated (Plate XVI, p. 336) so that their identification should be easy.

The species found in Burma differ little in their habits. They live in pairs in the breeding season, and at other times gather into flocks, which from their universality, the damage they do in gardens and fields, their noisiness, and their vivid coloration, are known to all and sundry. They are wonderful climbers, equally at home in any position and using their beaks freely to hold on with, and are normally arboreal in habits ; but a field of ripening paddy or maize will attract them in large numbers, to the despair of the unfortunate cultivator ; it is not so much the grain they eat as their very wasteful method of feeding that does the damage, for they often break off a whole ear, select one or two grains, and throw down the rest. They are also very destructive to maize, tearing open the pods and eating the unripe seeds.

On the ground their short legs, adapted for climbing or grasping food, and their long tails result in an awkward sidling gait that looks very quaint ; but on the wing they are magnificent, hurtling through the forest in a compact flock and swerving gracefully to avoid trees and branches. In the open the flight is direct and is best seen in the evening when flock after flock hurry in succession along the same line to a patch of trees, where they roost together, sometimes along with crows and mynas. Some species are commonly kept as cage birds, especially the rose-ringed parakeet, but though individuals may be taught to say a few words the best of them never learn to talk as glibly as the African parrots ; nevertheless there is something sedate and knowing about their demeanour that makes them attractive pets.

Most birds breed in the hot weather. No nest is made, the eggs being laid in holes in trees, or less commonly in walls or buildings. The hole may be a natural one, but the bird often excavates a tunnel

and chamber similar to that of a woodpecker. The eggs are pure white in colour.

Local names applicable to all parakeets are—Burmese : *kyet-tu-ywe* ; Chinghpaw : *kaikke.*

LARGE PARAKEET

Psittacula eupatria (Linnaeus), CEYLON
SUBSPECIES : *avensis* (Kloss), BHAMO (= *indoburmanica* Hume)

LOCAL NAMES. Burmese : *kyet-taw* or *kyet-paung-ka.*
IDENTIFICATION. Plate XVI, fig. 1, p. 336. Length 22 inches. Females and young birds lack the rose collar and the black moustachial streak.
VOICE. The cry is described as harsh and sonorous, or loud and shrill.
HABITS AND FOOD. Those of the family. It is chiefly a bird of the plains and of *indaing* forest.
NEST AND EGGS. Have been taken in Tenasserim (December), Southern Burma (February and March), and Central Burma (December to February).
STATUS AND DISTRIBUTION. Widespread in the oriental region (excluding Malaysia), and sparingly distributed throughout Burma, but not north of Myitkyina or south of Amherst and not in the higher hills.

ROSE-RINGED PARAKEET

Psittacula krameri (Scopoli), W. AFRICA
SUBSPECIES : *borealis* Neumann, ASSAM

LOCAL NAME. Burmese : *kyegyok.*
IDENTIFICATION. Plate XVI, fig. 2, p. 336. Length 16½ inches. Young males do not acquire the rose collar and black band until their third year, and the female has them replaced by an indistinct emerald-green band.
VOICE. The ordinary call is a harsh, rather shrill, scream.
HABITS AND FOOD. Those of the family. In Burma it is a fairly common bird of the plains and uplands of the dry zone, but nowhere attains the vast numbers that are to be seen in India, where it is the commonest and most familiar of all parakeets.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Africa, India, and Central Burma. It is a bird of the dry zone, straggling thence down the Irrawaddy and

Sittang valleys to about the latitude of Pegu, and eastwards to the Shan States and Karenni; there are no records from northern Burma or Tenasserim.

BLOSSOM-HEADED PARAKEET

Psittacula roseata Biswas, CACHAR
SUBSPECIES: *roseata* Biswas, CACHAR
juneae Biswas, ARAKAN

LOCAL NAME. Burmese: *kye-tama.*

IDENTIFICATION. Plate XVI, fig. 3, p. 336. Length 13½ inches. The female has the red on the head replaced by a dull bluish-grey and there is no black on the chin and throat and the red wing-spot is lacking; a yellow ring replaces the black collar. She is apt to be confused with the next species, but the tip of the tail, usually conspicuous in flight, is whitish, whereas in the next species it is bright yellow. Young birds are wholly green and have the bill all pale yellow.

VOICE. Its voice is softer and more musical than that of the other parakeets, and in flight it utters a sharp interrogative cry, *tooi*?

HABITS AND FOOD. Those of the family. It frequents cultivation and the outskirts of forest.

NEST AND EGGS. Macdonald reports that they are common on Mt. Popa and breed during March and April, while Wickham found it breeding at 3,000 feet in the Shan States early in March.

STATUS AND DISTRIBUTION. Almost throughout India, extending eastwards to Siam and southern China. It is sparingly distributed through Central and Southern Burma, the Shan States, and Tenasserim (excluding Mergui district), but seems to be local nowadays, although Oates found them abundant in Southern Burma seventy years ago, and so did Davison in northern Tenasserim. In Arakan "generally scarce and locally migratory, but very common in March and April at Ruywa" (Christison).

SLATY-HEADED PARAKEET

Psittacula himalayana (Lesson), HIMALAYAS
SUBSPECIES: *finschi* (Hume), SALWEEN Dist.

LOCAL NAME. Burmese: *kye-kala.*

IDENTIFICATION. Plate XVI, fig. 4, p. 336. Length 16–18 inches. The female has no red wing-patch and young birds are wholly green, but apparently acquire the slaty head in their first year.

VOICE. It has a comparatively soft and melodious though high-pitched call, constantly uttered on the wing and from trees, and a shrill whistle not unlike that of the long-tailed broadbill.

HABITS AND FOOD. Those of the family. It is more of a forest bird, and more of a hill bird, than the other parakeets. Large numbers have been seen eating grit in the dry bed of a sandy stream in Mandalay district. Others have been seen feeding on the leaf buds and forming fruits of wild cherries in Maymyo, and Davison noticed it feeding on *letpan* flowers and flowering climbers. It is a characteristic bird of the teak forests of the Pegu Yomas.

NEST AND EGGS. In Central and Southern Burma it breeds from January to March.

STATUS AND DISTRIBUTION. Himalayas to Yunnan and Burma. Though found up to 12,000 feet in Yunnan it does not go above 5,000 feet in Burma, and rarely above 3,500 feet. Though scarce in northern Burma it becomes common further south, and extends into Tenasserim as far south as Mt. Mulayit.

RED-BREASTED PARAKEET

Psittacula alexandri (Linnaeus), JAVA
SUBSPECIES : *fasciata* (P. L. S. Müller), ARAKAN

LOCAL NAME. Burmese : *kalama kyet-tu-ywe.*

IDENTIFICATION. Plate XVI, fig. 5, p. 336. The female has the head duller, generally more tinged with blue or green, and the breast redder and darker, not tinged with plum ; the most obvious difference, however, is that the upper mandible is black and not red. Young birds are green, but show a certain amount of plum colour, rather dull and brownish, about the head, and acquire the black on the forehead and neck after the first moult.

VOICE. The loudest and most raucous of all parakeets, and their trumpet-like screams can be heard at a great distance.

HABITS AND FOOD. Those of the family. This and the slaty-headed parakeet are the two species that are characteristic of the teak forests of the Pegu Yomas. It is particularly common round Myitkyina, where it roosts in bamboo clumps, teak forest, and sugar-cane. The roosting flight is thus described by Stanford : " In November and December the flights are hardly noticeable, only a few small and more or less silent parties coming in ; but from February onwards they begin to increase, reaching their maximum

about mid-May or June, when huge waves of many hundred parakeets, strung out abreast across half a league of sky, come chuckling noisily in from the distant hills before they cluster and sweep down into the bamboos. It is a magnificent sight, the steady onward rush of each main body, while above and below the wave are small parties of birds swerving up or down and chasing each other at racing speed. The teak forest does not attract these birds until the leaves begin to sprout, when they do a good deal of damage by nipping off the leaves or breaking them off as they settle, the ground below being carpeted with leaves and feathers. . . . In the early morning one can hear the roost ' boiling up ' as those of starlings do, ere the birds depart and scatter themselves over five hundred square miles or more of hilly country."

NEST AND EGGS. Breeds in January, February, and probably March.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as the central Himalayas; there is only one record from Yunnan. It is common throughout the forests of Burma, mainly in the foothills, rarely ascending to 6,000 feet. The almost complete absence of parakeets in the higher hills is rather remarkable, considering their powers of flight.

[NOTE.—The typical locality was altered from Pondicherry by Ticehurst (1933)]

BLUE-RUMPED PARROT

Psittinus cyanurus Forster, MALACCA
SUBSPECIES : *cyanurus* Forster, MALACCA

IDENTIFICATION. Length 7½ inches. Very short tail (2 inches) and blue rump distinguish it. " It has nothing of the harsh screaming notes of the parakeets, the usual note being a sharp whistle not unlike that of the glossy starling; it also has a series of pleasant notes, a warble in fact, which it chiefly gives utterance to when seated. It frequents principally old *taungyas* and other places where there is a dense growth of secondary scrub. It feeds chiefly on the small gummy flowers of a plant that always springs up where forest has been felled and burnt. It goes about in small flocks of 15 or more, and is not at all shy or wild. It has a rapid flight, and you often see small parties of them (like *Loriculus*) flying about round and round over the tops of the trees, apparently for fun or exercise, now settling for a moment, then off again, whirling round and round, and all the time whistling at the tops of their voices " (Davison).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species and an irregular summer visitor to the extreme south of Tenasserim, arriving just before the break of

PLATE XVI

Page

1. LARGE PARAKEET (adult male) 333
   Psittacula eupatria avensis.

2. ROSE-RINGED PARAKEET (adult male) 333
   Psittacula krameri borealis.

3. BLOSSOM-HEADED PARAKEET (adult male) . . . 334
   Psittacula roseata roseata.

4. SLATY-HEADED PARAKEET (adult male) 334
   Psittacula himalayana finschi.

5. RED-BREASTED PARAKEET (adult male) 335
   Psittacula alexandri fasciata.

6. INDIAN LORIKEET (adult male) 337
   Loriculus vernalis vernalis.

7. INDIAN ROLLER (adult) 338
   Coracias benghalensis affinis.

8. BROAD-BILLED ROLLER (adult) 339
   Eurystomus orientalis orientalis.

PLATE XVI

the rains, with a few early birds coming about the last week of March; in 1877 Davison saw none in localities where he obtained specimens in the two preceding years " though collecting vigorously from April to July."

INDIAN LORIKEET

Loriculus vernalis (Sparrmann), CACHAR, ASSAM
SUBSPECIES: *vernalis* (Sparrmann), CACHAR, ASSAM

LOCAL NAME. Burmese: *kye-tha-ta.*

IDENTIFICATION. Plate XVI, fig. 6, p. 336. The female has little or no blue patch on the throat, and young males have the red rump mixed with green. The flight is as quick and powerful as that of the parakeets, but consists of several rapid wing-beats, followed by a short pause and a consequent slight dip.

VOICE. A loud whistle or sharp trisyllabic *chee-chee-chee*, repeated every two seconds or so and a sharp *tsit tsit* are common flight-notes; twittering and warbling notes are uttered when feeding, but it is quiet compared to the parakeets and easily overlooked.

HABITS AND FOOD. Usually seen in *taungyas* or clearings in moist and evergreen forests, but Stanford watched one party feeding in a small tree on a village road and taking no notice of people passing beneath. " They feed much on the nectar of flowers " (Davison).

NEST AND EGGS. Bingham took 3 eggs in the Thaungyin valley on the 24th February.

STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Sikkim. It is found sparingly in Burma, and no one has yet observed it north of Mandalay, although it is unlikely to be completely absent from northern Burma. Wickham found it rare in the hills, but does not state where he observed it. Christison found it common in Arakan.

Order CORACIIFORMES

Family CORACIIDAE

ROLLERS

THIS family is found throughout the tropical and temperate countries of the old world, south to Australia, and is represented by two species in Burma.

INDIAN ROLLER

Coracias benghalensis (Linnaeus), BENGAL
SUBSPECIES : *affinis* McClelland, ASSAM

LOCAL NAME. Burmese : *hnget-hka.*

IDENTIFICATION. Plate XVI, fig. 7, p. 336. Length 13 inches. At rest it is inconspicuous and the sudden flash of blue wings (hence the name of blue jay sometimes given to it) when it takes flight is thus all the more startling.

VOICE. A sharp, harsh *tjock* is uttered from a perch and the usual cry on the wing is a loud, harsh *rack-kack-kacker*, etc., with rapidly repeated variants especially associated with the tumbling display (see below) ; young birds just out of the nest call incessantly and swallow each morsel brought to them by the parents with a loud, screaming gobble.

HABITS AND FOOD. This is a bird of open country with scattered trees, avoiding heavy jungle where it is replaced by the next species. It chooses an elevated perch in an exposed situation, such as the branch of an isolated tree, a telegraph wire, a ruined building, or in default of something better a bush or heap of stones ; there it sits motionless, its large dark eyes watching the ground in every direction, and occasionally jerking its tail ; but a grasshopper has only to walk along a blade of grass, or a cricket to emerge from its burrow, and the dark, lumpy bird reveals the beauty of its wings and tail as it launches itself straight at the spot ; it settles on the ground to pick up the morsel and then returns to its perch. Frogs, when available, form a large proportion of its diet and a bird was observed by Radcliffe diving kingfisher-fashion into a tank, probably after frogs ; Lindop estimated that about 90 per cent. of the food given by a pair of nesting rollers he had under observation to their young consisted of large frogs, but he was unable to see whether the frogs were swallowed whole or torn to pieces by the youngsters. In early February the roller betrays the secret of its name ; its sedateness is exchanged for the display in which it rises and falls in the air with wildly flapping wings and harsh grating screams.

NEST AND EGGS. The breeding season is from March to May. The eggs are usually laid in a hole in a tree, but occasionally the deserted nest of some other bird, *e.g.* the black-collared starling or the magpie, is utilised, and there is evidence to show that they will sometimes attack and drive out the rightful owners (*e.g.* hoopoes or white-collared mynas) of a desirable hole. The same

hole may be used year after year. The eggs, 4 or 5 in number, are pure white.

STATUS AND DISTRIBUTION. Widespread in the oriental region and a common and familiar bird throughout the plains of Burma; in the higher hills it is found only where the conditions are sufficiently open to suit it, as at Maymyo and Mogok (where it has been found breeding at 5,000 feet), but not further north where dense vegetation covers the Kachin hills.

BROAD-BILLED ROLLER

Eurystomus orientalis (Linnaeus), JAVA
SUBSPECIES: *orientalis* (Linnaeus), JAVA
deignani Ripley, N. SIAM

LOCAL NAMES. Burmese: *mo-gaung-hnget*; Chinghpaw: *u-shing-gyep*.

IDENTIFICATION. Plate XVI, fig. 8, p. 336. Length 12 inches. In flight a large almost translucent patch is seen on the wing, hence the name of "window-pane bird" sometimes applied to this species. The blackish appearance and red bill are distinctive at rest.

VOICE. A harsh croak is uttered at long intervals. It is a much quieter bird than the Indian roller, but has a similar noisy display in the breeding season.

HABITS AND FOOD. The habitats of this and the preceding species are more or less mutually exclusive, this being purely a forest bird, but there is some overlap in forest clearings and in open forests. This species is a characteristic bird of the teak forests of the Pegu Yomas, and is typically seen on the topmost branch of a dead tree in a small clearing, where it sits motionless with its head sunk into the puffed-out feathers of its shoulder and breast all through the heat of the day. Like the Indian roller it seems to feel no inconvenience when sitting in strong, direct sunlight. Though normally a sluggish bird it is a typically active roller when excited. Though often dropping to the ground it seems to capture its prey on the wing by preference, and has been noted catching flying ants in company with drongos.

NEST AND EGGS. Breeds from March to May. Wickham states that it usually selects a hollow at a considerable height up a tree.

STATUS AND DISTRIBUTION. From India and north-eastern Asia to Australia, extending as far west as the central Himalayas. It is resident throughout the forests of Burma in the foothills, but I have seen no records from the higher hills except for Wickham's statement

that it occurs in all the upper Burma hills; Forrest, however, obtained it as high as 8,000 feet in Yunnan. It is conspicuously common in some parts of the Pegu Yomas.

[NOTE.—*abundus* Ripley, NANKING, CHINA, probably occurs as a winter visitor but has not been detected so far.]

Family MEROPIDAE

BEE-EATERS

This family extends throughout the tropical and temperate regions of the old world. The predominantly green plumage, long, curved, slender bill, and fly-catching habits from a perch, with a loud snap of the bill each time an insect is taken, render the bee-eaters easy to recognise. When hawking for insects a bee-eater has an easy, graceful wheeling action, in which more or less brief periods of rapid wing movement alternate irregularly with intervals of sailing round on rigid wings; the bird alights neatly and quietly on its perch.

The eggs are laid in a circular chamber at the end of a tunnel, which may be 5 feet or more in length, excavated in the face of a bank or cutting. No nest is built, the eggs being laid on the bare floor of the cavity. The eggs are hard and brilliantly glossy in texture, and pure white in colour without markings.

GREEN BEE-EATER

Merops orientalis Latham, MAHRATTA, INDIA
SUBSPECIES: *birmanus* Neumann, MYINGYAN

LOCAL NAMES. Burmese: *hnget-pasin-hto* or *pasin-hto*.
IDENTIFICATION. Plate XVII, fig. 1, p. 348. Length 9 inches, including 2 inches for the elongated central tail-feathers. A green bird with a golden gleam about the head, a bronze tint on the wings, and a beautiful patch of blue on the throat; it has a bright red sparkling eye. Only careful examination with glasses reveals the full beauty of its plumage.
VOICE. The note is a pleasant, cheerful but rather monotonous trill, *tree-tree-tree-tree*, usually uttered on the wing.
HABITS AND FOOD. This species avoids dense forest, but otherwise is almost universal in the plains of Burma, and it is one of the birds most commonly seen from the train window, owing to its habit of

perching on the telegraph wires. The bee-eater is well named; though naturalists in the past have expressed doubts of its ability to tackle so large an insect as a bee, it has recently been proved to eat no less than four species, including the formidable rock honey-bee; it also takes dragon-flies and other insects; small ones are swallowed with a quick upward jerk of the bill, but larger ones are carried to the perch and there battered to death and eaten. It is often seen enjoying a dust bath in a sandy river bed or a gritty road and on cold mornings groups of three to seven birds have been observed huddled close together like ashy swallow-shrikes.

NEST AND EGGS. Breeds from March to May in borrow pits, holes on flat, sandy ground, banks, etc., and on the coast many birds breed in holes out on the flat, open dunes above the normal tide-mark.

STATUS AND DISTRIBUTION. From Egypt through India, Ceylon and Burma to Yunnan, Siam, and Indo-China. It is a common resident and local migrant throughout the plains of Burma, ascending the higher hills where conditions suit it (as on the Shan plateau). Little definite is known about its movements, but Stanford reported that in Myitkyina the winter population from October to January is small compared with the breeding population.

BLUE-TAILED BEE-EATER

Merops philippinus Linnaeus, PHILIPPINE IS.
SUBSPECIES: *philippinus* Linnaeus, PHILIPPINE IS.

IDENTIFICATION. Plate XVII, fig. 2, p. 348. Length 12 inches. Larger size and blue rump and tail distinguish it from the green bee-eater. General colour green with a bronze tinge; chin yellowish, throat chestnut.

VOICE. The call-note is freely uttered on the wing, and is a rather mellow characteristic sound, a rolling whistle or chirp, *teerp*.

HABITS AND FOOD. This fine bee-eater is partial to water and is typically seen over rivers, streams, and jheels, but it is commonly met with also over the paddy plains. It seems to spend more time on the wing than other bee-eaters.

NEST AND EGGS. They breed from February to May, usually in colonies, which may be in holes in a river bank, on the grass-covered, sandy links of the Irrawaddy islands near Myitkyina, in cultivated

kaing land along the Irrawaddy in Southern Burma, or on open, flat sand dunes behind the coastal beaches.

STATUS AND DISTRIBUTION. Throughout the greater part of the oriental region. It is common throughout the plains of Burma as a visitor to breed, but winter records are few. In northern Burma it has been observed only between mid-March and mid-August. In Central Burma (Myingyan) it is rare except in the breeding season. In Southern Burma a few birds winter on jheels (including the Hlawga lake near Rangoon) but the majority disappear between November and February, and large numbers may be observed round Rangoon on passage during the second half of October. In the Prome district it arrives to breed in mid-March and departs again in September or October. In northern Tenasserim it is common nearly all the year round, but in southern Tenasserim, Davison met with it only on passage at the end of February. It is clear that much further observation is required before its status can be accurately assessed, but it is said to visit northern India in summer and southern India in winter, and its movements in Burma seem to be on the same principle.

CHESTNUT-HEADED BEE-EATER

Merops leschenaulti Vieillot, CEYLON
SUBSPECIES : *leschenaulti* Vieillot, CEYLON

IDENTIFICATION. Plate XVII, fig. 4, p. 348. Length 8½ inches. The chestnut crown, nape and back and the pale yellow throat distinguish this, the prettiest of the bee-eaters found in Burma ; rump and tail-coverts pale blue. A forest bird.

VOICE. A musical trill is uttered frequently on the wing.

HABITS AND FOOD. This is a typical bird of the teak forests of the Pegu Yomas, frequenting glades and clearings, and is also commonly seen along roads and mule paths in the hills ; where a telegraph wire runs through the forest it is always much appreciated. There is little overlap between its habitat and that of the green bee-eater, but Milner reports that they roost together in large flocks on the coast west of Bassein. It has a habit of collecting along forest paths, apparently to pick up grit. Baillie saw some birds plunging into water like a kingfisher, but what they were catching was not observed. " These birds never eat the wings of butterflies. You see one of them swoop on to a butterfly close at hand ; then you hear a little click of the bill, and as the bird flies off the pair of wings come slowly fluttering down to the ground " (Davison).

NEST AND EGGS. Wickham's statement that it " certainly does not breed in colonies " in the upper Burma hills does not hold good for the plains; colonies have been observed from February to April in the Mali and N'Mai valleys, below Tagaung in the Katha district, and in the *lwins* round Heinze bay, Tavoy district.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and found throughout the forests of Burma, but its status is uncertain; it is a local migrant about whose movements we know little. In northern Burma, Stanford considered that some birds remained over the winter, but that the majority were summer visitors to breed, and he noted an influx into the N'Mai valley in early March. In Southern Burma, Armstrong thought it to be a migrant, appearing in February, but some birds certainly winter in the Pegu Yomas and on the Hlawga lake.

BLUE-BEARDED BEE-EATER

Nyctyornis athertoni (Jardine and Selby), BANGALORE, S. INDIA

LOCAL NAME. Burmese: *padu-hnget.*

IDENTIFICATION. Length 14 inches. A typical bee-eater, easily disinguished from the preceding ones by its much greater size. A green bird with a blue cap and a line of pale blue running from the chin down to the breast (hence the name); remaining under-parts dull yellowish-buff. Bill dark, long and curved.

VOICE. A harsh double croak, ending in a chuckle; the first note is uttered with the head held low, and the long blue feathers of the throat puffed out; with each succeeding note the head is raised, the last note being sounded with it pointing straight up. It also utters its croaks and chuckles on the wing, alternately soaring and nose-diving.

HABITS AND FOOD. This magnificent bee-eater is entirely a forest bird, though it may be seen occasionally in Maymyo gardens. It feeds little on the wing, searching the leaves and flowers of trees and shrubs for insects, and clambering about with slow, awkward movements; the flight is powerful but less graceful than that of other bee-eaters. It is not obtrusive, and were it not for its arresting, hoarse chuckle it would often be overlooked. The *letpan* tree in flower attracts them, and Bingham observed that they feed on beetles as much as on bees. S. F. Hopwood records on good authority that these birds have been observed perched on the roof of a

house in Maymyo catching bees that flew right up to them; this confirms the belief that the bees mistake the bird's blue "beard" for a flower and are attracted by it.

NEST AND EGGS. In Myitkyina district it nests from March onwards in roadside cuttings, most holes being within 2 feet of the ground, and in northern Tenasserim Bingham took eggs on the 23rd April from the end of a 7-foot tunnel in the sandy bank of the Meplé stream. Other nests have been recorded in the Katha and Bassein districts, along the Thandaung road, and in Arakan* (May and October). The nest cavity is usually deeply lined with the chitinous remains of beetles. Wickham records that he dug out many nest holes without ever finding eggs, possibly because this bird often roosts in its nest hole when not breeding.

STATUS AND DISTRIBUTION. India, Burma, and Siam, but not Yunnan. It is sparingly distributed throughout the forests of Burma as far south as Amherst, and has been noted up to 5,000 feet near Htawgaw. Little is known about its local migrations, but Wickham notes that it is particularly common in the Shan hills at the beginning of the rains.

RED-BEARDED BEE-EATER

Nyctyornis amicta Temminck, SUMATRA

IDENTIFICATION. Like the preceding species in size and general colour, but the "beard" is scarlet. "The note of this bird is something similar, and is a hoarse *quo-qua-qua-qua* uttered at irregular intervals. When one calls it is usually answered by its mate, the birds being generally found in pairs, seldom singly, and never that I know of in parties. When uttering its note the bird leans forward, stretches out its neck, and puffs out the feathers of its throat, and at each syllable of its note bobs its head up and down. It less often occurs away from forest than *athertoni*, but although keeping, as a rule, to the woods, it avoids the denser portions, frequenting those parts where the larger trees are somewhat scattered, and where plenty of sunlight penetrates; favourite places are the banks of large streams, and the borders of swamps and shallow lagoons surrounded by forest. I have not noticed that either this bird or *athertoni* are crepuscular. Occasionally on a clear moonlight evening, about 7 or 8 o'clock, I have heard the note, but there are numbers of birds that, of a bright evening, or if they have been in any way disturbed, will call. Like the true bee-eaters it lives entirely on insects which it takes on the wing" (Davison).

NEST AND EGGS. Breeds in March and April. Bingham found it breeding in roadside banks in the Dawnas.

STATUS AND DISTRIBUTION. A Malaysian species, fairly common in Tenasserim up to Moulmein and the Dawnas.

Family ALCEDINIDAE

KINGFISHERS

Kingfishers are found all over the world and can be recognised by their upright posture, habit of sitting motionless on an exposed perch, and usually brilliant colouring. In Burma some species are restricted to water habitats, whereas others are often found far from water and pounce on their prey in a shrike-like manner, or catch insects on the wing like a flycatcher. The eggs are usually laid at the end of a tunnel in the bank of a river or stream, but some species nest in hollow trees ; apart from fish-scales and other debris no nest is made. The eggs are always white in colour.

The Burmese names *dein-nyin* and *bein-nyin* seem to apply to all kingfishers.

WHITE-BREASTED KINGFISHER

Halcyon smyrnensis (Linnaeus), SMYRNA
SUBSPECIES : *perpulchra* von Madarasz, SINGAPORE

IDENTIFICATION. Plate XVII, fig. 6, p. 348. Length 11 inches. In flight the white wing-patch is conspicuous.

VOICE. A loud screaming cry, easily mistaken for that of a woodpecker, is uttered both on the wing and from a perch.

HABITS AND FOOD. The genus *Halcyon* comprises tree kingfishers, which are often found far from water, though at times they may be seen along streams like the water kingfishers ; they feed largely on insects, lizards, frogs, etc., which they capture after the manner of a shrike or roller, flying down from an elevated perch to seize them on the ground. The white-breasted kingfisher is equally at home in the depths of the teak forests and out in the open spaces of the paddy plains ; custom cannot stale the bright blues, deep rich browns and dazzling white of its plumage.

NEST AND EGGS. Breeds during the hot weather, most eggs being laid in April. In the hills it prefers roadside banks, and in the Pidaung wild life sanctuary it breeds freely in borrow pits beside the paths, the birds flying out of their tunnels with startling effect as you approach them.

STATUS AND DISTRIBUTION. This species has an immense range from Asia Minor to Persia and the whole oriental region ; it is the commonest kingfisher in Burma, resident throughout the plains and foothills, but a local migrant. Though not normally seen at high

elevations I collected one at 7,500 feet near the Chimili pass in late March. In the Minbu and Shwebo districts its numbers vary from month to month, being most abundant in the cold weather (Roseveare).

BLACK-CAPPED KINGFISHER

Halcyon pileata (Boddaert), CHINA

IDENTIFICATION. Plate XVII, fig. 9, p. 348. Length 12 inches. Young birds have the breast-feathers edged with black.

VOICE. Shrill and loud, but less unpleasant than that of the white-breasted kingfisher.

HABITS AND FOOD. This is mainly a bird of the coast and tidal waters, but also occurs inland; it is the most markedly characteristic bird of the Rangoon river coast-line, and is there extremely abundant, not only along shore, where it feeds on crabs, but also inland in mangrove swamps and willow jungle. In habits it resembles the white-breasted kingfisher, but is perhaps more of a fish-eater.

NEST AND EGGS. Hopwood found nests near Tavoy on the 19th April, in tunnels in the clay bank of a tidal creek in a mangrove swamp.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common all round the coast of Burma and in the Mergui Archipelago. Its status inland is puzzling, but it seems to be a summer visitor to breed in northern Burma and the Shan States; in North-East Burma it has not yet been observed, although Forrest obtained one at 6,000 feet north-west of Tengyueh in June; in the Upper Chindwin it is a common breeding bird in April, and Wickham found it common at the same season up tributaries of the Salween and considered they were breeding. Smith noted several pairs in April along the Myitnge river between Seikkon and Kyaukni and thought they were probably nesting. It is significant that Davison "in January and February found it excessively numerous along the higher portions of the Pakchan, 60 or 70 miles beyond the influence of the tide, but on going over the same part of the river in May not one was seen." Bingham found it plentiful at the headwaters of the Thaungyin river in September and October. In the course of frequent tours over two years up the Irrawaddy between Mandalay and Bhamo, I have never seen it, but I once saw a single bird, which may have been on passage, on the Sittang at Toungoo. I have not seen it on the lower Chindwin during several trips between Pakokku and Monywa.

RUDDY KINGFISHER

Halcyon coromanda (Latham), RANGOON
SUBSPECIES: *coromanda* (Latham), RANGOON

IDENTIFICATION. Length 10 inches. Except for the white rump the whole bird is orange-rufous and unmistakable; the upper-parts have a violet sheen, not usually visible in the field. Bill and legs red. It has a shrill high-pitched note, and is a bird of the coast and mangrove swamps, occasionally seen inland on forest streams.
NEST AND EGGS. Not described from Burma, but in Assam it breeds only in evergreen forest.
STATUS AND DISTRIBUTION. A migratory species, breeding in the Himalayas from Nepal eastwards to Assam and in parts of Burma, and wintering in southern China, Malaysia, and the Philippines. It has been recorded from the lower Chindwin, Prome (where a bird flew into the dining-room of Stanford's house on the 17th April and collided with the punkah), Pegu, Kalaw, the Karen Hills, Karenni, and Tenasserim. Outside Tenasserim it is probably a summer visitor to breed, and on Nattaung we observed it on small rocky streams in evergreen forest at 3,500–5,000 feet in April.

WHITE-COLLARED KINGFISHER

Halcyon chloris Boddaert, BURU IS., MOLUCCAS
SUBSPECIES: *humei* Sharpe, MALAYA

IDENTIFICATION. Length 9½ inches. A pale green kingfisher with white under-parts and a white collar on the back of the neck. Bill black, rather short and broad, with the lower mandible noticeably curved upwards. Said to have a harsh cry *krerk-krerk-krerk-krerk* and a cry like a wryneck. Stanford describes it as looking more like a cuckoo-shrike than a kingfisher on the wing, owing to its curiously hesitant and weak flight. Probably confined to forest country within tidal limits.
NEST AND EGGS. Serle describes a nest found on an island off the Arakan coast, in an isolated tree near a mangrove swamp. On the 30th April, two fresh eggs were found in a natural hollow on the underside of a large rotting branch. Round Bangkok it habitually makes a tunnel in ants' nests in hollow trees, and Davison found one of this type in a Mergui garden.
STATUS AND DISTRIBUTION. Widespread in the oriental region. It is found in Burma all along the coast and is fairly common round the islands of the Mergui Archipelago.

CHESTNUT-COLLARED KINGFISHER

Halcyon concreta (Temminck), SUMATRA
SUBSPECIES: *peristephes* Deignan, S-W. SIAM

IDENTIFICATION. Length 9 inches. Sexes differ. Blue upper-parts with a chestnut collar and under-parts distinguish this species; the female has the mantle and wings dark green spotted with buff. Frequents evergreen forest, usually far from water. "This is not a water kingfisher at all, but feeds on the

ground, almost exclusively on lizards and the large wood-lice so common in these damp woods. It is shy and difficult of approach, and when disturbed it flies off with a sort of low chuckle " (Davison).

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, reaching the extreme south of Tenasserim.

BANDED KINGFISHER

Lacedo pulchella (Horsfield), JAVA
SUBSPECIES : *amabilis* (Hume), PEGU YOMAS

IDENTIFICATION. Length 8½ inches. Sexes differ. The male has chestnut cheeks and forehead, upper-parts banded blue and black, under-parts pale rufous becoming white towards the tail. The female differs in having the upper-parts barred rufous and black and the breast and flanks barred with black. Bill red, short and thick, legs pale green. Frequents evergreen forest, usually far from water.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, extending through Tenasserim to Karenni and the eastern side of the Pegu Yomas as far north as Yamethin district, but rare outside Tenasserim.

BROWN-WINGED KINGFISHER

Pelargopsis amauroptera (Pearson), CALCUTTA

IDENTIFICATION. Length 14 inches. Resembles the next species in size and shape but has the wings and tail brown and not blue. Chiefly a bird of the coast, tidal creeks and mudflats, rarely found inland. Said to be extremely noisy.

NEST AND EGGS. Little known.

STATUS AND DISTRIBUTION. Found along the coast from Bengal to Tenasserim and south-western Siam ; common in Tenasserim. Wardlaw Ramsay obtained one at " Yeytho " on the Rangoon–Prome road 40 miles from Rangoon.

STORK-BILLED KINGFISHER

Pelargopsis capensis (Linnaeus), JAVA
SUBSPECIES : *burmanica* (Sharpe), BURMA

LOCAL NAME. Burmese : *hsin-bein-nyin.*

IDENTIFICATION. Plate XVII, fig. 5, p. 348. Length 14½ inches. Young birds have finely barred plumage, the bars broader on the breast and forming a pectoral band.

VOICE. The ordinary note is a loud, raucous cry, and in addition the birds of a pair call to each other in a characteristic, arresting and plaintive manner. " Like all the other stork-billed kingfishers with which I am acquainted it is an excessively noisy bird, darting off

PLATE XVII

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1. GREEN BEE-EATER (adult) 340
   Merops orientalis birmanus.

2. BLUE-TAILED BEE-EATER (adult) 341
   Merops philippinus philippinus.

3. COMMON KINGFISHER (adult) 350
   Alcedo atthis bengalensis.

4. CHESTNUT-HEADED BEE-EATER (adult) 342
   Merops leschenaulti leschenaulti.

5. STORK-BILLED KINGFISHER (adult) 348
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7. LESSER PIED KINGFISHER (adult female) 349
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8. PIED HORNBILL (adult male) 354
   Anthracoceros coronatus leucogaster

9. BLACK-CAPPED KINGFISHER (adult) 346
   Halcyon pileata.

1
2
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4
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8
9
SIX INCHES
150 mm.

when disturbed with a harsh chuckling scream, which it continues for some time after it has reseated itself " (Davison).

HABITS AND FOOD. This is a typical bird of streams in the teak forests of the Pegu Yomas, but is equally common in the paddy plains, and may be seen occasionally on the Rangoon lakes. " It is sometimes found about the mouths of tidal creeks or along the seashore, but this is comparatively rare ; by preference it frequents fresh water " (Davison). It is not shy, and fishes from a perch like the common kingfisher, but is often seen far from water.

NEST AND EGGS. Breeds from February to early May. Wickham obtained four fresh eggs at the end of April from a nest in the bank of a perennial stream at 3,000 feet in the Shan States. Eggs may be laid in a hollow in a tree or a termites' nest, and Stanford reports that they breed in flooded tree-jungle along the Irrawaddy in Myitkyina district.

STATUS AND DISTRIBUTION. Widespread in the oriental region and common throughout Burma, ascending the hills to about 4,000 feet. It seems to be resident where found.

LESSER PIED KINGFISHER

Ceryle rudis (Linnaeus), EGYPT
SUBSPECIES : *leucomelanura* Reichenbach, CEYLON

IDENTIFICATION. Plate XVII, fig. 7, p. 348. Length 12 inches. Sexes differ. The male has two black gorgets across the breast, the upper broad and the lower narrow. An excitable, noisy kingfisher of open water.

VOICE. A sharp, querulous twittering cry, *chirruk, chirruk*, is freely uttered in flight.

HABITS AND FOOD. This is a familiar bird of the Irrawaddy and other large rivers and streams, of jheels and tidal creeks and the coast. It lives entirely on small fish, and its method of catching them is interesting to watch. It flies over the water at a height of 10–20 feet above the surface, and on catching sight of a shoal of fish below it checks itself in mid-air and hovers with the wings vibrating rapidly and the bill pointing perpendicularly downwards, as if taking aim ; from this position it plunges headlong into the water, and if the aim has been true it emerges with a small fish in the bill and flies away uttering cries of satisfaction ; but often the plunge is unsuccessful, or the bird checks itself in mid-dive and hovers again, or goes off finally without diving at all. When not fishing the bird

rests on a high bank or post, and these favourite perches are often marked by pellets of indigestible fish-scales that the bird disgorges, like the castings of a bird of prey. While resting, the bird at intervals gives its tail a sharp upward flick. Though normally solitary or paired, a flock of thirteen birds has been observed (Roseveare).

NEST AND EGGS. Have been taken by Oates in Southern Burma in October and November, and by Venning on the 7th December at Pyawbwe.

STATUS AND DISTRIBUTION. From Egypt across southern Asia to China. It is a common resident throughout Burma on suitable rivers and jheels and has been seen up to 3,500 feet (Maymyo lake); in Yunnan it reaches 5,000 feet.

GREATER PIED KINGFISHER

Ceryle lugubris Temminck, JAPAN
SUBSPECIES: *guttulata* Stejneger, CACHAR

IDENTIFICATION. Length 16 inches. Distinguished from the preceding species by larger size, big dark crest, and finely chequered appearance of the upper-parts. Usually silent, but a harsh shrill call and a deep croak have been noted. It is a bird of forest streams.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Throughout the Himalayas, extending eastwards to Japan. It is not uncommon in the Chin Hills and northern Burma, where it goes up to 9,000 feet and occurs sparingly all over the area; but further south it is scarce and local, though its range extends as far south as Amherst and the Thaungyin valley. It has not been observed in the Pegu Yomas or the plains of Southern Burma.

COMMON KINGFISHER

Alcedo atthis Linnaeus, EGYPT
SUBSPECIES: *bengalensis* Gmelin, BENGAL

IDENTIFICATION. Plate XVII, fig. 3, p. 348. Length 7 inches. Can only be confused with the blue-eared kingfisher (*q.v.*).

VOICE. A hard, sharp squeak, *ch'kee*, is uttered on the wing, and a little subdued *click* from time to time when perched.

HABITS AND FOOD. The common kingfisher frequents fresh water of every description, including forest streams, and occasionally wanders to tidal creeks and the coast. It is usually seen perched bolt upright or flying very swiftly and straight low over the surface of the water. It usually captures its food by plunging obliquely into the water from a suitable vantage point, such as an overhanging bough, a stump, or a clump of reeds, on which it sits motionless waiting for

something to come within its reach ; but at times it hovers over open water with the body almost at right angles to the surface and some 15–20 feet above it (in the manner of the pied kingfisher), and from this position dives perpendicularly into the water. Large fish are beaten on a branch or other perch before being swallowed head-first, and may be tossed in the air and caught again to adjust the position. It is a pugnacious little bird and will not tolerate the presence of others of its kind on its established territory. The frequent up and down movement of the head accompanied by a forward flick of the tail seems to indicate uneasiness or excitement.

NEST AND EGGS. The breeding season is irregular, but most eggs are laid from March to June.

STATUS AND DISTRIBUTION. A palaearctic species, and common throughout Burma, but a local migrant ; in the Minbu and Shwebo districts it disappeared from mid-April to early August (Roseveare).

BLUE-EARED KINGFISHER

Alcedo meninting Horsfield, JAVA
SUBSPECIES : *coltarti* Stuart Baker, SADIYA, ASSAM
verreauxi de la Berge, BORNEO
scintillans Stuart Baker, S. TENASSERIM

IDENTIFICATION. Length 6 inches. Distinguished from the preceding species by the much deeper and more brilliant colouring. The back is deep purple-blue, not greenish-blue, the ear-coverts in adults are blue and not rusty, and the bill is black. More or less restricted to small streams in evergreen and moist forests.

NEST AND EGGS. Oates found it breeding in the Pegu Yomas in July, and Stanford found a nest on the 29th April in a bank of the Mogaung river.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It probably occurs sparingly through the forests of Burma but seems to have been much overlooked ; there are no records from western Burma, the Shan States, or Karenni, but it has been obtained at the Maymyo reservoir (3,500 feet) and is common in the evergreen forests of the Pegu Yomas.

BLYTH'S KINGFISHER

Alcedo hercules Laubmann, DARJEELING

IDENTIFICATION. Length 9 inches. Upper-parts speckled blue and black except for the brilliant pale blue rump and whitish stripe on each side of the neck ; chin and throat whitish, rest of under-parts red. A shy retiring bird of streams in evergreen forest.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Sikkim to parts of Burma, but not Yunnan. Stanford obtained one in the Arakan Yomas (Prome district)

and another along the Fort Hertz road, where I have once seen it. Stuart Baker states that it is found in the Chin Hills (Hopwood and Mackenzie list it as doubtfully seen).

BROAD-ZONED KINGFISHER

Alcedo euryzona Temminck, JAVA
SUBSPECIES : *peninsulae* Laubmann, MALACCA

IDENTIFICATION. Length 6¾ inches. Sexes differ. The name derives from the broad blue band on the breast of the male, but this is wanting in the female. The male has the back, rump, and upper tail-coverts light blue, rest of upper-parts and wings black ; under-parts whitish. The female has the breast and abdomen rufous. Another rare and shy bird of streams in evergreen forest ; its note is similar to that of the common kingfisher.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim, and once recorded by Wickham 40 miles north of Taunggyi, Southern Shan States, on a jungle stream.

THREE-TOED KINGFISHER

Ceyx erithacus (Linnaeus), BENGAL
SUBSPECIES : *erithacus* (Linnaeus), BENGAL

IDENTIFICATION. Length 5½ inches. Small size and violet colour are unmistakable ; under-parts rusty orange-yellow. Frequents small streams in evergreen forest. It utters a sharp note, similar to that of the common kingfisher but much more shrill (Davison).
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and is probably found sparingly throughout the evergreen forests of Burma. It sometimes turns up in unexpected places ; Wickham records that one killed itself against a window in Maymyo, and another was obtained in the grounds of the old Rangoon college ; Macdonald records it from the crater of Mt. Popa.

Family BUCEROTIDAE

HORNBILLS

The hornbills are found in tropical Africa and Asia, but they are not closely related to the American toucans, which also possess large bills. They are recognised at once by their large size and enormous bills, which are often furnished with a horny excrescence on the top, known as a casque, of varying shape and description ; these bills appear very massive, but are surprisingly light for their size, owing to their spongy, cellular structure. Hornbill feathers are valued by the Chins, Nagas, and Kachins for ceremonial head-dresses, and the Chins also hang them round graves.

Hornbills are remarkable for their curious nesting habits. The eggs, which are white when fresh but become stained brown, are laid in a hollow tree. When ready to lay, the female enters the nest hole and spends the first two or three days plastering up the entrance with her own droppings, which are very viscid and harden into a clay-like substance ; the male may assist with clay on the outside, using the flattened sides of his bill like a trowel. When the work has been completed only a narrow vertical slit is left, about the width of a man's finger and 2 or 3 inches long. The female is now a prisoner, and remains in solitary confinement until the young have hatched out ; her droppings are thrown out daily through the slit, and she extrudes the point of her bill to receive food from the male, who clings with his claws to the bark while feeding her. During the period of her imprisonment she becomes very fat and dirty, and on first emerging is so stiff that she can hardly fly. This plastering in of the female is not an invariable procedure however, and nests may be found with the entrance hole left untouched.

GREAT HORNBILL

Buceros bicornis Linnaeus, SUMATRA
SUBSPECIES : *cavatus* (Shaw), TRAVANCORE

LOCAL NAMES. Burmese : *aung-laung* or *yaung-yin* ; Chinghpaw : *u-kawng-rang.*

IDENTIFICATION. Frontispiece, fig. 1. Length 42–52 inches. The bill and primaries are usually stained yellow from a greasy powder secreted by the rump (uropygial) gland. Iris red (male) or white (female). Davison, who collected twenty-one specimens of both sexes, is unlikely to have made a mistake on this point, but according to Chasen, " In skins of both sexes from peninsular Siam the iris is marked as ' red ' . . . several authors have considered that the red iris is indicative of the male only, but this seems not always to be the case."

VOICE. A very noisy bird, apt to indulge in the most extraordinary rattling roars, chucklings, and bellows.

HABITS AND FOOD. This bird is found in foothill forests, and is said to pair for life, but outside the breeding season it collects into flocks of six to eighteen birds. The flight consists of a number of wing-beats alternating with glides, but flapping predominates and the flight is less undulating than in some other species ; the tremendous droning noise made by the wings is probably louder than that made

by any other Burma bird, and can be heard at a great distance. The tail-feathers are much sought after by some hill tribes, notably the Nagas and Kachins, for ornamental head-dresses. It feeds mainly on fruit, but is omnivorous and readily takes insects, lizards, grain, and even snakes, all of which are jerked into the air and caught in the back of the throat. It is adept at catching fruit thrown to it.

NEST AND EGGS. Breeds from January to April, often using the same nest hole year after year.

STATUS AND DISTRIBUTION. India, Burma, Siam, Indo-China, Malaya, and Sumatra. It is not uncommon throughout the forests of the foothills, and I have seen it up to 4,000 feet.

[NOTE.—*homrai* Hodgson, NEPAL, if separable, may apply to northern Burma birds. *vide* Deignan 1945, p. 216.]

PIED HORNBILL

Anthracoceros coronatus (Boddaert), MALABAR, S. INDIA
SUBSPECIES : *leucogaster* (Blyth), TENASSERIM

LOCAL NAME. Burmese : *auk-chin*.

IDENTIFICATION. Plate XVII, fig. 8, p. 348. Length 27–30 inches (male), 26–27 inches (female). In flight the white abdomen and wing-tips give it a more pied appearance than the plate might suggest.

VOICE. A noisy bird with high-pitched and strident notes.

HABITS AND FOOD. This is the commonest of the Burma hornbills and it frequents the foothill forests and the outskirts where patches of forest and paddy fields are intermingled. It is usually seen in flocks of about a dozen, but sometimes many more birds ; the flight consists of alternate flapping and gliding, and the absence of any perceptible dip in the flight creates the illusion that the wing-beats are ineffective and unnecessary. It is amusing to watch them clumsily catching flying ants in competition with drongos and treepies, and a bird was once seen with a fair-sized bat in its beak, but the bat resisted the bird's efforts to swallow it and eventually got free and flew unsteadily away. Wardlaw Ramsay noted that it was "extremely partial to dead snakes."

NEST AND EGGS. Have been taken in the Amherst district, where most eggs are laid in early March.

STATUS AND DISTRIBUTION. Widespread in the oriental region and found throughout Burma in the plains and foothills ; it is the only hornbill recorded from Yunnan.

WREATHED HORNBILL

Aceros undulatus (Shaw), JAVA
SUBSPECIES : *undulatus* (Shaw), JAVA
ticehursti Deignan, N-E. SIAM

IDENTIFICATION. Length 39–42 inches (male), 33–37 inches (female). In flight a jet-black bird with a white tail, which can only be confused with the next species (*q.v.*). Yellow (male) or blue (female) gular patches are conspicuous, with a dark band ½ inch wide, broken in the middle, stretching across just below the base of the lower mandible. Stanford states that the female utters loud menacing roars like the great hornbill. It frequents evergreen forest, and very large gatherings have been observed in late March, presumed to be non-breeding males, in the Pidaung reserved forest near Myitkyina. Hopwood reported that immense numbers of this species and the next roost together in bamboos at the headwaters of the Tavoy river.

NEST AND EGGS. Have been taken in Arakan (Theobald) and Tenasserim (Bingham) ; it breeds during February and March.

STATUS AND DISTRIBUTION. A Malaysian species, extending through Burma to Assam. It is common in Arakan, the Chin Hills, Upper Chindwin, North-East Burma, and Tenasserim (especially in the extreme south and on the islands of the Mergui Archipelago) ; also recorded from the Pegu Yomas (east side), the Karen foothills east of the Sittang, and the evergreen forests of the Mekong in Kengtung State (Bingham).

BLYTH'S HORNBILL

Aceros plicatus (Forster), CERAM
SUBSPECIES : *subruficollis* (Blyth), TENASSERIM

IDENTIFICATION. Length 34–35 inches (male), 30 inches (female). Differs from the preceding species in having no grooves or corrugations on the sides of the upper and lower mandibles near the base, and it lacks the dark band across the bare skin of the throat ; it is considerably smaller. The usual note is a short hoarse bark. " This species usually occurs in parties varying from half-a-dozen to twenty or more, and on one occasion I saw a flock of 33 flying over the town of Moulmein. This and the preceding species are remarkably strong on the wing, and morning and evening where they occur numbers may be seen flying far overhead, sometimes at such a height that they look no bigger than crows. The strokes of their wings are accompanied by a peculiar metallic or resonant swish which can be heard at an incredible distance. They are entirely frugivorous and appear occasionally to go long distances to feed " (Davison). " This hornbill is almost invariably seen in large flocks, flying low, and, when on trees, not showing the same amount of watchfulness as the other species. At Myitkyo I saw them flying in hundreds over the canal-lock and its neighbourhood every morning during the earlier months of the year. After crossing the Sittang river and the canal they would settle on the Pegu plain, and spend the whole morning hopping about on the ground. On shooting them on their return to the forests on the east of the Sittang, I found their pouches

full of earth and snail-shells ; the former was probably required for their nests, and the latter they no doubt fed largely on " (Oates).

NEST AND EGGS. Oates took an egg in March in the Pegu district. Two nests were found in the Ataran valley, Amherst district, on the 27th February ; the females had been plastered in, and there were 2 eggs in each nest.

STATUS AND DISTRIBUTION. A Malaysian species, extending through Burma to the extreme north, where it has been obtained near Fort Hertz and at Taro in the Dalu valley (Upper Chindwin). It also occurs in Arakan, the east side of the Pegu Yomas, Karen Hills, Karenni, and Tenasserim. Wickham states that he found a nest but no locality is given. It seems to be rare outside Tenasserim.

RUFOUS-NECKED HORNBILL

Aceros nipalensis (Hodgson), NEPAL

IDENTIFICATION. Length 45–48 inches. Sexes differ. In flight the white tips to the black wings are diagnostic. The grooves on the side of the basal half of the upper mandible, the absence of a casque, the bright blue facial skin and bright scarlet skin of the throat, rufous head and neck and white tail black at the base are distinctive field characters. The female has the wings and tail as in the male, and the rest of the plumage black glossed with green except on the head and crest ; the facial skin is dull pale blue. Frequents evergreen forest, usually in the higher hills, and makes a guttural noise rather like the bark of a dog.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas from Nepal eastwards to Burma, and thence to Siam and Indo-China. I have seen it in the Naga hills west of the Hukawng valley and in North-East Burma, whence there are several records ; it also occurs in the Chin Hills, on the Pino *taung* (Katha district), Shan States (recorded as rare by Bingham), Karenni, and Tenasserim as far south as Mt. Mulayit.

BUSHY-CRESTED HORNBILL

Anorrhinus galeritus (Temminck), SUMATRA
SUBSPECIES : *carinatus* (Blyth), MALACCA

IDENTIFICATION. Length 35 inches. Black bill with a small compressed and sharp-edged casque, well-developed crest, and blackish plumage distinctive. Keeps much to tall trees in evergreen forest and is very shy, with a voice similar to that of the pied hornbill.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim up to Mt. Nwalabo.

TICKELL'S HORNBILL

Ptilolaemus tickelli (Blyth), TENASSERIM
SUBSPECIES : *tickelli* (Blyth), TENASSERIM

IDENTIFICATION. Length 29 inches. Sexes differ. The male has the upper-parts dull to dark brown and the sides of the neck and under-parts rufous ;

wings and tail tipped white ; bill yellowish-white ; bare skin of face blue. The female has the sides of the neck the same colour as the crown and the under-parts more brown than rufous ; the bill is dark dull brown. According to Davison, its note is like that of the pied hornbill but less harsh, and is continually uttered when flying or sitting. It is exceedingly shy and difficult to approach and goes about in parties of 5–15 or even more, keeping to the tops of the higher forest trees. Like the pied hornbill they always fly in strings; one starts off suddenly, followed by another and another, each as it were taking its regular turn till all have left ; and in the air they retain the positions in which they started, just as a string of blue magpies do. They are very restless, not remaining for more than a few minutes on the same tree, but as a rule only taking short flights ; the flight resembles that of the pied hornbill and is comparatively noiseless, though not really noiseless like that of *Berenicornis comatus*.

NEST AND EGGS. Breeds in February and March.

STATUS AND DISTRIBUTION. This species is only known from Tenasserim and Assam but *austeni* Jerdon, N. CACHAR, will probably be found some day in north-western Burma. Bingham was assured by Karens that it occurred in the " Beeling hills," *i.e.* Karen hills.

WHITE-CRESTED HORNBILL

Berenicornis comatus (Raffles), SUMATRA

IDENTIFICATION. Length 40 inches. Sexes differ, but both have a long white crest and a black bill, with a casque like that of the bushy-crested hornbill but smaller. The male has the head, neck, breast, wing-tips and tail white, and the remaining under-parts black. The female has the sides and back of the neck and the whole under-parts black. The call is a single soft *hoo* when it takes wing, and the same sound repeated rapidly about a dozen times when it is feeding. The flight is almost noiseless, with continuous rapid flappings of the wings and no alternate sailings. Found in small parties in evergreen forest, keeping much to dense undergrowth and the ground, and feeding on lizards and small birds in addition to fruit.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim up to Mt. Nwalabo.

HELMETED HORNBILL

Rhinoplax vigil (Forster), TENASSERIM

IDENTIFICATION. Length 44 inches, the central tail-feathers 12–18 inches extra and white in colour. Casque large and high. Hume describes it as a perfect nightmare of a bird. Its call begins with a series of whoops uttered at intervals of about half-a-minute, gradually becoming faster till it ends with a harsh quacking laugh. A shy bird of evergreen forest, keeping to tall trees.

NEST AND EGGS. Unknown.

STATUS AND DISTRIBUTION. A Malaysian species, found in the extreme south of Tenasserim.

Family UPUPIDAE

HOOPOES

Anatomically the hoopoes are close to the hornbills, although so different externally. There is only one species, inhabiting Europe, Asia, and Africa.

COMMON HOOPOE

Upupa epops Linnaeus SWEDEN
SUBSPECIES : *saturata* Lönnberg, MONGOLIA
longirostris Jerdon, RANGOON

LOCAL NAMES. Burmese : *taung-bi-sok* or *bi-daung-bo.*
IDENTIFICATION. Plate XVIII, fig. 3, p. 372. Length 12 inches. In flight the rounded wings barred black and white, and the desultory butterfly-like wing-action are distinctive. The crest is normally flattened, but erected when excited or alarmed and for a moment on settling. The subspecies *saturata* has white subterminal spots on the hinder feathers of the crest and may be recognisable in the field by someone endowed with quick enough sight.
VOICE. The ordinary note in the breeding season is a low, soft *hoop-hoop-hoop* with considerable carrying power ; when uttering it the bird puffs out its neck and bobs its head.
HABITS AND FOOD. The hoopoe feeds almost entirely on the ground and frequents open cultivated country, grassy lawns, and dry bamboo jungle. It may be solitary or in a noisy party of half a dozen birds. It walks about with an accompanying movement of the head, quartering the ground methodically and probing grass-roots and the interstices of the soil or turning over leaves and litter for the insects, caterpillars, and grubs that shelter there. When disturbed it flies up into trees, or alights again on the ground.
NEST AND EGGS. Have been taken in several parts of Burma from March to June, and, in Central Burma, Macdonald took eggs in late May and early June. It breeds in holes in trees, and the eggs, 3 to 10 in number, vary from pale greenish-blue to pale olive-brown.
STATUS AND DISTRIBUTION. The subspecies *saturata* has only been recorded from the Upper Chindwin, North-East Burma (Harington), and Prome, but is no doubt more widely distributed in winter. The subspecies *longirostris* is resident throughout Burma and ascends to 5,000 feet ; it seems to be most abundant in Central Burma and the Shan plateau. In Arakan the hoopoe (subspecies ?) " is fairly common on passage and in winter, but absent in the monsoon" (Christison).

Order TROGONIFORMES

Family TROGONIDAE

TROGONS

Trogons are brightly coloured birds with a short, broad bill and a very broad square-cut tail; they are found in tropical America, Africa and the oriental region. They nest in hollow trees and lay buff-coloured eggs.

RED-HEADED TROGON

Harpactes erythrocephalus (Gould), RANGOON
SUBSPECIES: *erythrocephalus* (Gould), RANGOON
helenae Mayr, MYITKYINA Dist. (mountains)

LOCAL NAMES. Burmese: *htat-ta-yu*; Chinghpaw: *u-htaw*.
IDENTIFICATION. Plate XVIII, fig. 1, p. 372. Length 13½ inches. The female differs in having the head, neck and upper breast dull orange-brown. White on the wings and tail shows up in flight. Young birds have the wing-coverts black, broadly edged with buff, and the whole under-parts from the throat buff.
VOICE. Its ordinary call is a low mew, seldom uttered. In the breeding season it utters a rather plaintive call of six to seven notes, *tyaw-tyaw-tyaw* . . . at the rate of two per second. The alarm-note consists of a chattering croak, finishing with several single croaks, *korra* . . . *korra* . . . repeated at short intervals; these remind one of the roller, but are not so loud and penetrating.
HABITS AND FOOD. This is a typical bird of deep forest, where it is usually seen solitary or in pairs in the lower canopy, sitting very silent and still on a branch and flying out occasionally to capture an insect; when alarmed it flies a short distance with a characteristic, wavy, dancing flight and settles down quietly again. Trogons are usually stated in text books to be purely insectivorous, but the Vernay-Cutting expedition found individuals that had eaten leaves, seeds, and other vegetable matter. They are remarkably stupid and fearless birds, and will allow themselves to be fired at repeatedly, flying only a short distance after each shot.
NEST AND EGGS. Have been taken in several parts of Burma from March to May.
STATUS AND DISTRIBUTION. Widespread in the oriental region. It is a common resident throughout the forests of Burma from the

plains to 6,000 feet, and the subspecies *helenae* is equally common above 7,000 feet in climax forest along the Yunnan border.

SCARLET-RUMPED TROGON

Harpactes duvauceli (Temminck), SUMATRA

IDENTIFICATION. Length 10 inches. The male differs from the male of the preceding species in having the head and neck black, and the female has the crown dark brown, contrasting with the lighter brown of the back. The call-note is a very soft *too-too-too* repeated quickly; if suddenly alarmed it utters a note as it takes to flight, sounding like *kir-r-r-r* (Davison).
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim, where it is said to be not uncommon.

ORANGE-BREASTED TROGON

Harpactes oreskios (Temminck), JAVA
SUBSPECIES: *uniformis* Robinson, PENINSULAR SIAM
stellae Deignan, N. SIAM

IDENTIFICATION. Plate XVIII, fig. 2, p. 372. Length 12 inches. The female has the head browner, and the abdomen more yellow, less orange.
VOICE. Not recorded.
HABITS AND FOOD. Frequents moist and evergreen forests, but "it is less exclusively addicted to heavy forest than any other species with which I am acquainted, occurring in thin tree jungle, bamboo forest, and even in isolated clumps of trees, provided they are not too far off from some considerable extent of forest. In habits and food it resembles the other trogons. It lives entirely on insects, chiefly bugs and beetles, which it habitually catches on the wing, darting from its perch like a flycatcher or roller, but rarely returning with its prey to the same perch. Not infrequently it descends to the ground to pick up insects, and I once shot one dusting its feathers in the middle of the road like a sparrow or fowl. They are very tame birds" (Davison).
NEST AND EGGS. In northern Tenasserim many nests were found in hollow stumps about 2–3 feet from the ground, and others in the Pegu Yomas were in dead bamboos; eggs are laid from February to April.
STATUS AND DISTRIBUTION. A Malaysian species, extending into Indo-China, Siam, and Burma. It is common in Tenasserim and

rather scarce in the Pegu Yomas as far north as the Yamethin district, the western part of the Bassein district, and Arakan ; also recorded from Kengtung State.

WARD'S TROGON

Harpactes wardi Kinnear, MYITKYINA Dist.

IDENTIFICATION. Larger than the red-headed trogon, it is a dark vinous bird, appearing almost black at rest, and in the weak and fluttering flight shows much more crimson on either side of the dark-centred tail ; under-parts yellow. The call-note of the male is a soft *kew-kew-kew-tiree* at intervals, and another (alarm ?) note is *whirr-ur*. A bird of climax forest in the mountains, tame to the point of stupidity and easy to observe or collect ; usually settles with its back to the observer and if disturbed flies only a short distance. Feeds on insects, fruit and large seeds.

STATUS AND DISTRIBUTION. Discovered by Kingdon Ward in the Seinghku valley, north of Fort Hertz, and subsequently found in northern Tonkin and in Bhutan. I found it to be common in the mountains north-east of Myitkyina at 8,000–9,000 feet, and the Vernay-Cutting expedition obtained five in this area. A mysterious trogon seen by Hopwood in the northern Chin Hills in 1913 and listed as *duvauceli* might possibly have been *wardi*.

Order APODIFORMES

Family APODIDAE

SWIFTS

THOUGH somewhat resembling the swallows in outline, the swifts are very different in structure and do not even belong to the same order. They are the most aerial of all birds, spending the whole of their waking existence on the wing. The flight is very rapid and highly characteristic, only that of the swallow family being at all like it ; a swift wheels and dashes through the air with frequent changes of direction, tilting now to one side, now to the other, with a succession of rapid wing-beats alternating with long glides on extended wings, never with the wings partially closed like a swallow. It does not voluntarily settle on the ground, the short legs with all the toes directed forwards being only adapted for clinging to rocks, masonry, etc. At times it courses singly or in scattered bands low over cultivation or sheets of water, and will skim low to sip water from the

surface ; at other times it hawks for food high overhead, sometimes in great numbers together. The theory that they spend the night on the wing is improbable, though data on roosting are meagre.

In Burmese all swifts are referred to as *pyan-hlwa*.

Sub-family APODINAE

Swifts with the tarsus feathered are grouped in this sub-family, which is represented in most parts of the world.

WHITE-RUMPED SWIFT

Apus pacificus Latham, NEW SOUTH WALES
SUBSPECIES : *pacificus* Latham, NEW SOUTH WALES
cooki (Harington), N. SHAN STATES

IDENTIFICATION. Length 7 inches. The white rump distinguishes it from all other swifts except the next species, from which it is separated by the deeply forked tail and much larger size.

VOICE. On the wing it utters a scream lasting two or three seconds and gradually descending in pitch, and also a shorter scream with constant pitch, which seems to be uttered when the bird is excited ; both screams are of a trilling nature.

HABITS AND FOOD. Those of the family. I have seen it in a mixed flock with house martins hawking low over the summit of the Kanbalu *taung*, one of the highest points in the Pegu Yomas, and on another occasion I saw it in a mixed flock with crested swifts at a low elevation. I once saw a huge flock of at least 500 swifts flying over the Pegu Yomas ; owing to the great height at which they were flying it was impossible to identify the species for certain, but they appeared to be either white-rumped swifts or brown-throated spine-tailed swifts. They were flying round in circles, acting in unison like a flock of starlings, and every now and then they would fly down on a slant and produce a noise like a thousand snipe drumming ; it was this noise that first drew my attention to the flock.

NEST AND EGGS. Breeds in thousands in the cave beneath the railway viaduct in the Gokteik gorge, and in similar limestone caves all over the Shan States. Smith estimated that the birds spend the latter part of March selecting nesting sites, building in April, laying in May, the young being hatched in June ; by July almost all the

young have flown. Nests examined were made of dead bamboo leaves, a few feathers, and seed-down cemented with saliva.

STATUS AND DISTRIBUTION. The subspecies *pacificus* breeds in eastern Siberia and Japan and passes through south-eastern Asia on migration to Australia ; the only records of this form from Burma are one from the Pyepat bungalow, 6,800 feet, Myitkyina district, on the 18th April, and one from the Pegu river at 300 feet on the 18th February. The subspecies *cooki* breeds in the Shan States and wanders all over Burma.

HOUSE SWIFT

Apus affinis (J. E. Gray), GANGES
SUBSPECIES : *subfurcatus* (Blyth), MALAYA

IDENTIFICATION. Length 6 inches. Distinguished from the preceding species by smaller size and tail only slightly forked. At close range the black patch in front of the eye and the narrow light grey streak above are noticeable, the bird appears blackish with a conspicuous white throat and rump, and the tail seems short and rounded when spread as the bird hovers.

VOICE. The note is a squeal, querulous and not very piercing.

HABITS AND FOOD. Those of the family.

NEST AND EGGS. Breeds at any time from February to early October. Some nests examined in the Secretariat at Rangoon on the 11th August were made of feathers and fine bits of grass glued together, and were tunnel-shaped with an entrance at both ends ; the following year new nests were seen on the 26th May. Macdonald reported that one or two colonies breed annually on the cliffs of the Irrawaddy at Pagan and Sale in April. Wickham records breeding in caves.

STATUS AND DISTRIBUTION. This species has an extensive range from Africa through southern Asia to China and Malaysia. It may be seen anywhere in Burma, but records from northern Burma are few and its status there is uncertain.

[NOTE.—The ALPINE SWIFT, *Apus melba melba* Linnaeus has not been recorded from Burma, but is common in parts of Assam in winter, and may straggle as far as northern Burma. It is easily recognised by large size (length 8 inches), pale brown upper-parts and white under-parts, with a dark band across the breast.

The COMMON SWIFT, *Apus apus pekinensis* Swinhoe has not been recorded from Burma, but has been obtained in Assam and the Andamans, and is therefore likely to occur. Easily recognised by its uniform sooty brown plumage, except for the whitish throat (this and larger size distinguish it from the palm swift). Length 6½ inches.

The KHASIA HILLS SWIFT, *Apus acuticaudus* Blyth has not been recorded from Burma, but swifts have been seen in Myitkyina district by Stanford, which he considered to be either this or the preceding species. Upper-parts black, chin and throat white streaked with black; under tail-coverts black; rest of under-parts black with white margins to the feathers. Length 6 inches.]

PALM SWIFT

Cypsiurus parvus Lichtenstein, NUBIA
SUBSPECIES: *infumatus* (Sclater), S-W. BORNEO

LOCAL NAME. Burmese: *mo-sa.*

IDENTIFICATION. Plate XVIII, fig. 4, p. 372. Length 5 inches. Uniform sooty-brown colour with no white on the rump distinguishes this species. Common in flocks in the plains.

VOICE. The scream takes the form of a little trilling cry, freely uttered, and much more musical than that of the larger swifts.

HABITS AND FOOD. The toddy palm being one of the characteristic features of the Burmese countryside, it is not surprising that this bird is one of the commonest and most familiar birds of the plains, frequenting gardens and compounds even in the centre of large towns. Though normally linked to a group of palms, in which it breeds and round which its life revolves, it can exist without them; midges are said to form the chief item of food, and large flocks numbering as many as 1,000 birds have been observed flying about over water.

NEST AND EGGS. Breeds from March throughout the rains. In the plains and in the Shan States it breeds in colonies in the leaves of the toddy palm, but in the Chin and Kachin hills, where palms are scarce, it breeds in the thatch of village houses, either in tunnels in the thatch or in the loose edges thereof, the nest being a tiny pad of cotton-down. They breed from plains level up to 5,000 feet, and the sight of the birds wheeling over the forest is often the first indication that one is approaching a village.

STATUS AND DISTRIBUTION. Africa and southern Asia. It is common throughout Burma up to 5,000 feet.

Sub-family CHAETURINAE

This sub-family contains those swifts that have spiny shafts to the tail-feathers (not visible in the field) and the little swiftlets.

WHITE-THROATED SPINE-TAILED SWIFT

Chaetura caudacuta Latham, AUSTRALIA
SUBSPECIES : *cochinchinensis* Oustalet, COCHIN-CHINA

IDENTIFICATION. Length 7½ inches. A large square-tailed swift with a white rump and a white or smoky-grey chin and throat.
STATUS AND DISTRIBUTION. Himalayas to Australia. I picked up a dead bird which floated down a stream into my hand near Haungpa on the Uyu river in 1944 and Stanford saw a small party over the Hpimaw pass which he attributed to this species.

[NOTE.—*nudipes* Hodgson, NEPAL, probably occurs also.]

BROWN-THROATED SPINE-TAILED SWIFT

Chaetura gigantea (Temminck), MALAYA
SUBSPECIES : *gigantea* (Temminck), MALAYA
indica Hume, TRAVANCORE

IDENTIFICATION. Length 8½ inches. A large blackish swift with white under tail-coverts, distinguished from *caudacuta* by having the chin and throat not noticeably lighter than the rest of the underparts.
VOICE. A loud, screaming cry.
HABITS AND FOOD. This bird is usually seen hurtling through the air in small parties with a loud swish of wings, the individuals following one another at intervals ; at other times it hawks insects over some ridge-top, taking advantage of the rising currents of air to remain almost motionless in one spot or moving back and forth along the ridge in a wide circuit. When hawking over water it circles lower and lower until it is able to dip down at one point in the arc and brush the surface, apparently with its breast ; when swooping down to the water a drumming sound of three to four beats is often heard, not unlike the drumming of a snipe ; before dropping and again when rising from the water the wings are brought together over the back with an audible smack. The whole evolution is carried out at such breathless speed that I could never determine whether they were taking insects off the surface or sipping the water. At sunset the birds depart again as swiftly as they came. It is generally believed that this is the fastest bird that flies.
NEST AND EGGS. Not described from Burma. In Travancore it lays its eggs on the ground inside large hollow trees.
STATUS AND DISTRIBUTION. Widespread in the oriental region. Its breeding haunts, if any, in Burma are unknown, but it may be met

with in any part of the country ; it is most often seen in the higher hills at 4,000–6,000 feet, but it also visits the plains and foothills, and has been seen occasionally over the Maymyo lake.

SILVER-RUMPED SPINE-TAILED SWIFT

Chaetura leucopygialis (Blyth), MALAYA

IDENTIFICATION. Length 4½ inches. Whole plumage glossy black except for the silvery-white rump and upper tail-coverts. " In habits they much resemble the greater spine-tailed swifts, shooting down with the rapidity of lightning with a shrill scream, just touching the surface of the water, and rising again with equal rapidity, turning and swooping down again, upstream and downstream, for the hour together. It appears to be a forest-loving species, never being found far from it, and frequenting only those streams whose banks are lined with, and those clearings surrounded by, forest " (Davison).
STATUS AND DISTRIBUTION. A Malaysian species, found in the extreme south of Tenasserim.

HIMALAYAN SWIFTLET

Collocalia brevirostris (Horsfield), ASSAM

IDENTIFICATION. Length 5½ inches. General colour dark brown, paler below. Difficult to distinguish from the palm swift, except by larger size. The only note recorded is a low cheep like that of a bat.
NEST AND EGGS. Livesey found these birds breeding in great numbers in the Shan States in deep fissures in the ground, generally in the dip between hill-tops at about 4,000 feet. Two eggs were taken on the 23rd April.
STATUS AND DISTRIBUTION. Widespread in the oriental region. It is a bird of the higher hills, normally breeding from 4,000 feet upwards. Large flocks have been seen at Gangfang in the Ngawchang valley from November to March, usually at dusk, and breeding in the locality is suspected ; also seen in the Adung valley at 8,000 feet in February and March. In four successive years large numbers appeared over Myitkyina in mid-February during spells of cold weather with heavy rain. Odd birds have been seen in July and August.

[NOTE.—Several subspecies have been listed from Burma, including *brevirostris*, *pellos*, and *inopina*, but the species has not been revised for many years and is best treated binomially.]

LOW'S SWIFTLET

Collocalia lowi (Sharpe), BORNEO
SUBSPECIES : *robinsoni* Stresemann, STRAITS OF MALACCA

IDENTIFICATION. Indistinguishable from *inexpectata* in the field, but in the hand the feathered tarsus and larger wing (5–5·4 inches against 4·5–5 inches) separate it. Quite indistinguishable from its double *innominata* (Hume's swiftlet), except in series, but so far as we know at present *innominata* is extralimital (Andaman Is., mountains of Malaya, Straits of Malacca).
NEST AND EGGS. See under *inexpectata*.

STATUS AND DISTRIBUTION. A Malaysian species, found on the southern Tenasserim coast and in the Mergui Archipelago.

GREY-RUMPED SWIFTLET

Collocalia inexpectata Hume, ANDAMAN IS.
SUBSPECIES : *inexpectata* Hume, ANDAMAN IS.
germani Oustalet, PULAU CONDORE

LOCAL NAME. Burmese : *zi-we-so.*
IDENTIFICATION. See under *lowi.*
NEST AND EGGS. It is this species that makes the edible nests of gastronomic fame. Hopwood described the breeding of this species and another which he named *innominata* on the Mali islands off the Tenasserim coast, but this latter species was probably *C. lowi robinsoni* (which was not recognised at that time) or there may have been more than one species present (vide *The Birds of the Malay Peninsula*, vol. iv, pp. 115–116) ; in the summary of Hopwood's description I give here I have therefore left the question open by calling Hopwood's *innominata* simply " the larger species." The right to collect the nests in the islands of the Mergui Archipelago is sold annually by the Forest Department and normally brings in a revenue of several thousand rupees. The edible nests are made by *inexpectata* but the nests of the larger species, though of very little value, on account of the large amount of grass and feathers used in their construction, are also collected by the licensees. The latter is the earlier breeder of the two, commencing to build in February and a few eggs being laid about the first week of March, whereas *inexpectata* does not lay until well on in April. The larger species plasters its nests at random on the walls of the cave anywhere above high-water mark, whereas *inexpectata* always goes to the top of the cave. The eggs of the larger species can always be distinguished with certainty from those of *inexpectata* by their larger size. The edible nest consists of almost pure saliva looking like a silvery-white gelatine, and measures 2–3 inches across and 1 inch deep. If the first nest is taken, the second one always has a certain amount of feathers, etc. mixed with the saliva, but even second nests of this species are much purer than first nests of any other species. The eggs are 2 in number.
STATUS AND DISTRIBUTION. Widespread in the tropics, chiefly on islands and coasts, from the Seychelles and Mauritius to Queensland. It has been obtained on islands off the coast west of Bassein, and is common on the Tenasserim coast and in the Mergui Archipelago ; the subspecies *inexpectata* has been obtained once in Tenasserim.

GLOSSY SWIFTLET

Collocalia esculenta Linnaeus, AMBOINA
SUBSPECIES : *elachyptera* Oberholser, BENTINCK IS.

IDENTIFICATION. Length 3½ inches. A tiny swiftlet with a white belly ; upper-parts glossed with green.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. Mergui Archipelago, extending through Malaysia to New Caledonia.

Family HEMIPROCNIDAE

TREE SWIFTS

This family contains a single genus of swifts that perch and nest in trees.

CRESTED TREE SWIFT

Hemiprocne longipennis (Rafinesque), JAVA
SUBSPECIES : *coronata* (Tickell), BORABHUM
harterti Stresemann, N-E. SUMATRA

IDENTIFICATION. Plate XVIII, fig. 6, p. 372. Length 9 inches. The female has no chestnut on the face. Young birds have the feathers finely edged with white and sub-edged black or brownish-grey. On the wing the crest does not show up, and the bird appears light grey in colour and is readily identified by its habit of frequently opening and closing the long pin-like tail-feathers.

VOICE. The call-notes are loud and parrot-like, *kia-kia-kia* or *chwe-chwep*, uttered frequently both on the wing and from a perch ; another call-note resembles the noise made by a frog while being swallowed by a snake.

HABITS AND FOOD. The crested tree swift is a typical bird of the teak forests, frequenting the more open parts especially where forest and paddy fields are intermingled ; outside the breeding season it is seen in small parties hawking for insects with a wheeling and graceful flight that in character and pace recalls that of a swallow rather than a swift. It constantly perches on trees, usually preferring the top-most branches and those that are dead or bare of leaves, and sits upright with its crest erect.

NEST AND EGGS. Described by Stanford and Smith (1936). The breeding season extends from March to June, but most eggs are probably laid in April. The nest is a very shallow half-saucer composed of thin flakes of bark and a few small feathers gummed together with saliva and attached to the side of a horizontal branch. It is remarkable for its minute size, smaller than two 8 as. coins placed side by side ; the greatest thickness is $\frac{1}{8}$ inch and the depth about $\frac{1}{2}$ inch. The branch chosen is usually a dead one often at the top of a high tree, but many nests are built much lower on small trees growing in open scrub-jungle. Viewed from below it looks just like a knot on the branch to which it is attached, and it is only by watching the constant return of the bird to one particular spot that the nest can be detected. When incubating, the parent bird (both

sexes incubate) sits across the branch, which takes its weight, and covers the egg with the feathers of the abdomen. The single egg, which completely fills the nest like an acorn in its cup, is greyish-white in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region and fairly common throughout the forests of Burma.

LESSER TREE SWIFT

Hemiprocne comata (Temminck), SUMATRA
SUBSPECIES : *comata* (Temminck), SUMATRA

IDENTIFICATION. Length 6½ inches. Small size, small crest, and white stripe above and below the eye distinguish it.

STATUS AND DISTRIBUTION. A Malaysian species found in southern Tenasserim up to Mergui.

Order CAPRIMULGIFORMES

Family CAPRIMULGIDAE

NIGHTJARS

THIS family is found over almost the whole world, except in the Arctic and Antarctic regions and many islands, including New Zealand. A nightjar is a bird with rather long wings and tail, usually seen as dusk turns into darkness hawking insects in open spaces near trees. The flight is easy, silent and wheeling, with sudden twists and zigzags in pursuit of insects, and with deliberate wing-beats varied by gliding and floating on extended wings. It is nocturnal in habits, spending the day resting quietly on the ground with eyes almost, but not quite, closed. The plumage is finely mottled dark and light brown, black, grey and white, and the protective coloration is remarkable ; the bird seems to be conscious of the fact, only springing into life when the intruder comes within a yard or two. The silent flight is made possible by the soft texture of the feathers.

To the huge mouth is due the legend and the name, widely spread in many countries and languages, that the " goatsucker " (*Caprimulgus* in Latin) feeds from the udders of cows and goats, whereas the width of the gape is, in fact, very useful for catching large moths and other night-flying insects. Another feature of the nightjar is its large, lustrous eye, and travellers by motor car at night often see

these birds sitting in the middle of the road, their eyes gleaming like red-hot coals in the glare of the headlights. Why they should elect to sit on roads is not clear, but any white object such as a sheet spread out on the ground will attract them. Another peculiarity of the nightjar is that it normally perches lengthwise on a branch, resting on its breast, and only exceptionally perches across it in the normal manner; this is no doubt due to the structure of the feet, three toes being directed forwards and the long central toe backwards; on the inside of this central toe there is a comb, which some observers believe is used to clean out insects that get caught up in the long, stiff bristles surrounding the gape. Bingham noted that "the Karen women extract the oil from the bodies of nightjars and use it under the belief that it stimulates fertility."

The various species resemble each other in plumage, and the observer seldom gets the chance to study them in a good light; fortunately they all have distinctive breeding-calls, which are the best guide to identification. These are summarised below:

SUMMARY OF NIGHTJAR CALLS

Long-tailed Nightjar: *Chounk, chounk, chounk* . . . an indefinite number of times, sometimes ending in a rolling *churr*. Deliberate and loud, like a hammer hitting a plank, with a richness of tone that defies description. Speed about 15 times in 10 seconds.

Jungle Nightjar: *Tuck-tuck-tuck* . . . at a steady, even, but very rapid pace (5 per second).

Savanna Nightjar: *Che-weeze*, a squealing noise uttered on the wing or from a perch in a tree.

Common Indian Nightjar: *Took-took-took-took-irr-r-r-r-r*, like a stone skimming over ice.

Great Eared Nightjar: *Pee-weyew* on the wing, a loud, clear, musical call of three syllables.

Burmese names for a nightjar are *mye-wut* and *hnget-pyin*.

LONG-TAILED NIGHTJAR

Caprimulgus macrurus Horsfield, JAVA
SUBSPECIES: *bimaculatus* Peale, SINGAPORE (= *ambiguus* Hartert)

IDENTIFICATION. Length 11 inches. Seen in daylight the tone is brown or buffish-brown, varying greatly in depth of colour.

VOICE. See summary. A low chirping cry or liquid chuckle is sometimes uttered on the wing.

HABITS AND FOOD. This is the commonest forest nightjar in Burma, and in the hot weather its call may be heard almost throughout the

teak forests, and the hill forests of Maymyo and other stations ; it is a familiar bird owing to its habit of perching on fence posts round the compound.

NEST AND EGGS. Breeds during the hot weather. No nest is made, the eggs being laid on the ground ; in colour they vary from deep salmon-pink to creamy-yellow, indistinctly blotched.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and found throughout the forests of Burma in the foothills, locally ascending the higher hills.

JUNGLE NIGHTJAR

Caprimulgus indicus Latham, INDIA
SUBSPECIES : *hazarae* Whistler and Kinnear, HAZARA, HIMALAYAS
jotaka Temminck and Schlegel, JAPAN

IDENTIFICATION. Length 12 inches. A blackish bird with more conspicuous white patches on wings and tail than the preceding species (in the female the white in the tail is reduced or absent). A bird of the higher hills. For voice see summary. Each series of *tucks* is constant in speed but one series may be uttered rather faster or slower than the next. I have listened to a bird " waking up " at dusk and indulging in a long series of quiet calls while hidden in the depths of a thickly-foliaged tree ; then just as dusk was deepening into night it emerged with a deep *wock wock* call and a liquid chuckle as it flew about hawking insects in the open. It also called freely just before dawn.

NEST AND EGGS. Stanford records that a breeding female was shot off her eggs on the 21st April at Kambaiti (6,800 feet) and another brought in with a one or two-day old chick on the 23rd May. Wickham states that eggs were obtained for him on Mt. Victoria, and also by Mackenzie in the northern Chin Hills ; they are white in ground-colour, marbled with grey.

STATUS AND DISTRIBUTION. Widespread in eastern and southern Asia. In Burma it is normally restricted to the higher hills and mountains, and has been recorded from the Chin Hills, Upper Chindwin, North-East Burma, and Karenni ; it seems to be not uncommon as a breeding bird above 6,000 feet in these areas ; the Vernay-Hopwood expedition obtained a single bird at Lonkin, and Baillie found it common from 5,000 feet down to the plains in the Upper Chindwin. These are the only low elevation records. The subspecies *jotaka* breeds in eastern Siberia and Japan and winters in Siam, Indo-China, and Malaysia ; it has been recorded from Tenasserim, whence Hume described it under the name *innominatus* (*Stray Feathers*, vol. iii, p. 318).

SAVANNA NIGHTJAR

Caprimulgus affinis Horsfield, JAVA
SUBSPECIES : *monticolus* Franklin, CALCUTTA–BENARES (= *burmanicus* Stuart Baker)

IDENTIFICATION. Length 10 inches. The male has the two outer tail-feathers all white except at the tip, but in the female they are mottled throughout.

Two buff collars, a darker one round the base of the neck and a lighter one more across the shoulders. For voice see summary. Prefers dry open forest.
NEST AND EGGS. Davison found 2 eggs in open deciduous forest up the Ataran river on the 3rd March, and Smith found one in dry forest just behind the forest house in Katha town on the 7th April. The eggs are salmon-pink in ground-colour, mottled and streaked with dull red.
STATUS AND DISTRIBUTION. Widespread in the oriental region and recorded from Mengtsz in south-eastern Yunnan. In Burma it is sparingly distributed from Myitkyina and the Chin Hills in the north to Mergui in the south, and is probably commoner in the dry zone than elsewhere.

COMMON INDIAN NIGHTJAR

Caprimulgus asiaticus Latham, BOMBAY
SUBSPECIES : *asiaticus* Latham, BOMBAY
siamensis de Schauensee, N. SIAM

IDENTIFICATION. Plate XVIII, fig. 5, p. 372. Length 9 inches. A small pale brown nightjar.
VOICE. See summary. It is most vociferous during the hot weather, but in the Shwebo and Minbu districts birds have been heard calling in every month except December and January, and a bird was once heard calling at 11 a.m. during rain (Roseveare). On the other hand a bird was heard calling on the 26th January at Pyinmana for a very short time at dawn and dusk. Mating birds make a bubbling noise.
HABITS AND FOOD. This nightjar prefers dry scrub-jungle, with open, grassy patches here and there, to the depths of the forest, and on hot-weather nights may often be heard uttering its stone-on-ice call round towns and villages.
NEST AND EGGS. Breeds from February (Venning) to July (Macdonald). The eggs are similar to those of the long-tailed nightjar but smaller.
STATUS AND DISTRIBUTION. India, Burma, and Ceylon. In Burma it is a common breeding bird of the dry zone and seems to be a winter visitor to the plains of Southern Burma, and is commonly seen in and around Rangoon in October and November. It has not been recorded from North-East Burma or southern Tenasserim.

GREAT EARED NIGHTJAR

Eurostopodus macrotis Vigors, PHILLIPPINE IS.
SUBSPECIES : *cerviniceps* (Gould), PENINSULAR SIAM

LOCAL NAME. Burmese : *taung-daung-hnget.*
IDENTIFICATION. Length 16 inches. Distinguished by large size and ear-tufts, and absence of white on wings and tail.

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PLATE XVIII

VOICE. See summary. " Occasionally the first syllable is double and shortened *too-too-wee-oo* " (Davison). The call has been heard from the 13th November up to June, but principally in February and March, at which season it may be heard all night long on moonlight nights.

HABITS AND FOOD. This is a common bird of the teak forests of the Pegu Yomas, and is typically seen at dusk, singly or in small parties, hawking for insects at tree-top level over small clearings or above the larger forest streams, performing wonderful aerobatics the while ; it might be mistaken for a hawk or falcon, but its lovely, clear whistle, one of the most attractive of forest sounds, at once identifies it. " It makes its appearance soon after sundown, flying at a great height, and numbers coming from the same direction (though quite independently of one another and not all together) uttering its full and clear whistle. As the evening advances, they descend lower and lower, till by the time it is quite dark they are flying about within a few feet of the ground. I have noticed that only for about an hour after their first appearance of an evening do they call, after which they are neither seen nor heard again till dawn the next morning. I have travelled through many and many a mile of forest land, and I have flushed a great many *Caprimulgi*, but only on one occasion have I ever seen a bird of this species during the day, and that one I flushed from her nest. I cannot imagine, and I have often wondered, where these birds roost during the day. Unlike the ordinary nightjars they appear to settle but seldom. I have never seen them settle on the ground, but on one occasion a bird settled on an old stump and remained for six to eight minutes, uttering its fine whistle at short intervals ; I noticed that when about to whistle its head shot forward with a jerk. Its position when seated was the same as that of *Caprimulgus*, squatting with the lower breast and abdomen resting on the thing on which it was seated " (Davison). Smith, however, " watched a bird during the day lying along a dead bamboo for some time, the bird's protective coloration was remarkable," and it seems probable that these birds roost during the day on bamboos and trees, but escape notice. Hume remarks that it is *just* possible, but by no means probable, that like some near allies it roosts in caves in the hills ; Bingham found a whole colony of them in the daytime in a limestone cave on the eastern watershed of the Meple river.

NEST AND EGGS. Have been taken by various collectors in different parts of Burma, from January to April. Only one egg is laid, similar

in colour to those of the long-tailed nightjar when fresh, but fading quickly to a pale cream ; the markings are rather sparse as a rule.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is resident throughout the forests of Burma in the foothills, but not in the higher hills, and is locally common. Forrest obtained it near Tengyueh.

Family PODARGIDAE

FROGMOUTHS

These birds derive their name from their very wide bills. They are believed to be distantly related to the nightjars and have the same type of plumage, but they differ considerably in habits ; they are more or less arboreal, spending the day sitting quietly on branches in a very erect position and feeding at night by picking off insects from branches or from the ground ; they do not seem to fly about like the nightjars, which may account for the paucity of observations on these birds in Burma. The family is confined to the oriental and Australian regions.

HODGSON'S FROGMOUTH

Batrachostomus hodgsoni (Hodgson), DARJEELING
SUBSPECIES : *hodgsoni* (Gray), DARJEELING
indochinae Stresemann, ANNAM

IDENTIFICATION. Length 9 inches. Sexes differ, the male being dull brown and blackish in narrow wavy bars and the female chestnut throughout, with a white band across the throat and another across the lower breast. A bird of evergreen forest.

NEST AND EGGS. Hopwood and Mackenzie had six or seven nests brought in (one with young birds) in the northern Chin Hills, and describe them as typical of the species, *i.e.* a small nest made entirely of the bird's down and decorated on the outside with scraps of lichen, bark and moss so that it resembles an excrescence on the branch on which it is built. The eggs, 2 in number, are white.

STATUS AND DISTRIBUTION. North-eastern India, Burma, Siam, and Indo-China. It must be fairly common in the Chin Hills, but elsewhere has been recorded as a rarity in the Kachin hills west of Mohnyin (where I picked up a dead bird beside a mule track), the Southern Shan States (2 from Loi Maw at 5,000 feet, Rippon), and Karenni at 6,000 feet (Wardlaw Ramsay). Tickell obtained a bird near Toungoo that may have been this species or the next (Oates, vol. ii, p. 15).

BLYTH'S FROGMOUTH

Batrachostomus javensis (Horsfield), JAVA
SUBSPECIES : *continentalis* Stresemann, N. TENASSERIM

IDENTIFICATION. Length 9 inches. Distinguished from the preceding species by absence of black markings on the crown and nape of the male. Plumage a confused pattern of brown, grey, white, and rufous.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Recorded once from the Thaungyin valley by Bingham, " near the village of Hpamee on the Bawthaloo *chaung*," a tributary of the Meple.

Order STRIGIFORMES

OWLS

AN ORDER of world-wide distribution. Owls are predacious birds with broad, rounded heads, flattened faces, and large eyes directed forwards, usually surrounded by a more or less distinct facial disk of radiating feathers. Owing to the looseness of the plumage the head generally appears to merge into the body without a perceptible neck, but the latter is really rather long and very mobile, so that the bird without shifting its position can follow the movements of the observer, even to the extent of turning the head completely back to front. Nearly all species are more or less nocturnal, though some also hunt regularly by day. The flight is slow with regular wing-beats, and owing to the soft, loose plumage it is noiseless ; the normal gait is a walk, though many species are seldom seen on the ground. When disturbed by day or detected roosting an owl is frequently mobbed by small birds. The feet are powerful and furnished with very strong curved claws with immense grasping power, as anyone who has handled even a small owl alive will appreciate. Except when too large the prey is generally swallowed whole instead of being picked to pieces as is usual with the hawks and eagles ; indigestible portions are disgorged in the form of pellets. No doubt because of their sedate and solemn appearance the attribute most commonly credited to owls is that of wisdom ; there is no evidence, however, to show that they are notably superior to other birds in this respect.

Most owls nest in hollow trees or in buildings, but some nest on the ground. They all lay white eggs without markings.

Most owls have a variety of calls, including one or more having the

character of songs, *i.e.* either one note or a simple combination of notes repeated at varying intervals, and those most commonly heard are listed below :

SUMMARY OF OWL NOISES

Barn Owl : A screech.
Grass Owl : A screech.
Bay Owl : A single soft hoot.
Short-eared Owl : Generally silent.
Tawny Owl : A high, screeching, sharply accented call of two syllables, *buku*.
Brown Wood Owl : A deep, musical call of four syllables, *goke, goke-galoo* with the emphasis on the first note, lasting about one second.
Mottled Wood Owl : A loud, single hoot.
Spotted Wood Owl : A lovely musical call, commencing with a rolling *hoo-hoo-hoo* and ending with a prolonged deep *hoooo*.
Brown Fish Owl : A deep, threefold mumble resembling *um-um, um-um, um-um*, uttered by a person with the lips closed, the middle *um-um* higher in pitch than the other two, which are on the same pitch.
Malay Fish Owl : A soft musical *to-wee, to-wee*.
Tawny Fish Owl : Unknown.
Rock Eagle-Owl : A loud *dur-geon* or *to-whoot*, solemn and deep in tone.
Dusky Eagle-Owl : *Wruck-wruck-wruck-wruck-wruck-wruck-wruck-wruck-wruck*, accelerando, like a railway engine puffing out of a station.
Forest Eagle-Owl : A soft but resounding *boom*, repeated after about three seconds and audible from a great distance.
Malay Eagle-Owl : Unknown.
Collared Scops Owl : (1) A musical, mournful call, *kwo-oo*, the two syllables run together, but the emphasis on the first ; uttered at intervals. (2) *Kwow* four to seven times rapidly.
Spotted Scops Owl : A plaintive double whistle with the tone of a hammer on an anvil, *plew-plew*, a slight interval between the two notes ; uttered with great persistence.
White-fronted Scops Owl : Unknown.
European Scops Owl : *Tonk, tonk-ta-tonk*, repeated with great persistence and usually mistaken for a nightjar.
Spotted Owlet : A double note, *zi-gwet*, and many others.
Barred Owlet : A very beautiful rippling call, and many others.
Jungle Owlet : A pleasant protracted call.
Pigmy Owlet : A rather metallic *tonk-ta-tonk-tonk*, high pitched and repeated at intervals. Commonly heard by day.
Hawk-Owl : (1) *Whoo-woop*, a musical double hoot rising in pitch, repeated several times. (2) *Myi-wun*, with the accent on the first syllable.

Most owls when alarmed or annoyed make hissing noises and snap their beaks rapidly a number of times ; some species utter a variety of shrieks and screeches.

The Chinghpaw name of owls and frogmouths is *u-hku*.

Family TYTONIDAE

This family contains medium-sized owls of great beauty. They differ from the *Strigidae* in having the inner toe as long as the middle toe and the claw of the latter serrated.

BARN OWL

Tyto alba Scopoli, N. ITALY
SUBSPECIES : *stertens* Hartert, N. CACHAR

LOCAL NAMES. Burmese : *lin-gaung-bo* or *hnget-hso*.
IDENTIFICATION. Plate XVIII, fig. 8, p. 372. Length 13½ inches. Chiefly seen on the wing at dusk as a ghostly whitish form, but when seen in daylight the pale appearance, with pale grey upper-parts, pure white face and white under-parts spotted with brown, are distinctive. Can only be confused with the grass owl (*q.v.*). When perched the attitude is erect and the long legs are rather noticeable.
VOICE. It utters its screeching cry from September to March and is silent or nearly so at other times.
HABITS AND FOOD. This is a truly nocturnal owl, feeding throughout the night and roosting by day in a building or hollow tree. It feeds largely on rats and mice, which it takes from the ground, but it will devour any small animal or bird, and can kill birds of quite large size. It has regular stations at which its prey is eaten or deposited and the pellets are usually blackish even when dry, with a characteristic varnished appearance.
NEST AND EGGS. In Southern Burma, Oates found both fresh eggs and young birds in January, and in Myingyan district Macdonald took eggs in November. Sewell found a nest with six young birds in a mango tree in the Kyaukse district.
STATUS AND DISTRIBUTION. A cosmopolitan species. In Burma it is a bird of the plains, and is not uncommon in Rangoon. It has not been observed in northern Burma or Yunnan, although Wickham states that it is found in all the upper Burma hills.

GRASS OWL

Tyto capensis A. Smith, CAPE TOWN
SUBSPECIES : *chinensis* Hartert, FOKIEN

IDENTIFICATION. Length 14 inches. Closely resembles the barn owl but has the upper-parts dark brown and barred, not grey and speckled. A bird of

kaing grass. Pellets examined by Wickham contained mice remains and the bill of a quail; "in the daytime when disturbed they do not fly far and soon flop down in the grass again, but at night they are quick silent hunters. I have seen them behaving like large white bats as if they were catching insects of some sort."

NEST AND EGGS. Wickham found them breeding in the Shan hills in open grass spaces in the cold weather, and a nest found by Edgerley in the plains of Toungoo district contained 7 young birds in early January—the nest being merely a clearing, 3–4 feet in diameter and conspicuously clean, in the dense matted understorey of the *kaing* grass.

STATUS AND DISTRIBUTION. India and Burma. Wickham states that it is to be found in suitable places throughout the Shan hills, and the same can be said of the plains of Central and southern Burma. Though not yet recorded from northern Burma, it is likely to occur there also in some of the extensive *kaing* grass areas of the Hukawng valley and the upper Irrawaddy. Livesey found it common on the Loikaw plain in Karenni.

BAY OWL

Phodilus badius (Horsfield), JAVA
SUBSPECIES: *badius* (Horsfield), JAVA
saturatus Robinson, SIKKIM

IDENTIFICATION. Length 11 inches. A beautiful bird, like a small barn owl, with a large head, a short tail and pinkish coloration, the upper-parts cinnamon spotted with black. Frequents evergreen forests in the higher hills.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in the oriental region but rare and little known. It has been recorded from Arakan, Thayetmyo, Bhamo, the Karen Hills, Shan States, Karenni, and Tenasserim.

[NOTE.—The Burma population is probably intermediate between these two subspecies.]

Family STRIGIDAE

The inner toe is much shorter than the middle toe and the claw of the latter is not serrated.

SHORT-EARED OWL

Asio flammeus (Pontoppidan), DENMARK
SUBSPECIES: *flammeus* (Pontoppidan), DENMARK

IDENTIFICATION. Length 15 inches. Terrestrial and largely diurnal habits, long wings, and regular occurrence in open country distinguish the short-eared owl. It appears light tawny with dark bars all over except on the thighs, which are rich tawny. The short ear-tufts are inconspicuous in the field. It has been

reported on sandy islands of the Irrawaddy, grasslands, pea-fields, paddy stubble, grass and bush clad mountain tops, and *taungyas*.
STATUS AND DISTRIBUTION. A cosmopolitan species. It is a winter visitor to all parts of Burma, and may be met with at any height up to 6,000 feet. Macdonald reported it as very common in grassy country in Myingyan district. It probably arrives in October and leaves in March. A bird I picked up near the Seinghku-Adung confluence in mid-February may have been on passage.

TAWNY OWL

Strix aluco Linnaeus, SWEDEN
SUBSPECIES : *nivicola* (Blyth), HIMALAYAS

IDENTIFICATION. Length 16 inches. If disturbed during the daytime or seen on the wing at dusk, it appears as a moderately large mottled brown bird with disproportionately large head and broad rounded wings. One of the most nocturnal species. For voice, see summary ; Jones records that besides the usual hoot it has a note, usually uttered on the wing, similar to that produced by placing a blade of grass between the two thumbs and blowing sharply.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A palaearctic species, rare in Burma and recorded only from Mt. Victoria and the Southern Shan States. Status uncertain. Forrest obtained it in western Yunnan, so that it probably occurs in northern Burma.

BROWN WOOD OWL

Strix leptogrammica Temminck, S. BORNEO
SUBSPECIES : *newarensis* (Hodgson), NEPAL
rileyi E. Kelso, PENINSULAR SIAM
shanensis Stuart Baker, S. SHAN STATES

LOCAL NAME. Burmese : *gok-ka-lu*.
IDENTIFICATION. Length 16–22 inches. Very variable geographically in size and colour. Distinguished from tawny owl by larger size, under-parts barred but not streaked, and voice (see summary). Young birds utter a screeching, shrill and long-drawn cry. A forest bird of the higher hills and foothills.
NEST AND EGGS. Livesey (1939*f*) describes the taking of 2 eggs on the 17th February from a hole in a large peepul tree near Taunggyi, which he attributed to this species.
STATUS AND DISTRIBUTION. Widespread in the oriental region. Probably resident throughout the foothills and higher hills of Burma to 6,000 feet ; common in the Pegu Yomas.

MOTTLED WOOD OWL

Strix ocellata (Lesson), PONDICHERRY

IDENTIFICATION. Length 20 inches. A rufous stripe running vertically behind the eye ; upper-parts rusty-brown spotted with white ; under-parts white with narrow bars of black. Its note is said to be a loud single hoot.
STATUS AND DISTRIBUTION. India and Arakan, where Christison recorded it as common.

SPOTTED WOOD OWL

Strix seloputo Horsfield, JAVA
SUBSPECIES : *seloputo* Horsfield, JAVA

IDENTIFICATION. Length 19 inches. Distinguished from the brown wood owl by having the bars on the abdomen broad, more than ½ inch apart. Upperparts dark brown with small white spots. For voice see summary.
NEST AND EGGS. Oates found young birds in March and April.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim and Southern Burma, where Oates found it common round Rangoon and Pegu, and Smith heard the call in the Yomas of the Toungoo and Pegu districts; the same call was heard at a camp in the Mandalay district.

BROWN FISH OWL

Bubo zeylonensis (Gmelin), CEYLON
SUBSPECIES : *leschenaulti* (Temminck), CHANDANAGORE
orientalis Delacour, ANNAM

LOCAL NAME. Burmese : *di-dok.*
IDENTIFICATION. Plate XVIII, fig. 10, p. 372. Length 21–22 inches. A massive, solemn brown bird, which sleeps by day in trees and on the ground. Distinguished from the eagle-owls by the bare unfeathered legs.
VOICE. See summary.
HABITS AND FOOD. This fish owl frequents the forested streams, both small and large, of the foothills, and the environs of lakes and jheels ; it sleeps by day in a large thickly foliaged tree or on the face of a rocky cliff and with the fall of dusk wings its way to the neighbouring water ; it is less nocturnal than some owls and is often abroad early in the evening. It feeds largely on fish and crabs, which it catches at the water's edge, and its feet and claws, like the osprey's, are particularly well adapted to holding slippery prey.
NEST AND EGGS. Have been taken by Hopwood in the lower Chindwin on the 2nd April, from a hole in a cliff, and by Macdonald in Myingyan district in March ; Oates, however, found two young birds, about one month old, on the 31st March in Southern Burma, in the fork of a large tree.
STATUS AND DISTRIBUTION. Widespread in southern Asia, from Palestine to China. It is found throughout the better wooded parts of the plains and foothills in Burma, but does not seem to frequent the higher hills.

MALAY FISH OWL

Bubo ketupa (Horsfield), JAVA
SUBSPECIES : *aagaardi* Neumann, PENINSULAR SIAM

IDENTIFICATION. Length 18 inches. Distinguished from the preceding species by smaller size and absence of the fine wavy horizontal bars on the under-parts. In Burma frequents chiefly tidal waters.
NEST AND EGGS. Bingham found one egg on the 27th February in the fork of a *ficus* in northern Tenasserim.
STATUS AND DISTRIBUTION. Malaysia and Indo-China, extending up the coasts of Burma to Assam. Away from the coast the only records are from the Thaungyin valley and from the Arakan Yomas in the south of the Bassein district; it is common in the Irrawaddy delta. There is one record from Yunnan.

TAWNY FISH OWL

Bubo flavipes (Hodgson), NEPAL

IDENTIFICATION. Differs from *ketupu* in larger size and much richer, more rufous, colour. The tarsus is feathered one-third behind and more than half-way down in front, not bare. Frequents forest streams.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Himalayan species. The Vernay-Hopwood Chindwin expedition obtained two while floating down the Uyu river near Lonkin in a dug-out. Not recorded elsewhere in Burma, nor in Yunnan.

ROCK EAGLE-OWL

Bubo bubo Linnaeus, SWEDEN
SUBSPECIES : *bengalensis* (Franklin), CALCUTTA–BENARES

IDENTIFICATION. Length 22 inches. A large solemn bird, mottled tawny-buff and blackish-brown, with conspicuous tufts above large orange eyes, which sits motionless by day amongst rocks and ravines and occasionally in trees. This bird and the brown fish owl are difficult to distinguish in the field when the legs are not visible. The fish owl carries the ear-tufts lower and is reddish-brown in general colour, whereas the rock eagle-owl is yellowish-tawny with more black on the head. Frequents rocky cliffs, sometimes trees.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. India and Burma. Its occurrence in Burma rests on a century-old record from Arakan, but there is a strong probability that owls heard calling *hu-hu* at 8,000–10,000 feet in the Chimili pass area, from rocky bluffs and in the silver fir and hemlock forests, by both Stanford and myself, belonged to this species (probably the subspecies *jarlandi* which occurs in Yunnan).

DUSKY EAGLE-OWL

Bubo coromandus (Latham), COROMANDEL COAST
SUBSPECIES : *klossi* Robinson, MALAYA

IDENTIFICATION. Length 21 inches. Similar to the rock eagle-owl in the field, but it is a grey and not a tawny bird and the eyes are paler; frequents trees

rather than rocks. In hot and sultry weather its distinctive call (see summary) may be heard at intervals throughout the day, but it is particularly noisy at dusk and dawn. Frequents open cultivated country, with occasional tall trees, in the dry zone.

NEST AND EGGS. Smith records a number of pairs breeding in the old nests of vultures or eagles high up in big *letpan* trees, in the irrigated areas of Mandalay district; four nests examined in the first fortnight of February contained young birds in down, so that eggs are probably laid in December.

STATUS AND DISTRIBUTION. India, Burma, and Malaya. In Burma it is found in Arakan, Tenasserim, and Central Burma, where, in addition to Smith's records, Macdonald reported it to be fairly common in the Myingyan district.

FOREST EAGLE-OWL

Bubo nipalensis Hodgson, NEPAL
SUBSPECIES: *nipalensis* Hodgson, NEPAL

IDENTIFICATION. Length 24 inches. Large size, well-developed ear-tufts, and a brown (not yellow) eye are noticeable features. Above blackish with some rufous mottling, below whitish with blackish bars and spots; legs white with rufous blotches like the legs of a spaniel. The booming call (see summary) is heard mostly in cold weather; a captive young bird, believed to be of this species, uttered at brief intervals a kind of wheezy whine *weeee-ooo* rising slightly in the middle and then dropping, somewhat resembling the whine of an impatient dog. Frequents forests, as its name implies.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas and Burma as far south as Moulmein. Common in the Pegu Yomas, and recorded from the Southern Shan States and northern Tenasserim, but Smith notes that he has heard its distinctive booming call in many parts of Burma, and there can be little doubt that it is well distributed throughout the forests of the foothills, but has been much overlooked.

MALAY EAGLE-OWL

Bubo sumatranus (Raffles), SUMATRA
SUBSPECIES: *sumatranus* (Raffles), SUMATRA

IDENTIFICATION. Length 18 inches. Distinguished from the preceding species by wavy cross-bars on the back and much smaller size. Eyes brown.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim.

COLLARED SCOPS OWL

Otus bakkamoena Pennant, CEYLON
SUBSPECIES: *lettia* (Hodgson), NEPAL
lempiji (Horsfield), JAVA

IDENTIFICATION. Length 10 inches. A small owl with conspicuous ear-tufts, the general effect of the plumage being buff, rather richly marked with dark brown, especially about the head. The distinctive call (see summary) is uttered slowly

at long intervals from nightfall to dawn, and the head is jerked forward each time the call is uttered. Another call, less commonly heard, resembles the word *kwow* uttered 4, or more rarely 5–7, times quickly. Both calls are heard throughout the year in Rangoon except during March, April, and May. A purely nocturnal species, frequenting well-wooded areas in the plains and hills.

NEST AND EGGS. Breeds from January to April; Wickham notes that in the Shan hills his nests were generally taken in the last week of March.

STATUS AND DISTRIBUTION. Throughout Asia. It is common all over Burma from the plains to the higher hills, and may be found up to 7,000 feet.

SPOTTED SCOPS OWL

Otus spilocephalus (Blyth), DARJEELING
SUBSPECIES: *spilocephalus* (Blyth), DARJEELING
siamensis Robinson and Kloss, PENINSULAR SIAM
latouchei Rickett, TONGKING

IDENTIFICATION. Length 9 inches. A strictly nocturnal forest bird which resembles the preceding species but has no pale collar on the hind-neck. For voice, see summary. Its characteristic call-note may be heard throughout the moist and evergreen forests of the country, and it is well known to the Kachins, who have a little legend about the *hkam-hkam-u*, as they call it, to account for its nocturnal habits.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas, Burma, Siam, Indo-China, and Malaysia, but not Yunnan. Throughout Burma in forests, up to 7,000 feet.

[NOTE.—For remarks on validity of *latouchei* see Deignan, 1945, p. 173.]

WHITE-FRONTED SCOPS OWL

Otus sagittatus (Cassin), MALACCA

IDENTIFICATION. Length 11½ inches. Large size, intense rufous or chestnut colour, and white bill are distinctive.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Mt. Mulayit, but rare.

EUROPEAN SCOPS OWL

Otus scops Linnaeus, ITALY
SUBSPECIES: *sunia* (Hodgson), NEPAL
malayanus (Hay), MALACCA
stictonotus (Sharpe), CHINA

LOCAL NAME: Burmese: *taw-lon-hnget.*

IDENTIFICATION. Length 8 inches. This bird has ear-tufts like the collared scops owl, but it is normally either dark grey or rufous. A forest bird.

VOICE. See summary. The call, which is syllabified by the Burmans as *kyet-wet-kyauk-gaung*, is one of the most familiar sounds after dark throughout the teak forests of the foothills ; the most striking thing about the call is the way it goes on and on without variation in pace for what seem like hours on end. The call may be heard in any month of the year, but in the rains and cold weather the call is often abbreviated, the first *tonk* being omitted ; in the hot weather the calling is persistent and is occasionally heard during the day-time (unlike the spotted scops owl).

HABITS AND FOOD. It spends the day asleep in the crown of a climber-clad or thickly foliaged tree and is rarely seen.

NEST AND EGGS. Breeds from February to April, with second brood into May and June.

STATUS AND DISTRIBUTION. Almost cosmopolitan. Probably throughout Burma in the better wooded parts of the plains and foothills, but the records from northern Burma are few, and it may not extend north of Myitkyina ; very common in the Pegu Yomas, but not heard round Rangoon. It does not ascend the hills to any great height, but occurs round Maymyo and Rippon described it as common in the Southern Shan States.

SPOTTED OWLET

Athene brama Temminck, PONDICHERRY
SUBSPECIES : *pulchra* Hume, PEGU

LOCAL NAME. Burmese : *zi-gwet*.

IDENTIFICATION. Plate XVIII, fig. 9, p. 372. Length 8 inches. Absence of ear-tufts separates it from the scops owls.

VOICE. See summary. A very noisy little bird, with a great variety of calls. One bird that I listened to for half an hour from 8 a.m. in bright sunlight uttered the following : (1) A harsh two-syllabled call in an ascending scale, accelerating towards the end and ending almost in a screech ; (2) the same, but the pitch remaining constant ; (3) a trilling call ; (4) a call consisting of a single note, like the first note of call (1). Some of its calls are not easy to distinguish from some of those of the barred owlet. In the breeding season its noisy, quarrelsome screeching are heard all about dry zone towns such as Mandalay, Meiktila, and Shwebo.

HABITS AND FOOD. A familiar bird in the dry zone, and much in evidence during the daylight hours. It feeds almost exclusively on insects.

NEST AND EGGS. Have been taken from the 12th March to mid-July, but most eggs are laid in March and April.

STATUS AND DISTRIBUTION. India, Burma, and Siam, but not Yunnan. It is absent from North-East Burma, but just reaches the Upper Chindwin, one specimen having been obtained by the Vernay expedition at Okma below Kalewa. It is common throughout Central Burma, and continues down the Irrawaddy and Sittang valleys to Henzada and Pegu ; in Rangoon it is replaced by the barred owlet.

BARRED OWLET

Glaucidium cuculoides Vigors, HIMALAYAS
SUBSPECIES : *rufescens* Stuart Baker, MANIPUR
brügeli Parrot, SIAM (= *fulvescens* Stuart Baker)
austerum Ripley, MISHMI HILLS
whiteleyi (Blyth), CHEKIANG

IDENTIFICATION. Plate XVIII, fig. 7, p. 372. Length 8 inches. Differs from the spotted owlet, which it resembles in size and appearance, by the barred and not spotted upper-parts.

VOICE. See summary. Its beautiful rippling call may be heard at any time of the year, and in Maymyo in February it has been heard throughout the day ; typically, however, it is heard at dawn on a hot-weather morning. It has a variety of other notes.

HABITS AND FOOD. Similar to those of the spotted owlet and equally diurnal, but it is rather more of a forest bird, and does not frequent the semi-desert dry zone country that is the spotted owlet's stronghold. The tails of these little owlets are often wagged like a pendulum.

NEST AND EGGS. Have been taken by Bingham in April and early May in northern Tenasserim, and Harington noted it as breeding in February near Rangoon.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common throughout Burma in the better wooded parts of the plains and foothills ; it is common round Maymyo, and ascends locally to 7,000 feet (not in northern Burma).

JUNGLE OWLET

Glaucidium radiatum (Tickell), BORABHUM, BENGAL
SUBSPECIES : *radiatum* (Tickell), BORABHUM, BENGAL

IDENTIFICATION. Length 9 inches. Differs from the barred owlet in having the abdomen barred transversely instead of striated longitudinally. Its note is said to be a pleasant and protracted one, and has been likened to the distant cry of a sarus crane.

STATUS AND DISTRIBUTION. India and western Burma. Mackenzie shot one in the northern Chin Hills and Christison reported it to be fairly common in Arakan in the jungle and high open forest, thus confirming Tickell's record (*Ibis*, 1876, p. 343).

PIGMY OWLET

Glaucidium brodiei (Burton), SIMLA
SUBSPECIES : *brodiei* (Burton), SIMLA (= *tubiger* Hodgson)

IDENTIFICATION. Length 6 inches. Small size at once distinguishes it from any other owl. The plumage is extremely variable, but the usual type in Burma is a deep rufous barred with blackish.
VOICE. See summary. The call may be heard at any hour of the day, less often at night ; the hotter the day the more persistent the calling ; it is ventriloquial and difficult to locate.
HABITS AND FOOD. A common and characteristic forest bird in foothills and higher hills alike ; the Yawyins in North-East Burma when out hunting with the cross-bow attract small birds by imitating the call.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas to Formosa and Malaysia. A common resident throughout the forests of Burma, at all elevations to 10,000 feet.

HAWK-OWL

Ninox scutulata (Raffles), SUMATRA
SUBSPECIES : *burmanica* Hume, PEGU

LOCAL NAMES. Burmese : *hkin-bok* or *myi-wun*.
IDENTIFICATION. Length 12½ inches. Unbarred upper-parts, absence of ear-tufts, and long pointed wings, giving a close resemblance to a sparrow-hawk in flight, distinguish this species ; under-parts white with dark markings on the throat.
VOICE. See summary. Calls freely at dawn and dusk ; the *myi-wun* call is not heard very often, but is occasionally uttered by day.
HABITS AND FOOD. Frequents forest edges, and likes to perch after dark on isolated trees in fields and clearings, hawking insects like a flycatcher from its perch. Wickham notes that he often came across it in the Shan hills when beating patches of jungle for woodcock, and compares its flight to that bird's ; Stanford notes that it is frequently disturbed in scrub-jungle when beating for jungle fowl. Armstrong noted that on the coastal mudflats it feeds largely on the small crimson stalk-eyed crabs that are so common along the tide-line.
NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Widespread in eastern Asia, and found throughout Burma in the plains and foothills and on the Shan plateau ; common in Rangoon and Maymyo.

Order FALCONIFORMES

Family PANDIONIDAE

OSPREYS

THE osprey differs in many ways from all other hawks, chiefly in anatomical features, and is therefore placed in a family by itself.

OSPREY

Pandion haliaëtus (Linnaeus), SWEDEN
SUBSPECIES : *haliaëtus* (Linnaeus), SWEDEN

LOCAL NAME. Burmese : *wun-let.*
IDENTIFICATION. Plate XIX, fig. 1, p. 388. Length 20–23 inches. Constant association with water and the contrast of the dark brown upper-parts with the white under-parts and whitish head, with a broad, dark band on the side, are distinctive features. The wings are long and narrow, distinctly angled in ordinary flight ; there is a light brown band on the breast and the feathers at the back of the crown are elongated as a kind of crest.
VOICE. The ordinary note is a short, shrill musical whistle repeated a number of times, tending to drop in pitch towards the end of the sequence. Witherby describes a more definite alarm-note as a repeated *kyick-kyick-kyick*, interspersed when excitement is rising with a toneless *krrk, krrk.*
HABITS AND FOOD. The osprey frequents rivers, lakes, jheels, and tidal waters. When fishing it flies 30–100 feet above the surface with alternate flapping and gliding ; on sighting a fish it generally hovers for a short time with legs dropped and then plunges with half-closed wings, throwing up a shower of spray and sometimes completely submerging for a second or two. On rising it shakes the water from its plumage with a convulsive quiver, during which some elevation is lost. Sometimes it snatches a fish from the surface without a preliminary hover and plunge. The fish is carried head-foremost, gripped by both feet unless quite small, to a perch, usually the dead

branch of a tree, a post in the water, or a rock. After feeding it often flaps along the surface dragging its feet in the water to rid them of slime, and it may duck its head underwater as well. The feet are very powerful, and the sharp prickly scales beneath the toes are specially adapted to catching and holding fish. It feeds almost entirely on fish up to 4 lbs. weight, and is said occasionally to be drowned in attempting to capture one beyond its strength, but when pressed by hunger it has been known to take chickens, beetles, frogs, small birds, and mammals.

NEST AND EGGS. The osprey is suspected of breeding in Burma, but proof is lacking; it has bred in Calcutta and Cachar. On the 24th July a bird that was probably an osprey was seen to fly off a nest in a small tree by the Mahananda tank, Shwebo district (Roseveare).

STATUS AND DISTRIBUTION. Cosmopolitan. In winter it is found all over Burma on suitable pieces of water, and single birds have been observed in June, July, and August in Myitkyina district, on the lake at Maymyo, and on the Hlawga lake near Rangoon.

Family ACCIPITRIDAE

VULTURES AND HAWKS

The vultures differ from the hawks in their enormous size and in having the head and neck bare, or only partly covered with short down. The very broad square-ended wings, with front and hind borders roughly parallel for nearly the whole length and with the head and short, broad tail projecting a little beyond them, give a rectangular outline when soaring. At short ranges it can be seen that the pressure of the air causes the feathers of the wings to splay out and turn upwards like the fingers of a hand, and the rushing, tearing noise is surprisingly loud. When at rest the hunched-up high-shouldered attitude is characteristic, and after a spell of rain they are typically seen hanging out their wings half-open to dry.

As they plane over a hillside with easy sweeping flight, with now and again a single leisurely but powerful down-stroke through a wide arc, or as they soar on rigid wings in wide circles often at a great height, the vultures are most majestic birds; but there are few sights more revolting than a pack of these birds scrumming round a carcase, heaving and tearing, jostling and squabbling. They spend much of their time circling high overhead on the look-

PLATE XIX

Page

1. OSPREY (adult) 387
Pandion haliaëtus haliaëtus.

2. CRESTED GOSHAWK (adult) 409
Accipiter trivirgatus indicus.

3. PEREGRINE FALCON (adult) 412
Falco peregrinus peregrinator.

4. RED-THIGHED FALCONET (adult) 416
Microhierax coerulescens burmanicus.

5. EUROPEAN KESTREL (adult male) 415
Falco tinnunculus interstinctus.

6. CRESTED SERPENT EAGLE (adult) 396
Spilornis cheela burmanicus.

7. RUFOUS-BELLIED EAGLE (adult) 394
Hieraaëtus kieneri kieneri.

PLATE XIX

1

2

3

4

5

6

7

ONE FOOT

0" 3" 6" 9" 12"

0 150 300

300 mm

1940

out for food, and one carcase will draw birds from a wide area owing to each observing the movements of others patrolling within its range of vision ; they find their food by sight and not by scent.

Having settled on the ground they move up to the scrum with a clumsy, waddling walk, or run in huge, ungainly hops, aided by their wings, and the carcase (except for the skeleton and largest bones) is devoured in a surprisingly short space of time ; having gorged their fill the birds sit about on the ground, or with difficulty rise into the surrounding trees, till digestion allows them to wing a heavy way to a resting place. This is usually a fixed and favourite spot where they sit and meditate till returning hunger again sends them on patrol.

The nest is a huge structure of sticks high up in a big tree, and may be used year after year. Only one egg is laid.

CINEREOUS VULTURE

Aegypius monachus (Linnaeus), ARABIA

IDENTIFICATION. Length 4 feet. Distinguished by its immense size and uniform dark brown colour ; the head is covered with down, short on the crown and longer on the nape.

STATUS AND DISTRIBUTION. Widespread in southern Europe, northern Africa, southern Asia as far east as Burma and (?) China. In Burma it has been seen three times : on the Irrawaddy seven miles below Myitkyina, on the Taiping river in the Bhamo district, and near Namkham in the Northern Shan States ; it is presumably a rare visitor to Burma.

KING VULTURE

Torgos calvus (Scopoli), PONDICHERRY

LOCAL NAME. Burmese : *lada-teik-ni*.

IDENTIFICATION. Frontispiece, fig. 2. Length 32 inches. On the ground the bare red head and neck wattles, and in flight the conspicuous white thigh patches, are diagnostic.

VOICE. Not recorded.

HABITS AND FOOD. Those of the family, but it is seldom that more than two or three are seen together, no matter how many of the other species of vulture there may be round a carcase.

NEST AND EGGS. Some pairs start repairing their nests before the end of October, but most eggs are laid in December and January.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and resident throughout India and Burma, recorded from Yunnan in summer.

LONG-BILLED VULTURE

Gyps indicus (Scopoli), PONDICHERRY
SUBSPECIES : *tenuirostris* G. R. Gray, NEPAL

LOCAL NAME. Burmese : *lada.*
IDENTIFICATION. Frontispiece, fig. 3. Length 35 inches. Overhead the uniform, not contrasting, coloration of the underside of the wings and body distinguish it from the next species.
VOICE. Not recorded.
HABITS AND FOOD. Those of the family.
NEST AND EGGS. In Myingyan district Macdonald took a hard-set egg in October, but most eggs are laid in December and January. Large isolated *letpan* trees are much used by all the vultures for nesting purposes. One nest was found in a tree in which pariah kites were also breeding.
STATUS AND DISTRIBUTION. Almost throughout India and Burma. It is less common than the next species and there is no definite record from northern Burma, nor from Yunnan, but Christison found it very common in Arakan.

WHITE-BACKED VULTURE

Pseudogyps bengalensis (Gmelin), BENGAL

LOCAL NAME. Burmese : *lada.*
IDENTIFICATION. Frontispiece, fig. 6. Length 35 inches. On the ground the conspicuous white rump-patch, and in overhead flight the white band along the fore-part of the wing, are diagnostic.
VOICE. Caterwauls and squeals when feeding and a loud roaring and wheezing noise when pairing have been recorded.
NEST AND EGGS. An early breeder ; nests examined by Oates on the 5th December contained one young bird each ; a pair were seen on the 20th September preparing to nest, and Stanford saw birds incubating on the 9th November, in coconut palms in Rangoon ; in Myitkyina district it starts to breed in November or December.
STATUS AND DISTRIBUTION. India, Burma, Siam, Indo-China, and northern Malaya. It is the commonest vulture in Burma, found throughout the plains, but only making casual visits to the higher hills, except where towns like Maymyo offer a special attraction ; in Arakan, however, Christison reports that it is scarce and appears migratory, being absent from May to October.

WHITE SCAVENGER VULTURE

Neophron percnopterus (Linnaeus), EGYPT
SUBSPECIES : *ginginianus* (Latham), COROMANDEL COAST

IDENTIFICATION. Length 24 inches. A white vulture with black primaries and naked yellow head ; bill yellow in adults.

STATUS AND DISTRIBUTION. A southern palaearctic species, extending into Africa and east to India. No specimen has been collected east of western Bengal, but in Malaya " according to Dr. Abbott, a large white vulture is common at Trang and Penang " (*The Birds of the Malay Peninsula*, vol. iv, pp. 14–15), and S. F. Hopwood reported seeing it near Takaw on the Salween, Southern Shan States, in the cold weather of 1941–42.

[NOTE.—The BEARDED VULTURE or LAMMERGEIER, *Gypaëtus barbatus* subspecies, has not been recorded from Burma but has been obtained in the Cachar hills of Assam and may reach the mountains of northern Burma at times. Comparatively long, wedge-shaped tail and feathered head distinguish it from the other vultures ; the " beard " is distinct up to some distance and shows black against the pale head of the adult.]

EAGLES, KITES, HARRIERS, BUZZARDS, AND HAWKS

It is seldom difficult to place a hawk in one of the five groups listed above, but to differentiate between the species in each group is another matter ; not only are some species polymorphic, but the immature birds differ from the adults, and again the adult males differ from the adult females. Flight silhouettes, actions and behaviour are better guides than plumage, but are insufficiently well known for many of the tropical species. The only sure method is to obtain a specimen and have it identified in a museum, at any rate until the observer has collected enough to teach himself how to differentiate the birds in the field ; I give some keys that may help to separate specimens of the more difficult groups.

KEY TO SOME OF THE LARGER EAGLES

(Wing over 15 inches except *Spizaëtus nanus*, which has wing 13 inches.)

A. Between eye and beak densely feathered, without bristles . *Pernis*
B. Between eye and beak with bristles or with feathers ending in bristles.
  a. Tarsus not feathered throughout . . . . . *Circaëtus*
  b. Tarsus feathered throughout.
    a^1. Claws much curved ; hind claw longer than inner claw.
    a^2. Primaries exceed secondaries by more than length of tarsus.
      a^3. Nostrils round . . . . . *Aquila*
      b^3. Nostrils oval . . . . . *Hieraaëtus*
    b^2. Primaries exceed secondaries by less than length of tarsus . . . . . *Spizaëtus*
    b^1. Claws little curved. Hind claw shorter than little claw. *Ictinaëtus*

KEY TO THE GENUS *AQUILA*

A. Nostrils elliptical or ear-shaped, higher than broad.
  a. Claws very large, hind claw over 50 mm. . . . *A. chrysaëtos*
  b. Claws moderate, hind claw under 50 mm.
    a^1. Wing, male over 530 mm., female over 600 mm. . *A. nipalensis*
    b^1. Wing, male under 530 mm., female under 575 mm. . *A. rapax*
B. Nostrils round, as high as broad.
    c^1. Wing, female over 540 mm., male 486–501 mm. . *A. clanga*
    d^1. Wing, female under 510 mm., male 470–505 mm. . *A. pomarina*

[NOTE.—The GOLDEN EAGLE, *Aquila chrysaëtos* subspecies, is found in eastern Assam, and may extend to the mountains of northern Burma. In flight resembles a buzzard, but much larger with broad wings and widespread upward-curving primaries.]

STEPPE EAGLE

Aquila nipalensis Hodgson, NEPAL
SUBSPECIES : *nipalensis* Hodgson, NEPAL

LOCAL NAME. Burmese : *wun-lu*.
IDENTIFICATION. Length 25–28 inches, female larger than the male. A large brown bird, the shade varying from light to dark, of rather fierce appearance, with sharply hooked beak and feathered legs armed with sharp claws ; it sits heavily on the tops of trees or on the ground, or soars in great circles above the kites, from which it is easily distinguished by rounded tail and larger size. Habits help to distinguish it from the spotted eagle, from some adults of which (those without white at the base of the tail) the steppe eagle is not otherwise distinguishable in the field ; the latter haunts tree-less plains and generally flies low, rarely soaring, whereas the spotted eagle is partial to well-watered and swampy localities, and soars to great heights. The immature steppe eagle is not boldly spotted like the young spotted eagle, the ground-colour is a good deal paler, and the juvenile has two fairly distinct buffish wing-bars, though these afterwards disappear.
STATUS AND DISTRIBUTION. Breeds in central Asia and winters in north-eastern Africa and southern Asia. It is not uncommon in the plains of southern Burma and Tenasserim in winter, and might be seen in the plains further north. Rippon recorded it as common at and above 4,000 feet in the Southern Shan States.

TAWNY EAGLE

Aquila rapax Temminck, S. AFRICA
SUBSPECIES : *vindhiana* Franklin, VINDHYA HILLS

IDENTIFICATION. See key. I do not know if there is any character by which it can be separated from the steppe eagle in the field.
STATUS AND DISTRIBUTION. Common in India, and extending across Burma to northern Siam (one record) ; Macdonald described it as rare in the Myingyan district and there is one record from near Thayetmyo. A species of brown eagle frequents Irrawaddy sandbanks.

GREATER SPOTTED EAGLE

Aquila clanga Pallas, RUSSIA–SIBERIA

IDENTIFICATION. Length 26–29 inches. A large dark brown eagle, unspotted when adult, but with broad whitish or buff spots in immature plumage. It cannot always be separated from *pomarina* in the field; birds showing well-marked white on the upper tail-coverts are *clanga*, but those having a little dingy white or none may be either species. Habits are also rather different, *pomarina* being more of a woodland bird, though hunting over open country, without such a pronounced liking for water as *clanga* has. The note is said to resemble the high-pitched barking of a small dog.

STATUS AND DISTRIBUTION. Breeds in eastern Europe and much of Asia, including north-eastern India; winters from north-western Africa to India and Burma. It is probably a winter visitor in small numbers to Burma and has been recorded from Arakan, Central Burma (8 sight records from October to March, Roseveare), Southern Burma (Minbu district, and one shot out of several seen at Thayetmyo), the Sittang plain, and Tenasserim (Tickell).

LESSER SPOTTED EAGLE

Aquila pomarina Brehm, POMARANIA
SUBSPECIES: *hastata* (Lesson), BENGAL

IDENTIFICATION. Length 23 inches. See under the preceding species. The call is described as a very high-pitched cackling laugh.

STATUS AND DISTRIBUTION. From eastern Europe to India, where it is resident in most parts. Oates obtained one at Kyeikpadein (Pegu district) and there is a century-old record from Arakan; Stuart Baker claims that it occurs in northern Burma and as far south as Pegu (*F.B.I.*, vol. v, p. 76) but no other records are traceable.

BONELLI'S EAGLE

Hieraaëtus fasciatus Vieillot, MONTPELIER
SUBSPECIES: *fasciatus* Vieillot, MONTPELIER

IDENTIFICATION. Length 25–27 inches. A far more courageous bird than the eagles described so far, with more slender build, smaller beak and longer feet and tail. The adult is brown above and white to rufous-buff below, streaked with blackish; the pale plumage under the wing is noticeable in flight; there is a broad subterminal black band to the tail; young birds however lack this band and are paler above. The call is said to be a shrill creaking cry. It has a flycatcher's habit of returning again and again after short flights to its starting point, whether on the ground or in a tree; when perched it holds itself very erect and in flight the use of the tail as a rudder is very noticeable (Roseveare).

NEST AND EGGS. Have been taken in Central Burma (Hopwood and Macdonald) and the Southern Shan States. Breeds from November to February, making a huge nest of sticks lined with green leaves. The eggs, 1 to 3 in number, are pure white with or without faint flecks of reddish.

STATUS AND DISTRIBUTION. Widespread in southern Europe and south-western and central Asia; found almost throughout India, and in Burma has been recorded from Central Burma and the Southern Shan States.

BOOTED EAGLE

Hieraaëtus pennatus (Gmelin), SPAIN

IDENTIFICATION. Length 19–22 inches, the female considerably larger than the male ; like Bonelli's eagle but smaller.
STATUS AND DISTRIBUTION. Breeds in Europe eastwards across Asia to Trans-Baikalia ; also in India and northern Africa. In Burma it has been recorded from Thayetmyo, Shwebo district (2 sight records, Roseveare), the Southern Shan States, Thaton, and Moulmein, and is probably a winter visitor.

RUFOUS-BELLIED EAGLE

Hieraaëtus kieneri (E. Geoffroy), HIMALAYAS
SUBSPECIES : *kieneri* (E. Geoffroy), HIMALAYAS

IDENTIFICATION. Plate XIX, fig. 7, p. 388. Length 20 inches. In flight the underside of the wings and tail is pale grey in contrast to the deep rufous abdomen and white throat and upper breast. Young birds have the under-parts white throughout.
VOICE. A piercing scream is the only note described.
HABITS AND FOOD. A forest eagle, frequenting high forest from the foothills to 5,000 feet. Flies with rapid wing-beats.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region, but rare. In Burma it has only been recorded twice, at Thandaung (Cook) and in the Kabani forest reserve, Toungoo district (Smith), and its status is uncertain.

BLACK EAGLE

Ictinaëtus malayensis (Temminck), JAVA
SUBSPECIES : *perniger* (Hodgson), NEPAL

IDENTIFICATION. Length 27 inches. A blackish eagle with a noticeably long tail ; a white patch under the eye and the tail barred with dark grey. Usually seen sailing in small circles, harrier-fashion, low over a forested hillside.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in India, Burma, and Malaysia to the Celebes. It has been recorded only from the Chin Hills, North-East Burma (where it is not uncommon), and Tenasserim, and its status is uncertain.

KEY TO THE GENUS *SPIZAËTUS*

A. Feathering of tarsus not extending to division of toes . . *S. cirrhatus*
B. Feathering of tarsus extending to base of toes.
  a. Large (wing over 16 inches) . . . . . *S. nipalensis*
  b. Small (wing under 13 inches) . . . . . *S. nanus*

CHANGEABLE HAWK-EAGLE

Spizaëtus cirrhatus (Gmelin), INDIA
SUBSPECIES : *cirrhatus* (Gmelin), INDIA
limnaëtus Horsfield, JAVA

IDENTIFICATION. Length 26–29 inches, the female larger than the male. A lightly built slender eagle, with proportionately long narrow tail. A polymorphic species with two main colour phases ; a melanistic phase can easily be confused with the black eagle ; except in the melanistic phase, the underside of the wing in flight appears white barred and streaked with blackish-brown. A long black crest is present in *cirrhatus* but absent in *limnaëtus*. The call is a prolonged shrill scream, *yeep-yip-yip-yip, yeep-yip-yip-yip*, frequently uttered, or else *quick, quick, quick, quick, quick, k-kweeee——*, or *lu-wee ya week*. A forest bird, tolerably abundant in the foothills and higher hills, feeding on doves, domestic poultry, waterfowl, etc.
NEST AND EGGS. Have been taken in various parts of Burma, including Arakan and the Upper Chindwin (Hopwood and Mackenzie), Thayetmyo district (Feilden), and the Pegu Yomas (Smith). The nest is a large untidy structure of sticks, usually near the top of a large tree. The solitary egg is greyish-white, rarely with a few faint reddish freckles.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and a common resident throughout Burma.

HODGSON'S HAWK-EAGLE

Spizaëtus nipalensis Hodgson, NEPAL
SUBSPECIES : *nipalensis* Hodgson, NEPAL
fokiensis Sclater, FOKIEN, S. CHINA

IDENTIFICATION. Length 28 inches. A medium-sized eagle, general colour brown, conspicuously barred with white on the under-parts. A long crest up to 4 inches long, composed of a few lengthened feathers on the nape.
STATUS AND DISTRIBUTION. Himalayas to China. The subspecies *nipalensis* has been recorded from both Yunnan and Manipur and must occur in northern Burma, though not recorded to date ; *fokiensis* is probably resident in south-eastern China and is a rare winter visitor to Siam ; according to Stuart Baker it reaches Tenasserim and a specimen was obtained by Moore in the Chin Hills.

SMALL HAWK-EAGLE

Spizaëtus nanus (Wallace), BORNEO
SUBSPECIES : *nanus* (Wallace), BORNEO

IDENTIFICATION. Length 23 inches. Brown above, white below.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as Mergui.

SHORT-TOED EAGLE

Circaëtus ferox Gmelin, ASTRAKHAN
SUBSPECIES : *ferox* Gmelin, ASTRAKHAN

IDENTIFICATION. Closely allied to the serpent eagle. Upper-parts brown, head paler ; tail banded ; tarsus bare and reticulated. No crest.

STATUS AND DISTRIBUTION. Widespread in southern Europe, north-eastern Africa and western Asia; a rare straggler east of India to Siam and Malaya. Christison records that one was obtained at Myebon, Arakan, in January.

CRESTED SERPENT EAGLE

Spilornis cheela (Latham), LUCKNOW
SUBSPECIES: *burmanicus* Kirke Swann, THAYETMYO
ricketti Sclater, FOKIEN, S. CHINA

LOCAL NAME. Burmese: *lin-yon.*

IDENTIFICATION. Plate XIX, fig. 6, p. 388. Length 26–28 inches, the female larger than the male. In flight the wings appear very broad and rounded; a narrow black border with a broad white band inside it running along the whole length of the hinder-edge of the wing and across the tip of the tail make this bird easy to recognise when seen from below.

VOICE. Rather noisy, frequently uttering on the wing a plaintive whistling call of several notes, *kuk-kuk-kuk-kuk-queear-queear-queear*, the *kuks* forming a preparatory run up the scale.

HABITS AND FOOD. A bird of forests and well-wooded country, feeding chiefly on snakes (up to 7 or 8 feet in length), but also on lizards, frogs, insects, and birds. It is typically seen wheeling round in circles over the forest like a buzzard. In the forests of Tenasserim, Davison noted its preference for small openings that are dry in the cold weather but become marshes overgrown with rank grass and weeds in the rains.

NEST AND EGGS. Have been taken in several parts of Burma, from February to April. A rather small nest of sticks is built in a tree and the single egg is greenish-white with variable purplish markings.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and a common resident almost throughout the forests of Burma at all elevations. The subspecies *ricketti* has been recorded by Bangs from Malipa, Northern Shan States, and by de Schauensee from Kengtung.

WHITE-EYED BUZZARD-EAGLE

Butastur teesa (Franklin), CALCUTTA-BENARES

IDENTIFICATION. Plate XX, fig. 1, p. 400. Length 16 inches, the female slightly larger. A medium-sized brown hawk, heavy in build with pointed wings, easily identified by the whitish eyes, prominent white nape-patch, grey wing-patches, and three dark stripes on the throat; the axillaries are conspicuous as reddish-

brown patches on the white under-surface of the wings. The flight is quick and strong, with rapid wing-beats.

VOICE. A very noisy bird, frequently uttering its plaintive mewing cry, *pit-weer, pit-weer,* which varies from a low call to a prolonged squeal.

HABITS AND FOOD. A bird of dry, open country, it spends most of its time sitting sluggishly on a telegraph post, tree or shrub, and dropping thence occasionally to the ground to pick up a grasshopper or other insect. It is remarkably fearless of man and easily approached.

NEST AND EGGS. Macdonald found it breeding in the Myingyan district, where " the nest is as often in a leafless tree as a thickly foliaged one and usually from 20–30 feet from the ground " ; Hopwood also found it breeding in the lower Chindwin and Roseveare in Shwebo district. The eggs, 2 to 4 in number, are greyish-white or pale bluish-white in colour, rarely marked with reddish-brown.

STATUS AND DISTRIBUTION. Widespread in India, but in Burma it is common only in the dry zone of Central Burma ; it is found in the southern part of the Upper Chindwin, and southwards has been recorded from Thaton and Amherst ; also occurs in Arakan and the Chin Hills.

RUFOUS-WINGED BUZZARD-EAGLE

Butastur liventer (Temminck), CELEBES

IDENTIFICATION. Plate XX, fig. 2, p. 400. Length 16 inches. At rest the bird appears dark with white thighs, and the yellow bill with a black tip is noticeable ; in flight the very rufous wings and tail give it a very different appearance ; it flies with rapid beats of the rounded wings, but the flight is slow and laboured.

VOICE. A loud, plaintive mewing note or squeal, *chip-hweeee, chip-hweeee,* uttered both from a perch and on the wing.

HABITS AND FOOD. Frequents thin forest and open country, often near rivers and lakes, and feeds largely on reptiles ; one shot by Wickham had a whole lizard in its gullet. Freshwater crabs are said to attract it to water.

NEST AND EGGS. Have been taken by many collectors in various parts of Burma. A common breeding bird of the Shan plateau, and a pair usually nest in the oak woods of Maymyo. Most eggs are laid in March and April. Nest and eggs resemble those of the preceding species.

STATUS AND DISTRIBUTION. From Burma through Yunnan and Siam to southern Indo-China, and the Celebes. Fairly common and resident throughout Burma in suitable forests, but rare in Amherst district and absent further south in Tenasserim and in Malaya.

GREY-FACED BUZZARD-EAGLE

Butastur indicus (Gmelin), JAVA

IDENTIFICATION. Length 17 inches. The tail has no rufous tinge and shows broad dark bands. Adults have the upper-parts and breast brown, and the abdomen broadly barred. Eyes bright yellow. " It seemed to be of a confiding and somewhat indolent disposition, preferring to seat itself on some dry tree or other point of vantage, from whence it keeps a look-out for lizards, locusts, etc., of which its food seems principally to consist, as I found from an examination of the stomachs of those I killed " (Davison).

STATUS AND DISTRIBUTION. Breeds in eastern Asia and Japan, wintering in south-eastern Asia. In Burma recorded only from Tenasserim, where it is uncommon in the extreme south and a rare straggler up to Amherst.

WHITE-BELLIED SEA EAGLE

Haliaëtus leucogaster (Gmelin), JAVA

LOCAL NAME. Burmese: *wun-lo.*

IDENTIFICATION. Length 28 inches. Whole head and under-parts pure white; upper-parts ashy-brown, the wing-tips blackish; tail blackish with a broad white tip. In sailing flight the wings are held above the body in an open "V." Young birds have the head, neck, and under-parts tawny. It has a loud clanging cry of many notes, audible at a great distance, and " a harsh duck-like quack " (Davison). Entirely a coastal bird, though it may be found up the tidal estuaries of the larger rivers, feeding mainly on fish and water snakes.

NEST AND EGGS. The breeding season is from October to February. Shopland found one nest on the 11th December in a high tree in the compound of the civil hospital at Akyab. The nest is very large and may be used year after year; the eggs, 2 in number, are white.

STATUS AND DISTRIBUTION. The coasts of India, Burma, and Ceylon, thence through Malaysia to Australia. It is not uncommon on the Burma coast, ascending the larger rivers for 60 miles or so. It does not wander far from its breeding haunts.

PALLAS'S FISHING EAGLE

Haliaëtus leucoryphus (Pallas), LOWER URAL RIVER

LOCAL NAME. Burmese: *wun-bo.*

IDENTIFICATION. Plate XX, fig. 4, p. 400. Length 32 inches, the female larger. When soaring it appears as a dark bird with buff head, cheeks and neck, and a white tail with a black tip; the lovely

chestnut-sandy colour of the head and nape can only be seen in a good light when the bird is at rest, and the white band across the tail appears much wider than it really is (4½ inches). Young birds are all brown above, with pale fringes to the feathers; tail dark brown, sometimes mottled with white at the base; chin and throat tawny with darker centres to the feathers; remaining under-parts pale brown.

VOICE. At times very noisy, uttering at frequent intervals what has been described as a sonorous whinnying call and as a rather raucous gull-like call.

HABITS AND FOOD. Primarily a freshwater fisher, and the common fishing eagle of the Irrawaddy; it is usually seen perched on the top of a gigantic *letpan* tree or a low cliff, or else beating up and down the river with somewhat hurried flight. It does not plunge for fish like the osprey, but takes those that have ventured into the shallows or become stranded in drying pools; fishermen dragging the river with nets are often attended by one of these birds, which try to steal any fish left unguarded on the bank, and such birds as cormorants and terns may be bullied into giving up fish they have caught. It also feeds on carcases floating down the river.

NEST AND EGGS. Breeds from November to February, usually in large, solitary *letpan* trees; the same tree, or a neighbouring one, may be used year after year. One pair when building their nest would fly over the tops of *letpan* trees and, without stopping, pluck off leafy branches and carry them off to the nest in their claws. The eggs, 1 to 3 in number, are greyish-white in colour.

STATUS AND DISTRIBUTION. From southern Russia through central Asia to India and Burma. In Myitkyina district Stanford describes them as arriving in October or early November to breed and disappearing during the rains. It is found throughout Burma on the jheels and larger rivers, but more observations on its status are required.

GREATER FISHING EAGLE

Icthyophaga icthyaëtus (Horsfield), JAVA
SUBSPECIES: *icthyaëtus* (Horsfield), JAVA

IDENTIFICATION. Length 27 inches (male), females larger. Differs from the next species in its lighter colour and in having the upper-surface of the tail white except for a dark band across the terminal quarter. The ashy-grey head separates it from Pallas's fishing eagle. Young birds are brown, paler below with whitish streaks. It is said to have a loud deep call.

NEST AND EGGS. Bingham found a nest on the 3rd March in the Meple

drainage, northern Tenasserim ; it was a large mass of sticks and contained one egg. Another nest was found by Smith on the 21st January near Singu, Mandalay district.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and sparingly distributed through Burma ; the only records from northern Burma are one bird obtained by the Vernay-Hopwood expedition on the Chindwin above Homalin, and another seen by Smith below Homalin. Rippon described it as common on the Inle lake in the Southern Shan States, and Oates as fairly common throughout " British Burmah " in suitable localities.

LESSER FISHING EAGLE

Icthyophaga nana (Blyth), SINGAPORE
SUBSPECIES : *nana* (Blyth), SINGAPORE
plumbeus Jerdon, NEPAL

IDENTIFICATION. Plate XX, fig. 3, p. 400. Length 20 inches (male), females larger. In both this and the preceding species the white thighs, abdomen and under tail-coverts contrast sharply with the breast ; this species differs in having the breast much darker, the central tail-feathers brown throughout on the upper surface, and the lateral ones mottled white and brown on the basal two-thirds ; the breast is much darker.

VOICE. Said to be very noisy on moonlight nights.

HABITS AND FOOD. Frequents rivers and streams in forests, and avoids tidal waters.

NEST AND EGGS. Have been taken in Tenasserim from November to early March ; the nests were in large trees on the banks of small streams in forest, and contained two eggs.

STATUS AND DISTRIBUTION. A Malaysian species, extending through Burma to the central Himalayas. In Burma it is as rare as the preceding species. A bird obtained on the Chindwin by the Vernay-Hopwood expedition constitutes the sole record for northern Burma ; also recorded from Cape Negrais, the Pegu river in the Yomas, the Southern Shan States, and Tenasserim.

BRAHMINY KITE

Haliastur indus (Boddaert), PONDICHERRY
SUBSPECIES : *indus* (Boddaert), PONDICHERRY
intermedius Gurney, JAVA

LOCAL NAME. Burmese : *sun-gaung-byu* (white-headed kite).

IDENTIFICATION. Plate XX, fig. 6, p. 400. Length 18 inches ; the female considerably larger. The dark stripes are not visible on the

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PLATE XX

1

2

4

3

5

6

7

8

9

10

ONE FOOT

0" 3" 6" 9" 12"

0 150 300

300 mm.

1940.

wing. Young birds are mottled brown, but the rounded tail prevents confusion with the pariah kites.

VOICE. A long, shrill, mewing squeal, *chee-e-e*, like that of a pariah kite suffering from acute hoarse throat.

HABITS AND FOOD. These kites are common wherever there are fisheries, jheels, and large sheets of water; unlike the pariah kite they also ascend forest streams and have been seen in the heart of the Pegu Yomas. Over paddy fields it sometimes beats back and forth or floats lazily in wide circles overhead. A party of twenty or more has been observed at the Pa-an caves on the Salween river flying round high up just after sunset and apparently catching and carrying off bats from among the thousands that were streaming out from the caves. Normally, however, it is a scavenger, especially round fishing villages.

NEST AND EGGS. Most birds breed from January to March, but Bingham found a nest under construction on the 4th April in northern Tenasserim, and I found one with young by the Indawgyi lake at the end of April. The nest is usually built in a solitary tree growing in cultivation or beside a jheel, and the eggs, 2 or 3 in number, are greyish-white, either unmarked or feebly blotched with red or brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and a common resident throughout Burma; Wickham describes it as a rare bird in the hills, but Forrest collected one at 7,000 feet near Tengyueh. Baillie considers it to be a local migrant in Central Burma.

PARIAH KITE

Milvus migrans (Boddaert), FRANCE
SUBSPECIES: *govinda* Sykes, DECCAN
lineatus (Gray), CHINA

LOCAL NAMES. Burmese: *sun* or *u-bok-saung-the-hnget*, because they go away for the Buddhist lent.

IDENTIFICATION. Plate XX, fig. 5, p. 400. Length 24 inches (*govinda*) or 28 inches (*lineatus*). On the wing the forked tail separates it from all similar hawks; *lineatus* has the tail less deeply forked than *govinda* and also has yellowish-white patches on the under-surface of the wings at the base of the primaries; it is a larger and darker bird with a blackish back, as compared with the slim chocolate-brown *govinda*.

VOICE. A shrill, mewing squeal, long-drawn and almost musical, is freely uttered.

HABITS AND FOOD. Immense numbers of these kites appear in Southern Burma during the winter, and one of their strongholds is in the woodlands round the Royal Lakes in Rangoon. Stanford notes that " the evening flight over the Royal Lakes is one of the features of Rangoon, and a large troop of them hawking flying-ants, when the latter are swarming, is a wonderful sight. The ants are frequently taken in the talons and transferred to the mouth. I watched one on November 5th being attacked by a peregrine just over the roof of the Secretariat, and as the falcon stooped on its tail and dropped its claws, the kite turned gracefully upside-down in the air and struck upwards at the falcon with its claws—a manœuvre requiring marvellous timing. *lineatus* in the Sittang plain is a village-haunting bird feeding largely on offal, and gathering in large numbers to roost in the few clumps of trees in the area."

The flight is unmistakable in its lightness and buoyancy, long leisurely strokes alternating with short glides, and the direction continually changing with spirals and cants. After a shower of rain I have seen numbers waddling about on a grassy maidan and picking out earthworms. Odd birds may be seen far out on the mudflats of the coast.

NEST AND EGGS. Breeds from October to April. Stanford noted a sitting female on the 2nd November, and I have collected a breeding one on the 15th April. The nest is built in a tree, often in a town or village, and the eggs, 1 to 4 in number, are very variable in colour and markings.

STATUS AND DISTRIBUTION. All the continents except America. The subspecies *govinda* breeds in India, Burma, and Ceylon; it is a common breeding bird in the plains of Burma and on the Shan plateau in the cold weather, but disappears at the break of the rains; I once saw a flock of at least fifty birds migrating up the Sittang valley on the 4th June, but there are few records between that date and September. Roseveare recorded birds at Shwebo and Minbu on the 22nd and 24th June respectively, and Baillie saw two birds near Singu, Mandalay district, on the 7th July. Christison noted that " very few remain in the monsoon " in Arakan. It is not clear where they go to, but it seems possible that they migrate to India. The subspecies *lineatus* breeds in Japan, northern China, and the Himalayas; so far as we know it is a non-breeding winter visitor to Burma, arriving from the 24th August onwards (most birds arrive in the latter part of September) and leaving in March. Anderson collected two at Tengyueh in June and July.

BLACK-WINGED KITE

Elanus caeruleus (Desfontaines), ALGIERS
SUBSPECIES : *vociferus* (Latham), COROMANDEL COAST

IDENTIFICATION. Plate XX, fig. 7, p. 400. A small handsome little kite with pure white under-parts ; the long pointed wings with triangular black patches, graceful flight with slow, deliberate wing-beats, and habit of hovering identify it on the wing.
VOICE. It occasionally utters a very high-pitched cry, characteristic and rather arresting.
HABITS AND FOOD. Typically a bird of the paddy plains, with the habits of a kestrel ; it also frequents well-wooded country intermingled with cultivation, but avoids high forest.
NEST AND EGGS. In the Myingyan district Macdonald took two eggs on the 6th January and found a nest with three young birds, just able to fly, on the 4th April ; both nests were about 15 feet from the ground, one in a thickly foliaged tree and the other in a leafless one. The eggs are white to buff, heavily blotched and smeared with red.
STATUS AND DISTRIBUTION. Almost cosmopolitan. It is sparingly distributed throughout the plains of Burma (excluding Tenasserim) ; Wickham described it as decidedly uncommon in the Shan hills, but it has been seen as high as 5,000 feet in the Mogok hills. Oates described it as a summer visitor to Southern Burma, from July to mid-October. There are numerous records from Yunnan.

KEY TO THE HARRIERS

Harriers are large, long-winged, long-tailed and long-legged hawks frequenting open country. Their flight is characteristic, often only a few feet from the ground or just skimming the bunds of the paddy fields ; several leisurely wing-beats are followed by a glide on stiff, half-raised wings, an open " V " in outline, with banking and turning at intervals ; at times they will rise in wide circles to a great height. When hunting they quarter the ground with much regularity and seize their prey by a sudden pounce.

Apart from *aeruginosus*, identification is not always easy in the field. Adult males of *melanoleucos* and *pygargus* should be easy enough, and under good circumstances adult males of *cyaneus* and *macrourus* might be distinguished, as in *cyaneus* the cheeks and sides of the head are paler and the throat and breast are darker (grey) and often the upper-parts are darker ; in addition, the upper tail-coverts, being pure white, show up much more, and the black tip to the wing is more extensive. It is very doubtful whether females and immatures can be differentiated in the field on plumage characters. It is said

that in *pygargus* the more pointed wing and more buoyant, graceful flight are distinct from that of *cyaneus*, and this may be so.

A. Exposed bill over 29 mm. . . . . *C. aeruginosus*
B. Exposed bill under 29 mm.
  a. Primaries 2, 3 and 4 emarginate on outer web.
    a^1. Second primary shorter than fourth. Tarsus over 64 mm. . . . . *C. macrourus*
    b^1. Second primary usually longer than fourth. Tarsus under 64 mm. . . . . *C. pygargus*
  b. Primaries 2, 3 4 and 5 emarginate on outer web.
    c^1. Second primary shorter than fifth . . . *C. cyaneus*
    d^1. Second primary longer than fifth . . . . *C. melanoleucos*

The Burmese name *daung-sun* applies to all harriers.

PALLID HARRIER

Circus macrourus (Gmelin), VOLGA

IDENTIFICATION. Length 17–19 inches, the female rather larger than the male. The adult male is a strikingly pale grey bird, closely resembling the male hen harrier, see key.

STATUS AND DISTRIBUTION. Breeds in eastern Europe and south-western Asia. A winter visitor to Burma, not uncommon in the plains of Southern Burma, and also recorded from the Southern Shan States and Arakan (common, and arrives in November).

[NOTE.—MONTAGU'S HARRIER, *Circus pygargus* Linnaeus. There are only very old and unreliable records of this species in Burma. The male differs from the male hen-harrier in having a dark bar across the secondaries, which shows also on the under-side of the wing, and in the grey or greyish-white rump (never a broad area of pure white as in the hen-harrier); at close range the rufous streaks on the flanks may be seen.]

HEN-HARRIER

Circus cyaneus Linnaeus, LONDON
SUBSPECIES: *cyaneus* Linnaeus, LONDON

IDENTIFICATION. Length 17–20 inches. See key.

STATUS AND DISTRIBUTION. A holarctic species. Stanford obtained one on the Irrawaddy near Myitkyina and saw another that was either this or a pallid harrier at Kazu; there are no other records from Burma, but several have been obtained near Tengyueh.

PIED HARRIER

Circus melanoleucos (Pennant), CEYLON

LOCAL NAME. Burmese: *thein-gya*.

IDENTIFICATION. Plate XX, fig. 10, p. 400. Length 17–18 inches.

On the wing the male is a conspicuously pied bird, appearing more white than black; the wings are white with black tips and black patches near the body, connected by a black patch across the back. The female is probably not distinguishable from females of the pallid and Montagu's harriers in the field.

VOICE. The call is a weak but rapid *wek-wek-wek*, seldom uttered. At the nest the female utters a loud sixfold " chack-ing " note, like a magpie.

HABITS AND FOOD. A typical harrier, frequenting paddy plains, grass plains, and marshes.

NEST AND EGGS. A nest containing two young birds and one egg was found on the Hokat *lwin*, a grassy plain south of Myitkyina, on the 30th May by Stanford (1936*c*); the eggs were probably laid in the third week of April.

STATUS AND DISTRIBUTION. Breeds in eastern Siberia, Mongolia, and northern China, and perhaps regularly in Burma in small numbers; Livesey states that pairs are constantly seen in the Shan States throughout the monsoon. Most of the Burma population are winter visitors, arriving in September (few birds reach Southern Burma before October) and leaving in April before breeding. Probably the commonest of the Burma harriers.

MARSH HARRIER

Circus aeruginosus (Linnaeus), SWEDEN
SUBSPECIES: *aeruginosus* (Linnaeus), SWEDEN
spilonotus Kaup, PHILLIPPINE IS.

LOCAL NAME. Burmese: *daung-sun*.

IDENTIFICATION. Length 19–22 inches. The marsh harrier is the largest species in Burma, with broader more rounded wings, slower flight and heavier build than the others. The plumage is predominantly dark rusty-brown, much the commonest phase having lighter buffish shoulders and head. The adult male has the tail, secondaries and some coverts ashy-grey, so that in flight the wings show a broad oblique band of grey contrasted with the black wing-tips. Absence of white on the rump separates the female from the female pied harrier. The subspecies *spilonotus* has the abdomen white or buff with dark streaks.

VOICE. Generally silent outside the breeding season.

HABITS AND FOOD. Similar to those of the pied harrier, but perhaps more restricted to marshes and jheels, although on the Sittang plain

it is found over the wide grassy depressions that become flooded only in the rains.

STATUS AND DISTRIBUTION. A palaearctic species. In Burma it is not uncommon as a winter visitor from October to March in suitable localities, and the subspecies *spilonotus*, which breeds in Tibet and western China, has been recorded from the Southern Shan States and Moulmein and seen near Mogok.

KEY TO THE BUZZARDS

Buzzards are medium-sized hawks with large, broad wings, typically seen soaring slowly over forest or open country; owing to extreme individual variation it is almost impossible to differentiate the species in the field on plumage characters.

Adults

A. Tail more brown than rufous, with 4–12 transverse bars, not always distinct.
  a. Tail with 1 subterminal and 7 other bars, the base and inner webs of the tail-feathers white; flanks dark brown . . . . . *B. hemilasius*
  b. Tail with 4 or 5 nearly obsolete dark bars; flanks and thighs rufous . . . . . *B. buteo*
B. Tail more rufous than brown, the bars obsolete except for the subterminal one . . . . . *B. rufinus*

Immature

A. Tail uniform brown . . . . . *B. buteo*
B. Tail brown or ashy-brown with transverse bars.
  a. Thighs buff streaked with dark brown . . . *B. rufinus*
  b. Thighs ashy-brown, spotted with white . . . *B. hemilasius*

LONG-LEGGED BUZZARD

Buteo rufinus Cretzschmar, ASTRAKAN
SUBSPECIES: *rufinus* Cretzschmar, ASTRAKAN

IDENTIFICATION. Length 22–24 inches, the female larger than the male. A heavy lumpish bird that sits dully on trees and on the ground. In soaring flight the rounded tail is spread and the wings seen from below are peculiarly moth-like in the arrangement of the pattern, a crescent-shaped patch at the base of the primaries being distinctive. Colour very variable.

STATUS AND DISTRIBUTION. A bird of south-eastern Europe and Western Asia. The only record east of Bhutan comes from Fort Hertz, where a single specimen was obtained in December.

[NOTE.—The UPLAND BUZZARD, *Buteo hemilasius* Temminck and Schlegel breeds in Japan, south-eastern Siberia, Tibet, and the Himalayas. Stuart

Baker claims that it is found in Burma in winter (*F.B.I.*, vol. v, p. 141) but no specimens from Burma are traceable.]

EUROPEAN BUZZARD

Buteo buteo (Linnaeus), SWEDEN
SUBSPECIES : *burmanicus* Hume, THAYETMYO

IDENTIFICATION. See key.
STATUS AND DISTRIBUTION. A palaearctic species. A rare winter visitor to Burma, recorded from the Ngawchang valley, Mogok, Thayetmyo, and Thaton. I have seen buzzards near the Panwa pass and in the tea estate at Thandaung, and others have been seen in Central Burma, but the species has not been determined ; they are probably rather commoner than the records suggest.

GOSHAWKS AND SPARROW-HAWKS

These are small to medium hawks with comparatively short, broad wings and long tails. They frequent well-wooded country, and, when hunting, fly fast and low along forest edges or along streams and water-courses, gliding along with three or four wing-beats at long intervals, or threading their way with astonishing dexterity through the undergrowth ; they combine speed with a perfect control of movement, the broad wings and long tail enabling them to thread their way swiftly amongst tree-trunks or other obstacles and to check or turn abruptly with the utmost facility ; on sighting their quarry they make a lightning dash, often ending with a long glide, and seize it with a formidable grip of the claws. They feed mainly on birds, from sparrows to pigeons in size, and also on small mammals, reptiles, and large insects. The prey is eaten on a branch of a tree or frequently on the ground, where they usually walk but can also hop. Soaring is not infrequent, the bird circling upwards, generally with three or four wing-beats from time to time.

EUROPEAN GOSHAWK

Accipiter gentilis (Linnaeus), SWEDEN
SUBSPECIES : *schvedowi* Menzbier, TRANS-BAIKALIA (= *khamensis* Bianchi)

IDENTIFICATION. Length 19–23 inches, the female considerably larger than the male. Resembles a huge sparrow-hawk.
STATUS AND DISTRIBUTION. A holarctic species. A winter visitor to India and northern Burma ; Harington obtained one in Bhamo, and Stanford records two from the Myitkyina district. There are two records from Yunnan.

SHIKRA GOSHAWK

Accipiter badius (Gmelin), CEYLON
SUBSPECIES : *poliopsis* (Hume), N. PEGU

LOCAL NAMES. Burmese : *gyo-thein* or *thein* (applies to almost any hawk).

IDENTIFICATION. Plate XX, fig. 8, p. 400. Length 12–14 inches, the female larger than the male. Distinguished from the sparrow-hawks by smaller size, stouter feet, shorter toes, and paler coloration. Young birds have the under-parts with broad brown streaks (not bars), becoming spots on the abdomen ; upper-parts dark brown, the feathers edged with rufous ; white bases of neck feathers often show through strongly.

VOICE. Rather noisy, and the shrill call of two notes, *titu-titu*, is a familiar sound in the breeding season.

HABITS AND FOOD. The common type of small hawk in Burma, found perched in trees or soaring over open well-wooded country. I have also seen it in the heart of the Pegu Yomas, frequenting streams and glades in the teak forests. It spends much of its time sitting concealed in the leafy branches of large trees and launching surprise attacks on its prey ; I have seen it take a swallow on the wing and disturbed one killing a red-breasted parakeet on the ground. When the jungle is burning they are generally to be seen hawking insects over the fire, and on one occasion a party of six was observed.

NEST AND EGGS. Have been taken in various parts of Burma, in March and April. The eggs, 3 to 5 in number, are bluish-white in colour and usually unmarked.

STATUS AND DISTRIBUTION. Throughout Africa and most of tropical and sub-tropical Asia. A common resident throughout Burma in the plains, but Wickham states that it is by no means common in the Shan hills and there is only one Yunnan record. Common in Rangoon, Maymyo, and other towns. Bingham noted an influx into Moulmein and Myawaddy in November and December, and considered it to be a local migrant in northern Tenasserim.

HORSFIELD'S GOSHAWK

Accipiter soloensis (Horsfield), JAVA

IDENTIFICATION. Size of the shikra goshawk, but either plain white or more or less tinged with rufous below. In all plumages very like the Besra sparrow-hawk, but much smaller and the cere is distinctly yellow.

STATUS AND DISTRIBUTION. Breeds in China and winters as far south as Malaysia ; in Burma recorded only from the extreme south of Tenasserim as a rare straggler (Davison) and once from the Thaungyin valley (Bingham).

CRESTED GOSHAWK

Accipiter trivirgatus (Temminck), SUMATRA
SUBSPECIES : *indicus* Hodgson, S. INDIA (= *rufitinctus* McClelland)

IDENTIFICATION. Plate XIX, fig. 2, p. 388. Length 16 inches. The thin, pointed black crest lies very flat, but is usually clearly visible through glasses, and is diagnostic. In flight the whole under-surface is very pale, with some blackish barring except on the under tail-coverts, which are pure white. Young birds have the under-parts buff or pale rufous, the throat and breast with broad spots of dark brown, and the thighs more or less barred with the same colour.
VOICE. Not described from Burma.
HABITS AND FOOD. Those of the genus ; it frequents forest clearings.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and sparingly distributed through Burma in the foothills and higher hills.

EUROPEAN SPARROW-HAWK

Accipiter nisus (Linnaeus), SWEDEN
SUBSPECIES : *nisosimilis* (Tickell), BORABHUM, BENGAL
melanoschistus Hume, SIMLA

IDENTIFICATION. Length 13–15 inches, the female considerably larger than the male, which resembles a large shikra goshawk ; the female has the upper-parts considerably browner, a whitish eyestreak, and the under-parts whitish, or slightly rufous except on the flanks, barred with black. Silent outside the breeding season.
STATUS AND DISTRIBUTION. A palaearctic species. The subspecies *nisosimilis* breeds in central and northern Asia and is a winter visitor to Burma ; *melanoschistus*, which breeds in the Himalayas, may also be a winter visitor or may be found breeding one day in the mountains; the latter has been recorded from North-East Burma, Central Burma, the plains of Southern Burma, the Southern Shan States and once on Mt. Mulayit (Davison), whereas *nisosimilis* has only been recorded from North-East Burma, but both forms may be widespread in Burma, at least in winter. Both have been recorded from Yunnan.

BESRA SPARROW-HAWK

Accipiter virgatus (Temminck), JAVA
SUBSPECIES : *affinis* Hodgson, NEPAL
gularis Temminck and Schlegel, JAPAN

IDENTIFICATION. Length 10–12 inches, the female larger than the male. A broad black line down the centre of the throat and small size distinguish this species.

NEST AND EGGS. Eggs of *affinis* have been taken by Hopwood and Mackenzie in the northern Chin Hills (according to Stuart Baker), and of *affinis* or *gularis* in Tenasserim in April. It generally makes use of an old nest of some other species, and the eggs, 2 to 5 in number, are white in ground-colour lightly marked with bold blotches of red-brown.

STATUS AND DISTRIBUTION. Widespread in the oriental region. The Burma population probably comprises both residents and winter visitors, but far more observations are needed to work out their status ; in addition to the breeding records given above, *affinis* has been recorded from Arakan, Bhamo (Salvadori), and the Mu valley (Smith) ; there are specimens of *gularis* in the British Museum from Thayetmyo and Thaton.

[NOTE.—*stevensoni* Gurney, CHINA, may also occur; *nisoides* Blyth, MALACCA, was described from a migrant and is probably a synonym of *gularis*.]

HONEY BUZZARDS, BAT HAWKS, AND LIZARD HAWKS

These are all medium-sized hawks with very long wings, found in forests or well-wooded country.

CRESTED HONEY BUZZARD

Pernis ptilorhynchus Temminck and Schlegel, JAVA
SUBSPECIES : *ruficollis* Lesson, BENGAL
gurneyi Stresemann, MANDALAY
orientalis Taczanowski, LAKE BAIKAL

IDENTIFICATION. Length 20 inches. A polymorphic species. At close range scale-like feathers in front of the eyes distinguish the honey buzzards from all other hawks. In overhead flight the rounded tail, cross-barred black and white, is conspicuous, wings moth-like with a broad pale buff band, the primaries separated and upturned. The crest, like that of the crested serpent eagle, at times stands out and at other times is not noticeable. It has a high-pitched loud ringing note of 4 syllables which can be heard from a great distance. It frequents the paddy plains and the forests alike ; the normal flight is a quick flapping, unrelieved by sailing, from one tree to another, but it occasionally soars. As the name indicates, it feeds mainly on bees and their honey, wax and larvae, but in Burma probably feeds as much on reptiles and small mammals ; one bird was observed perched on a milestone beside the main trunk road north of Pegu, eating a snake.

NEST AND EGGS. Not described from Burma, but Stanford notes that it seems to breed along the foot of the Henzada Yomas and he saw a nest in February.

STATUS AND DISTRIBUTION. From Siberia and Japan to the oriental region. Ticehurst remarks that the material available in England is hopelessly inadequate to work out the races and distribution of the crested honey buzzards. The species is sparingly distributed through Burma, but the population combines resident and migrant birds.

BAT HAWK

Machaeramphus alcinus Westerman, MALACCA
SUBSPECIES : *alcinus* Westerman, MALACCA

IDENTIFICATION. Length 19 inches. A large black hawk with a conspicuous white chest and a long black nuchal crest ; a white ring round the eye. Said to be crepuscular, feeding on bats.
STATUS AND DISTRIBUTION. A Malaysian species, straggling into the extreme south of Tenasserim.

BLACK-CRESTED LIZARD HAWK

Aviceda leuphotes (Dumont), PONDICHERRY
SUBSPECIES : *leuphotes* (Dumont), PONDICHERRY
syama (Hodgson), NEPAL

IDENTIFICATION. Plate XX, fig. 9, p. 400. Length 12–13 inches, the female slightly larger than the male. The crest is usually vertical or nearly so, not horizontal as illustrated. Weak flight, black appearance and white wing-patches identify it in the field.
VOICE. A shrill, arresting, gull-like cry and a whistle like a kite's are commonly uttered.
HABITS AND FOOD. A forest bird, gregarious at times, parties of seven and even twelve birds having been observed, wheeling about over the tree-tops. The stomach of one bird was full of the remains of large green grasshoppers, and a young bird was observed being fed on similar ones. Davison describes the flight as rather swift, with continued flappings of the wings. A party he observed high up on *kanyin* trees " made short sailing flights after insects, perching immediately after seizing their prey. At times they would cling head downwards for a few seconds to some of the smaller branches." A solitary bird he observed " was in the thickest part of the forest ; it kept making sallies after insects, always catching them with its feet, sometimes in the air, sometimes picking them off a leaf before which it would flutter for a few seconds ; after each flight it would perch rather low down, seldom returning to the perch from which it started. It confined itself to insects and did not attempt to strike any of the small birds that were about. I found only the remains of insects, chiefly *Coleoptera*, in the stomachs of those I examined."
NEST AND EGGS. Have been taken in the Upper Chindwin (Hopwood), round Maymyo where it breeds annually in the oak woods, the Shan States (Harington), and in northern Tenasserim, from March to May. The nest is a flimsy cup of twigs, lined with green leaves, and the eggs, 2 or 3 in number, are white in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and not uncommon throughout the forests of Burma, up to 4,000 feet.

BROWN-CRESTED LIZARD HAWK

Aviceda jerdoni (Blyth), MALACCA
SUBSPECIES : *jerdoni* (Blyth), MALACCA

IDENTIFICATION. Length 18–19 inches. Differs from the preceding species in its brown upper-parts and much larger size. There is a black stripe down the white throat and three black bars on the brown tail.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. From southern India and Sikkim through Assam to Malaysia and the Philippines. Except for one specimen obtained by Lindop in the Yamethin district there are no records outside Tenasserim, and it must be very rare or else much overlooked.

Family FALCONIDAE

FALCONS

Falcons are slim, powerful hawks of small to medium size, recognizable by the strong, rapid strokes of their long, narrow wings. They fly very swiftly, seldom soaring, although some species hover over prey.

PEREGRINE FALCON

Falco peregrinus Tunstall, GT. BRITAIN
SUBSPECIES : *japonensis* Gmelin, JAPAN
peregrinator Sundevall, off the NICOBAR IS.

IDENTIFICATION. Plate XIX, fig. 3, p. 388. Length 14–19 inches, the female larger than the male ; the largest falcon in Burma, only the laggar falcon approaching it in size. On the wing it is a compact, robust-looking bird with long sharply pointed wings, medium-length rather tapering tail, and very characteristic flight, swift and direct with a few rapid winnowing beats alternating with long glides on extended wings. The female in addition to larger size is usually more heavily barred below. Young birds are browner above, with under-parts streaked and not barred. The subspecies *japonensis* is almost white below, whereas *peregrinator* (known as the shahin falcon in India) is much darker above and rusty below.
VOICE. Often very noisy when the breeding place is invaded,

especially when the young have hatched out. The main cries are given by Witherby as a shrill, chattering *kek-kek-kek-kek* and a hoarse almost quacking *kwaahk-kwaahk-kwaahk* of more intense excitement. A clear, drawn-out, plaintive cry rising very slightly at the end is mainly a call or recognition note. Usually silent outside the breeding season.

HABITS AND FOOD. The peregrine is fairly common in the paddy fields during the cold weather and is decidedly crepuscular, coming out at dusk when the ducks and night herons are flighting to their feeding grounds and often taking the same route night after night ; it has been seen far out on the mudflats of the coast, and perched on the Secretariat in Rangoon.

Swift and powerful on the wing, the peregrine typically strikes down its prey by a magnificent headlong stoop at almost incredible speed, with wings folded but held slightly out from the sides, producing a rushing sound out of all proportion to the size of the bird ; immediately after striking the victim it shoots upwards and usually circles round a few times before descending to the kill. The victim is dealt a blow with the powerful hind claw, which will rip the back of a duck or similar sized bird from end to end. Sometimes it will grip as it strikes, at other times it will pursue and capture a bird without stooping, and it has been known to roll over on its back and seize the bird from below. Its favourite prey seems to consist of pigeons, parrots, bats, duck and teal, and it occasionally feeds on carrion.

NEST AND EGGS. Have been taken from the 7th March to the 25th May in various parts of Burma. The nest is nearly always built on a ledge on the face of a cliff, or on a high river bank. The eggs, 3 or 4 in number, vary from pale stone to pale brick-red in colour, with variable brick-red markings.

STATUS AND DISTRIBUTION. Cosmopolitan. The subspecies *peregrinator* is resident in Burma, whereas *japonensis* breeds in Siberia and is a winter visitor from early November to early April.

LAGGAR FALCON

Falco jugger Gray, INDIA

IDENTIFICATION. Length 16–18 inches, the female larger than the male. Ashy-brown upper-parts distinguish it from the peregrine, which it somewhat resembles ; also smaller size and black and white stripes on the head.

NEST AND EGGS. Macdonald describes it as common in the Myingyan district

and breeding freely on big *letpan* trees near the river and elsewhere from January to March.

STATUS AND DISTRIBUTION. India and Central Burma, where it is resident and more or less restricted to the dry zone.

EUROPEAN HOBBY

Falco subbuteo Linnaeus, SWEDEN
SUBSPECIES : *streichi* Hartert and Neumann, S. CHINA

IDENTIFICATION. Length 11–13 inches. The hobby is the most graceful and agile of the falcons ; it is about the size of a kestrel, but with long scythe-like wings, comparatively short tail, and peregrine-like flight ; a rapid winnowing alternating with glides on extended wings. At close range or at rest the dark slaty upper-parts, broad black moustachial stripe, white under-parts with conspicuous black streaks, and rusty-red thighs and under tail-coverts are characteristic. Witherby gives the notes as (1) a clear repeated *kew-kew-kew-kew-kew* very variable in form and timbre; (2) a high-pitched incisive *keek*, usually uttered singly; (3) a sibilant *whit-yoo* uttered when the birds are excited, frequently high up in the air. Like the peregrine, in Burma the hobby is rather crepuscular and is usually seen passing over at dusk. When hunting birds it employs on occasion all the tactics of the peregrine and has wonderful powers of flight, but it feeds largely on flying insects, which may be caught in the mouth or seized in the claws and held up to the beak to be eaten on the wing.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Cosmopolitan. In Burma it has been obtained in the Southern Shan States by Thompson, and seen in the Myitkyina district by Stanford. Three birds were seen by Baillie in the Upper Chindwin on the 26th April. Probably a winter visitor.

ORIENTAL HOBBY

Falco severus Horsfield, JAVA
SUBSPECIES : *severus* Horsfield, JAVA

IDENTIFICATION. Resembles the European hobby in size and appearance, but distinguished by the rusty-red under-parts. Stanford describes it as fiercely attacking crows and drongos with shrill chattering notes of rage. Lindop watched a pair at Magwe hawking bats with great success at dusk, and another pair has been observed circling high above the mouth of the cave beneath the Gokteik viaduct, where they probably prey on young swifts emerging from the cave.

NEST AND EGGS. Macdonald found a nest with one young bird on the 13th May in Pakokku district and another with 2 eggs on the 26th April by the Thaungyin river in a cleft in a tree, and Stanford reports that it undoubtedly breeds near Myitkyina. Wickham was sure that it bred on the crags at Taunggyi early in March.

STATUS AND DISTRIBUTION. Himalayas from Kumaon eastwards, but not in Yunnan ; through Burma and Siam to Malaysia, the Philippines, etc. Occurs

sparingly throughout Burma, and is probably resident where found ; hobbies have been seen over the Kokine lake at Rangoon and round Maymyo.

EUROPEAN KESTREL

Falco tinnunculus Linnaeus, SWEDEN
SUBSPECIES : *tinnunculus* Linnaeus, SWEDEN
interstinctus McClelland, ASSAM

IDENTIFICATION. Plate XIX, fig. 5, p. 388. Length 13–14 inches, sexes not markedly different in size. Habitual hovering is the most distinctive feature of the kestrel, and the pointed wings distinguish it from the sparrow-hawks, which it resembles in its rather long tail. The female differs in her duller colouring and in having no blue-grey on the head and tail, the latter being barred rufous and black.

VOICE. The usual cry is a loud, shrill *kee-kee-kee* with some variation in form and pitch ; sometimes a single *kik*. Rather silent outside the breeding season.

HABITS AND FOOD. The kestrel is a bird of open country in the plains and higher hills alike ; it is usually solitary, but may collect in numbers to catch grasshoppers disturbed by a jungle fire ; Wickham describes how thirty or more appeared from nowhere over a fire that had been in progress only a few minutes.

The flight with rapid wing-beats and an occasional glide is more leisurely than that of the hobby ; it is usually seen 20–30 feet up in the air and well out in the open ; its course is constantly checked by the bird hanging stationary, head to wind, with rapidly fanned wings and depressed and outspread tail, as it scans the ground below. If no quarry is sighted it slips forward for a few yards and repeats the manoeuvre until the discovery of some beetle or small mammal rewards its search and it drops to earth to secure it, generally on a slant and seldom vertically. When adult birds are taken they are usually secured by a sudden dash whilst they are feeding or perched, being seized before they have taken wing or just after ; they are rarely if ever taken in full flight.

NEST AND EGGS. Not described from Burma, but kestrels are said to breed in Arakan and the higher Chin Hills.

STATUS AND DISTRIBUTION. Widespread in the old world. Kestrels may be seen throughout Burma in open country, up to 6,000 feet at least, from October to April. More observations on the breeding range of *interstinctus* are required.

[NOTE.—*saturatus* Blyth and *manchuricus* Stuart Baker are probably not separable from *interstinctus*.]

LESSER KESTREL

Falco naumanni Fleisch, S. GERMANY
SUBSPECIES : *pekinensis* Swinhoe, PEKING

IDENTIFICATION. Length 12 inches. The male is more brightly coloured than the male kestrel, with a richer red and unspotted mantle, but the female is probably indistinguishable.
STATUS AND DISTRIBUTION. Breeds from the Mediterranean across central Asia to China. A winter visitor to India and a passage migrant or rare winter visitor to Burma. Stanford obtained two out of a large gathering at Lunbye in the Sittang plain on the 1st April, and I have seen it between Rangoon and Mingaladon ; also recorded from Sumprabum, North-East Burma.

RED-LEGGED FALCON

Falco amurensis (Radde), AMUR, E. SIBERIA

IDENTIFICATION. Length 12 inches. A slim-bodied grey falcon, darker on the head and neck, with a patch of rusty-red under the tail. The female is barred with black. Usually seen in a large flock, which may number 100 birds, often soaring at an immense height and looking like insects in the sky ; Wickham remarks that it is a wonderful sight to see hundreds of these pretty hawks catching flying ants, and states that when tired they perch on quite low bushes.
STATUS AND DISTRIBUTION. A passage migrant, passing through Burma in April (latest date the 3rd May in Mongmit State) to its breeding quarters in north-eastern China and returning in November or later to its winter quarters in north-eastern India and Africa. It has been recorded from Thayetmyo (in January and February), the Upper Chindwin (by Hopwood in November), Central Burma (Popa and Maymyo), and the Shan States (passes through in April).

MALAY FALCONET

Microhierax horsfieldi (Lesson), JAVA–SUMATRA

IDENTIFICATION. Length 6 inches. Differs from the next species in having the thigh-coverts black instead of red. Davison describes it as a bold little bird, feeding chiefly on insects but also on birds both smaller and larger than itself ; he saw one swoop at a blue rock thrush.
NEST AND EGGS. Breeds in March, in the deserted nest-holes of barbets and woodpeckers.
STATUS AND DISTRIBUTION. A Malaysian species, found in southern Tenasserim and ascending to 3,500 feet at least.

RED-THIGHED FALCONET

Microhierax caerulescens (Linnaeus), BENGAL
SUBSPECIES : *burmanicus* Kirke Swann, THAYETMYO

[NOTE.—This bird is usually known as the red-legged falconet, but the legs are black and not red.]

IDENTIFICATION. Plate XIX, fig. 4, p. 388. Length 6–7 inches, the female slightly larger than the male. The head appears white except for a black patch on the crown and a black stripe through the eye.
VOICE. Not recorded.
HABITS AND FOOD. This bird is commonly seen in the teak forests of the Pegu Yomas, where it is partial to clearings, fields, *taungyas* and other open spaces surrounded by forest; it frequents similar habitats in the higher hills, and it likes to perch near the top of a dead tree with a good view all round. Insects are captured either by sailing round like a swallow-shrike or by pouncing on them from a perch. The flight is very rapid, partly sailing and partly flapping. It feeds mainly on grasshoppers, beetles, etc., and small birds such as pipits.
NEST AND EGGS. Have been taken by Bingham in Tenasserim on the 14th April and by Livesey in the Shan States. The eggs are laid in a hole in a tree, and are a dirty yellowish-white in colour.
STATUS AND DISTRIBUTION. From the Central Himalayas through Burma to Siam and Indo-China, but not in Yunnan. It is uncommon in northern Burma, but is found as far north as the Mogaung valley; it does not reach southern Tenasserim, but elsewhere is not a rare bird.

[NOTE.—The WHITE-THIGHED FALCONET, *Microhierax melanoleucos* Blyth, ASSAM, has not been recorded from Burma but is found over the whole of Assam and also in China. Distinguished from the other falconets by white under-parts and absence of a white collar.]

FEILDEN'S FALCONET

Neohierax insignis Walden, TOUNGOO
SUBSPECIES: *insignis* Walden, TOUNGOO
cinereiceps Stuart Baker, N. TENASSERIM

IDENTIFICATION. Length 10–11 inches, the female slightly larger than the male. Back very dark grey, contrasting with the pale grey head of the male and the pale rufous head of the female; rump and upper tail-coverts pure white; tail black broadly barred with white and strongly graduated; under-parts shining white, the sides of the head, breast and flanks heavily streaked with blackish. According to Feilden the ordinary note resembles that of the white-eyed buzzard-eagle but is not so loud, and in the breeding season it utters a whistling hoot, *tooey*, the *too* very much prolonged. Its actions are peculiar and when moving about the branches of a tree it somewhat resembles a magpie. The flight is described as weak and dipping like that of a magpie or young parrot; frequents clearings in dry forests, perching high up on a bare branch, whence it makes sallies after its prey, much like the red-thighed falconet. It feeds chiefly on locusts, grasshoppers, etc.
NEST AND EGGS. Little known. Breeds in March to April, making a nest of

twigs in a tree ; the eggs are grey-white and similar to those of the shikra, but smaller.

STATUS AND DISTRIBUTION. Burma, Siam, and Indo-China. In Burma it is found in Arakan, Central and Southern Burma, and Tenasserim, but seems to be rare outside the dry zone. The most northerly record is from the top of the Mu valley, in the Katha district.

Order COLUMBIFORMES

Family COLUMBIDAE

PIGEONS AND DOVES

THIS family is represented in most parts of the world ; it comprises the brightly coloured green pigeons, which are birds of the tree-tops, the true pigeons, which frequent trees principally, but are also found about cliffs and buildings, and the doves, which are mainly terrestrial when feeding. In their nesting habits they are all much alike ; they make a flimsy platform of twigs, often so sketchy in construction that the eggs are visible from below, and lay two white eggs.

GREEN PIGEONS

The green pigeons are beautiful birds, recognisable by their bright green or yellowish-green plumage, found throughout the tropical and subtropical regions of the old world. They are stoutly built birds, living an entirely arboreal existence, in flocks most of the year. Their feet have exceptionally broad, fleshy soles and are strong and adapted for climbing ; the birds move about the branches of a tree much like parakeets in search of fruits, but they are so sluggish and resemble the foliage so closely in colour that an entire flock easily escapes notice in a tree-top unless the birds draw attention to themselves with their beautiful whistling calls ; each species may have a distinctive call-note, but insufficient notes have been made on the point. Identification of the various species by plumage requires practice, especially for the females, and perhaps for this reason few notes have been made on their relative abundance or scarcity in different parts of Burma. They feed mainly on fruit, and are most often seen feeding on the various species of *Ficus* or wild fig that are common throughout the forests. The Burmese name *ngu* applies to all species.

YELLOW-FOOTED GREEN PIGEON

Treron phoenicoptera Latham, E. BENGAL
SUBSPECIES : *viridifrons* Blyth, TENASSERIM

IDENTIFICATION. Plate XXI, fig. 2, p. 428. Length 13 inches. Yellow feet, orange chin and throat, and the barred chocolate and white of the under tail-coverts diagnostic. A white wing-bar is conspicuous in flight.

VOICE. The note is a beautiful soft whistle of about ten notes, like a human whistle with no defined tune, yet full of melody. " It is louder and more rolling than, and at once distinguishable from, that of the thick-billed green pigeon " (Davison).

HABITS AND FOOD. Found in the plains and foothills, and one of the characteristic birds of the drier and more open teak forests.

NEST AND EGGS. Breeds from February onwards.

STATUS AND DISTRIBUTION. Almost throughout India, Burma, and Ceylon, extending eastwards to Indo-China ; not in Yunnan or Malaya. In Burma it is widespread, but chiefly a dry zone bird ; in the *indaing* forests of this area and the better wooded parts of the uplands west of Meiktila it is the only green pigeon normally met with, and it is also the common species of Maymyo and the Shan plateau ; Wickham was sure they bred on the crags at Taunggyi (5,000 feet). In the Pegu Yomas it is less common than the ashy-headed and thick-billed green pigeons. It does not extend south of Moulmein.

ASHY-HEADED GREEN PIGEON

Treron pompadora (Gmelin), CEYLON
SUBSPECIES : *phayrei* (Blyth), TOUNGOO

IDENTIFICATION. Length 10 inches. Not easily differentiated from the thick-billed green pigeon. The males of both have a maroon patch on the back and wings, but in this species the yellow-green of the face extends above the eye and there is no white on the under tail-coverts, whereas in the thick-billed green pigeon the space above the eye is bare and bright green and there is some white on the under tail-coverts. The female lacks the maroon on the back and mantle, and the under tail-coverts are mottled dark green with broad white borders, not cinnamon as in the male.

VOICE. Not yet distinguished from that of the preceding species.

HABITS AND FOOD. Those of the genus. It seems to prefer moist and evergreen forests.

NEST AND EGGS. Most eggs seem to be laid in April and May.
STATUS AND DISTRIBUTION. Range similar to that of the preceding species, but it extends as far south as Mt. Nwalabo where it is "extremely numerous, going about in flocks of hundreds" (Hume). It is common in the Pegu Yomas, uncommon in northern Burma, and Wickham was doubtful of its occurrence in the Shan States.

CINNAMON-HEADED GREEN PIGEON

Treron fulvicollis (Wagler), SUMATRA
SUBSPECIES: *fulvicollis* (Wagler), SUMATRA

IDENTIFICATION. Length 11 inches. Cinnamon head and upper breast of the male diagnostic; mantle and wings maroon in the male, olive-green (like the head) in the female; both sexes have bright yellow feathers on the legs.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found in the extreme south of Tenasserim where its status is uncertain. Davison describes it as coming over in December and January only, in small parties to eat the berries, much resembling red currants, of a shrub that grows in clearings near the Pakchan.

ORANGE-BREASTED GREEN PIGEON

Treron bicinta (Jerdon), MADRAS
SUBSPECIES: *praetermissa* Robinson and Kloss, S-W. SIAM

IDENTIFICATION. Plate XXI, figs. 8 and 8*a*, p. 428. Length 11–12 inches.
VOICE. "It has a lower and more jerky note than *phoenicoptera*, and a less soft one than *vernans* and *fulvicollis*" (Davison).
HABITS AND FOOD. Those of the genus. I once spent an interesting hour or two by one of the salt licks in the Pidaung wild life sanctuary, watching the antics of the green pigeons and trying to sort out the various species; all four of the common species were there, eating earth out of the lick, but the orange-breasted green pigeon was the most abundant and the male with his beautiful orange and lilac breast contributed much to the beauty of the surroundings. It is not often that green pigeons are seen on the ground.
NEST AND EGGS. Stanford notes that a nest seen on the 31st May was so flimsy that it appeared to consist of only six to eight twigs, and the eggs were clearly visible; the young are in flocks by May, so that most eggs are probably laid in February and March.
STATUS AND DISTRIBUTION. From India to Indo-China and south to Malaya and Java. It is the commonest green pigeon near Myit-

kyina and in Arakan, but elsewhere is less common than some of the other species and Wickham did not see it in the Shan States.

PINK-NECKED GREEN PIGEON

Treron vernans (Linnaeus), PHILIPPINE IS.
SUBSPECIES : *griseicapilla* Schlegel, SUMATRA

IDENTIFICATION. Length 9 inches. The male differs from *bicincta* in having the head grey and the neck vinaceous pink ; the female differs from *bicincta* in having a narrow grey tip to the tail, and the under tail-coverts are pale yellowish-buff suffused with cinnamon. The note is described as a soft low whistle ending in a sort of coo.
NEST AND EGGS. Have been taken by Hopwood near Mergui on the 27th November.
STATUS AND DISTRIBUTION. A Malaysian species extending to southern Indo-China, Philippines, and Celebes, and found in Tenasserim up to Mergui.

THICK-BILLED GREEN PIGEON

Treron curvirostra (Gmelin), MALAYA
SUBSPECIES : *nipalensis* (Hodgson), NEPAL

IDENTIFICATION. Plate XXI, figs. 3 and 3*a*, p. 428. Length 10 inches. It is liable to be confused with the ashy-headed green pigeon (*q.v.*), but the red gape and red base of the bill are diagnostic.
VOICE. Has not been differentiated from other species. "When feeding they are very noisy, uttering a hoarse note, *goo-goo*" (Davison).
HABITS AND FOOD. It seems to prefer moist and evergreen forests.
NEST AND EGGS. Breeds from late January to late March in Southern Burma, later in the north.
STATUS AND DISTRIBUTION. Widespread in the oriental region as far west as Nepal. Scarce in Arakan, but fairly common elsewhere in Burma in the forests, and in the Pegu Yomas it is almost as common as the ashy-headed green pigeon.

LARGE GREEN PIGEON

Treron capellei (Temminck), JAVA
SUBSPECIES : *magnirostris* (Strickland), MALAYA

IDENTIFICATION. Length 14 inches, the largest of the green pigeons ; the male has the breast orange and the under tail-coverts purple-chestnut ; the female has the breast yellowish-green and the under tail-coverts greyish-cinnamon.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim up to Elphinstone Island in the Mergui Archipelago.

PIN-TAILED GREEN PIGEON

Sphenurus apicauda (Blyth), DARJEELING
SUBSPECIES : *apicauda* (Blyth), DARJEELING

IDENTIFICATION. Length 16–17 inches, including a tail of 9–10 inches. The elongated central tail-feathers, which extend 2–3 inches beyond the next pair, at once distinguish this species. The note is characteristic, resembling a soft *croo-croo* followed by a single high-pitched soft note, *quor*.
NEST AND EGGS. Breeds from March to August.
STATUS AND DISTRIBUTION. From the Central Himalyas through Burma to Indo-China ; not in Malaya. Widespread in the higher hills of Burma as far south as Mt. Mulayit, and in the Kachin hills large flocks may be met with at a low altitude ; it seems to be rare in the Shan States, probably because it is a forest bird.

WEDGE-TAILED GREEN PIGEON

Sphenurus sphenurus (Gould), HIMALAYAS
SUBSPECIES : *sphenurus* (Gould), HIMALAYAS

IDENTIFICATION. Length 13 inches, including a tail of 5 inches. The long graduated tail in combination with the deep maroon on the back and wings and the orange and pink breast separate the male from other species ; skin round the eye pale blue ; bill blue ; legs red. The female lacks the orange on the breast and the maroon on the back and wings, these parts being olive-green ; under tail-coverts dark green with broad buff borders. The whistling is said to be fuller and sweeter than that of any other species, and it is a favourite cage bird in India for this reason ; it is syllabified by Whistler as *why, we what cheer ; what are we waiting for ?* The flight is noisy and undulating, like that of a woodpecker, and a bird will often " freeze " if fired at instead of flying away.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and the only green pigeon so far recorded from Yunnan, where it goes up to 9,000 feet. Sparingly distributed throughout the higher hills of Burma, and has been recorded at low elevations in the Mandalay foothills (down to 800 feet) and in Arakan (50 feet).

IMPERIAL PIGEONS

These are large fruit-eating pigeons, essentially arboreal in habits and rarely found on the ground ; they extend from India to Australia and the South Pacific islands. They make a flimsy nest of sticks like the green pigeons, but lay only one egg.

MOUNTAIN IMPERIAL PIGEON

Ducula badia (Raffles), SUMATRA
SUBSPECIES : *griseicapilla* Walden, KAREN HILLS

LOCAL NAME. Chinghpaw : *u-gum* (rhymes with boom).
IDENTIFICATION. Length 17–20 inches. General colour grey, with the head noticeably paler than the rest of the plumage,

VOICE. The call is distinctive, *click whroom whroom* ; the preliminary *click* is only audible at close range, but the *whroom whroom* is a melodious booming call that resounds across the mountain valleys.
HABITS AND FOOD. A forest bird of the higher hills, often seen flying high overhead when crossing from one lofty ridge to another. Outside the breeding season it collects in flocks, and Stanford reports seeing many hundreds at a salt lick in the south of the Triangle at the end of March. Except for their call and their occasional soaring and display flights they are easy to overlook in the lofty trees they frequent, but in the early morning they may be seen sunning themselves conspicuously on tree-tops.
NEST AND EGGS. Have been taken at the end of January on Mt. Mulayit, but further north they probably breed later.
STATUS AND DISTRIBUTION. Widespread in the oriental region. In Burma it is locally common throughout the higher hills, and in northern Burma comes down to 1,000 feet. There is only one record from Yunnan. Hume refers to a pigeon of this type " which occurs in vast multitudes in August at Mergui," which he thought were probably *badia*, but no specimens were obtained.

GREEN IMPERIAL PIGEON

Ducula aenea (Linnaeus), FLORES
SUBSPECIES : *sylvatica* (Tickell), BORABHUM, BENGAL

LOCAL NAME. Burmese : *hnget-nga-nwa.*
IDENTIFICATION. Plate XXI, fig. 5, p. 428. Length 17–18 inches.
VOICE. The call is a lovely deep coo, *click-hroooo*, somewhat like a cow mooing in the distance, and produced with the head lowered and pressed into the puffed-out breast. Another very characteristic call is a sort of cooing chuckle of five or six notes.
HABITS AND FOOD. This is a bird of moist forests in the foothills, frequenting tall trees often near wide streams ; like other pigeons it visits salt licks, and a flock of at least fifty birds has been seen at one of the licks in the Pidaung sanctuary. It is a shy and wary bird, difficult to approach. " They are not quarrelsome like many of the green pigeons, on the contrary always gentle and sociable together " (Davison).
NEST AND EGGS. In the Ataran valley, northern Tenasserim, it breeds at the end of March in scrub *indaing*, the nests being placed in low trees.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and

locally common throughout the forests of Burma in the foothills, rarely ascending to 6,000 feet. Davison found it abundant to a degree on the islands of the Mergui Archipelago, and continually saw huge flocks flying overhead from island to island.

PIED IMPERIAL PIGEON

Ducula bicolor (Scopoli), NEW GUINEA
SUBSPECIES : *bicolor* (Scopoli), NEW GUINEA

IDENTIFICATION. Length 15 inches. A creamy-white bird with black tips to the wings and tail, frequenting coastal forests and mangroves, and breeding on small islands only.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. From the Bay of Bengal to New Guinea, on small islands and along the coast. It has been recorded from Sandoway, the coast west of Bassein (where Milner reports that it breeds on the Calventuras islands and roosts in thousands on Sinma island in October–November) and Amherst ; birds are blown ashore along the Mergui coast in the monsoon, though whether these originate from the outer islands of the Mergui Archipelago or from the Andamans is not clear.

NICOBAR PIGEON

Caloenas nicobarica (Linnaeus), NICOBAR IS.
SUBSPECIES : *nicobarica* (Linnaeus), NICOBAR IS.

IDENTIFICATION. Length 12 inches. An unmistakable bird with its cape of long hackles and its beautiful plumage of metallic purples and greens ; under tail-coverts white. The note is described as a deep croak, seldom uttered.
STATUS AND DISTRIBUTION. Andamans, Nicobars, Malay Archipelago, and Cocos. Milner states that it is common along the coast of Tenasserim south of Mergui, many being blown ashore in the monsoon, and that he shot a young one in December.

EMERALD DOVES

These are spread over Africa and Asia, but only one is found in Burma.

EMERALD DOVE

Chalcophaps indica (Linnaeus), CALCUTTA
SUBSPECIES : *indica* (Linnaeus), CALCUTTA

LOCAL NAME. Burmese : *gyo-sein.*
IDENTIFICATION. Plate XXI, fig. 4, p. 428. Length 10 inches. The female differs in having less white on the forehead and the grey crown and nape are usually suffused with reddish ; the white wing-patch and white bars across the rump are not so pronounced. Young birds are barred dull brown and rufous on the under-parts.

VOICE. The note is a very deep low coo. " It sounds like the word *oo* very much prolonged, and slowly uttered with a booming sound " (Davison).

HABITS AND FOOD. This little dove is a forest bird ; it likes to feed along jungle tracks and when disturbed it flashes ahead for several hundred yards and then dives off into the jungle when a suitable opening presents itself ; the flight is direct and very fast, and it attains a surprising speed through thick cover. It keeps mainly to deep forest, but comes out into the stubble of the small paddy fields round jungle villages in the cold weather ; it is typically a solitary bird, but parties of three or four are seen on occasions in the stubble ; only in the Shwele drainage of Prome district have large numbers been seen together in the paddy fields.

NEST AND EGGS. Have been taken in January and February in Tenasserim and from March to May farther north. The eggs, 2 in number, are not pure white like most doves' eggs, but creamy-yellow or buff.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending to Australia. A common resident throughout Burma in the forests of the foothills and higher hills ; it breeds in the cane-brake portions of the scrub-jungle north of Rangoon.

TRUE PIGEONS AND DOVES

True pigeons are large birds, but less heavily built than the imperial pigeons, the head and neck especially being much more slender. Doves are smaller, and feed mainly on the ground.

EUROPEAN ROCK PIGEON

Columba livia Gmelin, S. EUROPE
SUBSPECIES : *intermedia* Strickland, INDIA

IDENTIFICATION. Length 13 inches. A blue-grey bird with two distinct black wing-bars.

STATUS AND DISTRIBUTION. A bird of the coasts of the western palaearctic region, extending eastwards to India and Burma. It is a familiar bird in Burma, living in a semi-domesticated state (usually mixed with feral dove-cote pigeons of various types) round many monasteries and pagodas, *e.g.* the Shwe Dagon pagoda in Rangoon ; it is very doubtful whether it occurs anywhere in Burma in a truly wild state, but some of the colonies along the cliffs of the Irrawaddy, *e.g.* between Pagan and Yenangyaung, might be considered wild, and Buxton thought that some of the birds seen along the coastal plain of Arakan were not domestic.

SNOW PIGEON

Columba leuconota Vigors, HIMALAYAS
SUBSPECIES : *gradaria* Hartert, SZECHWAN

IDENTIFICATION. Length 13–14 inches. Found near the snow-line, and in flight appears a white bird with dark wings. Cranbrook found them at 13,000–15,000 feet in June and July, feeding usually on stony screes, occasionally on grass (when they are very conspicuous). The crop of one was full of small bulbils of a pink *Polygonum* and a few seeds of *Morina*.
STATUS AND DISTRIBUTION. Himalayas to western China and northern Yunnan. In Burma recorded only from the Adung valley, and probably does not occur south of the Taron.

ASHY WOOD PIGEON

Columba pulchricollis Blyth, E. HIMALAYAS

IDENTIFICATION. Length 15–16 inches. General colour dark grey, with the head paler and a collar of black feathers tipped with buff on the base of the neck ; next to this collar the feathers are highly glossed with green and purple ; chin and centre of throat white ; under tail-coverts buff ; legs red. Shy forest birds of the higher hills.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Found at high elevations from Nepal eastwards to Formosa. The Vernay-Hopwood expedition obtained a single specimen at a low elevation by the Chindwin and Christison records two in Arakan ; it has been recorded from North-East Burma and the Shan States, but is rare throughout.

PURPLE WOOD PIGEON

Columba punicea (Tickell), CHAIBASA, CHOTA NAGPUR

IDENTIFICATION. Plate XXI, fig. 1, p. 428. Length 16 inches.
VOICE. The call is a monosyllable, characteristic and arresting.
HABITS AND FOOD. A forest bird of the plains and foothills, frequenting both evergreen and bamboo forest. In 1920, after the *kyakat* bamboo had flowered gregariously throughout the Myitmaka drainage in the Tharrawaddy district, large numbers of these pigeons collected to feed on the bamboo seed ; fruits of the *zi* tree (*Phyllanthus* sp.) also seem to attract them, and a party of twelve was observed in the plains of the Mandalay district, that had evidently collected to feed on these fruits.
NEST AND EGGS. Oates found a nest on the 27th July in the Pegu district with one fresh egg.
STATUS AND DISTRIBUTION. From Bengal through Burma to Indo-China. There is no record from northern Burma, but Stanford considers it likely to occur there ; actual records are from Arakan,

the Mandalay district, Pegu Yomas, Shan States, Karenni, and Tenasserim (south to Mergui); Wickham states that it is very local in the Shan hills, and that he shot it at 3,000 feet. Macdonald thought he saw it on Mt. Popa.

SPECKLED WOOD PIGEON

Columba hodgsoni (Vigors), NEPAL

IDENTIFICATION. Length 14–16 inches. It appears dull vinous-brown all over with speckles on the wing-coverts, and has a habit of sitting silent and motionless for long periods. The bright yellow claws contrasting with the dull green legs are conspicuous. The note is said to be a very deep one, sounding like *whock-whr-o-o——whr-r-oo*. A forest bird of the higher hills.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Himalayas to Yunnan and south to the Shan States. It is probably distributed sparingly throughout the higher hills of Burma down to the Chin Hills on the west and the Southern Shan States on the east, where Rippon found it common in March and April on the western slopes of Loi Mai at 5,000 feet. Wickham records a skin from the Chinese frontier of the Shan States, and it has been seen or obtained at Bernardmyo, Sinlum Kaba, Kambaiti, and Laukkaung.

RUFOUS TURTLE DOVE

Streptopelia orientalis (Latham), CHINA
SUBSPECIES: *orientalis* (Latham), CHINA
agricola (Tickell), BORABHUM

LOCAL NAMES. Burmese: *gyo-bein-du*; Chinghpaw: *u-hkru-du*.

IDENTIFICATION. Plate XXI, fig. 10, p. 428. Length 12–13 inches. A rather large vinous-brown dove with conspicuous rufous scale markings on the wings and a patch of black and blue-grey scale markings on the sides of the neck; the dark graduated tail edged with grey is conspicuous in flight. Larger size and much darker, more purple, appearance separate it from the spotted dove.

VOICE. The call-note is a dull, sleepy croo of four notes, *croo croo-croo croooo*.

HABITS AND FOOD. A forest dove of the plains, foothills and higher hills; when breeding it is found in deep forest, but at other times it is mostly seen in the more open and cultivated areas round forest villages; it likes to feed on the fallen grains of rice after the harvest, and will be found where large trees and patches of scrub-jungle provide it with shelter within easy reach of the paddy stubble; it will flight a considerable distance to feed, and one bird shot in the evening with its crop full of paddy was 6 miles away across hills and

thickly wooded country from the nearest paddy fields; it spends the heat of the day in the forest and flights out in the afternoon, returning at dusk. Although a number of birds may collect together, they behave as individuals and not as a flock, flying off in different directions if disturbed.

NEST AND EGGS. Breeds from February to April.

STATUS AND DISTRIBUTION. Eastern Siberia, China, and Japan, through Yunnan to the greater part of India, Burma, and Ceylon; not in Malaysia. Scarce and local in Arakan, elsewhere a common resident throughout the forests of Burma to 5,500 feet; in North-East Burma the subspecies *orientalis* is found in the Yunnan frontier hills up to 7,000 feet.

SPOTTED-NECKED DOVE

Streptopelia chinensis (Scopoli), CHINA
SUBSPECIES: *tigrina* (Temminck), JAVA
forresti (Rothschild), YUNNAN

LOCAL NAMES. Burmese: *gyo-le-byauk*; Chinghpaw: *u-hkru-du*.

IDENTIFICATION. Plate XXI, fig. 6, p. 428. Length 11 inches. In flight it appears a dull greyish colour and before alighting the tail is always fully expanded, thus showing the white tips to the outer tail-feathers.

VOICE. The call-notes commonly heard are: (1) *cuck-croo-cuck*; (2) *cuck-croo, croo-oo-cruck*; (3) *cuck-cuck-crooo-cruck*; and (4) *croo-croo-croo*.

HABITS AND FOOD. This dove is one of the commonest of the birds of Burma, and from its habit of walking about on roads and village paths in search of grain it is one of the most familiar; when disturbed it rises almost vertically into the air for a few feet, with a great fluster and clapping of wings, and then flies away swiftly with quick wing-beats and the tail partly spread; it usually flies up to a tree, but may settle again on the ground, and its action when flying or settling is curiously stiff. It does not collect into flocks, but enormous numbers pepper the stubble after the paddy has been reaped, feeding in the mornings and evenings and resting in trees during the heat of the day; the sleepy cooing of these doves and the rattling of the wooden *kalauks* on the necks of grazing cattle are two sounds indelibly engraved on the memory of afternoon siestas in innumerable rest-houses. The display consists of a flight straight up into the air and a volplane downwards, the wings and tail stiffly spread.

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PLATE XXI

NEST AND EGGS. The breeding season extends throughout the year, and several broods are probably raised annually. In Myitkyina it appears to start breeding as soon as the rains are over, but in the Myitmaka drainage eggs have been taken at the height of the rains in July and August. There is usually a marked influx of these birds in and around Rangoon in the first week of August, probably to breed.
STATUS AND DISTRIBUTION. Widespread in the oriental region and ubiquitous in the plains of Burma and on the Shan plateau. The subspecies *forresti* is found locally in the Yunnan frontier hills, probably not east or north of the Chipwi valley.

RING DOVE

Streptopelia decaocto (Frivalsky), TURKEY
SUBSPECIES : *xanthocycla* (Newman), BURMA

LOCAL NAME. Burmese : *gyo-lin-bya.*
IDENTIFICATION. Plate XXI, fig. 9, p. 428. Length 12 inches. A large dove, comparable in size to the rufous turtle dove.
VOICE. It has a cooing call, composed of about five notes, different from that of other doves, and a mewing, hawk-like cry, constantly uttered as the birds soar or plane from tree to tree.
HABITS AND FOOD. A typical bird of the dry zone, nearly always seen in pairs, sometimes in threes or small parties, in dry bamboo forest or *indaing*, and in scrub-jungle on the edge of cultivation. It flies swiftly and strongly.
NEST AND EGGS. Eggs may be laid at any time of the year, but most will be found during the latter part of the monsoon and the early cold weather.
STATUS AND DISTRIBUTION. From eastern Europe across Asia to China and Japan, but not in Yunnan. In Burma it is more or less restricted to the dry zone, straggling up to Bhamo where Anderson obtained it ; it is uncertain how far it goes up the Chindwin valley, whence Mears reported it, but probably not very far. It also occurs in Arakan, but not in the monsoon, and appears very scarce and local (Christison).

RED TURTLE DOVE

Streptopelia tranquebarica (Hermann), TRANQUEBAR, S. INDIA
SUBSPECIES : *humilis* (Temminck), BENGAL

LOCAL NAMES. Burmese : *gyo-ni-pu* or *gyo-ni-do.*
IDENTIFICATION. Plate XXI, figs. 7 and 7*a*, p. 428. Length 9 inches.

The only Burma dove in which the sexes differ. Seen at close range, the male is a handsome bird with the back and part of the wing brick-red contrasting with the dark grey wing-coverts and edge of wing; the female is distinguished from the ring dove by smaller size, more compact shape and browner colouring.

VOICE. The call is distinctive, a rather deep *cru-u-u-u-u* repeated four or five times quickly without a pause, and with emphasis on the first syllable.

HABITS AND FOOD. Outside the breeding season this bird is more gregarious than other doves and is often seen in large flocks, the members of which act together and not independently; the flight is faster and more direct than that of other species.

NEST AND EGGS. Most eggs are probably laid from March to August.

STATUS AND DISTRIBUTION. Widespread in the oriental region, including most of India, Burma, and Ceylon, and it occurs in Yunnan. In Myitkyina district a few undoubtedly winter, but it begins to be noticeable at the end of April, when it starts breeding in the plains. In Central Burma it is a common breeding bird of the dry zone in July and August. In Southern Burma it is very common in flocks from October to March, and though a few pairs stay to breed the rest disappear for the rest of the year, and it seems probable that they migrate to the dry zone. Wickham notes that it is a local migrant in the Shan hills, "more common at some seasons of the year than at others." In Shwebo district not seen from early May to late July (Roseveare). Absent from Arakan in the monsoon (Christison).

BARRED CUCKOO-DOVE

Macropygia unchall (Wagler), JAVA
SUBSPECIES: *tusalia* (Blyth), DARJEELING

IDENTIFICATION. Length 16–17 inches, including a tail of 8 inches. This species and the next are easily recognised by their very long barred tails and slim elongated appearance; this is a rather large dark-coloured bird as compared with the next, which is smaller and bright chestnut. The under-parts are barred in the adult female but not in the male; young birds resemble the female but without gloss. The call is a very deep *croo-oom*, the second note being a booming note audible at a considerable distance; another call, or a variant, Stanford describes as a loud and unmistakable *we-hoop-hoop-hoop*. A wary and rather mysterious forest bird of the higher hills, feeding on fruits in the tree-tops.

NEST AND EGGS. A nest containing 2 white eggs was found on the 18th March

by Wardlaw Ramsay at 4,000 feet in the Karen hills, and Hopwood and Mackenzie took many nests in the northern Chin Hills.

STATUS AND DISTRIBUTION. Widespread in the hills of the oriental region, as far west as the central Himalayas. It is probably resident in small numbers throughout the higher hills of Burma, where sufficient forest is available, and single birds and small parties have been seen at low elevations in northern Burma in February and March; these low elevation birds may have been breeding or may have dropped down from the higher hills to feed on fruiting trees. Not recorded from Yunnan.

LESSER RED CUCKOO-DOVE

Macropygia ruficeps (Temminck), JAVA
SUBSPECIES: *assimilis* Hume, N. TENASSERIM

IDENTIFICATION. Length 13 inches, including a tail of 7 inches. The long barred tail distinguishes it from all doves other than the preceding species (*q.v.*); the female is darker and duller than the male. Neither sex is barred when adult but young birds have the upper-parts barred rufous and black. The call-note is *croo-wuck, croo-wuck, croo-wuck* repeated very rapidly about 30 times in 15 seconds, then a pause of about 5 seconds, and then repetition. The *croo* is only audible at close quarters and all that can be heard from a distance of 50 yards or more is *wuck, wuck, wuck*, etc., not unlike a quiet version of the call of the hoolock gibbon; it is usually uttered by a bird sitting bolt upright on a branch amongst thick foliage. Another wary bird of hill forests.

NEST AND EGGS. Have been taken at Thandaung by Robinson (19th April) and Cook (25th April) and by Hopwood in Tenasserim at 3,500 feet on the 14th May. The nest may be a pad of moss or the usual scanty collection of twigs, and the eggs are cream-tinted.

STATUS AND DISTRIBUTION. A Malaysian species, extending through Tenasserim to the Karen Hills and Karenni, where it is locally common.

ZEBRA DOVE

Geopelia striata (Linnaeus), MALACCA
SUBSPECIES: *striata* (Linnaeus), MALACCA

IDENTIFICATION. Length 8–9 inches. A tiny dove with a long tail. "Its note is quite unlike that of any other dove, and sounds like *kok-a-kurr-kurr*, softly repeated several times. The general habits are the same as those of *Streptopelia chinensis* except that it never occurs in flocks, being always found singly or in pairs. It keeps about cultivation, and feeds on the ground, walking about here and there picking up seeds. It is not at all shy" (Davison).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species. "A permanent resident in the cultivated lands in the immediate neighbourhood of the higher parts of the Pakchan" (Hume) in the extreme south of Tenasserim, but rare.

Order GALLIFORMES

Family PHASIANIDAE

PHEASANTS, PARTRIDGES, AND QUAILS

THIS family includes all the true game-birds of Burma except the button quails; they live on the ground, but perch and roost in trees; they lay their eggs on the ground, except for the tragopans, which nest in trees. The young when hatched are covered with down and can run about within a few moments of emerging from the egg.

Sub-family PAVONINAE

PEAFOWL

This sub-family contains only two species, the common peafowl of India and the green peafowl of the countries farther east.

GREEN PEAFOWL

Pavo muticus (Linnaeus), JAVA
SUBSPECIES: *muticus* (Linnaeus), JAVA
spiciferus Shaw and Nodder, CALCUTTA

LOCAL NAMES. Burmese: *daung*; Chinghpaw: *u-daung*.
IDENTIFICATION. Frontispiece, fig. 5. The beautiful train of the adult cock is no part of the tail, but consists of the modified and enormously lengthened upper tail-coverts; young cocks have no train and Burmans assert that some cocks never acquire a train nor utter the characteristic call; such birds are referred to as *ma-go*, *pa-go daung* and, occasionally, *haing* (a name that denotes a tuskless male elephant). The hen has no train and has the upper-parts barred.
VOICE. A loud trumpet-like call *kay-yaw*, *kay-yaw*, is uttered usually in the late evening and early morning. A note of anxiety or alarm, uttered by a covey after the cock had been shot, resembled *tak-tak-kerr-r-r-r-oo-oo ker-r-r-roo*, a kind of clucking that sounds like the noise produced by hitting two bamboos together.
HABITS AND FOOD. The most marked characteristic of the peafowl is its habit of roosting early in the evening on high and large trees with little foliage, and calling loudly as it goes up to roost and again when it descends in the morning. It may be found in any type of

jungle from heavy *kaing* grass swamps to light scrub-jungle, but it prefers dry open forest on the banks of large rivers or near cultivation ; it lives in small parties, resting and lazily feeding in the undergrowth by day and moving out into cultivation (if nearby) for the morning and evening feed, or sometimes to river-beds where they peck about on the sand and shingle banks. It is perhaps the most sharp-eyed of the denizens of the jungle, and is very shy and wary, running swiftly on foot when approached ; on the wing it travels fast with regular, rather slow, wing-beats, without the glides with wings spread, common to most game-birds. The display of the cock, with the train (supported by the tail-feathers) spread fan-wise and arched forwards over the head and the wings quivered at the same time, is a lovely and familiar sight owing to the fact that cocks display freely in captivity.

NEST AND EGGS. Most eggs are laid from March to May, but they may be found up to September. The peacock is polygamous, his harem consisting of two to five hens, and takes no share in the family duties. The eggs 3 to 5 (occasionally up to 8) in number, are pale fawn to buff in colour, sometimes freckled with darker buff or reddish-brown.

STATUS AND DISTRIBUTION. Burma to Indo-China, Malaya, and Java. In Burma it is locally common in most districts, but owing to constant persecution is rapidly becoming scarce in the more accessible localities. They go as far north as the Hukawng valley and up the N'Mai valley to Chipwi. Wickham found them fairly plentiful in the Shan hills, in the larger river valleys especially, but not much above 3,000 feet ; they have been seen in " peacock ride " at Maymyo, and 4,000 feet is probably their ceiling. There is only one record from Yunnan (from the Salween valley at 2,000 feet).

Sub-family ARGUSIANINAE

This sub-family comprises birds of grey plumage with metallic ocelli, or " eyes," brilliant in the male but duller or obsolete in the female.

GREAT ARGUS PHEASANT

Argusianus argus (Linnaeus), MALACCA
SUBSPECIES : *argus* (Linnaeus), MALACCA

IDENTIFICATION. Frontispiece, fig. 7. Length 70–73 inches (male, including a tail of 49–52 inches), 27–30 inches (female). The argus

pheasant is peculiar in having the secondaries longer than the primaries; in the male they are twice as long, in the female only slightly longer.

VOICE. Both sexes call freely by day or by night, and any startling noise is usually sufficient to set off the cocks. "The call of the male sounds like *how-how*, repeated ten or a dozen times, and is uttered at short intervals when the bird is in its clearing, one commencing and others in the neighbourhood answering. The report of a gun will set every male within hearing calling, and on the least alarm or excitement, such as a troupe of monkeys passing overhead, they call. The call of the female is quite distinct, sounding like *how-owoo, how-owoo*, the last syllable much prolonged, repeated ten or a dozen times, but getting more and more rapid until it ends in a series of *owoo's* run together. The call of both male and female can be heard to an immense distance; that of the former especially can be heard at a distance of a mile or more. Both sexes have also a note of alarm, a short, sharp, hoarse bark" (Davison).

HABITS AND FOOD. "They live quite solitarily, both males and females; every male has his own dancing room, of which he is excessively proud. They haunt exclusively the depths of the evergreen forests, and each male chooses some open, level spot—sometimes down in a dark gloomy ravine, entirely surrounded and shut in by dense cane-brakes and rank vegetation—sometimes on the top of a hill where the jungle is comparatively open—from which he clears all the dead leaves and weeds, for a space of six or eight yards square until nothing but the bare clean earth remains, and thereafter he keeps this place scrupulously clean, removing carefully every dead leaf or twig that may happen to fall on it from the trees above.

These cleared spaces are undoubtedly used as dancing grounds, but personally I have never seen a bird dancing in them, but have always found the proprietor either seated quietly in, or moving backwards and forwards slowly about, them, calling at short intervals. Except in the morning and evening when they roam about to feed and drink, the males are always to be found at home, and they roost at night on some tree quite close by."

Davison goes on to describe how difficult the birds are to approach and observe, and yet how easy to snare on the dancing grounds; an obvious method is to ring the ground with a low fence, leaving three or four openings over which nooses are suspended. Other methods depend on the bird's idiosyncracy about keeping its place clean; perhaps the most ingenious, which was the theme of an

article in *Blackwood's Magazine* a year or two ago entitled "The Feather-Duster," is described by Davison as follows:

"A bit of bamboo, about 18 or 20 inches long and ¼ inch wide, is shaved down till it is the thickness of writing paper, the edges being as sharp as a razor. This narrow pliant piece ends in a stout sort of handle at one end, 6 or 8 inches long, which is driven firmly into the ground in the middle of the cleared space. The bird, in trying to remove it, scratches and pecks at it, trying to dig it up, but finding all its efforts vain, it twists the narrow pliant portion several times round its neck, and taking hold of the bamboo near the ground with its bill, it gives a sudden spring backwards to try to pull it up; the consequence is that its head is nearly severed from its body by the razor-like edges of the bamboo."

"The males are not at all quarrelsome, and apparently never interfere with each other, though they will answer each other's calls. The female, like the male, lives quite solitarily, but she has no cleared space, and wanders about the forest apparently without any fixed residence. The birds never live in pairs, the female only visiting the male in his parlour for a short time. The food consists chiefly of fallen fruit, which they swallow whole, especially one about the size and colour of a prune, which is very abundant in the forests of the south, but they also eat ants, slugs, and insects of various kinds. These birds all come down to the water to drink about 10 or 11 a.m. after they have fed."

NEST AND EGGS. "I was unable to find the nest, but, from what I could learn, the female builds a rude nest on the ground in some dense cane-brake, laying 7 or 8 eggs, white or creamy, minutely speckled with brown like a turkey's, and hatching and rearing her brood without any assistance or interference from the male. They are said to have no regular breeding season, the females laying at all times except during the depth of the rains. I secured two nestlings about a week old on the 28th February" (Davison).

STATUS AND DISTRIBUTION. A Malaysian species, common in the Victoria Point subdivision of Mergui district, and straggling up north as far as Tavoy.

BURMESE PEACOCK-PHEASANT

Polyplectron bicalcaratum (Linnaeus), THOUNGYAH
SUBSPECIES: *bicalcaratum* (Linnaeus), THOUNGYAH
bakeri Lowe, BHUTAN DUARS

LOCAL NAMES. Burmese: *daung-min* or *daung-kala*; Chinghpaw; *u-gaw*.

IDENTIFICATION. Plate XXII, fig. 1, p. 436. Length 22–30 inches (male) including a tail of 12–16 inches. The female is smaller and duller, with fewer " eyes."

VOICE. The call is a deep guttural note rapidly repeated, a harsh, grouse-like cackle sounding not unlike a wooden rattle, and is heard all over the Kachin hills in the hot weather and rains. Milner ascribes to this bird a whistled *trew-tree* which he heard all over the Taok plateau in March.

HABITS AND FOOD. This is an inveterate skulker in evergreen and dense bamboo jungle and is rarely seen even in localities where it is abundant. Milner reports that they make rectangular clearings, 3 feet by 1 foot approximately, along paths and in the jungle, and Karens told him these were used for dancing. The display of the cock is very beautiful, both wings being fully expanded with the tail, so that the effect of an ocellated fan is produced.

NEST AND EGGS. The breeding season is in March and April ; it is said to be monogamous, pairing for life. The eggs, 2 to 5 (rarely 6) in number, resemble small, richly coloured eggs of the domestic fowl.

STATUS AND DISTRIBUTION. Himalayas from Sikkim eastwards to northern Burma, but not Yunnan ; south to Siam but not Malaya. It is very common in northern Burma and Tenasserim, and elsewhere is found where there is suitable evergreen forest, though it has not been recorded from the Pegu Yomas.

MALAY PEACOCK-PHEASANT

Polyplectron malacense (Scopoli), MALACCA

IDENTIFICATION. About the size of the preceding species, but the male has a long purple crest, and the female is a browner bird. In voice and habits resembles the preceding species.

NEST AND EGGS. Very little known.

STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim up to Tavoy.

Sub-family PHASIANINAE

JUNGLEFOWL AND PHEASANTS

RED JUNGLEFOWL

Gallus gallus (Linnaeus), PULAU CONDORE
SUBSPECIES : *spadiceus* Bounaterre, MALACCA

LOCAL NAMES. Burmese : *taw-gyet* ; Chinghpaw : *u-gun.*

IDENTIFICATION. Plate XXII, figs. 3 and 3*a*, p. 436. Length 26–28

PLATE XXII

Page

1. BURMESE PEACOCK-PHEASANT (adult) 435
Polyplectron bicalcaratum bicalcaratum.

2. KALIJ PHEASANT (adult male) 440
Lophura leucomelana lathami.

3. RED JUNGLEFOWL (adult male) 436
Gallus gallus spadiceus.

3*a*. RED JUNGLEFOWL (adult female) 436
Gallus gallus spadiceus.

4. CHINESE FRANCOLIN (adult male) 450
Francolinus pintadeanus.

5. BLACK-BREASTED QUAIL (adult) 446
Coturnix coromandelica.

6. YELLOW-LEGGED BUTTON QUAIL (adult) . . . 4[illegible]
Turnix tanki blanfordi.

7. PAINTED QUAIL (adult male) 445
Coturnix chinensis chinensis.

8. KALIJ PHEASANT (adult male) 440
Lophura leucomelana lineata.

8*a*. KALIJ PHEASANT (adult female) 440
Lophura leucomelana lineata.

PLATE XXII

inches (cock), including a tail of 11–13 inches; 17 inches (hen). When flying away the most noticeable feature of the cock is the white patch above the tail; flying towards one it appears a blue-black bird except for the red wattles on the head.

VOICE. The calls of both sexes resemble those of domestic fowl, but the cock's crow is shorter, the last note being cut off abruptly.

HABITS AND FOOD. This bird, the ancestor of all our domestic poultry, is a typical bird of the teak forests, frequenting deep forest during the rains and moving in the cold weather to the neighbourhood of forest villages, where it lives and roosts in the scrub-jungle surrounding the paddy fields; after the harvest it comes out into the stubble in the early mornings and late afternoons, sometimes collecting into flocks of fifty or more birds. The flight is the typical game-bird glide on stiff wings, with a few rapid wing-beats now and then, and on the ground the cock runs with a shame-faced crouching gait, the neck and tail outstretched and streamlined. Junglefowl beaten out of cover over streams and glades used to provide good sport and good food for those who earned their bread-and-butter in the jungle, especially where beats had been laid out beforehand and become familiar to the local villagers; they trap the cocks by tethering a decoy cock in the jungle and surrounding him with snares. "On one occasion, near Papun, I counted thirty males and females seated side by side on one enormous bent bamboo" (Davison).

NEST AND EGGS. Most eggs are probably laid from March to May, but on the 3rd March I once found a nest of eggs and shot a young bird at least three months old; odd nests are found up to October, so that the breeding season may be said to extend throughout the year; many eggs laid early in the year are probably destroyed by jungle fires. The eggs are generally laid on a few leaves at the base of a bamboo clump or bush and resemble small hens' eggs. One nest was found in the Tharrawaddy district in the fork of a tree about 5 feet from the ground.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common throughout Burma, ascending the higher hills to 5,000 feet.

[NOTE.—The KOKLAS PHEASANT, *Pucrasia xanthospila meyeri* Madarasz, from central and south-eastern Tibet, was obtained by Forrest on the Shweli-Salween divide and may occur in the mountains of northern Burma. Long brown crest from the crown, with a still longer black occipital crest, and white patch on the side of the neck contrasting with dark metallic head are diagnostic for the cock. The female has a short but well-marked occipital crest, brown margined or mottled with black. Both sexes have the tail rufous with a broad subterminal black band and a narrow white tip.]

MRS. HUME'S PHEASANT

Syrmaticus humiae (Hume), MANIPUR
SUBSPECIES : *humiae* (Hume), MANIPUR
burmanicus (Oates), RUBY MINES District

LOCAL NAME. Burmese : *yit-min.*

IDENTIFICATION. In size resembles the common pheasant, and the cock has the same type of tail ; flying away, the white on the rump is conspicuous, and on the ground the dark head with red bare skin round the eye, broad white bars on the deep chestnut sides of the body, and the black or steel-blue upper-parts, chin and throat are noticeable. The hen is a mottled brown bird with white tips to the tail-feathers and with a small, bare red space round the eye.

VOICE. The call is said to be a low grunting note. They rise with a characteristic chuckle. The alarm-note is a low muttering *būk-būk-būk-būk-būk-būk* (Heinrich).

HABITS AND FOOD. This beautiful pheasant is found in the higher hills in small parties on broken, rocky ground or steep hillsides, especially where open, grassy slopes are dotted with patches of forest or scrub-jungle ; when put up by dogs they often perch in trees. The cock has been observed drumming in April.

NEST AND EGGS. A nest found on the 26th April at 4,000 feet in the Shwe-u-daung sanctuary, Katha district, contained nine fresh eggs ; it was in a hollow under a small, sloping rock, lined with dead leaves and a little down ; the ground was covered with longish grass, and there were some scattered rocks round about, while overhead there was open forest of oak and chestnut. The hen bird sat very tight and only flew off when touched.

STATUS AND DISTRIBUTION. This pheasant has a restricted range from Manipur through Burma to Yunnan, where it has been obtained east of the Mekong. The only record for North-East Burma seems to be a cock that I saw in the headwaters of the Ngawchang river, but further south it is not uncommon in the Mogok hills (Shwe-u-daung area) and extends through the Shan States to Karenni, where I shot one on Nattaung ; Wickham reports it as common on the Taunggyi crags. On the west side it extends down to the Chin Hills.

COMMON PHEASANT

Phasianus colchicus Linnaeus, COLCHIS, ASIA MINOR
SUBSPECIES : *elegans* Elliot, SZECHWAN

IDENTIFICATION. Length 30–35 inches (adult male), 21–25 inches (female). This familiar British bird needs no description ; the cock of the subspecies

elegans, known as Stone's pheasant, has the rump and upper tail-coverts light green, noticeable in flight, and the head metallic blue-green with red wattles surrounding the eye; the long tail, though shorter than that of the Amherst pheasant, is a noticeable feature, both of the male and of the brown female. When caught out in the open, as on the Panwa pass, it habitually runs for cover and crouches; if followed up it will permit a very close approach before taking wing. The flight is rapid, direct and strong; it begins with rapid wing-beats, causing a loud whirring as the bird rises, giving place as soon as sufficient elevation is attained, to a glide on spread wings. The voice (crowing) of the male is a far-sounding resonant *korrk-korrk*. It feeds on berries, bulbs, insects, and acorns.

NEST AND EGGS. Unknown for *elegans*.

STATUS AND DISTRIBUTION. A southern palaearctic and north-eastern oriental species. In North-East Burma it is common at 6,000–7,000 feet on the open bracken-covered hills of the Panwa pass; Harington records one shot at 2,000 feet between the Bhamo and Myitkyina districts; Wickham states that he has seen a skin said to have been taken in the Shan hills, and according to Stuart Baker (*Game Birds of India*, vol. iii, p. 190) it is found in the Shan States down to latitude 21°. It is common in western Yunnan.

LADY AMHERST PHEASANT

Chrysolophus amherstiae (Leadbeater), CHINA

IDENTIFICATION. The cock is a bird of brilliant and varied colouring, and is to be seen in most zoos; he is distinguished by immensely long central tail-feathers (34–46 inches) and curious cape-like arrangement of feathers over the neck. The female is barred buff and brown with a much shorter tail (12–15 inches).

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. Where China, Tibet, and Burma meet is this bird's headquarters; in north-western Yunnan it goes up to 15,000 feet, but in North-East Burma it is not uncommon along the Ngawchang valley at 6,000–8,000 feet on open bracken-covered hillsides or in climax forest, and I shot a female below 5,000 feet in a patch of scrub above the mule-track near Gamkawn. Harington had native reports of its occurrence on the higher hills in Bhamo district, and Wickham states that he saw the skin of a male obtained near the eastern boundary of the Northern Shan States.

CRESTED FIREBACK PHEASANT

Lophura ignita (Shaw and Nodder), S. BORNEO
SUBSPECIES: *rufa* (Raffles), SUMATRA

IDENTIFICATION. Length 27–29 inches (male), 23–24 inches (female). Both sexes have blue facial wattles and an erect brush-like tuft of feathers for a crest. The name is derived from the fiery-red lower back and rump of the male. "I have never heard the males crow, nor do I think that they ever do so; when alarmed both males and females have a peculiar sharp note, *chukun*, *chukun*, exceedingly like that of the large black-backed squirrel (*Sciurus*

bicolor). The males also continually make a whirring sound with their wings, which can be very well imitated by twirling rapidly between the hands a small stick in a cleft of which a piece of stiff cloth has been transversely placed. I have often discovered the whereabouts of a flock by hearing this noise. These birds frequent the thick evergreen forests in small parties of five or six; usually there is only one male in the party, the rest being females, but on one or two occasions I have seen two males together; sometimes the males are found quite alone. They never come into the open, but confine themselves to the forests, feeding on berries, tender leaves, and insects and grubs of all kinds, and they are very fond of scratching about after the manner of domestic poultry, and dusting themselves. When disturbed they run rapidly away, not in different directions, but all keeping much together; they rise at once before a dog, getting up with a great flutter, but when once well on the wing, fly with a strong and rapid flight; they seldom alight again under 200 yards, and usually on the ground, when they immediately start running" (Davison). He goes on to describe how a male fireback ran on to the dancing ground of an argus he was watching and drove the argus round and round its clearing till it eventually ran into the jungle. The fireback then made the whirring noise with its wings, evidently as a challenge, "whereupon the argus slowly returned, but the moment it got within the cleared space the fireback charged it and drove it back into the jungle and then, as before, took up his position in the middle of the space and repeated the challenge." This performance of the fireback driving off the argus was repeated at least a dozen times; the argus never made the slightest attempt to attack the fireback, but retreated at once when charged, nor was the fireback seen to strike the argus; eventually a movement on Davison's part disturbed the birds and they disappeared into the jungle.

NEST AND EGGS. More or less unknown.

STATUS AND DISTRIBUTION. A Malaysian species, sparingly distributed through the Victoria Point subdivision of the Mergui district.

[NOTE.—DIARD'S FIREBACK PHEASANT, *Lophura diardi* Bonaparte, COCHIN-CHINA, is found in Indo-China and eastern Siam. Stuart Baker's claim (*F.B.I.*, vol. v, p. 319) that it occurs in the Shan States and Karenni seems to be unsupported by any records or specimens.]

KALIJ PHEASANT

Lophura leucomelana (Latham), INDIA

SUBSPECIES: *lathami* (Gray), ASSAM
williamsi (Oates), KALEWA
oatesi (Ogilvie-Grant), PROME AND ARAKAN YOMAS
lineata (Vigors), E. PEGU YOMAS
crawfurdi (J. E. Gray), S-W. SIAM

LOCAL NAMES. Burmese: *yit*; Chinghpaw: *u-ri*.

IDENTIFICATION. Plate XXII, figs. 2, 8 and 8*a*, p. 436. Length 20–27 inches. The subspecies *lathami* and *williamsi* are dark birds of the fig. 2 type, whereas *oatesi* and *crawfurdi* are light birds like *lineata*, figs. 8 and 8*a*. Inter-specific crosses with *nycthemerus* and

intergrades within the species *leucomelana* result in a diversity of hybrids in the intergrading zones.

Tends to frequent moister forests than the junglefowl, though both birds often emerge from the same beat, and is often located by the challenge of the cock, a drumming noise produced by a rapid vibration of the wings against the body.

VOICE. A guttural, harsh crow and a guttural, cooing sound have been described. The alarm-note is a distinctive guttural *whoop-keet-keet*, rapidly repeated.

HABITS AND FOOD. This is a common bird of the teak forests, especially of the moist deciduous and evergreen types, and it is typically seen in parties near small streams ; it is less often seen on open paddy stubble than the junglefowl, but parties are occasionally met with on a cold-weather morning, and Bingham observed that they constantly come out into clearings on moonlight nights ; they are shy and not easily observed in the thick cover they frequent, running in preference to flying when disturbed unless put up by a dog, when they immediately perch. Their food consists of grain, seeds of various kinds, young leaves and grass, grubs and insects. The cocks are very pugnacious and easily snared with the help of a decoy.

NEST AND EGGS. Most birds breed in March to May, but some eggs are laid in early January in Tenasserim, and second broods run on to October. The eggs, 4 to 10 in number, are laid in a hollow scraped on the ground and are white to buff in colour.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and fairly common throughout the foothills of Burma, but becoming scarce in accessible areas on account of poaching ; also in the higher hills to 6,000 feet in small numbers, hybridising with *nycthemerus* at 4,000–6,000 feet in the east (for discussion of the hybrids see *Ibis*, 1939, pp. 219–224).

[NOTE.—The above arrangement is that proposed by Delacour, who has been revising these pheasants and kindly sent me notes on their classifications.]

SILVER PHEASANT

Lophura nycthemerus (Linnaeus), CHINA
SUBSPECIES : *occidentalis* Delacour, TENGYUEH District
ripponi Sharpe, S. SHAN STATES
rufipes Oates, RUBY MINES District
jonesi Oates, KENGTUNG

LOCAL NAMES. Burmese : *yit* ; Chinghpaw : *u-ri-hpraw*.

IDENTIFICATION. In size like *leucomelana*, but has red legs and the

cock has a very long tail (18–26 inches). The cock is easily recognised by the almost white upper-parts, crimson facial skin, black crown, crest, and under-parts; Wickham aptly compares it when seen in thick cover to a white, bushy-tailed cat running about. The hen is olive-brown with the crest darker.

VOICE. Has not been differentiated from that of *leucomelana*.

HABITS AND FOOD. Except that it is a mountain bird I doubt if there is any significant difference between its habits and those of the kalij pheasant. Its normal habitat is in climax forest at 4,500–9,000 feet, and its emergence on to open grasslands is exceptional, but has been observed, for example, in the Shwe-u-daung area. Most of those I have seen have been in small flocks in thick cover, but one was a solitary cock just below where the snow was lying in early March on the Fenshuiling pass. Wickham notes its habit of coming out in the early morning on to camping grounds and mule paths.

NEST AND EGGS. Apparently unknown.

STATUS AND DISTRIBUTION. This Chinese species is found in the eastern hills of Burma as far south as the Shan States, and is locally common; some birds wander down in winter, the lowest record being a bird taken near Laukhaung at 3,500 feet. In Yunnan it is common at 7,000–9,000 feet.

[NOTE.—The EARED PHEASANT, *Crossoptilon crossoptilon crossoptilon* Hodgson, TATSIENLU, was obtained by Bailey at Lagyap, near the source of the Taron, but has not been recorded within Burmese limits.]

SCLATER'S MONAL PHEASANT

Lophophorus sclateri Jerdon, MISHMI HILLS

IDENTIFICATION. Sexes differ, but the strongly hooked yellow beak is diagnostic for both sexes; this beak, combined with a thick-set body and short broad tail, gives the cock a somewhat vulturine appearance when seen perched in a tree; he is a magnificent bird, the most noticeable feature being the white-tipped chestnut tail; the white rump and upper tail-coverts are prominent in flight but concealed when perched. There is a patch of bare blue skin round the eye, a short curly crest and a bronze patch on the nape; the rest of the plumage shows dark metallic colours. The hen is brown with a white-tipped dark tail. The cock has a loud whistling call, half-owl, half-curlew. Cranbrook describes the alarm-note as a rather harsh call between that of a peacock and that of a guinea fowl, and Kingdon Ward describes it as a shrill, rather plaintive, call, a single cry repeated again and again. Cranbrook met with them in flocks amongst scrub and cliffs above the tree-line and notes that they are very cunning and always post a sentinel on a ridge or prominent mound. He notes that their coloration harmonises admirably with their haunts amongst the

dwarf rhododendron, juniper, cotoneaster, grass, etc. Birds shot had *Polygonum* seeds and the heads of a thistle or hard-headed flower in their crops, whereas others I collected near the Chimili pass in March had been feeding on nothing but roots, their crops being full of 1 inch long sections about the thickness of a pencil.

NEST AND EGGS. I found paired birds with organs enlarged in the Chimili pass area in late March; nest and eggs not described from Burma.

STATUS AND DISTRIBUTION. A bird of restricted range round the area where Assam, Burma, Tibet, and Yunnan meet. In North-East Burma it probably extends through the mountains from the extreme north down to the Hpimaw area and Imaw Bum. It lives above the tree-line and even when the mountains are under deep snow in winter I doubt if it often comes much below 10,000 feet; Beebe, however, observed it farther south near Sima (but over the border in Yunnan) and from his photographs and descriptions the elevation must have been about 8,000 feet (unfortunately he gives no figure).

Sub-family PERDICINAE

TRAGOPANS, PARTRIDGES, AND QUAILS

GREY-BELLIED TRAGOPAN

Tragopan blythi (Jerdon), NAGA HILLS
SUBSPECIES: *blythi* (Jerdon), NAGA HILLS

IDENTIFICATION. The male differs from the male of the next species in having a grey belly, and the female has crimson on the shoulder of the wing. The call is described as a fine sonorous *wak*, sometimes lengthened into *wa-ak-ak*, reminiscent of a peacock's call but much less harsh; Heinrich describes it as *göck . . . göck . . . göck*, like the *gröck* of the great hornbill but much softer, and states that two cocks will answer one another, the one beginning as soon as the other ceases. It is found in climax forest in small parties.

NEST AND EGGS.—Not described from Burma, but in the Naga hills it breeds in April to May, making a bulky nest of twigs and leaves in a tree.

STATUS AND DISTRIBUTION.—Restricted to the mountains of Assam, the Naga hills and Chin Hills, from 6,000 feet upwards. Beebe give its eastern limit as 96° E, possibly to 97° E, but Kaulback obtained one near the Taron-Tamai junction, lat. 27° 38′ long. 98° 00′, at 6,000 feet.

CRIMSON-BELLIED TRAGOPAN

Tragopan temminckii (J. E. Gray), SZECHWAN

IDENTIFICATION. In body size the tragopans resemble pheasants rather than partridges, and are often known as horned pheasants on account of two small fleshy bright blue horns that are normally concealed in the feathers on each side of the crown, but are erected in display; there is also a pouch of bright

blue skin with salmon-pink blotches round the margin that is blown up like a balloon in display or when calling. The male of Temminck's or the crimson-bellied tragopan, aptly termed by Stanford " that great Beau Brummell of a bird," has beautifully variegated crimson plumage, and one could imagine bird-watchers going on pilgrimage to see it in its native haunts, just as botanists go to the Hpimaw pass to worship at the shrine of *Primula sonchifolia*. The female is a mottled brown bird. This is essentially a bird of that unshaven belt of climax forest that runs round the contours of the mountains from the upper limit of the hillmen's *taungyas* at 7,000–8,000 feet to the limit of tree growth. A solitary cock that I met face to face round a corner in a rather bare snow-filled gully at 10,000 feet retreated hurriedly behind some shrubs down the slope and then kept on poking up its head and uttering a soft but rapid *quack-quack-quack-quack* of anxiety; the Yawyins say it has a loud note, which they described to me, and on account of which they name it *nyear-ni*, but the call is not uttered till April; they trap many birds in spring nooses set on narrow ridge-tops; it does not seem to be very gregarious—the few birds I saw were all solitary. It feeds largely on fern leaves, also on acorns and buds.

NEST AND EGGS. Breeds in April and May; nest and eggs more or less unknown.

STATUS AND DISTRIBUTION. Eastern Himalayas to Yunnan and western China; also in southern Tibet. It has been collected by several naturalists in the mountains of North-East Burma, from Sadon to the Adung Valley, from 7,000 feet upwards, but it is rare below 8,000 feet.

BLOOD PHEASANT

Ithaginis cruentus Hardwicke, NEPAL
SUBSPECIES: *marionae* Mayr, MYITKYINA District

IDENTIFICATION. This " pheasant " is more of a partridge in size and appearance. The bill is short and grouse-like, and black in colour, and there is a small patch of scarlet bare skin round the eye. The cock is a streaky grey bird with crimson forehead, throat, breast, and under tail-coverts; the female is a finely vermiculated brown with the nape and crest almost black. The habitat of the blood pheasant is the same as that of the tragopan. I have seen it both solitary, scratching about in the snow, and in coveys (one consisted of 20 birds at least) which behave in a bewildered manner and refuse to take wing even when under rapid fire. Kingdon Ward describes a pair as follows: " The female has a crest and strutted about, with tail outspread, bobbing her head abruptly to pick up food as she walked, then throwing it up suddenly, and all the time she uttered a single rather querulous cry. The male has the same upright way of pecking at the ground and looking up quickly. His tail, however, was not spread." The alarm-note is a harsh cackle, which Cranbrook compares to that of a hen common pheasant. The birds feed on moss, grit, and vegetable matter.

NEST AND EGGS. Little known. Breeds in May near the snow-line.

STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan and south-eastern Tibet. In North-East Burma from the extreme north down to Hpimaw,

from 8,000 feet upwards. A very common bird in the Chimili pass area. Numbers are snared by the Yawyins.

BAMBOO PARTRIDGE

Bambusicola fytchei Anderson, PANGSI, W. YUNNAN
SUBSPECIES : *fytchei* Anderson, PANGSI, W. YUNNAN
hopkinsoni Godwin-Austen, KHASIA HILLS
oleaginia Bangs and Phillips, MENGTSZ

IDENTIFICATION. Superficially resembles *Arborophila* but has a chestnut breast spotted with white and a distinctive call, a loud ringing cackle of two notes rapidly repeated ; they rise with much the same screaming notes as the English partridge, and Stanford observed a pair with young that kept calling with a harsh churring note. Usually found in coveys haunting hill villages, feeding in the *taungyas* and living in the scrub-jungle nearby.
NEST AND EGGS. Breeds from May to July. The cock is said to be monogamous, keeping with the hen whilst she is incubating and looking after the chicks. The eggs, 3 to 7 in number, are distinguishable from all other game-birds' eggs by the extremely hard thick shell ; the colour is buff.
STATUS AND DISTRIBUTION. Assam, Burma, Yunnan, and Szechwan. It has been recorded from the Chin Hills, North-East Burma, and the Shan States ; it has a considerable altitudinal range, from 1,000 feet at Chipwi to 10,000 feet in Yunnan, but 3,000–7,000 feet seems to be the normal, and it is common in the cultivated areas of the Laukkaung, Sadon, and Hpimaw hills.

CRESTED WOOD PARTRIDGE

Rollulus roulroul (Scopoli), MALACCA

IDENTIFICATION. Length 10 inches. Sexes differ. The male has long hair-like bristles on the forehead, a long cockade-like crest of bristly red feathers, and a white patch on the crown in between. Scarlet skin round the eyes ; head, neck, and under-parts black. The female has the frontal bristles but not the crest, head grey, rest of plumage mainly bright green. The call is a soft mellow whistle. Found in small parties in dense evergreen forest. " It does not scratch about nearly so much as the *Arborophilas*, and is much quicker and more lively in its movements, much like a quail, running hither and thither " (Davison).
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found on some islands of the Mergui Archipelago and not uncommon in the extreme south of Tenasserim.

PAINTED QUAIL

Coturnix chinensis (Linnaeus), CHINA
SUBSPECIES : *chinensis* (Linnaeus), CHINA

LOCAL NAME. Burmese : *ngon* (applies to all quails).
IDENTIFICATION. Plate XXII, fig. 7, p. 436. Length 6 inches. Sexes differ. The male appears a very dark, almost black, little bird when

flushed out of grass ; the back is mottled black and rufous-brown and the legs yellow. The female is lighter, the under-parts pale buff barred with black on the breast and flanks.

VOICE. When flushed it utters a quiet *tir-tir-tir*, but the call-note to the male or young is a sweet double whistle sounding like *ti-yu, ti-yu*.

HABITS AND FOOD. A common plains bird found in stubble and rank grass ; after the manner of quails it explodes from your feet to fly fast and straight for a few yards before dropping back into cover.

NEST AND EGGS. Nests have been recorded in Assam in all months of the year, but in Burma most eggs are laid in the rains and a few in January. Typical breeding haunts are the polo grounds and race-courses at Rangoon and Maymyo, and the *kaing* grass swamps of the Myitmaka drainage. The eggs, 4 to 7 (rarely 8) in number, vary from pale yellowish to brown in colour, and a few have freckles.

STATUS AND DISTRIBUTION. Widespread from Africa to Australia, and common throughout the plains of Burma and on the Shan plateau. It may be a local migrant ; Stanford thought it arrived in Myitkyina in February and Wickham thought it commoner in the Shan States during the rains. It has not been recorded from Yunnan.

EUROPEAN QUAIL

Coturnix coturnix (Linnaeus), SWEDEN
SUBSPECIES : *japonica* Temminck and Schlegel, JAPAN

IDENTIFICATION. Length 7–8 inches. A plump seemingly tailless little bird, with a striped head and sandy coloration streaked with white ; the female differs from the male in having the feathers of the chin and lower cheeks stiff, long and pointed, forming a little bristly beard.

STATUS AND DISTRIBUTION. Almost throughout Europe and Africa, and most of Asia ; occurs sparingly in Burma as a winter visitor.

BLACK-BREASTED or RAIN QUAIL

Coturnix coromandelica (Gmelin), COROMANDEL

LOCAL NAME. Burmese : *ngon*.

IDENTIFICATION. Plate XXII, fig. 5, p. 436. Length 7 inches. Difficult to distinguish from the European quail in the field except by voice and smaller size ; the black on the breast of the male is distinctive, but the female has none. In the hand both sexes are at once distinguished by the primaries, which are plain on the outer webs, whereas the European quail has all the primaries except the first barred with rufous on the outer web.

VOICE. The call-note is a loud, high-pitched double note, *whit-whit*, repeated a number of times, usually from a clod of earth or similar point of vantage. Commonly heard from July to October.

HABITS AND FOOD. A bird of open country, in cultivation and grass-lands, often near villages; in pairs in the breeding season and solitary or in coveys at other times of the year.

NEST AND EGGS. Breeds from February to October. The eggs, 4 to 11 in number, are laid in a scrape in the ground, and are very variable in colour and markings.

STATUS AND DISTRIBUTION. India, Burma, and Ceylon. In Burma a common breeding bird of the dry zone and the Shan plateau, where Wickham describes them as arriving in April and common up to 4,500 feet. It is found as far north as the Bhamo district and extends south to the Irrawaddy delta, where Stanford found them breeding in pea fields in the hot weather, on riverine land that is under water in the rains.

[NOTE.—The MANIPUR BUSH QUAIL *Cryptoplectron manipurensis* Hume, is a bird of *kaing* grass that may turn up one day somewhere in the Chindwin valley.]

COMMON HILL PARTRIDGE

Arborophila torqueola (Valenciennes), BENGAL

SUBSPECIES: *torqueola* (Valenciennes), BENGAL (= *batemani* Grant)
interstincta Ripley, NAGA HILLS

IDENTIFICATION. Length 11–12 inches. Colour largely olive-brown, variegated with chestnut and black, with white spots on the flanks; the male has a chestnut crown and a black and white throat enclosed in a white gorget. The female has the throat spotted with black. It has a distinctive call, a gentle melancholy long-drawn-out whistle, *poor* or *peeor*, uttered singly at short intervals. A second call is a run up the scale in double notes which sounds just like the call of *rufogularis*, but having heard them only separately and not at the same place at the same time I cannot say whether they can be distinguished or not. I once listened to a noise that sounded just as if two men were very rapidly tapping a wooden plank in turn, the two notes being slightly different; it was produced by a pair of these birds, which were only a few yards from me, and may have been a note of alarm or suspicion, but I doubt if they were aware of my presence. This is a high altitude species, and is nearly always seen from the mule path slipping away uphill or downhill through the dense undergrowth of bamboos or shrubs so typical of the hill forests. There is usually a small covey, which may consist of a pair of old birds and their last brood. Wickham remarks that they are easily called up and snared.

NEST AND EGGS. Have been taken in the Chin Hills in April and May, but Stanford says they breed in the Myitkyina district in June and July.

STATUS AND DISTRIBUTION. Throughout the Himalayas to northern Yunnan. Very common from 4,000 feet upwards in the Chin and Kachin Hills.

RUFOUS-THROATED HILL PARTRIDGE

Arborophila rufogularis Blyth, DARJEELING
SUBSPECIES : *intermedia* (Blyth), ARAKAN
tickelli (Hume), MT. MULAYIT

IDENTIFICATION. Length 11 inches. A brown-coloured bird, deriving its name from the rufous chin and foreneck, which are also spotted with black. The call is loud and arresting, a slow run up the scale in double notes, the first note of each pair higher than the second, *war war, war war*, etc. getting higher and faster till the bird has to stop ; another member of the party may answer with *wick wick wick*. . . . See under *torqueola*, which seems to have an almost identical call. Found in climax forest in the higher hills, with the habits of *torqueola*.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Himalayas and Burma, where it is well distributed throughout the higher hills ; it is very common on Nattaung and goes nearly up to the summit ; why it should be absent or very rare in the Yunnan frontier hills from Sadon eastwards, where *torqueola* is so common, is a puzzle. It is rare anywhere below 3,000 feet.

[NOTE.—The RED-BREASTED HILL PARTRIDGE, *Arborophila mandellii* Hume, occurs in eastern Assam.]

WHITE-CHEEKED HILL PARTRIDGE

Arborophila atrogularis (Blyth), ASSAM–ARAKAN

LOCAL NAME. Chinghpaw : *u-gam* (applies to any hill partridge).
IDENTIFICATION. Length 11 inches. Distinguished from the two preceding species by white cheeks, black chin and throat, and lack of chestnut on the flanks.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Assam and Burma. Common in the evergreen forests of the foothills in northern Burma to 4,000 feet, extending down to the Northern Shan States on the east and Arakan and the Chin Hills on the west.

BROWN-BREASTED HILL PARTRIDGE

Arborophila brunneopectus (Blyth), TENASSERIM
SUBSPECIES : *brunneopectus* (Blyth), TENASSERIM

IDENTIFICATION. Length 11 inches. White chin, cheeks and ear-coverts, buffy-brown breast and a black patch on each side of the neck are distinctive. Frequents evergreen forest, and makes a soft chirruping sound, almost a whistle.
NEST AND EGGS. A nest with 4 eggs was found near Rangoon on the 5th June ; the eggs were laid on the ground in open bamboo jungle, in a hollow well filled in with bamboo leaves and grass.
STATUS AND DISTRIBUTION. Widespread from Burma east to Formosa and

south to Malaysia. Andrews and Heller obtained it in Yunnan near the Burma border ; except for a doubtful sight record from the Shwe-u-daung sanctuary it has not been recorded in Burma north of the Shan States, whence it extends through the Karen Hills to Tenasserim, and also occurs in the Pegu Yomas (east side) ; distributed from plains level to 4,500 feet.

GREEN-LEGGED HILL PARTRIDGE

Arborophila chloropus Blyth, TENASSERIM
SUBSPECIES : *chloropus* Blyth, TENASSERIM

IDENTIFICATION. Length 11 inches. Green legs diagnostic. Upper-parts brown with narrow crescentic bars of black ; chin, throat and sides of the head white, each feather with a black spot at the tip ; neck and sides bright rufous, similarly spotted ; breast brown like the back, with wavy black bars on the upper-breast and rusty-red on the lower breast. Frequents dry and evergreen forests in the foothills. " Its note is a low soft double whistle " (Davison).
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. From Burma eastwards to Indo-China. There are scattered records from northern Burma including one from the Mawhun *taung* (Katha district), the Pegu Yomas (east side), Salween district, and northern Tenasserim, but it seems to be rare.

CHESTNUT-BREASTED TREE PARTRIDGE

Arborophila charltoni (Eyton), MALACCA
SUBSPECIES : *charltoni* (Eyton), MALACCA

IDENTIFICATION. Length 11 inches. A dark brown bird with a long white supercilium, chestnut ear-coverts, chin and upper throat white ; sides of neck and lower throat white spotted with black ; a wide chestnut collar on the upper breast and sides of the neck ; centre of breast and flanks broadly barred with black.
STATUS AND DISTRIBUTION. A Malaysian species, found also in Tongking. It is common in peninsular Siam, but its occurrence in Tenasserim rests on the statements of Stuart Baker, Chasen, and Riley that it occurs there ; Oates did not include it in his book.

FERRUGINOUS WOOD PARTRIDGE

Caloperdix oculea (Temminck), INDIA
SUBSPECIES : *oculea* (Temminck), INDIA

IDENTIFICATION. Length 11 inches. Differs from the males of *Arborophila* in having one or more spurs on each leg. Whole head, neck, and under-parts ferruginous.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim as far north as the Dawnas, but rare.

LONG-BILLED WOOD PARTRIDGE

Rhizothera longirostris (Temminck), SUMATRA
SUBSPECIES : *longirostris* (Temminck), SUMATRA

IDENTIFICATION. Length 14 inches. The long, much bent-down black bill is diagnostic ; legs yellow, one spur in both sexes.
NEST AND EGGS. Unknown.
STATUS AND DISTRIBUTION. A Malaysian species, found in Tenasserim.

[NOTE.—The BLACK PARTRIDGE, *Francolinus francolinus melanonotus* Hume, is found within 40 miles of the Chindwin at Ukhrul in eastern Manipur, but there is no evidence that it occurs within Burmese limits.]

CHINESE FRANCOLIN

Francolinus pintadeanus (Scopoli) CHINA

LOCAL NAME. Burmese : *ka.*
IDENTIFICATION. Plate XXII, fig. 4, p. 436. Length 13 inches. Usually heard and not seen ; the bird has a general grey appearance, due to the scaled character of the plumage. The under-parts of the female are whitish, barred with black, except on the chin and throat.
VOICE. The call-note is distinctive, and is freely uttered at most times of the year, but particularly at dawn and dusk in the cold weather ; it is a harsh, grating *do-be-quick-papa*, normally uttered from a low perch in a tree or bush, the neck being stretched upwards each time the bird calls.
HABITS AND FOOD. This francolin frequents all types of country except dense forest, but it favours dry areas, especially where scrub-jungle and light open forest adjoin cultivation. Its stronghold is the dry zone, where it feeds on the ground in bean, ground-nut or sessamum crops and paddy stubble, picking up grain and seeds of all kinds and also insects ; it runs rather like a wren, with lowered head and tail erected vertically. It does not form coveys and is generally seen solitary or in pairs.
NEST AND EGGS. Breeds from March to October ; the eggs, 3 to 6 in number, are laid in a scrape in the ground and vary from pale yellowish-buff to a warm coffee colour.
STATUS AND DISTRIBUTION. From Manipur through Burma to China and Indo-China. Excluding Tenasserim, it is found throughout Burma in suitable localities as far north as Myitkyina, and up to 5,000 feet on the Shan plateau, breeding alike in the hills and plains. One nest was found in the botanic gardens in Maymyo.

[NOTE.—No subspecies are recognisable.]

[NOTE—The SWAMP PARTRIDGE, *Francolinus gularis* Temminck, may yet turn up in north-western Burma.

The TIBETAN PARTRIDGE, *Perdix hodgsoniae sifanica* Przevalski, KANSU, was obtained by Bailey on the Tsong La near the source of the Taron, but has not been recorded within Burmese limits.]

Order GRUIFORMES

Family TURNICIDAE

BUTTON QUAILS

THE button quails superficially resemble the true quails, but are not closely related to them, and have only three toes, the hind-toe being absent. They live in grasslands in plains and hills alike, and when disturbed they prefer to run for cover, but, if forced to take wing, they fly very straight and fast, with whirring wings quail-fashion, for fifty yards or so before dropping back into cover.

The family life of these birds is remarkable in that the females are the dominant sex; they are larger than the males, often more richly coloured, and do all the courting; they fight with rival females for the possession of the males, to whom they relegate the care and incubation of the eggs and the upbringing of the young. One hen will apparently go on laying eggs as long as she can find a supply of males to incubate them, so that eggs may be found in any month of the year. They are usually 4 in number, laid point to point, plover-fashion, in a hollow in the ground lined with grass and leaves. The young hatch after twelve days, and like young chicks are covered with down and can run about in a very short time after hatching. The Burmese name *ngon* applies to button quails and true quails alike.

BARRED BUTTON QUAIL

SUBSPECIES: *Turnix suscitator* (Gmelin), JAVA
plumbipes (Hodgson), NEPAL
pallescens Robinson and Baker, THAYETMYO
thai Deignan, CENTRAL SIAM

IDENTIFICATION. Length 5 inches. Dark reddish-brown above with a greyish tinge, and pale buff below with black bars on the breast; throat black in the female, white in the male.

VOICE. The female is said to have a loud drumming call and also a booming note that carries a long distance.
HABITS AND FOOD. Those of the family. They frequent cultivation and open scrub-jungle in the plains and grasslands or *taungyas* in the hills.
NEST AND EGGS. Those of the family; the eggs are greyish-white profusely speckled with brown.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and found throughout Burma in suitable localities; it is common round Maymyo.

[NOTE.—The species requires revision.]

LITTLE BUTTON QUAIL

Turnix sylvatica Desfontaines, ALGIERS
SUBSPECIES: *dussumier* (Temminck), BENGAL

IDENTIFICATION. Length 4–4½ inches. A plump rounded bird with a stiff pointed tail and a slaty bill. A buff stripe down the crown, upper-parts mottled rufous-black and grey, breast plain buff. The call-note of the female is a soft booming sound, usually described as a cross between a coo and a purr.
NEST AND EGGS. Wickham found it breeding near Taunggyi at 3,000 feet.
STATUS AND DISTRIBUTION. Ranges from northern Africa and western Europe to Australia; it is widespread in India, but in Burma has been recorded only from Central and Southern Burma and the Shan States; Stanford described it as a common bird of the dry zone.

YELLOW-LEGGED BUTTON QUAIL

Turnix tanki Blyth, BENGAL
SUBSPECIES: *blanfordi* Blyth, PEGU

IDENTIFICATION. Plate XXII, fig. 6, p. 436. Length 5 inches. Yellow bill and short tail distinguish the male and a broad rufous collar the female.
VOICE. The call of the female is a loud challenging boom.
HABITS AND FOOD. Those of the family. Its habitat is similar to that of the barred button quail, with which it sometimes mixes. On Nattaung I found it frequenting the grassy undergrowth in open pine forest at 6,000 feet.
NEST AND EGGS. Those of the family.
STATUS AND DISTRIBUTION. Widespread in eastern Asia and the oriental region, but not in Malaysia. There are three records from Yunnan. It seems to be absent from the Chin Hills and northern Burma, but is not uncommon elsewhere in Burma and goes up to 7,000 feet.

Family RALLIDAE

RAILS, CRAKES, MOORHENS, WATERCOCKS, AND COOTS

An almost cosmopolitan family. The rails and crakes are skulking marsh birds, hiding in reeds and *kaing* grass and seldom venturing out into the open except in the early mornings or late evenings. They walk well with long strides, but in an ungainly fashion with a jerk of the head and tail at each step; when disturbed they run fast into the nearest cover with the head and tail depressed, and fly with reluctance, the long-toed legs hanging down conspicuously. The watercock resembles the rails in habits, whereas the moorhens and coots are more birds of open water, and are often seen swimming about the surface of a lake or jheel. They feed on seeds, plant shoots, buds, etc., and also on insects, especially grasshoppers and their larvae.

WATER RAIL

Rallus aquaticus Linnaeus, GT. BRITAIN
SUBSPECIES: *indicus* Blyth, BENGAL

IDENTIFICATION. Length 13 inches. Crown and nape black with a blackish line through the eye, above which is a white eyebrow; upper-parts ruddy-brown streaked with black; under-parts similar to those of the next species; eye red and bill brown with some red at the base. The ordinary note is a softly repeated *chip chip chip*.

STATUS AND DISTRIBUTION. A palaearctic species, visiting eastern India and Burma in winter. Recorded by Blyth and Shopland from Arakan, and by Rippon from the Inle lake; the only recent records come from the Myitkyina district.

SLATY-BREASTED RAIL

Rallus striatus Linnaeus, PHILIPPINE IS.
SUBSPECIES: *albiventer* Swainson, INDIA
gularis Horsfield, JAVA

IDENTIFICATION. Plate XXIII, fig. 1, p. 460. Length 10 inches. The dark brown upper-parts with wavy white bars, the ashy-blue breast, and the white bars on the flanks are distinctive. The female is a trifle duller and paler on the abdomen.

VOICE. Said to be a sharp *terrik*.

HABITS AND FOOD. Typically a bird of *kaing* grass, but commonly seen in and around Rangoon during the rains in rank grass and bushes, *e.g.* by the Kokine lake.

NEST AND EGGS. Breeds in large numbers in *kaing* grass areas of

the Myitmaka drainage during the rains ; in one year fourteen nests were found between the 8th July and the 24th August, clutches varying from 2 to 8 eggs. The nest is a thick pad of dead *kaing* placed about a foot from the ground among the stems of growing *kàing*. Milner found it breeding in very short, swampy grass on the Rangoon race-course in early July. Wickham notes that they breed in swampy areas in the Shan hills. The eggs are creamy-white to pinkish-buff in ground-colour, blotched and spotted with reddish.

STATUS AND DISTRIBUTION. Widespread in the oriental region and all over Burma in suitable swamps, but there seem to be no winter records and it may be a summer visitor only. It occurs in south-eastern Yunnan.

PHILIPPINE BANDED CRAKE

Rallina eurizonoides Lafresnaye, PHILIPPINE IS.
SUBSPECIES : *nigrolineata* (Gray), NEPAL

IDENTIFICATION. Length 9 inches. Chin and throat white ; head, neck and breast chestnut ; rest of upper-parts dark brown and of under-parts barred black and white.

STATUS AND DISTRIBUTION. Widespread in the oriental region, but in Burma only recorded once from Thayetmyo and once from the Southern Shan States, and of unknown status.

MALAY BANDED CRAKE

Rallina fasciata (Raffles), SUMATRA

IDENTIFICATION. Length 7 inches. Differs from the preceding species in having the wings barred and the legs red, not slaty. The flanks are white barred black, not vice versa. It seems to be a forest bird.

NEST AND EGGS. Have been taken in the Pakokku district by Wickham (29th June) and by Hopwood at Henzada (15th August) in undergrowth in forest, the first nest being near the bank of a small stream. The eggs are pure white.

STATUS AND DISTRIBUTION. A Malaysian species extending through Burma to Assam. It has been recorded from the southern Chin Hills, Mt. Popa, the plains of Southern Burma (Thayetmyo, Henzada, Rangoon), Karenni, and Tenasserim. Except that Wickham thought it was undoubtedly a local migrant we know little of its movements.

SPOTTED CRAKE

Porzana porzana (Linnaeus), FRANCE

IDENTIFICATION. Length 8–9 inches. Differs from the next species in having the neck, breast, and back spotted with white.

STATUS AND DISTRIBUTION. Breeds in Europe and west-central Asia. A winter visitor to India, recorded from Arakan many years ago by Blyth.

BAILLON'S CRAKE

Porzana pusilla (Pallas), DAURIA
SUBSPECIES : *pusilla* (Pallas), DAURIA

IDENTIFICATION. Length 6 inches. Upper-parts brown streaked with black and white ; under-parts slate-grey, the flanks and under tail-coverts barred black and white ; white edge to the first primary conspicuous. In flight resembles a small quail, but the long greenish legs usually dangle.
STATUS AND DISTRIBUTION. Widespread in the old world, it is found in winter over the greater part of Burma in suitable swamps, but has not been recorded from northern Burma. The nearest known breeding locality seems to be Kashmir.

RUDDY CRAKE

Porzana fusca (Linnaeus), PHILIPPINE IS.
SUBSPECIES : *fusca* (Linnaeus), PHILIPPINE IS.
bakeri Hartert, KUMAON
erythrothorax (Temminck and Schlegel), JAPAN

LOCAL NAME. Burmese : *ye-ngon* (water quail) applies to any crake.
IDENTIFICATION. Length 7 inches. Upper-parts dark olive-brown, mask and under-parts rufous ; bright red legs conspicuous, especially when dangling in flight; flies fast and straight like a quail. The call is a soft crake, *keek-keek-keek*.
NEST AND EGGS. Have been taken during the rains round Maymyo and in the plains of Southern Burma. The nest is a pad of reeds and grass built on the ground, and the eggs, 5 to 8 in number, are pale cream well blotched with rufous-brown.
STATUS AND DISTRIBUTION. Widespread in the oriental region and throughout Burma in suitable swamps ; to what extent it is migratory is uncertain ; in northern Burma Stanford only saw it from June to August, and there are few winter records anywhere, but one was snared on a jheel in Mandalay district on the 24th December. It occurs in the Tengyueh valley in Yunnan.

ELWES'S CRAKE

Porzana bicolor (Walden), SIKKIM

IDENTIFICATION. Length 11 inches. Head, neck and under-parts dark ashy-grey ; upper-parts brown ; tail black. A bird of the higher hills, frequenting small marshes and streams amongst grass and cultivation, and a typical skulking rail in habits.
NEST AND EGGS. A nest was taken by Osmaston near Mogaung on the 18th July. Harington records that Tancock obtained a nest with 6 eggs at Sinlum Kaba on the 9th May.
STATUS AND DISTRIBUTION. Himalayas from Nepal to Yunnan, and through the higher hills of Burma to the Chin Hills on the west (where Wickham found it common) and Karenni on the east (one obtained on Nattaung) ; Livesey describes it as not uncommon in the Shan States. The only record from a low elevation is Osmaston's from Mogaung.

WHITE-BREASTED WATERHEN

Amaurornis phoenicurus (Pennant), CEYLON
SUBSPECIES : *chinensis* (Boddaert), HONG-KONG

LOCAL NAMES. Burmese : *kalu-gwet* or *ye-kyetma*.
IDENTIFICATION. Plate XXIII, fig. 2, p. 460. Length 12 inches. Young birds have the feathers of the face and forehead tipped with slaty, obscuring the white.
VOICE. An exceedingly noisy bird in the breeding season and remarkable for its weird calls, which consist of a series of grunts, croaks and chuckles followed by a monotonous *kee-wak, kee-wak, kee-wak-a-wak-wak*, which may be kept up for fifteen minutes at a stretch.
HABITS AND FOOD. This is one of the commonest marsh birds of Burma, though sometimes found far from water ; it frequents thick cover by marshes and jheels, or round paddy fields and village ponds and grazing grounds. It is less of a skulker than the crakes, and comes out to feed in the mornings and evenings, searching for grain and insects on the ground. It is by no means earth-bound and is often seen clambering about bushes or high up in trees.
NEST AND EGGS. Breeds from May onwards. Stanford records a nest 25 feet from the ground in a bamboo clump, a long way from water, in Henzada in mid-May, and others in *bizat* and thorn bushes in Myitkyina, also far from water, but most eggs are laid about July in the vicinity of water, or the nest may be built on the water. The eggs, 4 to 8 in number, are a pale buff in ground-colour, blotched with brownish-red and purple.
STATUS AND DISTRIBUTION. Widespread in the oriental region and common throughout Burma in suitable localities ; resident, but may be a local migrant to some extent.

BROWN CRAKE

Amaurornis akool (Sykes), DECCAN

IDENTIFICATION. Length 11 inches. Upper-parts dark brown ; under-parts ashy-grey, the vent and under tail-coverts brown.
STATUS AND DISTRIBUTION. Northern and central India ; Christison reports that it is fairly common in Arakan.

MOORHEN

Gallinula chloropus (Linnaeus), ENGLAND
SUBSPECIES : *indica* Blyth, CALCUTTA

LOCAL NAME. Burmese : *ye-gyet*.
IDENTIFICATION. Plate XXIII, fig. 3, p. 460. Length 12 inches.

It swims with a characteristic bobbing action of the head and incessantly jerks up the tail, like all rails, thus revealing the white patches underneath. The red-gartered green legs and the red bill with a yellow tip are distinctive features.

VOICE. The call is a loud, harsh *prruk*, somewhat startling and audible from a distance.

HABITS AND FOOD. The two essentials for the moorhen are an abundance of weeds, rushes and other cover and a perennial supply of deep water, but in Burma it is seldom found along rivers and streams as in England, being typically a bird of jheels. It spends most of its time swimming about amongst the water weeds, feeding on vegetable matter, small molluscs, water insects and their larvae. It swims well and when necessary is a good diver, though it seems to dive only to escape danger. It feeds a good deal on land in the cover round the water's edge and often wanders out into the open; like the white-breasted waterhen it often perches on trees, climbing about the branches quite easily. The flight is rather heavy and laboured, with neck and legs extended, usually low over the water.

NEST AND EGGS. Breeds during the rains in Central and Southern Burma and the Shan States on suitable jheels. The nest is a mass of rotting vegetation, composed of the broken-off stems of water plants, and may be floating on the water or in a bush or tree. The eggs, 6 to 9 (rarely up to 14) in number, are pale stone in ground-colour, blotched with reddish-brown and purple.

STATUS AND DISTRIBUTION. Almost cosmopolitan. Widespread in Burma, but decidedly local and showing a special preference for particular sheets of water. In northern Burma it is common in the cold weather, but seems to be absent in the rains and may not breed. In the Shan States, Wickham notes that it is found on all decent-sized lakes and tanks in winter, but does not always breed where found, seeking the largest jheels, well covered with weeds, bushes, etc., in the rains. It is commonly seen on the Maymyo lake, but does not breed there. It occurs in Yunnan, but it is not clear whether it breeds there.

WATERCOCK

Gallicrex cinerea (Gmelin), CHINA
SUBSPECIES: *cinerea* (Gmelin), CHINA

LOCAL NAME. Burmese: *baung-dok*.

IDENTIFICATION. Plate XXIII, fig. 4, p. 460. Length 17 inches.

The frontal shield is much larger in males than in females, and in the breeding season ends in a fleshy horn-like protuberance. The illustration shows the male in breeding plumage, but the shield alone should be red, and the bill yellow; in non-breeding plumage he resembles the female, with upper-parts mottled light and dark brown, and under-parts paler brown barred with wavy lines of dark brown; the eye is yellow, the bill horny-yellow with no shield and the legs and feet dull greenish-brown; in flight the greyish-brown wings contrast with the blacker neck and tail. Young birds resemble the female, but are more rufous and less barred below.

VOICE. The call or challenge of the male is a deep boom, *ogh-ogh-ogh*, uttered rapidly. When calling, the neck is puffed out and the bill pointed vertically down; at intervals it is lowered out of sight and the note then changes, sounding exactly as if the bird were blowing into the water (whether it actually does or not has not been observed). Another common call, made by bending the neck forward, opening the bill, and working the throat, resembles the popping of corks (Roseveare).

HABITS AND FOOD. Frequents *kaing* grass swamps, jheels, flooded grazing grounds, often paddy fields, in which it is very destructive, eating the young rice shoots.

NEST AND EGGS. Many eggs have been taken in the Myitmaka drainage in *kaing* grass areas. The nest is a pad of *kaing* grass placed near the ground in tufts of *kaing* growing round paddy fields. The eggs, 3 to 8 in number, are like handsome richly marked eggs of the moorhen.

STATUS AND DISTRIBUTION. Widespread in the oriental region (not in Yunnan) and not uncommon throughout Burma in suitable localities, notably round the Inle lake and in the Myitmaka drainage. There are few winter records, but it has been observed on jheels in the Mandalay district in December.

PURPLE WATERHEN

Porphyrio porphyrio (Linnaeus), W. MEDITERRANEAN
SUBSPECIES: *poliocephalus* (Latham), INDIA

LOCAL NAME. Burmese: *me-nyo*.

IDENTIFICATION. Plate XXIII, fig. 6, p. 460. Length 17 inches. The female is like the male, but has a smaller frontal shield.

VOICE. It is a noisy bird, uttering cacklings, grunts, and hoarse rippling notes.

HABITS AND FOOD. Confined to jheels, preferring those with extensive areas of *kaing* grass, reed beds and bushes round their shores, typical areas being the southern and north-eastern fringes of the Indawgyi lake in Myitkyina district and the bullrushes of the Sunye jheel in the Kyaukse district. Numbers may flight out to paddy fields at dusk and are said to do a great deal of damage by trampling down the rice plants with their heavy feet. It is a tame and confiding bird where not persecuted.

NEST AND EGGS. Many eggs have been taken in the Myitmaka drainage in August and September. The nest is a large bowl made of the stalks of water plants, about a foot in diameter, and is easy to find because the surrounding plants within a radius of several yards are broken off to supply material for the nest. The eggs, 3 to 10 in number, are like richly coloured well-marked eggs of the moorhen.

STATUS AND DISTRIBUTION. From Africa and southern Europe across southern Asia to Australia and beyond. It is resident throughout Burma on suitable jheels and is locally common. Once in Yunnan (Tengyueh valley at 5,300 feet).

EUROPEAN COOT

Fulica atra Linnaeus, SWEDEN
SUBSPECIES: *atra* Linnaeus, SWEDEN

LOCAL NAMES. Burmese: *ye-gyet-don* or *thinbaw-ye-gyet*.

IDENTIFICATION. Plate XXIII, fig. 7, p. 460. Length 16 inches. Young birds are brown above and have the under-parts paler and much more mottled with white. In flocks on open water.

VOICE. The call is a loud, harsh *kraw-kraw*; it has many other conversational notes.

HABITS AND FOOD. The coot is more definitely aquatic than other rails and frequents the larger jheels, swimming about by day in the open water and diving for food; in the mornings and evenings it often resorts to the fields, where it hunts for insects and snails and feeds on the young crops. In flight it has a peculiar appearance with the heavy feet extending beyond the short tail.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A palaearctic species, wintering in the sub-tropics. Common on most suitable jheels in the cold weather, but no evidence of breeding has been obtained; Wickham thought

they might breed on a big inland lake in the Chin Hills, near the Lushai border, and villagers say they remain all the year on the Maungmagan jheel, Mandalay district.

Family HELIORNITHIDAE

FINFOOTS

A small family of remarkable water birds with lobed feet represented in the tropics of Asia, Africa, and South America.

MASKED FINFOOT

Heliopais personata (Gray), MALACCA

LOCAL NAME. Burmese : *ye-balon*, from its peculiar call.
IDENTIFICATION. Plate XXIII, fig. 5, p. 460. Length 24 inches. The neck of the bird illustrated is too swan-like. Sexes differ, the female having the chin, throat and fore-neck white surrounded with black, which is edged with white as in the male, and the eye yellow. The male has a small, fleshy horn rising from the base of the bill in the breeding season, but this shrivels up and disappears at the end of the rains, and is lacking in the female. Young birds resemble the female, but have no black on the crown.
VOICE. The bubbling call is diagnostic, and resembles the sound made by blowing air through a tube into water, the note being rather high-pitched.
HABITS AND FOOD. In the breeding season it is typically a bird of flooded forest areas and vast swamps, but at other times of the year it is also found on tidal creeks and singly along streams in or near evergreen forest. As a rule, when seen, it seeks safety by swimming ashore ; it is a strong runner and an equally fine swimmer and diver ; when unafraid it swims high out of the water, progressing rather jerkily with the head bobbing forward, but when suspicious it submerges all but the head and neck, like the darter. It rises from the water like a coot, skittering along the surface with the legs hanging down, but once airborne it flies fast and well. It walks freely, but holds its body in a peculiar way, not upright like a penguin, nor horizontally like a water hen, but at an angle of about 45 degrees (Davison). Those he examined had been feeding on shells, insects, and vegetable matter.

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PLATE XXIII

NEST AND EGGS. Described by Hopwood (1921). "The upper reaches of the Rangoon (or Hlaing) river are known locally as the Myitmaka river, a sluggish stream flowing through the plains of the Tharrawaddy district, and in places opening out into big lagoons. When the Irrawaddy rises the flood water covers large areas of the low-lying country, and backs up the Myitmaka, the result being a huge swamp, in which the depth of water varies from 5 to 15 feet, or even more. Much of the inundated area is under forest growth, consisting of trees, shrubs, and a tangled mass of creepers, and as might be expected, the finfoot revels in country of this nature." This flooded swamp is known locally as the *laha* area, and is regularly visited by forest officers engaged in river training and teak floating operations; two of these officers (Smith and Marlow) mentioned casually to Hopwood that they had shot and eaten a number of birds which they had identified as finfoots, and which were quite common in the area; Hopwood replied that on the contrary it was an extremely rare bird and straightly charged them to find the nests; this led to what he described as "the most important ornithological discovery in recent years in the Indian regions," namely the first authentic nests of the masked finfoot.

The nest is usually built in a dark place under thick creepers, and is a very thick mass of small sticks, heaped one upon the other to form a large pad; it is roughly circular with an average diameter of 15 inches, with a shallow egg cavity about 8 inches in diameter, and resembles a crow's nest. The eggs are creamy, mottled with brown and purple, and resemble in colour-pattern the eggs of the slaty-breasted rail. The nest may be from a few inches to 9 feet above the surface of the water, and 5 to 7 eggs are laid.

STATUS AND DISTRIBUTION. From Bengal and Assam through Burma to southern Annam and Sumatra. The only known breeding haunt is the flooded area of the Myitmaka river, but odd birds have been observed up the Kaukkwe stream and in the Indawgyi lake area opposite Shwegu, Bhamo district, and the villagers say that the birds breed there in the rains; also observed near Seiktha, Katha district, and on a jheel near the Irrawaddy bank 12 miles north of Tagaung; also in northern Arakan, at Sinma on the coast west of Bassein, in the Myaungmya area of the Irrawaddy delta, the Intagaw area of Pegu district, once on one of the largest streams in the Shan States (Wickham), in Karenni, and on the Zami river in the Amherst district. Davison saw it some six or eight times in Tenasserim, from Amherst to the Pakchan. It is a rare bird, but widely distributed.

Family GRUIDAE

CRANES

Cranes are wading birds of large size with long necks and legs, but with the bill only equal to or a little longer than the head, a feature that distinguishes them from the storks. They are almost cosmopolitan in range, but only three species occur in Burma.

EUROPEAN CRANE

Grus grus (Linnaeus), SWEDEN
SUBSPECIES : *lilfordi* Sharpe, E. SIBERIA

IDENTIFICATION. Length 45 inches. Smaller than the sarus crane and distinguished by black legs and by black markings on the head and neck ; there is a dull red patch on the nape. A loud trumpeting call is the usual note. On the cultivated plains east of the Irrawaddy in Myitkyina district they are common in winter ; according to Stanford " throughout the cold weather they feed in long lines on the paddy stubble, repairing at night to lonely jheels, and at all times, except in fog, are as wary and as difficult to approach as geese, with which they have much in common." They fly in " V " formation with measured regular wing-beats, with the neck and legs extended horizontally, and perch only on the ground, where the normal gait is a sedate walk with long strides ; all the movements are more graceful than those of storks and herons. The diet is mainly vegetarian, and the bird picks up much of its food from the surface of the ground or vegetation, but also probes the ground or levers up soil with its bill to get at burrowing larvae.
STATUS AND DISTRIBUTION. A palaearctic species, found in winter from northern Africa to China. In Burma it arrives early in November, and leaves in March. Rippon described it as fairly common in the Southern Shan States, Harington found it very common on the Shan States border of the Bhamo district, and I noted a large flock in the Fort Hertz plain up to the end of March. It is abundant at Mengtsz in south-eastern Yunnan, arriving in late September. It straggles to Arakan, where Christison records two on the 4th November and three on the 26th March.

[NOTE.—The HOODED CRANE, *Grus monachus* Temminck, YESSO and KOREA, has been recorded in Assam. Blanford (*F.B.I.*, ed. 1, vol. iv, p. 190) states that " Anderson at Ponsee, west of Bhamo, saw flocks of cranes flying towards Burma in March. He took them for *G. antigone*, but that species is not known to collect in flocks." Ponsee is a village (now spelt Pangsi) in Yunnan, east (not west) of Bhamo. Although Blanford attributed these birds to *Grus monachus* they are much more likely to have been *Grus grus*. Blanford also states that " Captain Couchman saw cranes in the marshes near Myothit . . . with a scarlet hood or crest " ; a reference to Couchman (1893) makes it fairly obvious that these were sarus cranes. These two records were repeated by Stuart Baker in the *F.B.I.*, ed. 2, but they are no evidence for the occurrence of the hooded crane in Burma.]

SARUS CRANE

Grus antigone (Linnaeus), INDIA
SUBSPECIES : *sharpei* Blanford, BURMA

LOCAL NAME. Burmese : *gyo-gya.*
IDENTIFICATION. Frontispiece, fig. 4. Young birds have the head and neck covered with buff feathers.
VOICE. A characteristic raucous note is uttered just before and just after taking wing ; it is also said to have a beautiful trumpet-like call.
HABITS AND FOOD. The sarus is typically a bird of grassy plains and *lwins*, including small secluded *lwins* surrounded by heavy cover. The birds pair for life and are inseparable companions, feeding together a few yards apart and flying in close company, one slightly behind the other. The flight is strong, with regular rhythmic beats of the huge wings. These pairs sometimes collect into larger assemblies, eight birds having been seen together in Myitkyina district and no less than sixty near Thaton in mid-monsoon.
NEST AND EGGS. Breeds during the rains ; known breeding haunts are the Myitkyina *lwins*, up the Shweli river in Mongmit State, and in the Shan hills. The pair frequently indulge in a striking dance, spreading their wings and lowering their heads and leaping into the air, trumpeting loudly the while. The nest is a huge, irregular mass of vegetation pulled up by the roots, and the eggs, 1 to 3 in number, are pinkish-cream or pale greenish, more or less spotted or clouded.
STATUS AND DISTRIBUTION. From India through south-eastern Asia to Australia. It is locally distributed throughout Burma, but seems to be commoner in northern and Central Burma and the Shan States than elsewhere, probably because it prefers grass plains to paddy plains.

DEMOISELLE CRANE

Anthropoides virgo Linnaeus, INDIA

IDENTIFICATION. Length about 33 inches. A small grey crane distinguished from others by a white plume of soft feathers behind each eye and by the black under surface of the whole neck terminating in black plumes pendant over the breast.
STATUS AND DISTRIBUTION. Breeds in southern and eastern Europe, southern Siberia and parts of central and western Asia, migrating south in winter. It is a rare winter visitor to Burma, but Hopwood (1912*a*) saw a pair on the Chindwin 40 miles above Kindat on the 28th December, and records that birds of this species were frequently seen and shot by Dove on the Chinese frontier

near Bhamo; Hopwood (1912*b*) also saw three birds in Arakan on the 1st January; Wickham (1929) saw them at Namhkam in the Shweli valley, northern Shan States.

Family OTIDIDAE

BUSTARDS

This family is represented in Europe, Asia, Africa, and Australia, but there is only one record of one species from Burma.

GREAT BUSTARD

Otis tarda Linnaeus, POLAND
SUBSPECIES: *dybowskii* Taczanowski, DAURIA

IDENTIFICATION. Length 40 inches (male), 30–33 inches (female). The male is a huge bird with the upper-parts sandy-rufous banded with black and the under-parts whitish with a chestnut band across the breast; the female is much smaller and lacks the chestnut breast-band. In flight the great bulk of the body as compared with the wings, very prominent breast, and great amount of white on the wings, mostly concealed when at rest, are striking features. Comparatively silent.

STATUS AND DISTRIBUTION. A palaearctic species, recorded about half-a-dozen times from India. Two birds were seen, and one of them obtained, in December 1933, two miles from Fort Hertz down the Myitkyina road.

Order CHARADRIIFORMES

Family JACANIDAE

JACANAS

JACANAS are remarkable for their very long toes and claws, a feature that enables them to walk about freely on the floating leaves of aquatic plants. The females are larger than the males, and the normal role of the sexes seems to be reversed.

BRONZE-WINGED JACANA

Metopidius indicus (Latham), INDIA

LOCAL NAMES. Burmese: *bi* or *kya-bet-nin*, because it treads (*nin*) on the water-lily (*kya*) leaves (*bet*).

IDENTIFICATION. Plate XXIII, fig. 9, p. 460. Length 11 inches. Young birds have the crown and nape rufous-brown and the underparts mostly pale rufous-white.

VOICE. The breeding call is said to be a harsh grunt or crake, but it also utters a variety of piping calls and low guttural notes.

HABITS AND FOOD. Jacanas frequent the larger jheels with reed-fringed shores and stretches of water-lilies and lotus plants, on the leaves of which they walk about and feed ; they are not nervous of human beings, and are commonly seen in such exposed places as the Mandalay moat. The walk is typically rail-like, slow and deliberate with a high-stepping action of the feet and an accompanying jerk of the tail at each step, and the flight is also rail-like, with trailing legs. They can run at great speed in pursuit of an insect or if frightened. In the water they swim buoyantly, but can half-submerge for concealment ; they harmonise well in colour with half-dead *bedabin*, in which they sometimes " freeze " when approached in a boat.

NEST AND EGGS. Breeds commonly in the rains on most jheels, the nest being a pad of rotten weeds floating on the water with a very slight depression for the eggs ; the latter, usually four in number, are very handsome, buff to deep red-brown in ground-colour scribbled all over with black.

STATUS AND DISTRIBUTION. Widespread in the oriental region and in Burma on suitable jheels.

PHEASANT-TAILED JACANA

Hydrophasianus chirurgus (Scopoli), PHILIPPINE IS.

LOCAL NAMES. Burmese : *kya-bet-nin ;* also *bi-gya.*

IDENTIFICATION. Plate XXIII, fig. 8, p. 460. Length 10 inches, with tail up to 10 inches extra. The plate shows the breeding plumage, in which the white wings are conspicuous. The non-breeding plumage is very different ; the long central tail feathers are missing, there is a white eyebrow, a line from behind this, running down the side of the neck, golden-yellow ; a black line through the eye and down below the yellow line, expanding into a band across the breast ; rest of under-parts white. Young birds have no yellow down the side of the neck and the band across the breast is broken up with white.

VOICE. The note is a peculiar nasal mewing call, *tewn, tewn, tewn,* and it also pipes a pleasant musical *hoo-hoo-hoo.*

HABITS AND FOOD. This beautiful and distinctive water-bird seems to prefer jheels with more open water than the bronze-winged

jacana, and to keep farther out from the scrub-jungle round the shores, but otherwise its habits are the same.

NEST AND EGGS. Breeds commonly on most jheels during the rains; the nest is a floating mass of weeds like that of the bronze-winged jacana, and the four eggs, pear-shaped and lying point to point like those of a plover, are a deep rich bronze colour, without markings when fresh, but bleach rapidly.

STATUS AND DISTRIBUTION. This species has an even greater range than the last, but in Burma the distribution of the two is more or less identical.

Family ROSTRATULIDAE

PAINTED SNIPE

Though called painted snipe, these birds seem to be more closely related to the rails than to the true snipe; the bill is slender and long, but shorter than in most species of snipe and not pitted at the end; in breeding habits they resemble the button quails in that the female is larger and more brightly coloured than the male and the dominating partner in sexual matters.

PAINTED SNIPE

Rostratula benghalensis (Linnaeus), BENGAL
SUBSPECIES: *benghalensis* (Linnaeus), BENGAL

IDENTIFICATION. Plate XXIII, figs. 10 and 10*a*, p. 460. Length 10 inches (male), 11 inches (female). It flies well but rises with dangling legs like a rail and is weak on the wing compared with a true snipe.

VOICE. The challenge of the female is a loud note, sounding as if someone was blowing into an empty bottle. Soft purring notes and pleasant whistling notes are also described.

HABITS AND FOOD. Frequents some types of snipe ground. It is less of a skulker than most rails, but runs, swims and dives much as they do. As many as thirty birds will sometimes congregate in a small marshy patch, much as jack snipe do.

NEST AND EGGS. Probably breeds wherever found, and certainly round Maymyo, Kalaw, and in the Myitmaka drainage, where many eggs have been taken in July and August. The females do all the courting and are believed to be polyandrous like the female button

quail, though this has not been proved beyond question ; the males incubate and rear the young, and males with incubation patches have been shot at Myitkyina in mid-July. Milner, however, came on a mother with four chicks, which at once hid ; " the mother then turned on us, dropped her head and wings, fluffed all her feathers, and stood there hissing at us like a snake." The nest is a saucer of neatly woven grass placed in a depression on the ground, such as an old hoof-mark, and the eggs, 4 to 6 in number, are a clear bright yellow thickly blotched with deep brown.

STATUS AND DISTRIBUTION. Ranges from Africa through Asia to Australia and Tasmania, and is well distributed and probably resident throughout Burma up to 5,000 feet in suitable localities.

Family BURHINIDAE

STONE CURLEWS

Stone curlews or thick-knees are found almost throughout the old world and two species occur in Burma.

EUROPEAN STONE CURLEW

Burhinus oedicnemus (Linnaeus), ENGLAND
SUBSPECIES : *indicus* Salvadori, INDIA

LOCAL NAME. Burmese : *kwe-kaw-yit.*

IDENTIFICATION. Plate XXIV, fig. 1, p. 476. Length 16 inches. In flight the wing pattern is rather conspicuous, the secondaries and the whole wing beyond the wrist being black, with white marks on the primaries and two conspicuous whitish bars on the basal part.

VOICE. The call is a loud *curlivee*, and round Shwebo where these birds are common I have heard at night the wild and musical outcries so characteristic of this bird in its European breeding haunts, and responsible for the name of curlew.

HABITS AND FOOD. The stone curlew requires dry, open country with patches of scrub and grass, and for this reason is most commonly seen in the dry zone and occasionally on Irrawaddy sandbanks. It is purely terrestrial and largely nocturnal, as is suggested by the large eyes. It is usually seen solitary or in pairs, but sometimes in small parties. Owing to its protective coloration and shyness it generally escapes notice till it suddenly takes wing in front of the observer.

The flight is direct with regular, rather slow, wing-beats, sometimes with a long glide ; the bird usually flies low over the ground with the yellow legs stretched out behind. When standing still the carriage is markedly upright, and when suspicious it often makes a sudden downward bob of the head with a corresponding elevation of the hind part of the body, as though hinged on the legs. On the ground it runs rapidly in little bursts with short, pattering steps, and with the head lowered and the neck retracted in a thoroughly shame-faced manner, and if taken by surprise it squats with the body pressed close to the ground and the head and neck outstretched. It feeds entirely on insects, worms, frogs, etc., and swallows large quantities of small stones.

NEST AND EGGS. Breeds in the hot weather, in open scrub-jungle or on sandbanks, laying on the bare ground and not even scraping out a hollow as a rule. The eggs, 2 or rarely 3 in number, are yellowish-white to buffy-brown in colour with very variable markings of deep olive-brown or black.

STATUS AND DISTRIBUTION. A western palaearctic and oriental species, found in Arakan, Bhamo district, Central Burma, Southern Burma, and Tenasserim, but essentially a bird of the dry zone. In Arakan it frequents the dry coastal scrub-jungle on Ramree Island and at Akyab, but is rare, and absent in the monsoon (Christison).

GREAT STONE CURLEW

Esacus magnirostris (Vieillot), AUSTRALIA
SUBSPECIES : *magnirostris* (Vieillot), AUSTRALIA
recurvirostris (Cuvier), INDIA

LOCAL NAME. Burmese : *mein-zein.*

IDENTIFICATION. Plate XXIV, fig. 2, p. 476. Length 20 inches. The typical form, sometimes known as the reef thick-knee, has the top of the bill straight instead of curving upwards, a difference that led some authorities in the past to place it not only in a separate species, but even in a separate genus.

VOICE. It utters a low whistling alarm-note when running or bobbing the body lapwing-fashion, and a sort of chatter like that of the English partridge when it takes wing. In the breeding season they may be heard piping at night.

HABITS AND FOOD. Frequents coastal beaches and reefs, and river sandbanks, preferring those with some mud, stones and vegetation to pure sand. Stanford notes that " except in the breeding season

they rarely crouch or run when approached, and prefer to stand stock-still on their long pale-green legs, even if a steam-launch passes close to them. In the rains and cold weather they gather in parties of a dozen or twenty birds, and when the rivers are in flood these flocks haunt the grasslands above flood level." Milner notes that when bobbing the body lapwing-fashion the reef thick-knee depresses the tail vertically, whereas *recurvirostris* shakes it horizontally, an interesting difference if constant.

NEST AND EGGS. The subspecies *recurvirostris* breeds on the sand-banks of the larger rivers in the hot weather. The eggs, 2 in number, resemble large eggs of the European stone curlew.

STATUS AND DISTRIBUTION. South-east Asia and Australia. The reef thick-knee has been recorded from various islands of the Mergui Archipelago; *recurvirostris* is resident on the Irrawaddy from the confluence down to Henzada and also on other large rivers such as the Mogaung and Shweli; it has also been observed on the coast west of Bassein and at the mouth of the Sittang. Not recorded from Yunnan.

Family GLAREOLIDAE

PRATINCOLES or SWALLOW-PLOVERS

This family is divided into the coursers, which frequent dry and desert regions and do not occur in Burma, and the pratincoles with short legs and rather swallow-like action and flight.

COLLARED PRATINCOLE

Glareola pratincola (Linnaeus), AUSTRIA
SUBSPECIES: *maldivarum* Forster, MALDIVE IS.

IDENTIFICATION. Length 9–10 inches. Distinguished from the next species by larger size and a black necklace running up to each eye; blackish wings and white upper tail-coverts noticeable in flight.

VOICE. A sort of harsh chitter. Rises with a soft plover-like note, *to-wheet, to-wheet* (Davison).

HABITS AND FOOD. A bird of open country, found in flocks which fly very strongly with a swallow-like flight, constantly wheeling; they often feed as swifts do, slowly against the wind, often many miles from their breeding haunts. On the ground they run at great speed in short dashes hither and thither, feeding on insects.

NEST AND EGGS. Perhaps the most distinctive breeding bird of the paddy plains of Southern Burma in the hot weather; it breeds in colonies of anything from half a dozen to fifty pairs in the burnt rice fields, the eggs (2 or 3 in number) closely resembling half-burnt yellow pieces of stalk, being yellow in ground-colour with numerous black markings. Elsewhere, *e.g.* in the Pidaung sanctuary, it breeds on grassy *lwins*, but always seems to prefer those with blackish burnt grass or dark soil. In Arakan it breeds in March and April among the dunes on Ramree Island and at Akyab. Colonies are constantly changing their breeding quarters. The birds try hard to entice human beings away from their nests, as described under the next species.

STATUS AND DISTRIBUTION. Mediterranean region, Africa, and eastern Asia. The subspecies *maldivarum* breeds in Mongolia and from India through Burma to the Philippines, visiting Malaysia and Australia in winter. It is common throughout Burma in the more open parts of the country, but its movements require further study, and it seems probable that most, if not all, the Burma breeding population migrate south for the cold weather. It is significant that Stanford observed none in Myitkyina district between November and March, while Lindop on the 4th December in the Tharrawaddy district saw hundreds flying high at dusk in an easterly direction as if on migration. In Southern Burma they remain in their nesting haunts up to mid-June and Oates thought a few remained up to mid-August, while Stanford saw a small flock near Pazundaung on the 1st November and thought some birds might be resident throughout the year. It has been recorded in Yunnan.

SMALL PRATINCOLE

Glareola lactea Temminck, BENGAL

LOCAL NAMES. Burmese: *thaung-din* or *thi-hpa*.

IDENTIFICATION. Plate XXIV, fig. 3, p. 476. Length 7 inches. In flight it shows conspicuously bi-coloured wings, blackish-brown in front and whitish behind except near the tips, and a barred white tail; graceful swallow-like flight diagnostic.

VOICE. A curious low, harsh note is freely uttered.

HABITS AND FOOD. A typical bird of the Irrawaddy, nearly always seen in large flocks skimming over the surface of the water or running about the sandbanks; in spite of its short legs it can run very fast.

It is more active at dusk than during the day, hawking the insects that swarm out at the close of the day in a tropical climate, and is commonly seen over jheels. Stanford describes how at times " they appear to slide just above the surface with wings vibrating rapidly just above the back, the wings never seeming to be brought into a horizontal position at all."

NEST AND EGGS. Breeds in April in large colonies on sandbanks, or on the banks of stones and shingle that are a feature of the Irrawaddy above the first defile. To approach a colony is to cause widespread alarm and the birds make desperate efforts to entice you away; some skim about uttering their curious notes, others drop down and flutter along the sand as if wounded, but the eggs are all too conspicuous in the hollows scraped in the bare sand, though often placed under isolated tufts of grass or other herbage for shade; usually 2, sometimes 3 or 4 in number, they are pale greenish-white to fawn or stone in ground-colour with numerous and varied markings.

STATUS AND DISTRIBUTION. Confined to the larger rivers of India, Burma, and Ceylon. It is a common resident on the larger rivers in Burma, but a local migrant whose movements are dictated by floods.

Family STERCORARIIDAE

SKUAS

Skuas are parasitic birds, living principally on food robbed from terns and gulls, which they closely resemble except for their brown colour. They have long pointed wings and magnificent powers of flight. The family is represented in most parts of the world, but there is only one record of a skua from Burma.

POMATORHINE SKUA

Stercorarius pomarinus (Temminck), ARCTIC EUROPE
SUBSPECIES: *pomarinus* (Temminck), ARCTIC EUROPE

IDENTIFICATION. Length 22 inches. A dimorphic species, brown in one phase and with white under-parts in the other, except for a band across the breast.

STATUS AND DISTRIBUTION. A holarctic species, ranging in winter from the Arctic seas to Peru, South Africa, and northern Australia. The only record for India and Burma is of a bird obtained at Moulmein nearly a century ago by Tickell. The probable occurrence of this skua off the coast of Burma in December 1941 is referred to by Wood in the *Ibis*, Vol. 91, p. 690.

Family LARIDAE

GULLS AND TERNS

Gulls are familiar birds, found in most parts of the world; two species occur in Burma.

GREAT BLACK-HEADED GULL

Larus icthyaëtus Pallas, CASPIAN SEA

IDENTIFICATION. Length 28 inches. When seen standing next to the brown-headed gull it appears about twice its size. In breeding plumage the whole head and upper neck are black except for two white patches above and below the eye, but in winter these parts appear white much streaked with black. Eye brown, bill orange-yellow with a black sub-terminal band and a crimson tip; legs greenish. Young birds have no black on the head and the upper-parts and wings are brown mottled with white. Said to have a very loud raucous cry much like that of the greater black-backed gull.

STATUS AND DISTRIBUTION. Breeds on the inland seas and lakes of south-eastern Russia and central Asia to Turkestan, and extending in winter from the Red Sea to the coasts of India and Burma. It winters on the coast of Burma in small numbers as far south as Amherst, and occurs inland on passage; one stormy October day I saw a bird on the lake at Maymyo, and others on the Sittang estuary at the end of October. The return migration probably takes place in March, and birds in full breeding plumage were noted by Stanford on the 20th February in Hanthawaddy district.

[NOTE.—The BLACK-HEADED GULL, *Larus ridibundus* Linnaeus, has not been recorded from Burma but has been obtained on the Hooghly and Ganges; it is an occasional winter visitor to Malaya, and will probably be observed one day in Burma. At all times of the year the adult can be distinguished from the brown-headed gull by the wing-tip; the end of the wing is white with a narrow black edge posteriorly, whereas in the brown-headed gull it is black with two white patches near the tip, which in the field appear as a broad subterminal white band. In breeding plumage the blacker head and whiter appearance help to identify it.]

BROWN-HEADED GULL

Larus brunnicephalus Jerdon, INDIA

IDENTIFICATION. Plate XXIV, fig. 5, p. 476. Length 16 inches. In winter plumage the dark brown head disappears, except, perhaps, for a few dark feathers near the eye. Young birds are mottled brown and the wing-tips appear uniform brownish-black.

VOICE. The two notes most often heard are a harsh *gek, gek*, and a

loud wailing *ka-yek, ka-yek,* but it has many other harsh calls and cries.

HABITS AND FOOD. This is the common gull of the Rangoon river in the cold and hot weathers, and probably the first bird to greet the visitor to Burma; each ship is escorted by a large party all the way up the river, and the birds are very bold and tame, flying alongside almost within reach and affording perfect opportunities for studying them at close range. It feeds largely by scavenging, but on lakes and jheels it seems to feed chiefly on insects, picking them off the surface of the water as it swims along. When not feeding it rests either on the water or on sands and mudflats.

STATUS AND DISTRIBUTION. Breeds on the lakes of Central Asia from Turkestan to Tibet. It winters in large numbers on the coast of Burma and on the Inle lake, and in small numbers on inland rivers and jheels. It starts to arrive late in September, and passes through the Myitkyina district in October and November; the return passage takes place in April and May (latest the 30th May in Myitkyina), and the last bird leaves the Rangoon river just before the rains break, about the 20th May. It is commonly seen in April on the Maymyo lake and I have seen a large party of about fifty birds on the Irrawaddy above Katha on the 23rd April. On the 25th February only one bird out of one hundred showed a brown head, whereas by mid-April nearly all have brown heads.

[NOTE.—The HERRING GULL, *Larus argentatus cachinans* Pallas, reaches Assam and the Bay of Bengal, but has not been recorded from Burma.]

TERNS

Terns are found in all parts of the world. They are dainty and graceful birds and their beautifully modelled lines and buoyant, airy flight combined with the delicate tints of their plumage place them very high in the bird-watcher's affections.

They are usually seen flying over wide expanses of open water, such as rivers or jheels, and the sea. In general they are birds with tapering, pointed bills, short legs, and small webbed feet; most species have long, deeply forked tails, the outermost feathers being attenuated and greatly lengthened, but those that live mainly on inland waters have the tail shorter and much less forked. The various species are easy to recognise in breeding plumage, but at other times they lose most of their distinctive features and identification in the field becomes much more difficult. The sexes are always alike and

the young usually resemble the winter plumage of the adults, but have the upper-parts mottled with brown.

WHISKERED TERN

Chlidonias hybrida Pallas, S-E. RUSSIA
SUBSPECIES : *indica* (Stephens), CAWNPORE
javanica Horsfield, JAVA
swinhoei (Mathews), FOKIEN, S. CHINA

IDENTIFICATION. Plate XXIV, fig. 4, p. 476. Length 10 inches. The plate shows the bird in breeding plumage. In non-breeding plumage the under-parts are white, the crown is greyish streaked with black, there is an indefinite band through the eye, and the upper-parts are light ashy-grey. This species and the next both have short, scarcely forked tails.

VOICE. It has a characteristic rather shrill cry.

HABITS AND FOOD. This is typically a tern of jheels, but also frequents the coast. It feeds on the wing in small companies in the most methodical manner, starting at one end of the jheel and working up against the wind to the far end ; as they go each bird dips down repeatedly to pick food off the water or weeds. Dragon-flies and their larvae appear to be their staple diet, but water beetles and other aquatic insects are freely taken. Having arrived at the far end of the jheel the flock flies back to the starting point, those that have had enough dropping out to rest on a convenient perch and preen their plumage.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. The temperate parts of Europe, the whole of Africa, southern Asia, and Australia. It breeds in Assam and Malaya, and is widespread in Burma, but there are no breeding records, though it may breed on some of the larger jheels. It has been recorded from Mengtsz in south-eastern Yunnan.

WHITE-WINGED BLACK TERN

Chlidonias leucoptera (Temminck), MEDITERRANEAN
SUBSPECIES : *leucoptera* (Temminck), MEDITERRANEAN

IDENTIFICATION. Length 10 inches. In winter not distinguishable from the preceding species ; in breeding plumage the whole head, neck, under-parts and upper back are black.

STATUS AND DISTRIBUTION. A palaearctic species, recorded from the Sittang plain and the Southern Shan States in winter.

CASPIAN TERN

Hydroprogne caspia (Pallas), CASPIAN SEA
SUBSPECIES : *caspia* (Pallas), CASPIAN SEA

IDENTIFICATION. Length 21 inches. Easily recognised by its great size, large red bill, and slightly forked greyish tail. In breeding plumage the upper part of the head is black, the hind-neck white, and the remaining upper-parts pale grey ; under-parts white. In winter the head is black streaked with white and the white collar on the hind-neck is more conspicuous. Young birds have no black on the head, the upper-parts are barred with brown, and the bill is dull orange. Generally solitary and utters a loud harsh cry.
STATUS AND DISTRIBUTION. Breeds on the coasts and inland lakes of North America, Europe, Africa, and central and southern Asia. The only Burma records are from the Irrawaddy-Sittang delta, and it is probably a winter visitor in small numbers to the coast. I noted one over the Sittang estuary in the last week of October.

GULL-BILLED TERN

Gelochelidon nilotica (Gmelin), EGYPT
SUBSPECIES : *nilotica* (Gmelin), EGYPT
affinis Horsfield, JAVA

IDENTIFICATION. Length 15 inches. The stout black bill, black legs, and short moderately forked tail, combined with rather stout build, separate it from other terns. In breeding plumage it has a black cap, but in winter only a small black patch near the eye and dark ear-coverts. Young birds have the head dull white with dusky streaks ; back and shoulders buff spotted with brown ; wing-coverts and primaries ashy-grey ; bill and feet reddish-brown. Witherby describes a characteristic laughing note, a harsh *kaahk*, and other notes. This is perhaps the commonest tern of the coast, where it hunts singly or in pairs as well as in parties along the foreshore and up and down the tidal creeks.
NEST AND EGGS. This bird is suspected of breeding both in Burma and Malaya, but no colony has yet been discovered.
STATUS AND DISTRIBUTION. Almost cosmopolitan. Very common throughout the year on the coast of Southern Burma, and one of the most conspicuous birds of the vast paddy plain to a distance of 10 miles or so from the sea. Casual inland on passage.

GREATER CRESTED TERN

Sterna bergii Lichtenstein, CAPE OF GOOD HOPE
SUBSPECIES : *edwardsi* Mathews, CEYLON

IDENTIFICATION. Length 20 inches. In size exceeded only by the Caspian tern. A long, black, slightly curved crest, yellow bill (usually tinged greenish), and black legs ; in breeding plumage the forehead is white and the upper-part of the head mainly black ; in winter the crown is white streaked with black and the nape and crest are dull black. Young birds resemble the adults in winter plumage, with some mottling on the back.

NEST AND EGGS. Many years ago Shopland took some eggs, believed to be of this species, from Oyster Island off the Arakan coast on the 19th May and Christison reports that it breeds on St. Martin's Island. Milner records a large colony at the mouth of the Paungkado *chaung* on the coast west of Bassein. Stuart Baker's collector sent him 20 eggs and a skin (which he identified —correctly ?—as *cristata*) from an island off the coast of Tenasserim. Only one egg is laid, either on bare rock or sand, and it is described as the most beautiful of all sea birds' eggs.

STATUS AND DISTRIBUTION. Widespread along the coasts from east Africa to China. It has been reported as common along the coast west of Bassein, but has not been seen along the Irrawaddy-Sittang coastline nor inland ; Hume describes it as rare on the Tenasserim coast and only observed from Mergui southwards.

[NOTE.—There is some doubt as to whether Burma birds belong to this form or to *cristata* Stephens, CHINA.]

LESSER CRESTED TERN

Sterna bengalensis Lesson, INDIAN COASTS
SUBSPECIES : *bengalensis* Lesson, INDIAN COASTS

IDENTIFICATION. Length 15 inches. Similar to the preceding species but smaller ; the upper-parts much paler grey ; tail deeply forked, greyish-white. Bill orange, feet black. The call *cher-uk* uttered while fishing is said to be characteristic.

STATUS AND DISTRIBUTION. Breeds on the islands of the Persian Gulf, and visits the coasts of India, Burma, and Ceylon in winter. Its occurrence in Burma rests on century-old records from Arakan and Tenasserim.

INDIAN RIVER TERN

Sterna aurantia Gray, INDIA

LOCAL NAMES. Burmese : *zin-yaw* or *myit-htwe*.

IDENTIFICATION. Plate XXIV, fig. 6, p. 476. Length 18 inches. The plate shows the bird in breeding plumage. In winter the black cap is replaced by white or greyish-white, but some black usually remains on the cheeks and round the eye and the nape is usually more or less streaked with black. Young birds have the forehead and a broad eyebrow white and the feathers of the upper-parts edged buffy-white and sub-edged black.

VOICE. It has the usual harsh cries of the family.

HABITS AND FOOD. A typical bird of the Irrawaddy and Chindwin rivers and their larger tributaries and adjacent jheels ; a few birds also frequent the mudflats of the coast. It spends most of its time fishing, flying 20–30 feet above the surface and looking for the

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shoals of small fish on which it mainly feeds. The actual capture of a fish is effected by a perpendicular drop to the water, the fish being seized with the bill and swallowed head first on the wing ; birds have been observed following the plough, and flighting up and down the river at dusk after insects.

NEST AND EGGS. Breeds in April on bare, glittering sandbanks in mixed colonies with skimmers, black-bellied terns, little terns, pratincoles, and maybe a few pairs of great stone curlews, spur-winged lapwings and little ringed plovers. The arrival of a human being on the sandbank causes a great stir ; sitting birds leave their nests, others come flying over from the river, and while the terns swoop at his head with furious cries the sand is covered with pratincoles fluttering and staggering in apparent agony.

The eggs, 2 or 3 in number, are laid in the sand, which in April is almost too hot to touch with the naked hand, and the birds are therefore very casual about brooding their eggs and spend much of their time fishing in the vicinity. I found the river tern as indifferent to the erection of a hide near the nest as the arctic tern in Scotland. The eggs are greenish-grey or buffy-stone in ground-colour with markings of dark brown and inky-purple.

STATUS AND DISTRIBUTION. Confined to India and Burma, and a common resident on the larger rivers of Burma ; Wickham records it as a non-breeding bird of the Inle lake.

BLACK-BELLIED TERN

Sterna acuticauda Gray, CAWNPORE

IDENTIFICATION. Plate XXIV, fig. 7, p. 476. Length 14 inches. The plate shows the breeding plumage, in which it resembles the whiskered tern, but for the long tail. After breeding the black cap and belly are lost for a short time, the head being pure white streaked with black, with a black patch behind the eye, and the under-parts white, tinged with grey on the breast and fore-neck. Young birds have the upper-parts buffy-grey, edged paler buffy-white and sub-edged blackish.

VOICE. A shrill but pleasant *krek krek* is the usual call.

HABITS AND FOOD. Another typical Irrawaddy tern, and the only one that habitually leaves the main river and hawks over wayside ditches and village ponds.

NEST AND EGGS. Breeds from February to April on sandbanks ; the eggs are smaller and more elongated than those of the river tern.

STATUS AND DISTRIBUTION. India, Burma, and Ceylon. Common on the Irrawaddy and Chindwin rivers and their larger tributaries.

[NOTE.—The record of *Sterna hirundo tibetana* given in the *Ibis*, 1939, p. 235, was later cancelled, *Ibis*, 1939, p. 770.]

ROSEATE TERN

Sterna dougalli Montagu, SCOTLAND
SUBSPECIES : *korustes* Hume, ANDAMAN IS.

IDENTIFICATION. Length 13 inches. Purely a sea tern with very long outer tail-feathers, deriving its name from the delicate pink tinge of the under-parts in breeding plumage (not easy to see in the field). According to Witherby the subspecies *dougalli* has a most distinctive alarm-note, a guttural rasping *aach, aach*, by which even an odd pair can be picked out from large numbers of other species.

NEST AND EGGS. Not described from Burma, but there is a colony on the Andamans.

STATUS AND DISTRIBUTION. Almost cosmopolitan. In Burma it is found in the Mergui Archipelago and has been recorded from the Bassein estuary.

LITTLE TERN

Sterna albifrons Pallas, HOLLAND
SUBSPECIES : *sinensis* Gmelin, CHINA (= *pusilla* Temminck)

IDENTIFICATION. Plate XXIV, fig. 8, p. 476. Length 10 inches. The plate shows the bird in breeding plumage. Small size, weak flickering flight, deep yellow legs, pale yellow black-tipped bill and white forehead are distinctive features. In winter the crown is much mixed with white, the bill becomes blackish and the legs and feet dusky-red. Young birds have the whole upper-parts, including wing-coverts and tail, beautifully mottled black and white.

VOICE. It has a curious chittering note, *jek-ek-jek-ek*, and a call-note, *tiri-iri, tiri-iri*.

HABITS AND FOOD. This is the third of the three common Irrawaddy terns, and in habits resembles the other two, but is frequently seen hovering after the manner of the pied kingfisher.

NEST AND EGGS. Breeds during the hot weather on sandbanks, both coastal and riverine, in colonies of half a dozen to a hundred or more pairs. The eggs, 1 to 3 in number, are pale yellowish to deep buff in ground-colour, blotched with brown and pale grey.

STATUS AND DISTRIBUTION. Almost cosmopolitan. Widespread on the coasts and rivers of Burma, but not observed north of Bhamo.

BLACK-NAPED TERN

Sterna sumatrana Raffles, SUMATRA
SUBSPECIES : *sumatrana* Raffles, SUMATRA

IDENTIFICATION. Length 14 inches. Purely a sea tern with a very long forked tail and a rosy tinge on the under-parts in the breeding season, but differs from the roseate tern in having black and not red feet, and the bill black tipped yellow ; forehead and crown white with a black band on the nape.
STATUS AND DISTRIBUTION. Widespread in the Indian ocean, and a colony breeds in the Andamans ; not recorded from Burma since 1880, but before that it was obtained in the Bassein estuary and the Layna creek in Tenasserim. Davison believed it to be common off the Moscos Islands and in the Mergui Archipelago.

BROWN-WINGED TERN

Sterna anaetheta Scopoli, PHILIPPINE IS.
SUBSPECIES : *anaetheta* Scopoli, PHILIPPINE IS.

IDENTIFICATION. Length 14 inches. Purely a sea tern, with white eyebrow and forehead and dark brown mantle, tail, and wings.
STATUS AND DISTRIBUTION. Found in all the tropical and sub-tropical seas. Davison thought he saw it in the Mergui Archipelago.

SOOTY TERN

Sterna fuscata Linnaeus, WEST INDIES
SUBSPECIES : *nubilosa* Sparrman, " INDIA ORIENTALIS "

IDENTIFICATION. Length 17 inches. An oceanic bird, often found at great distances from land. A dark tern with very long outer tail-feathers, sooty-black upper-parts and abdomen suffused with grey. Young birds have the upper-parts sooty-brown, the mantle mottled with white, and brown under-parts, paler on the abdomen.
STATUS AND DISTRIBUTION. Found in all the tropical and sub-tropical seas. A young bird was found near the mouth of the Sittang on the Pegu Canal more than half-a-century ago, and there is no other record from Burma.

COMMON NODDY

Anous stolidus Linnaeus, WEST INDIES
SUBSPECIES : *pileatus* Scopoli, PHILIPPINE IS.

IDENTIFICATION. Length 15 inches. A dark brown bird with a white forehead, grey crown, and a blackish band from bill to eye. Noddies are distinguished from terns by their wedge-shaped tails with a " V " cut out of the centre, like a " W " on its side. They are oceanic birds, only frequenting land regularly during the breeding season ; their flight is in appearance much slower and more lethargic than that of a tern ; they wheel about more lazily and seldom hover and plunge, but feed on small surface molluscs and floating oddments.

NEST AND EGGS. There is a breeding colony on the Laccadives; unlike the terns, they nest in trees.
STATUS AND DISTRIBUTION. Widespread in tropical seas; numbers were seen by Davison when he was passing through the Mergui Archipelago in steamers.

Family RHYNCHOPIDAE

SKIMMERS

In this family the mandibles are greatly compressed, much as if two knife blades had been set edge to edge, and the lower is much longer than the upper. Only one species occurs in Burma.

INDIAN SKIMMER

Rhynchops albicollis Swainson, INDIA

IDENTIFICATION. Plate XXIV, fig. 9, p. 476. Length 17 inches. Young birds have the upper-parts lighter brown and the tail mottled with white near the tip. At a distance it would pass for a very clumsy black and white tern, remarkable for the very long, thin and scythe-like wings and the deep, deliberate flapping, but the curious bill and feeding habits prevent confusion.
VOICE. A shrill, chattering scream.
HABITS AND FOOD. The skimmer is a bird of open water, and earns its name from its habits of skimming along with the elongated lower mandible cutting through the surface and leaving scarcely a ripple. It is a common bird on the Irrawaddy and Chindwin rivers, and also frequents jheels and the coast. It usually goes about in small parties.
NEST AND EGGS. Breeds in the hot weather on sandbanks, usually with river terns, and the snow water coming down the Irrawaddy in April often wipes out colonies wholesale. The eggs, 3 or 4 in number, are very variable in colour and markings.
STATUS AND DISTRIBUTION. Breeds on the larger rivers of India, and in Burma from Henzada to Myitkyina. It has been observed on the mudflats of the Sittang estuary in July, but few notes have been made of its whereabouts in the rains, when the Irrawaddy is in flood.

WADERS

The remaining families of this order contain the typical waders. They are walking and running birds of small to medium size, often

with long legs, and they are essentially birds of open country, not resorting to cover ; a few (*e.g.* woodcock), however, are mainly woodland birds, a few (*e.g.* woodcock, snipe) regularly resort to cover by day, and some breed in wooded localities and perch freely on trees in the breeding season. Nearly all of them are more or less closely associated with water and wet places and are characteristic birds of marshes and the seashore, though a few (*e.g.* lapwing, golden plover) also regularly frequent dry ground. They are mostly birds of rapid flight with quick wing-action, the wings being usually rather pointed and appearing angled in flight because they are not extended to the full ; slower flying birds with rounded wings (*e.g.* lapwing) also occur. The legs are extended beneath the tail in flight.

There are two main types : the round-headed, short-billed plover type and the longer-billed curlew, sandpiper, and stint type. Amongst the most important field characters are the pattern of the wings, rump and tail in flight, and the notes. Most of the waders are winter visitors to Burma, and the summer and winter plumages often differ conspicuously. The time of moulting being very erratic, adults in nearly complete winter and nearly complete summer plumages may be seen together, and, as the juveniles are often more or less distinct from either, field identification of some species is often rather puzzling. Immatures and non-breeding adults of many species remain in Burma throughout the summer, a fact that complicates the study of their migrations.

Most, but not all, waders are gregarious outside the breeding season, and a number of them are amongst the most characteristic birds of the seashore, especially of the extensive mudflats that comprise the coast of Southern Burma, where they are to be found in vast numbers. The general behaviour of all these shore-birds is much the same ; their times of feeding are mainly conditioned by the tides, and when the tide is high the flocks, which may number thousands of individuals, pack on the higher parts of the saltings ; a bird like the curlew may travel some way inland, to return at the ebb.

Nearly all typical waders have certain mannerisms in common, which are described by Witherby. The normal carriage of the body is horizontal and the neck is generally more or less withdrawn, but when nervous or particularly alert a more slanting pose of the body is adopted and the neck is more stretched up. The typical attitude of rest is with the bill tucked into the wing-feathers, either while the bird is standing or prone on the ground. Frequently they rest on one leg with the other drawn up into the feathers of the abdomen,

and many or most of both the plover and stint or sandpiper types, if not unduly disturbed, will shift their ground by hopping along in this position without troubling to lower the disengaged leg. A typical and graceful pose is with a leg stretched out rather to one side and the wing of the same side extended over it, and another graceful habit common to many species is that of holding the extended wings almost vertically above the back for a moment on alighting. While some waders swim habitually, most, or probably all, can do so on occasions, or if wounded and unable to escape by flight, when some will even dive.

Family CHARADRIIDAE

PLOVERS and their Allies

Sub-family ARENARIINAE

TURNSTONE

Arenaria interpres (Linnaeus), SWEDEN
SUBSPECIES : *interpres* (Linnaeus), SWEDEN

IDENTIFICATION. Length 9 inches. In breeding plumage the black breast with a black line running up to each eye distinguishes it at once from all other waders; in non-breeding plumage the orange-red legs, tortoiseshell appearance of the back, white ring round eye, short-pointed black bill and white under-parts (except for the brown sides of the head and neck) are distinctive. The turnstone keeps entirely to the coast, where it feeds above the tide-line ; it is an active little bird, running in short bursts here and there with the head held low and horizontal. It is chiefly met with in small parties, which usually fly a short distance when disturbed, with a wavering flight, uttering a twittering metallic *kititititit*. The stone-turning habit from which the bird gets its name is a regular method of uncovering sandhoppers, etc. The bird bends its legs and inserts its bill under the stone, clod, shell or other object and throws it over with a vigorous jerk.

STATUS AND DISTRIBUTION. A northern holarctic species, which winters over a large area from the British Isles through Europe, northern Africa and southern Asia to Sumatra. It is a winter visitor to Burma in small numbers, arriving in October and leaving in April, though a bird obtained on the 23rd July (1940) suggests that some birds are non-breeding residents. The few records come from Arakan, the coast west of Bassein, and the coast of Southern Burma. Christison reports large flocks on the coast of Arakan on passage.

Sub-family CHARADRIINAE

OYSTERCATCHERS AND SMALLER PLOVERS

OYSTERCATCHER

Haematopus ostralegus Linnaeus, SWEDEN
SUBSPECIES : *osculans* Swinhoe, CHINA

IDENTIFICATION. Length 18 inches. Easily identified by its bold pied black and white plumage, long stout orange-red bill, and flesh-pink legs and feet. One of the wariest and shiest of the waders and almost entirely a bird of the sea-coast ; it is found in small parties hunting along the shore or sitting during the heat of the day in a closely-packed flock just above the tide-line. Its plaintive whistle of two notes is shrill and high-pitched and it has a short, shrill single note of alarm. It feeds on molluscs, such as mussels and limpets, and the method of attack has been described in great detail by Witherby ; it also probes in sand or mud for worms. The flight is strong and direct with regular wing-beats through a small arc, and the ordinary gait is a sedate walk, though it can run rapidly when necessary.
STATUS AND DISTRIBUTION. Almost cosmopolitan. There are only two records from Burma, one from Bassein and the other from Arakan, but it may well occur regularly and may even breed where conditions are suitable, as it does in the Sundarbans of Bengal.

[NOTE.—The ORIENTAL SAND PLOVER, *Charadrius asiaticus veredus* Gould, N-W. AUSTRALIA, has not been recorded from Burma but is a vagrant to Malaya and the Andamans ; it breeds in Mongolia and northern China, and winters in the eastern part of the oriental region and Australia. Length 7½ inches. In breeding plumage has a broad chestnut band bordered with black across the breast ; in winter plumage has the forehead, superciliaries, sides of the face, chin and throat, and an indistinct collar round the neck buffy-white ; ear-coverts brownish ; breast brown ; rest of under-parts white ; upper-parts, except the hind-neck, brown.]

KENTISH PLOVER

Charadrius alexandrinus (Linnaeus), EGYPT
SUBSPECIES : *alexandrinus* (Linnaeus), EGYPT
dealbatus Swinhoe, S. CHINA

IDENTIFICATION. Length 6½ inches. Distinguished from the ringed plovers by the dark bill and legs, obscure dusky patch on each side of the breast in place of the breast-band, and the greater amount of white on the face ; very like a sand plover but smaller and whiter in appearance. In breeding plumage the crown is pale rusty. The two main call-notes according to Witherby are a monosyllabic *wit-wit-wit* and one with an " r " sound, *chirr*. Its alarm-note is a shrill *too-it, too-it, ittup, ittup*. A typical bird of the mudflats and tidal creeks of the coast in winter, with the habits of a ringed plover.
STATUS AND DISTRIBUTION. Almost cosmopolitan. A winter visitor to Burma, arriving in October and leaving in March or April, though a few birds, possibly

non-breeding residents, have been obtained on the coast on the 23rd July ; it winters on the coast and some birds pass up and down the Irrawaddy on both migrations.

[NOTE.—The MALAY PLOVER, *Charadrius peroni* Schlegel, BORNEO, is included by Stuart Baker in the Indian avifauna, although no locality within Indian or Burmese limits is given in the bird's distribution. Chasen states (*The Birds of the Malay Peninsula*, vol. iii, p. 135) that "it is found as far north as Koh Lak in south-west Siam, and may therefore occur in the Mergui Archipelago and on the coast of Tenasserim." Also "this plover is generally met with in pairs on sandy beaches . . . and shows a marked preference for small islands. It is usually seen running very swiftly away from the observer in the manner of the ringed and Kentish plovers." Sexes differ. The size of *dubius*, but the male has a narrower (often interrupted) pectoral band and the black patches on the lores and ear-coverts are separated by the white of the throat ; the female has the black parts of the male pale rufous.]

EUROPEAN RINGED PLOVER

Charadrius hiaticula Linnaeus, SWEDEN
SUBSPECIES : *tundrae* Lowe, YENESEI

IDENTIFICATION. Distinguished from *dubius* by larger size and yellow bill, black at the tip ; shafts of all primaries white near the end.
STATUS AND DISTRIBUTION. A palaearctic species, in winter ranging from northern Africa to China. Buxton informed me that he saw a party of 4 birds at Maungdaw, northern Arakan, in April 1944, which were definitely not *dubius* and looked exactly like the ringed plover of the British Isles.

LITTLE RINGED PLOVER

Charadrius dubius Scopoli, PHILIPPINE IS.
SUBSPECIES : *jerdoni* (Legge), CEYLON
curonicus Gmelin, CURONIA, RUSSIAN BALTIC

IDENTIFICATION. Plate XXV, fig. 1, p. 484. Length 6 inches. Young birds have no black on the head or breast, the black being replaced by brown. Yellow legs prevent confusion with Kentish plover. The swift flight is emphasised by sharply pointed wings and there is no wing-bar.
VOICE. A sharp, plaintive pipe or whistle, *pink pink pink*, is constantly uttered on the wing, and is particularly marked in the breeding season.
HABITS AND FOOD. These small plovers are energetic and lively ; unlike the stints, which when feeding move along with the heads down, constantly probing the mud, they run rapidly here and there with the head not (or only slightly) lowered, pausing for a moment every few yards ; a small mollusc or other item of food is seized by

PLATE XXV

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1. LITTLE RINGED PLOVER (adult, summer) 484
   Charadrius dubius jerdoni.

2. LESSER SAND PLOVER (adult, winter) 485
   Charadrius mongolus atrifrons.

3. GOLDEN PLOVER (adult, winter) 487
   Pluvialis dominica fulva.

4. SPUR-WINGED LAPWING (adult) 488
   Hoplopterus spinosus duvauceli.

5. RED-WATTLED LAPWING (adult) 489
   Lobivanellus indicus atronuchalis.

6. GREY-HEADED LAPWING (adult) 490
   Microsarcops cinereus.

7. BLACK-WINGED STILT (adult) 490
   Himantopus himantopus himantopus.

8. CURLEW (adult) 492
   Numenius arquata orientalis.

PLATE XXV

a quick tilt over of the whole body as though it were hinged on the legs, or by a quick dart sideways. They have a trick of sometimes raising the wings vertically for a moment. Feeding parties scatter over the wet sand or mudflats and as a rule maintain only a loose contact, though flocks on the wing are often more compact. The flight is rapid, generally low down with regular rather deliberate wing-beats, gliding when about to pitch, and the birds usually run a little way with the wings raised after settling.

The little ringed plover is essentially a bird of the sandy and stony margins of rivers and wider streams and of the dried mudflats that form round the edges of jheels and swamps ; it also wanders temporarily to places where the presence of rubbish or the drying up of temporary ponds and inundations produces an abundant supply of insect food. It seems to avoid the coast and tidal estuaries. Except when breeding it is usually seen in small parties, the members of which run about independently on the ground, but at once unite when they take wing.

NEST AND EGGS. Breeds in the hot weather on sandbanks or beds of shingle by rivers, streams, and lakes. The eggs, 4 in number, are sharply pointed and a pale greenish-grey to buffish-stone in ground-colour, with spots and lines of brownish-purple and black.

STATUS AND DISTRIBUTION. A palaearctic and oriental species. The subspecies *curonicus* is a winter visitor, but *jerdoni* is a common resident and local migrant. Both occur in Yunnan.

LONG-BILLED RINGED PLOVER

Charadrius placidus Gray, NEPAL

IDENTIFICATION. Length 9 inches. The black bill is nearly twice as long as the bill of *dubius*, and the bird is much larger. Legs yellow.

STATUS AND DISTRIBUTION. Breeds in eastern Siberia, Manchuria, northern China, and Japan, migrating south in winter. Several have been obtained or seen on banks of shingle on the Irrawaddy below Myitkyina and in the N'Mai valley, in February and March. Forrest obtained it in the Shweli valley in Yunnan, including two in rice fields at 6,000 feet in August.

LESSER SAND PLOVER

Charadrius mongolus Pallas, SIBERIA
SUBSPECIES : *atrifrons* Wagler, BENGAL

LOCAL NAME. Burmese : *di-lon-gaung*, from the brick-red colour of the crown and breast in breeding plumage.

IDENTIFICATION. Plate XXV, fig. 2, p. 484. Length 7½ inches. In non-breeding plumage, as illustrated, the bird appears a rather nondescript brown with whitish under-parts and a greyish patch on the sides of the neck; there is a brown eye-stripe and a white wing-bar, neither very marked.
VOICE. A distinctive chittering tern-like note is uttered in flight.
HABITS AND FOOD. The commonest wader of the coastal mudflats, where it may be seen in countless thousands. Its flight, run and habits resemble those of the ringed plover.
STATUS AND DISTRIBUTION. Breeds on the roof of the world in central Asia and in winter is found over an enormous area in Africa and southern Asia. It is remarkably common on the coastal mudflats even in mid-July, which suggests that many birds are non-breeding residents. It is often seen inland on rivers and jheels, but whether it winters inland or occurs only on passage has not been determined; it has not yet been observed in northern Burma.

[NOTE.—*schäferi* de Schauensee, E. TIBET, may occur.]

GREATER SAND PLOVER

Charadrius leschenaulti Lesson, PONDICHERRY
SUBSPECIES: *leschenaulti* Lesson, PONDICHERRY

IDENTIFICATION. Length 8½ inches. A much larger bird than *mongolus* with a stout black bill, blackish patch in front of and round the eye and no white ring on the neck; in breeding plumage it looks foxy-red, with a black line through the eye, and is then a remarkably beautiful bird. Unlikely to be confused with any other wader on the shore.
STATUS AND DISTRIBUTION. Breeds in Japan, Formosa, and Hainan, and is found in winter from eastern Africa through southern Asia to Australia. It is a winter visitor to Burma and is found all round the coast on the tide-line, and on island beaches in the Mergui Archipelago. There are no inland records.

GREY PLOVER

Pluvialis squatarola (Linnaeus), SWEDEN

IDENTIFICATION. Length 12 inches. A compact bullet-headed bird like the golden plover but larger and paler and in adult plumage spangled on the upper-parts with silver, not gold. Adults in winter have the upper-parts brownish-grey and much more uniform than any plumage of the golden plover; young birds on the other hand have the upper-parts spangled and tinged with yellowish and can easily be confused with the golden plover, but in flight the conspicuous black axillaries, whitish rump and tail, and whitish wing-bar distinguish the grey plover at all ages. It is usually met with in small parties

and its flight and behaviour are like the golden plover's. The ordinary flight-note is higher-pitched than the golden plover's, not so mellow and liquid, and typically trisyllabic *tlee-oo-ee*, the middle note shorter and lower in pitch.

STATUS AND DISTRIBUTION. A holarctic species with an almost world-wide distribution in winter. It is a winter visitor to Burma, arriving in October and leaving in March (Christison reports a pair in breeding plumage at Ramree on the 30th April), and probably occurs in small numbers all along the coast; the only inland record is from Toungoo (Wardlaw Ramsay).

GOLDEN PLOVER

Pluvialis dominica Müller, ST. DOMINGO, AMERICA
SUBSPECIES: *fulva* Gmelin, TAHITI

LOCAL NAMES. Burmese: *talaing-gaung* or *hnok-thi-do*.

IDENTIFICATION. Plate XXV, fig. 3, p. 484. Length 10 inches. The plate shows the non-breeding plumage. The rump and tail appear dark in flight and there is no wing-bar. In breeding plumage, which is seen in early May, it is a much darker-looking wader and the forehead is broadly white, running back as a broad eyebrow and down the sides of the neck and breast; the under-parts are black and the gold spangles on the back are more noticeable. Usually seen in flocks, remarkable for their wonderful powers of flight, it is distinguished from the grey plover by smaller size, more slender shape, and in flight by smoky-grey axillaries and under-wing.

VOICE. The call is a shrill but melodious double whistle, *tuill, tuill*.

HABITS AND FOOD. The golden plover is a bird of snipe grounds and mudflats on the coast, and it likes newly ploughed fields, wet grass and stubble. The flight is very rapid with fairly quick, regular wing-beats. Birds fly in a compact body with the astonishing precision common to many wader flocks, now opening out into a looser formation, now contracting again, and wheeling as though at a word of command. Feeding flocks scatter over the ground and the individuals run in the usual plover manner; when running the body is nearly horizontal, but when the bird stops it stands more upright, especially if it is at all suspicious. It feeds on all kinds of insects, berries and shoots, and when by the sea on small molluscs, crustaceans, and sea worms.

STATUS AND DISTRIBUTION. An eastern palaearctic and nearctic species. It is a winter visitor to Burma, arriving with the pintail snipe; very large numbers have been observed passing over Sadon on a dark night in August. The return passage lasts up to mid-May.

Sub-family VANELLINAE

LAPWINGS

This sub-family contains the larger plovers.

EUROPEAN LAPWING OR GREEN PLOVER

Vanellus vanellus (Linnaeus), SWEDEN

IDENTIFICATION. Length 12 inches. The narrow pointed crest, black breast, broad rounded green-glossed wings, patch of chestnut at the base of the tail and pied appearance on the wing are distinctive. Its flight is a leisurely flapping but it indulges in much twisting and turning and is capable of great speed when frightened. In Burma usually seen on open grasslands in small parties by water. The well-known call is syllabified as *pee-wit* but is a more mewing cry than this word would indicate.

STATUS AND DISTRIBUTION. A palaearctic species, wintering from northern Africa to south-eastern Asia. It is a regular winter visitor to northern Burma in small numbers from late October to February, a few birds reaching Central Burma. It has been recorded from Yunnan.

SPUR-WINGED LAPWING

Hoplopterus spinosus (Linnaeus), EGYPT
SUBSPECIES: *duvauceli* (Lesson), CALCUTTA

LOCAL NAMES. Burmese: *sit-talaing* or *chaung-talaing*.

IDENTIFICATION. Plate XXV, fig. 4, p. 484. Length 12 inches. The curious horny spur on the wing, from which it derives its name, is not visible in the field and little is known of the use to which this formidable weapon is put.

VOICE. The call is similar to that of the next species, but perhaps less loud and shrill, *dit-dit-to-weet, dit-dit-to-weet.*

HABITS AND FOOD. A typical bird of river sandbanks, and when these are flooded in the rains it is found in gardens, grasslands, and fallow. It is commonly seen on the larger jungle streams where banks of shingle occur and it is found less frequently on the upper reaches of tidal creeks. Otherwise it much resembles the next species in its ways. A distinctive habit is to stand motionless for long periods of time (more than six minutes once, Roseveare).

Stanford describes a nuptial performance in March as follows: "There was a party of four birds on the sand. First two approached each other slowly, and then stooping their bodies until they were in a horizontal position, whirled rapidly round on their 'axes' twice or thrice, describing a complete circle. They then drew themselves

bolt upright, so that they appeared to be standing erect and, as it were, on tip-toe, with bodies held vertically and breasts puffed out, and in this (for a wader) extraordinary position ran, or rather shuffled, with short, quick steps side by side, exactly as if 'dressing by a flank'."

NEST AND EGGS. Breeds in the hot weather on sand or shingle. The eggs are longer in shape than those of the next species and duller, more grey or olive in general tone.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and a common resident throughout Burma on rivers and streams; it is found locally in the higher hills and has been seen on the Maymyo lake. In Yunnan it has been recorded at 6,000 feet.

RED-WATTLED LAPWING

Lobivanellus indicus (Boddaert), GOA, INDIA
SUBSPECIES: *atronuchalis* Jerdon, BURMA

LOCAL NAME. Burmese: *tit-ti-du*, from the call.

IDENTIFICATION. Plate XXV, fig. 5, p. 484. Length 13 inches. The white patch behind the eye is conspicuous in the field. Young birds have the feathers of the head broadly fringed with brown, and the chin and throat are white.

VOICE. The call is a series of loud, shrill notes, well expressed by the words *did-he-do-it, pity-to-do-it*, usually uttered on the wing when the bird is disturbed. Another common note sounds much like the syllable *ping*.

HABITS AND FOOD. Usually found in pairs or family parties, which show a wider ecological preference than the spur-winged lapwing, frequenting not only sandbanks and shingle, but also open cultivation, the fallow fields of the dry zone uplands, and the outskirts of jheels; it has not been observed within tidal limits. Its habit of ducking like the stone curlews when suspicious is very noticeable.

NEST AND EGGS. Breeds in the hot weather in almost any type of open country, usually near water. The eggs are of the usual pear-shaped plover type, 4 in number, pale olive-green to yellowish in ground-colour, thickly blotched and streaked with deep brown or black.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending westwards to Iran. It is a common resident throughout the plains of Burma and the open spaces of the Shan plateau. Common round Maymyo.

GREY-HEADED LAPWING

Microsarcops cinereus (Blyth), CALCUTTA

IDENTIFICATION. Plate XXV, fig. 6, p. 484. Length 14 inches. Young birds have the head, neck and breast the same colour as the back. In flight the pure white of the posterior part of the wing near the body (*i.e.* the secondaries and secondary-coverts) contrasting with blackish primaries, and the white rump and tail, the latter with a broad black subterminal bar, are distinctive features.

VOICE. A plaintive *chee-it, chee-it,* and a sharp *pink* uttered on the wing are the commonest notes, but it is quiet for a lapwing.

HABITS AND FOOD. Usually seen in a flock of ten to twenty birds, which keep loosely together in flight. It frequents marshes and swamps, the edges of jheels and lakes, and is sometimes found in the heat of the day among bushes in scrub-jungle. In the Sittang plain it favours the big grassy depressions that become uncultivated swamps in the rains.

STATUS AND DISTRIBUTION. Breeds from central Siberia and north-western China to Japan and Korea, and in winter spreads over the oriental region as far west as Kashmir. It is a winter visitor to Burma from mid-September to mid-May. A flock usually winters round the lake at Maymyo (latest date the 16th May), but it is more often seen in the plains than in the hills.

Family RECURVIROSTRIDAE

STILTS, AVOCETS, AND IBISBILLS

BLACK-WINGED STILT

Himantopus himantopus (Linnaeus), S. EUROPE
SUBSPECIES : *himantopus* (Linnaeus), S. EUROPE

LOCAL NAME. Burmese : *daung-lan-chidauk.*

IDENTIFICATION. Plate XXV, fig. 7, p. 484. Length 15 inches. In flight the long legs project 6–7 inches beyond the tail.

VOICE. The ordinary call is reminiscent of that of a tern, a repeated sharp *kik-kik-kik,* and the alarm-note is a shrill pipe. A disyllabic *kiwik* has also been recorded.

HABITS AND FOOD. The stilt is a water bird found about the shallower portions of lakes, jheels and marshes, and sometimes on village ponds

and flooded paddy fields. Very large flocks have been observed on the Wetlet jheel, but small parties are more usual and solitary birds may be seen. The flight is direct, with fairly quick beats of the pointed wings, and the bird sometimes glides for some distance when well up in the air as well as prior to landing. The gait on land is a graceful, deliberate walk with long strides, quickened occasionally to almost a run, but when wading it appears rather awkward. On rising the long legs are bent almost double, so that the bird gives quite a big jump into the air. The food consists of minute seeds of water-plants, insects, small molluscs, and worms.

NEST AND EGGS. Oates considered this bird to be a winter visitor only, but Macdonald recorded " very plentiful in the cold weather. A few birds remain to breed. I saw two young birds with their parents near Myingyan on the 10th July 1900, and found a nest containing four fresh eggs on the 1st June 1901 at Kanna tank." Stanford found a small colony breeding two miles east of Kinu, Shwebo district, on a bog of volcanic origin, known locally as a soap-bog ; there were six or seven pairs breeding in July 1921, and a bird flushed on the 4th August 1935 behaved as if it had young.

The nest is usually built on the water or on the mud beside it, and varies from a large mound of weeds two feet high to a mere depression in the mud. The eggs, 3 or 4 in number, are olive-brown, greenish-stone or creamy-buff in ground-colour, blotched and streaked with black or rich brown.

STATUS AND DISTRIBUTION. Almost cosmopolitan. In Burma most birds are probably winter visitors, but a few are breeding residents ; it is widely distributed in winter, but perhaps more abundant in the dry zone than elsewhere. There is one record from Yunnan.

AVOCET

Recurvirostra avosetta Linnaeus, S. EURO.E

IDENTIFICATION. Length 17 inches. Rather smaller than the stilt and easily recognised by the beautiful snow-white plumage boldly patterned with black and long turned-up black bill and bluish-grey legs. The call is described as a melodious clear liquid *klweet, klweet,* and the male has a low *chuck, chuck, chuck, hawy* note uttered on the ground. It keeps to rivers and jheels and obtains its food by a circular action of its curved bill. It walks slowly and quietly, flies well with outstretched legs, and swims well and high in the water.

STATUS AND DISTRIBUTION. Breeds over the greater part of Europe and Asia and parts of Africa, and is a rather rare visitor to Burma, but each winter a flock or two may be seen on the sandbanks of the Chindwin, and it has also been recorded from the Bassein district of Southern Burma.

IBISBILL

Ibidorhyncha struthersi Gould, HIMALAYAS

IDENTIFICATION. Length 15 inches. The red bill, shaped like a curlew's, but shorter and more sharply turned down at the end, is diagnostic. The note is a musical *klew-klew*. Frequents the stony beds of mountain streams, in small parties that may number 20 to 25 birds. Noted feeding on beetles with head submerged.

NEST AND EGGS. Kaulback met with a pair evidently breeding at 11,000 feet in the Seinghku valley on the 20th May, but the nest was not found.

STATUS AND DISTRIBUTION. Breeds from the Pamirs to north-western China. A few pairs probably breed at high elevations in extreme northern Burma, and others winter on most tributaries of the Mali Hka as far south as Sumprabum.

Family SCOLOPACIDAE

This family comprises a large number of waders of all sizes, including such familiar birds as snipe and woodcock ; it is divided into four sub-families, of which we are concerned with three; some authorities include the turnstones in this family.

Sub-family TRINGINAE

CURLEWS, GODWITS AND SANDPIPERS

CURLEW

Numenius arquata Linnaeus, SWEDEN
SUBSPECIES : *orientalis* Brehm, E. INDIES

LOCAL NAME. Burmese : *hkayu-sok*.

IDENTIFICATION. Plate XXV, fig. 8, p. 484. Length 23 inches. The pure white rump is very noticeable in flight.

VOICE. The commonest notes are a loud musical *quoi quoi* and *crooee, crooee, crooee,* with the second syllable higher-pitched and more emphatic than the first and often uttered in long sequences. The song (described by Witherby) begins with a succession of low drawn-out liquid notes, the first three or four delivered in a rather slow measured manner, *oorrr-oorrr-oorrr,* then gaining speed and passing into a louder and higher-pitched bubbling trill impossible to render in words, finally sinking again and often ending with some

low notes like the opening ones. We have not heard, in Burma, the full song thus described, but only a curtailed version of it, which maintains a fairly constant pitch and is uttered freely at night.

HABITS AND FOOD. A typical bird of mudflats all round the coast, usually in flocks, sometimes mixed with whimbrel. Along the Irrawaddy in the Myingyan district Macdonald reported it as common during the cold weather and not at all rare during the rains, when they were to be seen, almost invariably in pairs, on the almost flooded islands during July and August. The flight is swift with slower wing-beats than most waders use; the gait is a sedate walk with the body horizontal and the neck generally more or less retracted, but when suspicious or on the alert the body is often held more slanting and the neck is stretched straight up. When feeding it wades in the water and picks up food on the surface or probes deeply for it in the mud, shifting it without effort from the tip of the bill to the gullet with a slight jerking motion of the head. It is a shy bird and as difficult to approach as it is in England.

STATUS AND DISTRIBUTION. A palaearctic species, wintering over most of Africa and southern Asia. In Burma a winter visitor, passage migrant, and non-breeding resident. Large numbers of non-breeding (immature ?) birds may be observed on the coastal mudflats at any time in the rains, and a few along the Irrawaddy. Passage migrants have been observed at Maymyo (17th July) and in the Myitkyina district (October, December, and March). Odd birds are occasionally seen flying over Rangoon.

WHIMBREL

Numenius phaeopus (Linnaeus), SWEDEN
SUBSPECIES: *phaeopus* (Linnaeus), SWEDEN
variegatus (Scopoli), PHILIPPINE IS.

IDENTIFICATION. Length 17 inches. A miniature curlew; when seen together the difference in size is obvious, but when seen alone the brown barring on the rump, the comparatively short bill (about half the length of the curlew's), and two broad dark streaks on the crown divided by a narrow pale streak, distinguish the whimbrel. The ordinary note is a rapid tittering or rippling whinny, difficult to put into words, something like *titti-titti-titti-titti-titti-tit* in very even time with even emphasis throughout. A common bird of the tide-line, often in mixed flocks with curlew, sometimes with redshank. Stanford notes that "both curlew and whimbrel follow the narrow winding creeks when feeding, far up into the interior, and I have frequently flushed them from under bushes almost at my feet, or in mangrove jungle, and once in high forest in the Pilakat reserve where one might expect to see a junglefowl or pheasant."

STATUS AND DISTRIBUTION. A holarctic species, in winter widespread in

Africa, Asia, and Australia. A common winter visitor to the coast of Burma; observed on the 6th June on the Sittang estuary (Smith) and at the end of July on the Tavoy river (Davison). It passes down and up the Irrawaddy on migration but has seldom been observed; there are isolated records from Myitkyina (the 1st September), Bhamo, Sagaing (mid-October), Thayetmyo, and Prome.

BLACK-TAILED GODWIT

Limosa limosa (Linnaeus), SWEDEN
SUBSPECIES: *melanuroides* Gould, AUSTRALIA

IDENTIFICATION. Length 15–17 inches. Markedly larger than redshank and much smaller than curlew, godwits are easily recognised among shore birds by their long, straight or upward-curved bills. As this bird flies away the rump appears dark grey, and the tail white with a broad subterminal band of black; the long legs project conspicuously beyond the tail, and there is a broad white wing-bar. In full summer plumage, not assumed till May, the whole bird is more or less rufous, the breast and flanks barred with black and the upper-parts marked with blackish-brown; even in mid-winter it shows some rufous marks on the head, neck, and breast. The flight is fairly rapid with quick wing-beats, and the neck is withdrawn so that the bird looks compact and stocky in shape. The ordinary gait is a brisk walk, with an occasional short run. The flight-call, heard chiefly from flocks on the move, is described as a loud clear *wicka-wicka-wicka*; otherwise it is often rather silent outside the breeding season, but feeding birds sometimes use a monosyllabic *kuk* or *kik*. It may be seen singly, in small parties, or in large flocks.

STATUS AND DISTRIBUTION. A palaearctic species, wintering in Africa, southern Asia, and Australia. It is a winter visitor in small numbers to the coast of Burma, and there are inland records from Yandoon (a flock of 40 on passage on the 27th April), Minbu, and Myingyan; also a sight record of a flock of about 15 birds over Wetlet lake, Shwebo district, on the 3rd September (Roseveare) and a solitary bird that I saw on the Sittang at Toungoo in the first week of November.

TEREK SANDPIPER

Xenus cinereus Güldenstadt, CASPIAN SEA

IDENTIFICATION. Length 9 inches. The long sharply upturned black bill with some yellow at the base and the orange legs are distinctive. There is no white on the upper-parts, which are greenshank-grey except for a white edge to the hind-wing near the body (seen in flight); under-parts all white. On the wing it resembles a small redshank, but has a distinctive trilling note. One of the typical waders of the coastal mudflats, usually seen in mixed flocks with marsh sandpipers, curlew-sandpipers, and greenshanks.

STATUS AND DISTRIBUTION. A northern palaearctic species, wintering in Africa, Asia, and Australia. It is a winter visitor to Burma, and is common all round the coast, but has not been observed inland or away from the tide-line. Odd birds seen on the mudflats on the 23rd July may have been non-breeding residents.

COMMON SANDPIPER

Actitis hypoleucos (Linnaeus), SWEDEN

IDENTIFICATION. Plate XXVI, fig. 4, p. 496. Length 8 inches. A small sandpiper with no white on the upper-parts. In flight it almost invariably skims low over the surface of the water, progressing by means of two or three curiously stiff wing-beats with the wings moving through a very small arc, alternating with glides during which the wings are held motionless in a characteristically bowed position. A white wing-bar is conspicuous in flight, and it is a slow flyer compared with other sandpipers.

VOICE. A shrill note, *twee-dee-dee-dee-dee*, is uttered on the wing, the second and subsequent notes perceptibly shorter and lower in pitch than the first.

HABITS AND FOOD. The common sandpiper is usually found solitary feeding along the banks and beds of rivers and streams and the sides of jheels and ponds ; it also frequents the mudflats and tidal creeks of the coast in small numbers. Although well able to swim and dive it prefers to feed exactly along the margin of the water, tripping along the sand or mud with its toes just awash ; hence it is seldom found in marshy ground with other sandpipers. It is very busy and active, incessantly nodding its head and jerking its tail up and down. The food consists of insects and their larvae, sandhoppers, freshwater shrimps, and similar items.

STATUS AND DISTRIBUTION. A palaearctic species, in winter ranging from Africa through southern Asia to Australia. It is a common winter visitor to Burma, arriving early in August and leaving early in May, and is found in all parts of the country, but mostly at low elevations. A few individuals may remain throughout the year.

GREEN SANDPIPER

Tringa ochropus Linnaeus, SWEDEN

LOCAL NAME. Burmese : *ye-hnyaung*.

IDENTIFICATION. Plate XXVI, fig. 1, p. 496. Length 9½ inches. The blackish wings contrasting in flight with the pure white rump, tail and abdomen and its solitary habits distinguish this from the sandpipers that follow. When flushed it zigzags sharply in its flight at first, then mounts high and flies right away or circles in the sky like a snipe.

VOICE. The usual note, when flushed, is a full clear musical *tlooi*, *tlooi-tlooi*, or *klu-wit*, the first syllable frequently rather prolonged.

HABITS AND FOOD. On migration it sometimes collects into small parties, but normally the green sandpiper is a solitary bird, and its habit of dropping in to feed along the margins of any pond or even buffalo wallow, however small, is characteristic ; for this reason it is often seen at small pools in the forest where no other sandpiper would occur ; it also frequents jheels and casual flood-water, but is not common on the mudflats and tidal creeks of the coast. The gait is a brisk walk or run and it bobs its head and moves its tail up and down in the same way as the common sandpiper, but much less persistently. It is common along forest streams in the Pegu Yomas.
STATUS AND DISTRIBUTION. A palaearctic species, wintering in Africa and southern Asia. It is a common winter visitor to all parts of Burma ; birds may be seen in any month of the year ; this may be due to the earliest arrivals coming before the last birds have departed, or it may be due to some individuals being non-breeding residents.

MARSH SANDPIPER

Tringa stagnatilis Bechstein, GERMANY

IDENTIFICATION. Plate XXVI, fig. 8, p. 496. Length 9 inches. The little greenshank, as this bird is sometimes called, is greenshank-grey above, with the lower back and rump white, but it is altogether slighter and more graceful than the greenshank with conspicuously slender legs and bill ; under-parts pure white ; tail lightly barred above. In summer plumage the upper-parts, throat and breast are blotched with black.
VOICE. Its note is a shrill *kewip*, said to be distinctive, and a feeble, twittering note has also been recorded.
HABITS AND FOOD. Typically a sandpiper of jheels and marshes, round which it is seen in small flocks, and also occurs on the mudflats, but seems to avoid rivers and streams.
STATUS AND DISTRIBUTION. A palaearctic species wintering from Africa through southern Asia to Australia. It is a winter visitor to Burma, but less common than the other sandpipers.

WOOD SANDPIPER

Tringa glareola Linnaeus, SWEDEN

IDENTIFICATION. Plate XXVI, fig. 3, p. 496. Length 8 inches. It has the same rapid, twisting flight as the green sandpiper, but is

PLATE XXVI

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1. GREEN SANDPIPER (adult, winter) 495
Tringa ochropus.

2. GREENSHANK (adult, winter) 498
Tringa nebularia.

3. WOOD SANDPIPER (adult, winter) 496
Tringa glareola.

4. COMMON SANDPIPER (adult, winter) 495
Actitis hypoleucos.

5. REDSHANK (adult, winter) 497
Tringa totanus eurhinus.

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Calidris temminckii.

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9. COMMON or FANTAIL SNIPE (adult) 507
Gallinago gallinago gallinago.

10. WOODCOCK (adult) 505
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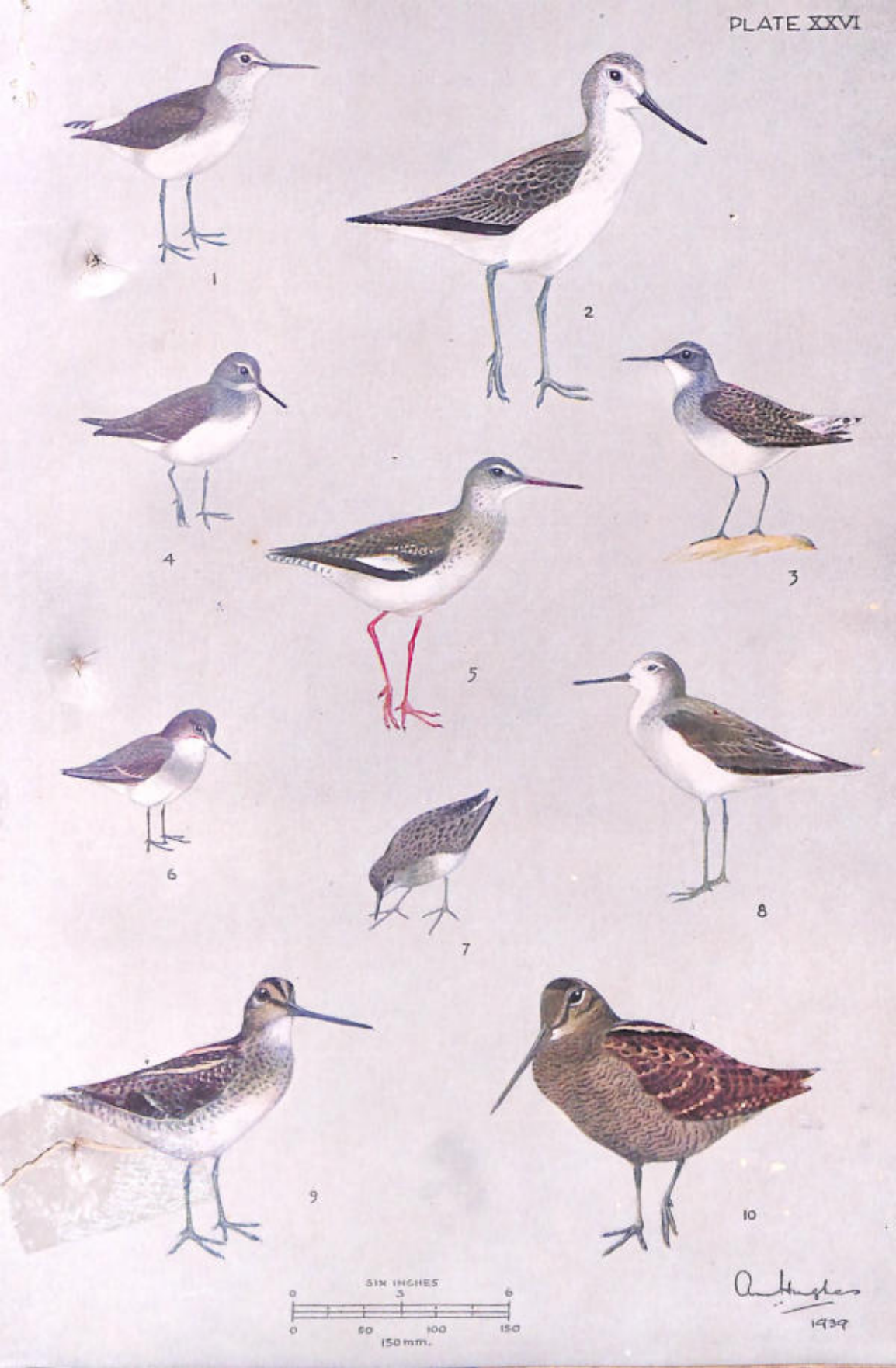
PLATE XXVI



slighter in build, with narrower wings, and is much paler in colour, more brown and less black, with the underside of the wings greyish and not blackish. On the ground the spotting of the upper-parts is much more conspicuous.

VOICE. Its note is milder, less liquid and challenging, than that of the green sandpiper, *chiff-chiff-chiff*, *chiff-iff-iff*, etc.

HABITS AND FOOD. This species frequents snipe grounds and is the commonest "snippet" in Burma (a term that covers any wader that is not a snipe, *e.g.* the green, marsh and wood sandpipers and the stints). It is found on almost every jheel and river also, but is a freshwater bird that avoids the tidal creeks, and in spite of its name is not found in the forests.

STATUS AND DISTRIBUTION. A northern palaearctic species, wintering in Africa and southern Asia to the Philippines. Abundant in Burma from August (early record the 20th July) to the third week in May.

REDSHANK

Tringa totanus (Linnaeus), SWEDEN
SUBSPECIES: *eurhinus* (Oberholser), LADAK
terrignotae Meinertzhagen, KOKONOR

IDENTIFICATION. Plate XXVI, fig. 5, p. 496. Length 11 inches. In flight the white rump and tail-coverts and the pure white of the posterior part of the wing near the body contrast with the dark brown of the rest of the wing. Perhaps the most beautiful of all the waders. In summer plumage the upper-parts are marked with black and the under-parts are densely streaked with brown.

VOICE. The commonest notes, which have a musical, whistling quality, are a single *tuu* and a triple *tu-hu-hu*, the second two notes rather lower than the first. When excited it dashes up with a noisy clamour.

HABITS AND FOOD. The redshank is a typical wader of the mudflats and tidal creeks, and inland it frequents the larger jheels; birds on passage drop in to feed on snipe grounds or flooded paddy fields. It is a shy, restless and noisy bird. The flight is swift and rather erratic, tending to tilt from side to side, with regular, fairly quick wing-beats, sometimes planing for some distance; there is usually a perceptible pause at the end of each down stroke, giving a jerky or flicking effect. The gait is a brisk walk or run and the bobbing action when suspicious, common to most sandpipers, is perhaps more conspicuous in the redshank than in any other. Another action common to most waders

and especially noticeable in the redshank is the graceful holding of the wings raised above the back for a moment after alighting. It feeds largely by picking insects, etc., from the surface of the ground or the bottom of shallow water, but it also regularly probes mud. It may be seen singly, in twos and threes, or in parties, and it associates freely with other waders. It also frequents canals, wet borrow-pits being specially attractive to it, as many as fifty having been seen in a single borrow-pit (Roseveare).

STATUS AND DISTRIBUTION. A palaearctic species, in winter widespread from South Africa to the Philippines. Common in Burma, and hundreds have been seen on the coast in mid-July, suggesting that many birds are non-breeding residents. Single birds visit the Maymyo lake on passage.

[NOTE.—These two forms are doubtfully separable.]

DUSKY REDSHANK

Tringa erythropus Pallas, HOLLAND

IDENTIFICATION. Length 12 inches. The sharp double note *ke-wip* or *tchuet*, lacking the full musical quality of the redshank's voice, is distinctive. It derives its name from the black summer plumage, spotted with white on the back, which is assumed before it leaves Burma and is unmistakable. In winter plumage it is distinguished from the redshank by more ashy-grey colour, with the wing-coverts and shoulder noticeably barred and spotted with white; it lacks the conspicuous white on the hind-wing of the redshank in flight, the secondaries being barred brown and white instead of pure white.

STATUS AND DISTRIBUTION. A northern palaearctic species, migrating south in winter to Africa and southern Asia. It is a winter visitor to Burma in small numbers and is seen chiefly on the coast, and on the Irrawaddy jheels on passage.

GREENSHANK

Tringa nebularia (Gunnerus), NORWAY

IDENTIFICATION. Plate XXVI, fig. 2, p. 496. Length 14 inches. In flight the white rump and white tail lightly barred with light brown are noticeable, and there is no white on the wing.

VOICE. On rising it utters a loud alarm-whistle, a mellow but plaintive *thew-thew, tew-tew-theeuw*, less musical and lower pitched than that of the redshank. The ordinary flight-call is *chee-wet*.

HABITS AND FOOD. The greenshank is usually a solitary bird, frequenting the sandy margins of rivers and jheels, especially where no vegetation separates the open water from the bank, and it is common

on the mudflats of the coast ; it is also a frequent visitor to village ponds and the smallest patches of temporary water such as flooded borrow-pits. It does not probe the mud for which its up-tilted bill is not very suitable, but picks minute life from the surface of the mud or water. It is rather shy and rises with a swift, erratic flight, mounting high into the air like a green sandpiper. It feeds in the shallows with a side-to-side motion of the bill or by picking and probing ; it also chases small fish by a succession of rapid dashes through the water, with the neck extended and the bill submerged.

STATUS AND DISTRIBUTION. A northern palaearctic species, wintering in Africa, tropical Asia, and Australia to New Zealand. It is a winter visitor to Burma from August till the third week in May and is the commonest large wader in the country. A few individuals seen in June and July on the mudflats were probably non-breeding residents.

ARMSTRONG'S SANDPIPER

Tringa guttifer Nordmann, OKHOTOSK

IDENTIFICATION. Length 13 inches. In size intermediate between a redshank and a greenshank and closely resembles the latter, but the legs have a yellowish tinge and are no longer than those of the redshank (2 inches). In summer plumage it is much darker above and spotted with black below.

STATUS AND DISTRIBUTION. Breeds in north-eastern Siberia and is casual in Tibet. It appears to be a rare vagrant to north-eastern India and to Burma, where the only records are from Elephant Point, Hanthawaddy district, in 1875, and from Amherst in 1877 (Armstrong).

RUFF and REEVE

Philomachus pugnax (Linnaeus), SWEDEN

IDENTIFICATION. Length 12 inches (male), 10 inches (female). This is the only genus in which the sexes differ markedly in size. In winter plumage it lacks outstanding features but an oval white patch on each side of the dark central area of the tail is a good character at all ages. Upper-parts light brown, breast pale ashy-brown. The flight is rapid with strong regular wing-beats, much like that of the redshank, and it shows a narrow white wing-bar. It walks with a deliberate gait, probing mud for food, and is said to prefer creeks and tidal estuaries to the open mudflats. In general very silent, occasionally uttering a low *tu-whit* when flushed.

STATUS AND DISTRIBUTION. A palaearctic species, migrating south to Africa and southern Asia as far as Ceylon and Tenasserim. It has been recorded from the Sittang estuary, Bassein, and Arakan, but not since 1883, when it was described as " tolerably abundant." It does not seem to arrive early nor to stay late.

Sub-family CALIDRIINAE

STINTS

This sub-family contains most of the smaller waders. Some authorities include the ruff in this group and not in the preceding group. Some authorities also keep *canutus* in the genus *Calidris*, and use the name *Ereunetes* for all the other stints here placed under *Calidris*.

SPOON-BILLED STINT

Eurynorhynchus pygmaeus (Linnaeus), " SURINAM " (error, = E. ASIA)

IDENTIFICATION. Length 6 inches. Easily distinguished from all other waders by the remarkable shape of its black bill, which terminates in a broad flat disk. It is a whiter bird than the other stints, the upper-parts being the same shade as those of the broad-billed sandpiper.

STATUS AND DISTRIBUTION. Said to breed in north-eastern Siberia, this species winters in south-eastern Asia as far west as Bengal. It is probably a regular winter visitor to Burma in very small numbers. One bird I collected on the 29th October 1939 was picked out at once from a very large flock of closely packed waders (mostly sand plovers) by its bill, and was the only one seen out of thousands of waders inspected. Previous records are from Arakan, Elephant Point, and Amherst, all dating from over 70 years ago.

SANDERLING

Calidris alba (Pallas), HOLLAND

IDENTIFICATION. Length 8 inches. Larger than the stints that follow and has no hind toe. Its extreme activity is no less characteristic than the almost white appearance in winter. It shows a prominent white wing-bar in flight; the tail has a dark centre and shows white at the sides. In summer plumage the whole head, neck and upper breast are light chestnut rather sharply defined from the pure white abdomen. The note in flight or when flushed is a shrill but liquid and pleasant *twick-twick*.

STATUS AND DISTRIBUTION. A holarctic species, breeding in the Arctic regions and found all over the world in winter. It is rare in Burma, the only records being from Elephant Point (1886) and Myingyan (1902); except on passage it is entirely a shore bird, not even found up the tidal creeks.

LITTLE STINT

Calidris minuta Leisler, GERMANY
SUBSPECIES: *minuta* Leisler, GERMANY
ruficollis (Pallas), TRANS-BAIKALIA

IDENTIFICATION. Length 6 inches. This stint, and the three that follow, can only be distinguished with practice. They are all tiny waders, about the size of sparrows, found in flocks about water.

The little stint is a grey-brown bird with small, darker mottlings above and white below; a little white shows near the base of the tail when the bird is alighting, but not near the tip. In breeding plumage *ruficollis* has rufous cheeks, throat and neck, whereas *minuta* has the upper-parts black with broad rufous edges, and a rufous tinge on the breast.

VOICE. It rises with a monosyllabic *chit* or *tit* repeated about three times, and a more twittering variant is used when feeding. Many less common notes have been described.

HABITS AND FOOD. Small shore-birds of the stint type all have much the same habits. They are very gregarious and mixed parties fly about together. Much of their food is obtained on recently uncovered flats, which they search methodically for small burrowing organisms by tapping or probing with the bill or they pick up minute molluscs, etc., from the surface. The mode of feeding has been carefully studied and described in great detail by Witherby (vol. iv, p. 234). Though at times they run about with great activity in search of food on the surface, the typical gait is a brisk walk with short, mincing steps. When excited or uneasy they bob with a backward jerk of the head and a depression of the hinder end of the body, but much less freely and conspicuously than in the larger waders like the redshank. The flight is swift with regular quick wing-beats, the birds wheeling and swerving in a characteristic fashion, and tilting as they do so, the flock now appearing dark and now flashing white, as first the upper-side and then the under-side of every bird is turned towards the observer. When about to pitch they glide with the wings extended, usually alighting with a little flutter and often keeping the wings raised for a moment or two before folding them. A similar raising of the wings may be seen when the birds are becoming restless on the approach of an observer and will shortly take flight.

The little stint is a common bird of the coastal mudflats, where it is found in large mixed flocks with other stints and curlew-sandpipers. When the tide is out they feed on the mud, and as it comes up they retreat to grassy saltings, which are only covered at high tide. They are invariably very busy, pattering along with their tiny feet in and out of the water, their heads down, busily collecting minute insects, crustacea and worms from the mud.

STATUS AND DISTRIBUTION. A northern palaearctic species, in winter extending from Africa along southern Asia to Australia. It is a common winter visitor to the coasts of Burma and has been recorded inland on passage.

LONG-TOED STINT

Calidris minutilla Vieillot, N. AMERICA
SUBSPECIES : *subminuta* (Middendorff), SIBERIA

IDENTIFICATION. Plate XXVI, fig. 7, p. 496. Length 6 inches. Dark appearance with black markings on the upper-parts giving a tortoise-shell appearance, grey on the neck and breast, and absence of white on the tail are distinctive features. The middle toe, including the claw, measures nearly 1 inch in length and distinguishes the bird in the hand.
VOICE. It is said to have a shrill, piping cry, uttered as it rises and also when running about on the mud.
HABITS AND FOOD. Common on snipe grounds and the edges of jheels as well as on the tide-line.
STATUS AND DISTRIBUTION. Breeds in Siberia and winters in the oriental region as far west as eastern India and Ceylon. It is a common winter visitor to Burma.

TEMMINCK'S STINT

Calidris temminckii (Leisler) GERMANY

IDENTIFICATION. Plate XXVI, fig. 6, p. 496. Length 6 inches. Distinguished by uniform grey upper-parts, white outer tail-feathers and more or less grey breast. As the little stint has the lateral tail-coverts white, giving a general impression of a dark centre to the tail and white at the sides, the white outer tail-feathers of Temminck's stint, though a useful character, need to be observed with care ; white towards the tip of the tail must be looked for, and this shows up best when the bird is rising or alighting. In breeding plumage the feathers of the upper-parts have black centres, giving a mottled appearance.
VOICE. It utters a weak trill or sharp, twittering whistle, almost cricket-like, as it rises.
HABITS AND FOOD. In some ways a miniature of the common sandpiper, but the flight is erratic and twisting with a fluttering bat-like action. It is primarily a freshwater bird and is much the commonest stint on jheels and rivers, but a very few visit the coast, where they prefer tidal creeks to the open mudflats. We have found it tame and confiding, but its behaviour is said to be variable and at times wild.
STATUS AND DISTRIBUTION. A northern palaearctic species, wintering in northern Africa and southern Asia. It is a common winter

visitor to Burma, arriving in mid-August and leaving in mid-May, and has been recorded up to 4,000 feet in the hills.

SHARP-TAILED SANDPIPER

Calidris acuminata (Horsfield), JAVA

IDENTIFICATION. Length 7–8 inches. Not unlike a very large little stint with a pointed tail ; the crown, neck and back are streaked blackish and brown or buff, the striped effect being characteristic. In winter plumage the breast is only slightly streaked, chiefly at the sides. Bill black, legs dull greenish-slate. Also known as the Siberian pectoral sandpiper.

STATUS AND DISTRIBUTION. Breeds in north-eastern Siberia and Alaska, and winters in Australia and the oriental region, but a very rare vagrant to India and Burma. There are two records from near Rangoon.

CURLEW-STINT

Calidris ferrugineus Pontoppidan, DENMARK

IDENTIFICATION. Length 8 inches. The black bill bent down near the tip is diagnostic. A small sandpiper with long wings, narrow white wing-bar, and white upper tail-coverts. The breeding plumage is mostly rufous, mottled with black on the upper-parts. A typical bird of the coastal mudflats, with strong flight and a twittering call or a rather sharp single note.

STATUS AND DISTRIBUTION. Breeds in northern Siberia and winters from Africa through southern Asia to Australia. It is a common winter visitor to Burma, arriving in August and leaving in May ; odd birds seen on the mudflats on the 23rd July may have been non-breeding residents. A flock seen on the 14th October at the Paunglin jheel, Minbu district (Roseveare), was probably on passage.

[NOTE.—The DUNLIN, *Calidris alpina* (Linnaeus), has not been recorded from Burma, but in India the typical race straggles as far east as Assam and the subspecies *sakhalina* is a rare winter visitor to Malaysia, so one or other may turn up in Burma some day. Resembles the last species but the bill is shorter and less markedly curved.]

ASIATIC KNOT

Calidris tenuirostris (Horsfield), JAVA

IDENTIFICATION. Length 12 inches. Distinguished from the curlew-stint by larger size, white upper tail-coverts, and lack of chestnut on the under-parts in breeding plumage.

STATUS AND DISTRIBUTION. Breeds from central Siberia to Japan, and winters in the oriental region to Australia. It is a winter visitor to Burma in very small numbers, or possibly a vagrant.

EUROPEAN KNOT

Calidris canutus (Linnaeus), SWEDEN
SUBSPECIES : *canutus* (Linnaeus), SWEDEN

IDENTIFICATION. Length 10 inches. A smaller bird than the asiatic knot with a much smaller bill (30–37 mm. as against 39–47 mm.).. Upper-parts dark grey ; under-parts white in winter, chestnut in summer. A large short-legged plump wader that often feeds in densely packed masses and possibly derives its name from its note—a clear *knut knut*. A wing-bar shows in flight and at close quarters black bars are visible on the upper tail-coverts.
STATUS AND DISTRIBUTION. Breeds in the Arctic regions, and is a rare winter visitor to India, Burma, and Malaysia. One was obtained by Stanford, just assuming breeding plumage on the 14th April, out of a flock of curlew-stints and sand plovers at Kamakalok, near the mouth of the Rangoon river.

BROAD-BILLED SANDPIPER

Limicola falcinellus Pontoppidan, DENMARK
SUBSPECIES : *sibirica* Dresser, CHINA and SIBERIA

IDENTIFICATION. Length 7 inches. Resembles a large stint but distinguished by long stout bill, usually held vertically as the bird moves over the mud. In winter the upper-parts are uniform grey, and the very white throat and eyebrow are noticeable. A narrow pale wing-bar is visible in flight, and the tail is blackish with white at the sides. The ordinary note when flushed is a trill not unlike that of Temminck's stint. Its habits resemble those of the little stint and it is abundant on the coastal mudflats, but has not been recorded inland.
STATUS AND DISTRIBUTION. A palaearctic species, wintering from the Red Sea to Australia. A common winter visitor to the coast of Burma.

[NOTE.—The RED-NECKED PHALAROPE, *Phalaropus lobatus* Linnaeus, is a northern holarctic species that winters in the seas south of Malaysia and has been recorded from India ; it may therefore occur in Burma occasionally. A grey wader, the size of the broad-billed sandpiper, with a blackish patch round the eye and a very conspicuous white wing-bar ; a tame bird, usually seen swimming.]

Sub-family SCOLOPACINAE

DOWITCHERS, WOODCOCK, AND SNIPE

The bill is specially adapted for probing in mud, being long, slender, and very sensitive, with the tip slightly swollen and provided with nerves. Woodcock and snipe have the eyes placed so far back in the head that they are visible from directly behind the bird, and conversely enable the bird to "see backwards" without turning the head.

ORIENTAL DOWITCHER

Limnodromus griseus (Gmelin), NEW YORK
SUBSPECIES : *semipalmatus* Blyth, CALCUTTA

IDENTIFICATION. Length 13½ inches. In winter plumage resembles the black-tailed godwit, but the bill is black as opposed to dull orange-red or dusky orange and there are dark brown bars on the lower breast, flanks and under tail-coverts. In summer the whole head, neck and under-parts are rufous ; back rufous with large black spots ; a black line through the eye.
STATUS AND DISTRIBUTION. An eastern palaearctic and nearctic species. A rare vagrant to India and Burma, recorded from near Pegu and Rangoon.

WOODCOCK

Scolopax rusticola (Linnaeus), SWEDEN

IDENTIFICATION. Plate XXVI, fig. 10, p. 496. Length 14 inches. Generally seen as a medium-sized, round-winged, russet-coloured bird with a long, straight bill, which rises from cover in open forest and flies off with a twisting flight amongst the trees. When flighting at dusk it has a curious bat-like flight with short, rapid wing-beats and the bill inclined downwards.
VOICE. A silent bird and no note has been heard in the cold weather.
HABITS AND FOOD. The woodcock is typically a bird of the higher hills, favouring small streams in evergreen forest, or thick undergrowth on the edge of a marsh, or places where shallow streams run out into fields through thick scrub-jungle. It is crepuscular in habits, but on several occasions I have seen it in the middle of the day feeding in the running water of a gravelly hill stream, with little or no overhead cover ; normally, however, it prefers to lie up in thick cover till dusk, when it flights out to its feeding-grounds ; these are usually in a marsh, either in the open or in a forest clearing. On one memorable evening in April when camping at 7,500 feet on Sosiko, a subsidiary peak of Nattaung, no less than seven woodcock flew one by one over my tent at dusk in a period of a quarter of an hour. In the plains they are not uncommon in some localities in winter, and Stanford notes that round Myitkyina six or seven may be obtained in junglefowl beats in an afternoon. On passage it drops in at unexpected places ; I once flushed one from the moat round the Mandalay fort, and Cooke shot one inside the fort.

The normal method of feeding is by probing all around at every few steps, the bill often being driven in to the base ; the terminal part of the upper mandible can be raised independently of the rest,

and this enables the bird to swallow all but the larger worms without withdrawing the bill; the same mechanism is found in the snipe and less conspicuously in other probing waders.

NEST AND EGGS. The woodcock is believed to breed in the higher hills and mountains of northern Burma, but its nest has not yet been discovered. The Vernay-Cutting expedition obtained birds with enlarged organs in mid-March.

STATUS AND DISTRIBUTION. A palaearctic species whose breeding range extends from the British Isles to the Himalayas and Japan. In the plains it arrives from late October onwards (early record the 6th September in Pakokku district) and may be met with up to April (late record the 20th May near Fort Hertz), whereas in the Panwa pass and Hpare areas the birds increase in numbers from mid-February onwards. Stanford (1935*c*) has shown that it is a regular winter visitor to most of Burma, and round Maymyo some sportsmen used to average forty to fifty birds a season. It has been recorded as far south as Mt. Mulayit and Maungmagan (Hume), and is a rare visitor to Malaya.

WOOD SNIPE

Gallinago nemoricola (Hodgson), NEPAL

IDENTIFICATION. Length 13 inches. A slightly larger and darker species than the fantail, easily recognised by heavy slow wavering flight. It frequents *kaing* grass, reeds, etc. growing in swamps or along the banks of streams as opposed to the open fields and marshes in which the fantail and pintail snipe are found. It rises with a guttural croak and flies for only 100 yards or so before flopping back into cover.

STATUS AND DISTRIBUTION. Breeds in the Himalayas and may one day be found breeding in the mountains of northern Burma. It has been recorded in the Chin Hills and down the eastern hills of Burma to Tenasserim, and is locally common; Livesey once shot 20 in one day in the Southern Shan States and Wickham notes that there were always a number round Taunggyi. Macdonald shot 7 or. the 24th October in a small patch of swampy scrub-jungle near Myitkyina, and numerous specimens have been obtained on the Panwa pass in December. One was shot in August on the racecourse at Maymyo. Davison saw one up the Pakchan estuary.

SOLITARY SNIPE

Gallinago solitaria (Hodgson), NEPAL

IDENTIFICATION. Resembles the fantail in flight, etc., but has a larger wing (153–169 mm.) and a shorter tail (55–63 mm.); it is also said to be less wild and to get up with a louder and harsher *pench*.

STATUS AND DISTRIBUTION. Breeds from the Altai mountains eastwards to Manchuria and Japan and southwards to the Himalayas. Wickham mentions one from the Chin Hills and one from the Shan States; Harington mentions one from near Bhamo; and there is one record from the Myitkyina district. It is evidently a rare visitor to Burma, and has been recorded from northern Yunnan.

COMMON or FANTAIL SNIPE

Gallinago gallinago (Linnaeus), SWEDEN
SUBSPECIES: *gallinago* (Linnaeus), SWEDEN (= *raddei* Buturlin)

LOCAL NAME. Burmese: *sanaik* (the nearest a Burman can get to "snipe").

IDENTIFICATION. Plate XXVI, fig. 9, p. 496. Length 11 inches. It springs suddenly out of marshy herbage with a harsh call that distinguishes it from all waders except other snipe, and mounts high in the air with a rapid, twisting flight. For distinctions from pintail see under that species. Tail-feathers 12–18 (usually 14). Albino and semi-albino snipe, both fantail and pintail, are reported from time to time.

VOICE. The alarm-note is *scap-scap* or *pench*, pronounced sharply with a nasal twang unlike the note of any other bird.

HABITS AND FOOD. The common snipe of the British Isles, usually known as the fantail in Burma to distinguish it from the pintail, is found in a variety of habitats where soft mud and water are combined with cover; thus it frequents paddy fields (particularly the winter-planted *mayin* paddy), the edges of lakes and jheels, small marshes, and similar localities; it is a fussy bird and will only be found where the water level is level with, or just below, the top of the soil; flooded and dried-out paddy fields are alike avoided. During the heat of the day it rests in thick cover on the edge of the feeding ground, and sometimes in dry crops and scrub-jungle if sufficiently shady, and is then sluggish and unwilling to rise; but in the mornings and evenings it is shy and active, zigzagging sharply over the ground, and either dropping back into cover or mounting into the sky at a great pace like a green sandpiper. It is always reluctant to leave its chosen spot, and often drops back to it as soon as the coast is clear, meanwhile flying round in wide circles at a great height and calling occasionally.

The drumming of snipe, a well-known form of display, is occasionally observed in Burma; Wilson, of the Bombay Burmah Trading Corporation, reported seeing and hearing a snipe drumming three miles from Pakokku on the 25th December 1946, but "the

rather short and sloppy dive produced a sound quite different from the usual clear tone—more like a buzz than a note. The dive was only about 20 feet, and the bird gave me the impression of not being so tense as the snipe I have seen drumming in the breeding season in England."

STATUS AND DISTRIBUTION. Almost cosmopolitan. It is a winter visitor to Burma in vast numbers, but arrives nearly a month after the pintail. There is a noticeable return passage through Myitkyina district in late February and March.

PINTAIL SNIPE

Gallinago stenura (Bonaparte), SUNDA IS.

IDENTIFICATION. Length 11 inches. Difficult to distinguish in the field from the fantail except by the slight difference in the call, the slower and heavier flight, and the less red appearance, though difference in habitat often indicates the species. In the hand it is at once identified by the tail of 26–28 feathers (occasionally 24 or very rarely 22), of which the outermost 8 on each side are stiff, narrow, and wire-like and explain the bird's name; the under wing-coverts are barred all over and lack the clear white spaces of the fantail.

VOICE. Very like that of the fantail, but some sportsmen claim that they can be distinguished.

HABITS AND FOOD. The pintail has a less highly specialised bill than the fantail and feeds less on worms and more on insects, larvae and molluscs; consequently, though often found in company with the fantail in the paddy fields, it is more typically a bird of grazing grounds and grasslands where the ground is not so soft, and occasionally visits dry grass and stubbles where no fantail is ever found. During the heat of the day it is often found in the shade of bushes far from water, and sometimes in burnt *kaing* grass. In early September they have been shot with the primaries only just sprouting, with two to four bright blue quills in each wing, so that they could hardly flutter.

STATUS AND DISTRIBUTION. Breeds in Siberia and is a winter visitor to Burma in vast numbers, arriving in August (earliest date for Myitkyina district the 4th August at Sumprabum, but at Kindat thirty to forty were seen by Marten on the 21st July) and leaving by early May (latest date for Myitkyina district the 21st May, but Marten saw snipe on the 2nd June at Kindat). Kenny noted in the Yaunghwe-Loikaw plain, Southern Shan States, that pintails arrived

in August, moved on southwards with the first moon of October, and returned in February; they started leaving on the 1st March with the fantails, and most had left by the 21st March, but a few stayed on for another few weeks and "pricked" birds stayed throughout the summer.

SWINHOE'S SNIPE

Gallinago megala (Swinhoe), PEKING

IDENTIFICATION. Indistinguishable in colour from the pintail on the wing but can always be identified by the tail, which consists of 20 feathers, the outermost 6 on each side being attenuated but never less than 5 mm. wide, whereas in the pintail they are wire-like and less than half this width. The white tips to the tail-feathers are slightly more conspicuous than in the pintail.
STATUS AND DISTRIBUTION. Breeds in eastern Siberia and northern China, and winters in the oriental region as far west as Assam and Madras. There are few authentic records from Burma, probably because it is much overlooked; several have been shot in Myitkyina district, one near Maymyo, and one near Tharrawaddy.

JACK SNIPE

Lymnocryptes minimus Brunnich, EUROPE

IDENTIFICATION. Length 8 inches. Easily recognised by small size and wedge-shaped tail of twelve pointed feathers with no white on them. It normally rises without a sound, but may utter a low weak call, and settles again close at hand. It prefers small patches of thick cover in the corners of paddy fields and swamps.
STATUS AND DISTRIBUTION. A palaearctic species, in winter ranging from the British Isles across northern Africa and southern Asia to China and Formosa. It is a winter visitor in small numbers to Burma, and has been recorded from most districts as far south as Moulmein, whence Hume records several. In the Shan States Wickham obtained them "although there are never many about." There are no Yunnan records.

Order PELECANIFORMES

Family PELECANIDAE

PELICANS

PELICANS are found throughout the temperate and tropical regions of the world. There has been considerable confusion in the past over

the names of the pelicans of the oriental region, and Grant and Mackworth-Praed have shown (*Bull. B.O.C.*, 1934, vol. 55, p. 63) that *Pelecanus roseus* = *manillensis* = *philippensis*. To confuse matters still further, it seems that the birds named *roseus* by Oates are actually *onocrotalus* because he states (*Birds of British Burma*, vol. ii, p. 239) that Burmese specimens are identical with some from South Africa.

WHITE PELICAN

Pelecanus onocrotalus Linnaeus, CASPIAN SEA

LOCAL NAME. Burmese : *sekkawet*.

IDENTIFICATION. Length 65 inches. The adult in breeding plumage (September to February) is a beautiful rosy pink, at other times pure white ; primaries and primary-coverts black, secondaries varying from blackish to ashy. According to Oates, the old female has an occipital crest, about 4 inches long and lying rather flat, whereas the male has none. Young birds have the under-parts chestnut. The full plumage is probably not attained till the third or fourth year.

STATUS AND DISTRIBUTION. According to Grant and Mackworth-Praed, breeds in south-eastern Europe and parts of Asia, in winter found in southern China, Burma, India, the Persian Gulf, and Africa; according to Delacour, found in small numbers in Malaysia. It is a winter visitor to Burma, arriving probably in August and leaving in January and February. A party of 23, believed to be of this species, was observed in the Sittang estuary on the 30th July 1939; there are no other records since Oates' day.

SPOTTED-BILLED PELICAN

Pelecanus philippensis Gmelin, PHILIPPINE IS.

LOCAL NAME. Burmese : *wunpo*.

IDENTIFICATION. Plate XXVII, fig. 1, p. 516. Length 52–60 inches. In adult breeding plumage the bird is silvery-grey above and white below with a pinkish tinge on the lower back and under-parts ; wings whitish with black primaries. In non-breeding plumage the wings, tail and under-parts are brown, and young birds are brown. It derives its name from the row of blue-black spots along the middle of the bill, but these cannot be seen in the field. A smaller, less white, bird than the white pelican.

VOICE. The only note seems to be a deep guttural croak.

HABITS AND FOOD. Small parties of pelicans may be seen on the Irrawaddy and on tidal creeks at any time of the year ; they have a

characteristic flight, gliding very close to the surface of the river and rising about 1 foot every 50 yards or so to give a few powerful wing-beats and drop again ; the neck is bent and the head drawn right back to the shoulders, the bill being carried parallel to the water. They are clumsy walkers on land, but may be seen on sandbanks or mudflats at the water's edge, and they also perch on trees. They feed largely on fish, which they catch by rapid scoops of the lower mandible, which with its pendant and elastic pouch of naked skin serves as an ideal landing net ; flocks are said to form a line across the water and drive the fish into the shallows by beating the water with their wings, but I have not seen this manoeuvre.

NEST AND EGGS. There used to be a breeding colony of pelicans and adjutant storks on the Sittang plain below Shwegyin, which Oates estimated to cover no less than 100 square miles (20 miles in length by 5 miles in width) and it may be of interest to give extracts from the account he wrote of a visit to this colony on the 8th November 1877 :

" The country to the west of the Sittang consists of an immense plain of indefinite length and extending to the westward to the foot of the Pegu hills. Certain small tracts are cultivated, but the greater part of the plain is covered with elephant grass or forest, and intersected by numerous creeks choked up with drift. . . . From July to October or November the whole area is nothing but a most dismal swamp, inundated to the depth of ten feet in many parts."

The settled and peaceful conditions of the next half-century and the development of trade encouraged the clearing of this jungle, and Oates's dismal swamp is now one enormous and monotonous paddy plain, which contributes its quota to Burma's exportable surplus of rice, and hence to her prosperity.

" Leaving Shwegyin we dropped down the Sittang for about ten miles till we reached the mouth of the Hsa-zay creek on the right bank. We proceeded up this stream till . . . we reached Kadat, a small village where we expected to find the pelicans. The whole stream from the Sittang to Kadat runs through beautiful forest with sparse undergrowth, and in many places the stream narrowed so much that we had carefully to pick a way for the boat between the trees. Immense flocks of pelicans and adjutants were flying in circles over our heads the whole day.

" The whole forest consisted of very large trees, but a portion, about one in twenty, was made up of wood-oil trees (*i.e. kanyin*), gigantic fellows, 150 feet high and more, with a smooth branchless trunk of 80–100 feet. These are the trees selected by the pelicans. I noticed no tree contained less than three nests, and seldom more than fifteen. Some birds select the upper branches, placing

their nest on a fork, but others, the majority, placed their nests on the nearly horizontal branches of the tree not far from the trunk. In all cases, the nests on one branch touch each other, and when these nests were on a horizontal branch they looked like an enormous string of beads . . . The nest is about two feet in diameter, and, when in a fork, about eighteen inches deep. Others on flat branches are shallower. They are composed entirely of twigs and small branches, without a lining. The female bird sits very closely . . . it was a most ludicrous sight to see the sitting birds stretch neck and head out of the nest to have a look at us, as often happened.

The eggs are invariably 3 in number, and on the 11th November all I took were either fresh or only slightly incubated. They are pure white at first. As incubation proceeds they change to brown, and before hatching become in some cases almost black. The inner lining of the egg is white, and consequently the eggs of the pelican can never be mistaken for those of either of the adjutants in which the lining is dark green.

" Notwithstanding the millions of birds which breed in this forest, a most wonderful silence prevails. The pelican seems to be perfectly mute, and the adjutants only bellow at intervals. The only sound which is constantly heard, and after a time even this sound passes unnoticed, is a sort of Aeolian harp caused by the movement of the wings of innumerable birds high in the air."

The subsequent history of this colony is somewhat obscure. According to Stuart Baker, it was visited in 1910 by Wickham, who reported that countless millions of birds still bred over a vast area ; and Stuart Baker, writing in 1935, states that " quite recently a friend informs me that the pelicans and adjutants still wheel all day overhead and over their nests just as they did then." Stanford, also writing in 1935, " was assured by villagers that the pelicans still breed in the remnants of the forest along the right bank of the Sittang," but in 1946 he states that " the immense colonies which Oates found on the Sittang have disappeared. Have the pelicans now retreated to the Dawnas, or the Upper Chindwin, or the forests of the Mali Hka ? " During a tour down the Sittang at the end of October 1939 I saw no signs of pelicans or adjutants whatever, and believe the colony must have disappeared or shifted before that date, but it is a pity that no naturalist has been able to visit the actual site of the colony in recent years, and ascertain from the villagers the history of its decline and fall.

STATUS AND DISTRIBUTION. From India to the Philippines and Malaysia. Whether it still breeds anywhere in Burma we do not know, but the occurrence of flocks at all times of the year along the main rivers, round various jheels, and on the coast suggest that a breeding colony is not too distant. The bird is said to be resident on the Mengtsz plateau in south-eastern Yunnan.

Family PHALACROCORACIDAE

CORMORANTS AND SHAGS

This family contains web-footed birds of blackish but not waterproof plumage, which dive for fish and hunt for them under water, but have to spend much of their time perched on rocks or trees, hanging out their wings to dry.

LARGE CORMORANT

Phalacrocorax carbo (Linnaeus), SWEDEN
SUBSPECIES : *sinensis* (Blumenbach), CHINA

LOCAL NAME. Burmese : *din-gyi*.
IDENTIFICATION. Plate XXVII, fig. 3, p. 516. Length 32 inches. Easily recognised in breeding plumage, which is assumed from the beginning of September to the middle of December, by the white cheeks and flanks. Young birds are browner with white under-parts, mottled with brown at the sides and sometimes in the centre as well.
VOICE. Silent away from the nesting site.
HABITS AND FOOD. In Burma the cormorant is mainly a freshwater bird, frequenting rivers and jheels and often found in large flocks. The flight is direct and fairly swift, with regular rapid wing-beats and the neck extended in front. Unlike the ducks it does not rest on the water when not feeding, but sits on the shore or perches on rocks or trees, typically with the outspread sharply angled wings hanging out to dry. On land the carriage is erect like that of a penguin and it walks with difficulty, but is capable of little spurts. In the water it swims low with the head erect and when suspicious or alarmed it sinks the body till only the head and neck show above the surface, a trick also performed by the darter. Though an expert diver it rarely remains under water for more than sixty seconds, catching small fish by chasing them at great speed ; its captures are ordinarily brought to the surface before being swallowed, and if necessary are jerked about until in the right position to go down head-first. It rises from the water with some difficulty except in a strong wind, flapping over the surface assisted by both feet paddling vigorously together before it becomes air-borne.
NEST AND EGGS. Oates described a colony in Southern Burma, breeding in the Sittang valley in October. " This bird breeds in vast

numbers in the Myitkyo swamp, placing its nest in low, apparently dead trees, which rear their heads 15 or 20 feet above the water. From a short distance the nests appeared to be made of twigs ; but I have often seen these birds dive in the canal and fly off with weeds fully 5 feet long ; these, no doubt, enter into the composition of the nest."

Stuart Baker states that " Harington records a breeding colony in the Bhamo hills, and Hopwood, Mackenzie and Macdonald also found breeding colonies in Upper Burma." Stanford, on the other hand (1946), writes, " Where in Burma does this very common bird breed at the present day and at what season ? I have never seen a nest or heard of a colony. Oates found them breeding in the Sittang valley in October. In Myitkyina immense numbers can be seen *in full breeding plumage* in March and April " and he notes elsewhere " from this it would appear that these cormorants either migrate to breed or breed somewhere in the (Myitkyina) district in the rains, probably in inaccessible gorges of the Mali Hka or the N'Mai Hka."

The eggs, 3 to 6 in number, have a dense, chalky covering of white, which often breaks away in flakes to reveal the pale sea-blue below.

STATUS AND DISTRIBUTION. A cosmopolitan species, common on the rivers and jheels of Burma, but it seems to avoid the coast. Its breeding haunts at the present day are unknown ; it has been recorded up to 6,000 feet in winter and occurs on the Maymyo lake on passage.

INDIAN SHAG

Phalacrocorax fuscicollis Stephens, INDIA

IDENTIFICATION. Length 25 inches. As size is often difficult to judge in the field this is probably often mistaken for either the large cormorant or the little cormorant. The adult shag has a fine recurved crest, but this is not achieved till the bird is three years old. In breeding plumage the absence of the white thigh-patches distinguishes it from the large cormorant, and a white border to the pouch, white tuft behind the eye, and white speckles on the side of the head and neck distinguish it from the little cormorant.

NEST AND EGGS. Oates reported that " this bird breeds in the Myitkyo swamp alongside the many other birds which are found there. Although the bird is very numerous I came across only one nest with eggs, the rest containing young ones. This was on the 25th July. The nest is made of the smaller side-branches of reeds, is flat at top, converging to a point below, about 9 inches across and 6 inches deep, supported by a few bent reeds." We visited this swamp in July 1940 and saw no shags there, and its present breeding haunts (if any) in Burma

are therefore unknown. The eggs resemble those of the large cormorant but are smaller.

STATUS AND DISTRIBUTION. India, Burma, and Ceylon. Oates described it as "very abundant, and resident in the streams which intersect the plain between the Pegu and the Sittang rivers; but in other portions of Pegu I did not meet with more than a few birds. Davison noticed it in the creeks between the Sittang and Salween rivers." No naturalist other than Harington at Rangoon has observed this bird since Oates's day.

LITTLE CORMORANT

Phalacrocorax pygmaeus Pallas, CASPIAN SEA
SUBSPECIES: *niger* (Vieillot), BENGAL

LOCAL NAMES. Burmese: *din-gyi* or *aw-yaw*.

IDENTIFICATION. Plate XXVII, fig. 2, p. 516. Length 20 inches. In non-breeding plumage there is a white patch bordering the throat-pouch. Young birds are brown, with the throat and the centre of the abdomen white.

VOICE. Said to be the same as that of other cormorants.

HABITS AND FOOD. This is the commonest cormorant in Burma, and though occasionally found on the coast is typically a freshwater bird of jheels and rivers, and even roadside ditches and ponds. It may be seen singly or in large flocks, which roost in company in trees. There are usually a few birds to be seen on the Royal lakes in Rangoon and the Hlawga lake near Insein, and a flock of at least fifty birds has been seen on the Kokine lake in the hot weather.

NEST AND EGGS. Oates reported that "incredible numbers of this bird breed in the reeds of the Myitkyo swamps. The water is alive with the young birds which tumble out of the nests. They seem quite happy in the water, and although some of the birds were certainly not more than a week old they dived readily on my attempting to seize them." More usually, however, it breeds in trees, in company with darters and egrets; the nests are made of sticks and are very compact and hassock-like compared with the more loosely constructed nests of the egrets. Stanford notes that they breed in bamboo and palms as well as in trees, and commence building in the last week of May. "The inky hordes of cormorants provide a striking contrast to the dazzling company of snow-white egrets among which they nest." Most eggs are laid in July and August.

STATUS AND DISTRIBUTION. Eastern Europe, northern Africa, and

southern Asia. A common resident throughout Burma. Wickham notes that this is the only cormorant seen on lakes in the Shan hills.

Family ANHINGIDAE

DARTERS

ORIENTAL DARTER

Anhinga anhinga (Linnaeus), BRAZIL
SUBSPECIES : *melanogaster* Pennant, CEYLON

LOCAL NAMES. Burmese : *din-gyi* or *u-ban*.
IDENTIFICATION. Plate XXVII, fig. 6, p. 516. Length 36 inches. The long, snaky neck, spear-like bill and whitish chin, throat and breast prevent confusion with the cormorants.
VOICE. A harsh, disyllabic croak.
HABITS AND FOOD. The darter is a freshwater bird and frequents rivers and jheels where the water is deep enough for it to swim and dive in. It swims very low in the water, often with only the head and neck sticking out like a periscope, and, as it moves along, the head turns from side to side and the long neck twists and bends with snake-like movements that at once suggest the name of snakebird often applied to this bird. It frequently dives whilst swimming or plunges in from its perch, often remaining under for a long time and appearing a hundred yards or so from the place where it dived ; it pursues fish under water, and if successful it emerges with the captured fish in its bill, throws it up in the air, and catches it in a position to swallow head-foremost.
NEST AND EGGS. Oates reported that " it breeds on trees and not in reeds. It is very abundant in the Myitkyo swamps, where, on the 6th August, I saw some 200 nests on a few low trees. The nests, with few exceptions, contained eggs, a few contained young birds a few days old." Hopwood and Mackenzie found colonies breeding in trees on the bank of the Chindwin, and also single pairs breeding either on trees by rivers or on bushes and trees in swamps. Stanford found a colony on jheels in Myitkyina district and notes that the eggs are often taken for food by the villagers ; the nests were rough platforms of twigs with the leaves still adhering, built in scattered, low trees standing out in the water.

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1939.

STATUS AND DISTRIBUTION. Almost cosmopolitan. A common resident throughout Burma; birds occasionally visit the Maymyo lake for a few days.

Family SULIDAE

GANNETS

BROWN GANNET

Sula leucogaster (Boddaert), CAYENNE, S. AMERICA
SUBSPECIES: *plotus* (Forster), NEW CALEDONIA

IDENTIFICATION. Length 26 inches. A large long-winged seabird, with a stout conical pointed yellow bill, under-parts and under-wing white, rest of plumage chocolate-brown; legs and feet yellow. Young birds are dusky-brown, paler below, and take two or three years to acquire adult plumage. Most characteristic is its method of fishing, for it will fly round over a shoal of fish at a height of 60–100 feet above the surface and periodically dive headlong into the water with half-closed wings.
STATUS AND DISTRIBUTION. A cosmopolitan species in the tropical seas; it has been frequently reported off the Tenasserim coast, and Oates records a specimen collected in Tenasserim.

[NOTE.—The SHORT-TAILED TROPICBIRD, *Phaethon aethereus indicus* Hume, MEKRAN COAST, was seen by Davison off Victoria Point and Cape Negrais. It breeds on the islands of the Persian Gulf and on the Paracel Islands off the coast of Annam. Length 21 inches excluding the tail, which when fully developed measures about 12 inches. Distinguished by red bill, white plumage with black bars on the back, and elongated white central tail-feathers.

WILSON'S PETREL, *Oceanites oceanicus* Kuhl, SOUTH ATLANTIC, was seen by Davison off the Moscos Islands in July in large numbers. Breeds in the South Polar regions and wanders up to the south and north temperate zones. Length 7 inches. Sooty-black colour, white rump, square tail, and yellow-webbed feet extending nearly ½ inch beyond the tail in flight are distinctive features. Rarely seen near land but habitually follows ships.]

Order CICONIIFORMES

Family THRESKIORNITHIDAE

SPOONBILLS AND IBISES

Spoonbills are closely related to the ibises, but differ in having flat bills, whereas the ibises have long, curved bills.

SPOONBILL

Platalea leucorodia Linnaeus, EUROPE
SUBSPECIES : *major* Temminck and Schlegel, JAPAN

IDENTIFICATION. Length 33 inches. A tall white bird diagnosed by its long flat spatulate bill, black in colour like the legs and feet. In adults at close range a crest is visible and an orange-tawny patch on the crop. The feeding action is remarkable, for the bird wades quickly through the water with its neck stretched out and the bill half-immersed, turning from side to side with a regular sweeping action like a man scything grass. Said to have a low grunting note, audible only at close range.
STATUS AND DISTRIBUTION. Widespread in Europe, Africa, and Asia; a rare visitor to Burma, recorded from Arakan and Minbu.

WHITE IBIS

Threskiornis aethiopica (Latham), ETHIOPIA
SUBSPECIES : *melanocephala* (Latham), INDIA

LOCAL NAME. Burmese : *hkayu-sok-ahpyu.*
IDENTIFICATION. Plate XXVII, fig. 5, p. 516. Length 30 inches. The head and neck are naked in adults, but young birds have short white feathers on the throat and neck and brown on the head.
VOICE. Said to have a peculiar booming call, but is normally silent.
HABITS AND FOOD. The white ibis is a common coastal species, and I once saw a flock of nearly 100 birds collected at a pool in the saltings of the Sittang estuary; elsewhere it is a bird of jheels and is sometimes seen feeding out in the paddy fields. It wades about in the water or stalks along the edge of it collecting molluscs, crustaceans, etc., and perches freely on trees.
NEST AND EGGS. Not described from Burma.
STATUS AND DISTRIBUTION. Widespread in northern Africa and southern Asia. Its breeding haunts, if any, in Burma are unknown and its status is therefore uncertain. It has not been observed in northern Burma, but is not uncommon in the dry zone of Central Burma, and is abundant along the coastal areas of Arakan, Southern Burma, and Tenasserim.

BLACK IBIS

Pseudibis papillosa (Temminck), INDIA
SUBSPECIES : *davisoni* (Hume), S. TENASSERIM

LOCAL NAME. Burmese : *hkayu-sok-anet.*
IDENTIFICATION. Length 30 inches. A large black bird, easily distinguished from the glossy ibis by the bare head, conspicuous white wing-spot, and absence of chestnut on the under-parts. Bill bluish,

legs and feet coral-red. Young birds resemble those of the white ibis.
VOICE. It utters a weird and characteristic cry when rising from the ground, and its voice in the breeding season is described as loud and peculiar.
HABITS AND FOOD. Resemble those of the white ibis, except that it seems to be less gregarious and is usually seen in pairs or family parties, sometimes solitary. It feeds in marshes and along the banks of muddy streams, and has been seen out on the burnt-up paddy plains in the hot weather.
NEST AND EGGS. Oates found a nest with two hard-set eggs on the 13th February near Pegu, and several collectors have taken eggs round Myingyan in March, including Macdonald, who reported that "it breeds on lofty cotton (*i.e. letpan*) trees during February and March. The nest is comparatively small and a lot of the sitting bird is usually visible from below." Christison reports a small nesting colony near Tumbru in Arakan. The eggs are a beautiful sea-green in colour, sometimes spotted and streaked with brown.
STATUS AND DISTRIBUTION. India, Burma, Siam, and Indo-China, straggling to Borneo. Its distribution in Burma is the same as that of the white ibis, but it is now seldom seen in Southern Burma where Oates described it as not uncommon in the Sittang plain.

[NOTE.—*papillosa* is said to occur in Arakan (*F.B.I.*, vol. vi, p. 317).]

GLOSSY IBIS

Plegadis falcinellus (Linnaeus), AUSTRIA
SUBSPECIES: *falcinellus* (Linnaeus), AUSTRIA

IDENTIFICATION. Length 25 inches. General colour blackish with a green and purple gloss; in breeding plumage the head, neck, breast and mantle become chestnut-maroon, and in non-breeding plumage the head and neck are brown streaked with white.
VOICE. It is said to utter a harsh croak when disturbed.
HABITS AND FOOD. A gregarious bird of the larger jheels, sometimes seen on marshes and paddy fields.
NEST AND EGGS. Stuart Baker states that Macdonald took fresh eggs (a deep unspotted blue) at the end of May near Pakokku, and the latter remarks, "It breeds in large colonies which I think *davisoni* never does."
STATUS AND DISTRIBUTION. Cosmopolitan. Recorded from Arakan, the dry zone of Central and Southern Burma, and the Shan States. Common at Wetlet in the cold weather.

Family CICONIIDAE

STORKS

Storks are large wading birds with long legs, long and massive bills, and large wings ; they nest and perch in trees.

[NOTE.—The WHITE STORK, *Ciconia ciconia boyciana* Swinhoe, has been recorded in Assam and Manipur, but not from Burma. Length 42 inches. The colour pattern resembles that of the open-billed stork, but it has a black bill and red legs.]

BLACK STORK

Ciconia nigra (Linnaeus), SWEDEN

IDENTIFICATION. Length 38 inches. A large stork, black, or when immature dark brown, with white under-parts, red facial skin, bill and legs ; in flight the whole wing appears black from below. Found in flocks on river sandbanks and jheels.

STATUS AND DISTRIBUTION. Breeds from Germany eastwards to north-central Asia, wintering in northern Africa and southern Asia. It is probably a regular winter visitor to northern and Central Burma ; Stanford observed a number of flocks from November to February, and it is often seen in the Shwebo district ; elsewhere it has been observed at Sipein in Mongmit State (Northern Shan States), on the Irrawaddy just above Mandalay, and three times in the Minbu district. It probably arrives at the end of October and leaves towards the end of April.

WHITE-NECKED STORK

Dissoura episcopus (Boddaert), COROMANDEL COAST
SUBSPECIES : *episcopus* (Boddaert), COROMANDEL COAST

LOCAL NAME. Burmese : *chi-gyin-sut.*

IDENTIFICATION. Plate XXVII, fig. 8, p. 516. Length 36 inches. The legs are usually blackish, not red as illustrated. Young birds have the glossy black replaced by dull dark brown.

VOICE. It is said to have a deep grunting note.

HABITS AND FOOD. Unlike other storks, this species is commonly seen in pairs along jungle streams in the depths of the forest, but also frequents jheels, paddy fields, and the larger rivers. Small parties sometimes associate with black-necked storks and black storks, and all these species have a habit of soaring round in circles at a great height for an hour or more ; they fly with the neck stretched out, not folded back like the herons. It feeds on reptiles, frogs, fish, etc.

NEST AND EGGS. Macdonald took eggs in the Myingyan district in

February and March, but a nest found in the Lower Chindwin district on the 4th December contained three full-grown young, and the village headman said the birds nested in the same tree every year and laid eggs in September. In Myitkyina district Stanford suspected that they bred in late May and June, so that the breeding season seems to be very prolonged or erratic.

The nest is the usual structure of twigs in a tree, *letpan* trees being favourites, and the eggs, 3 or 4 in number, are faintly bluish-white when fresh, but quickly stain to a dirty brown.

STATUS AND DISTRIBUTION. Africa and the oriental region. A common resident throughout Burma.

BLACK-NECKED STORK

Xenorhynchus asiaticus (Latham), INDIA
SUBSPECIES : *asiaticus* (Latham), INDIA

LOCAL NAME. Burmese : *hnget-kala.*

IDENTIFICATION. Plate XXVII, fig. 10, p. 516. Length 52 inches. In flight it appears pied black and white, the wings from beneath showing white with a black band along the arm and another along the body-edge ; young birds are dark brown and not black.

VOICE. Not recorded.

HABITS AND FOOD. This fine stork seems to be less gregarious than the others, and is typically seen in pairs or family parties feeding along the edges of rivers, jheels and marshes or resting on the tops of trees. On the ground it has been seen resting with the tarsi flat on the ground.

NEST AND EGGS. Oates reported that " in the Pegu plains the birds select an isolated tree, and make a large nest near the summit. On the 1st December I took two eggs and on the 6th January a clutch of four. Young birds reared from the nest are now (June) moulting into adult plumage." In the Myingyan district Macdonald notes that it is " common throughout the year and breeds freely, making its nest usually on the topmost branches of the large cotton (*i.e. letpan*) trees along the bank of the river." The nest is a large structure of sticks, carefully lined with rushes, grass, water-weeds and similar material, and some nests are used year after year. The eggs, 3 to 5 in number, are pure white when fresh, but soon become stained.

STATUS AND DISTRIBUTION. Widespread in the oriental region, but apparently not in Malaysia ; not uncommon in Burma in suitable

localities. In Arakan " large flocks pass over going south in October and stragglers remain in winter " (Christison).

GREATER ADJUTANT STORK

Leptoptilos dubius (Gmelin), INDIA

LOCAL NAME. Burmese : *don-zat.*

IDENTIFICATION. Plate XXVII, fig. 9, p. 516. Length 60 inches (male), 54 inches (female). The red-colour of the head, neck and pouch (from which the name of " beef-steak bird " is derived) is apparently shown only by adult males in breeding plumage ; most birds have these parts yellowish, and young birds have more feathering on them. The pouch can be extended to a great size, looking like a pink balloon with smeary black spots. The largest and most impressive of the Burmese storks, with a wing-span exceeding that of the common vultures ; in flight the wing pattern resembles that of the white-backed vulture, *i.e.* black with a white band along the middle.

VOICE. This bird has no voice muscles, but makes a curious, grunting croak, likened by Oates to the lowing of a cow when separated from her calf, and by Bingham to the lowing of a buffalo ; how the noise is produced is not known.

HABITS AND FOOD. The greater adjutant stork is a bird of the open plains and may be seen solitary or in small parties. When approached it sidles off with an amusing expression and then launches into the air with a short run ; on leaving the ground the birds always seem to make two or three circles, alternately flapping their wings and gliding, gaining height and increasing the size of the circles as they go round. The noise made by the wings is loud and high pitched. It is an omnivorous bird and will swallow almost anything, and sometimes helps vultures to dispose of a carcase.

NEST AND EGGS. A former breeding colony has been described under the spotted-billed pelican. Another was described by Bingham as follows : " To the south-east of Moulmein, about 25 miles up the Ataran river, a low but excessively steep and scarped range of limestone rocks, called the Needong hills, run nearly at right angles to the river on the north bank, and overhanging the water present a strikingly bold and picturesque aspect. On the south bank this range is broken into four or five isolated masses rising abruptly from the surrounding plain. In the latter end of November and in December these almost inaccessible cliffs afford safe nesting-sites to the two

species of adjutant, *Leptoptilus dubius* and *javanicus*." The nests were built on trees growing on these cliffs. There is no recent information about this colony. The eggs, 3 or 4 in number, are whitish in colour, with a dark green interior skin.

STATUS AND DISTRIBUTION. Widespread in the oriental region. In the past, large numbers used to visit Southern Burma for the breeding season; Oates reported that " one can hardly realise the number of these birds that visit Pegu in October, unless, as I have, he has seen the vast armies which settle on the plains on their first arrival. I have stood on a bund where I could see about 2 miles round me, and the whole area was literally covered with them. Some fifty birds stand huddled together; then there is a bare space of about 100 feet, and then another group of birds. Their numbers are incredible. They all arrive in the Pegu plain on the same day, and after resting about two days they betake themselves to the forest, where I had the pleasure of visiting them." These immigrants departed again in February or March, but some birds apparently remained throughout the year.

This influx no longer takes place, and it is difficult to define the bird's status at the present day. In the Shwebo and Minbu districts it is uncommon from December to May but less so from June to November (Roseveare), and other recent records are all from June to November. Thus it seems to be a bird that is widespread but uncommon in most districts during the rains and migrates to some unknown breeding haunt for the cold weather.

LESSER ADJUTANT STORK

Leptoptilos javanicus (Horsfield), JAVA

LOCAL NAME. Burmese: *don-mi-gwet.*

IDENTIFICATION. Length 45 inches. A smaller edition of the preceding bird, with no gular pouch. The upper-parts appear brownish-grey in the field.

NEST AND EGGS. See under the preceding species. Hopwood reported that " these birds breed in several spots on the Little Tenasserim river, the largest colony, consisting of about 40 nests, being at Indaw village, some 60 miles south of Mergui . . . the nests are built in *kanyin* trees at an immense height, fully 150 feet, and are only accessible to professional climbers, who drive previously prepared bamboo spikes into the trunk, forming a ladder as they climb. The full clutch is 4, but as often as not only 3 eggs are laid." Most of the eggs had hatched by the 23rd November. It is remarkable that the eggs are only a millimetre or two smaller on the average than those of the greater adjutant stork.

STATUS AND DISTRIBUTION. Widespread in the oriental region. Oates recorded

it as comparatively scarce though probably a constant resident. It is seen occasionally in the plains of Burma, but it is uncertain whether it breeds anywhere outside Tenasserim at the present day. Christison reports that it is common in Arakan in winter.

PAINTED STORK

Ibis leucocephalus (Pennant), CEYLON
SUBSPECIES : *leucocephalus* (Pennant), CEYLON

LOCAL NAMES. Burmese : *hnget-kya* or *hnget-sat*.
IDENTIFICATION. Plate XXVII, fig. 4, p. 516. Length 40 inches. The orange-yellow bill and orange face show up well in the field. The pink feathers are not on the tail, as they appear to be, but on the innermost secondaries ; in flight it appears a white bird with black wings and tail. Young birds have the head, neck, back and wing-coverts brown, and the under-parts smoky-white with no black band across the breast. Some birds have brown or fleshy-brown legs, appearing dark in the field.
VOICE. Said to have no note.
HABITS AND FOOD. A very common bird of the coastal mudflats, seen both solitary and in flocks ; it also frequents jheels, flooded paddy fields, and marshes ; when feeding it often walks along in the water with the bill submerged up to the eyes, and like other storks often perches in trees.
NEST AND EGGS. On the 22nd November a bird was seen building a nest on the top of a tall tree in the Mandalay district (Roseveare). I cannot find any other reference to this bird's breeding in Burma.
STATUS AND DISTRIBUTION. From India through Burma to Indo-China. It has not been observed in northern Burma, and Wickham does not record it from the Shan States, but it is locally common in Central and Southern Burma.

OPEN-BILLED STORK

Anastomus oscitans (Boddaert), PONDICHERRY

LOCAL NAME. Burmese : *hkayu-sok*, because it sucks up small snails, resembling winkles, called *hkayu*.
IDENTIFICATION. Plate XXVII, fig. 7, p. 516. Length 32 inches. Identified by the curious bill, the gap between the mandibles being visible even at a distance in flight. In many birds the white is sullied with smoky-grey, darkest on the nape and upper back, but it seems uncertain whether this represents winter plumage or immaturity.

VOICE. It is said to utter a low grunt.
HABITS AND FOOD. This is another familiar stork in Burma, frequenting rivers, jheels and marshes, though it seems to avoid the coastal mudflats. One large flock on the Maungmagan jheel in the Mandalay district was seen to soar to an immense height and then circle very slowly above the jheel, looking like a swarm of gnats. It feeds chiefly on freshwater molluscs, which it crushes before swallowing.
NEST AND EGGS. Apparently not described from Burma.
STATUS AND DISTRIBUTION. From India through Burma to Indo-China. It is found throughout Burma and is probably resident, but no naturalist seems to have found it breeding.

Family ARDEIDAE

HERONS, EGRETS, AND BITTERNS

Herons have long, slender, straight bills and long legs, and are accomplished fishermen.

PURPLE HERON

Ardea purpurea Linnaeus, FRANCE
SUBSPECIES : *manillensis* Meyen, PHILIPPINE IS.

LOCAL NAME. Burmese : *nga-hit.*
IDENTIFICATION. Plate XXVIII, fig. 4, p. 532. Length 38 inches. Striped neck and chestnut under-parts prevent confusion with the grey heron.
VOICE. Utters a loud, harsh croak as it rises and on the wing.
HABITS AND FOOD. A retiring and crepuscular bird, usually flushed out of reed beds or *kaing* grass. It frequents jheels, and is a common bird in the drainage of the Myitmaka.
NEST AND EGGS. Oates described its quondam breeding haunts in the Myitkyo swamp as follows :

" The whole area is one vast dismal swamp, the chief feature of which is a gigantic reed called *kyu* by the Burmese. The swamp in the rains becomes the resort of myriads of birds. It is possible to enter the swamp only during the highest floods for otherwise the reeds offer too great a resistance to a canoe and at best the progress by poling is not more than 200 or 300 yards an hour. What wonders the interior of the swamp could reveal, I cannot say, for I have never been able to penetrate it more than half-a-mile. The numbers of nests of all sorts met with is marvellous. In pushing along, the young fall, and the eggs

roll, into the canoe, and in some parts there must be a nest either of a heron, bittern or cormorant on every square yard of reeds. Three nests frequently touch each other. The most numerous species is perhaps the purple heron. It constructs a nest of sticks and the broken branches of the reeds, about a foot in diameter and eight inches deep, nearly flat at the top, and lays 4 or 5 eggs. The nest is placed about 4 feet above water, resting on three or four reed-stems which they or the wind have bent towards one point. I took eggs on the 7th July and the 1st August, but cannot state the extreme limits of the breeding season."

The eggs resemble those of the grey heron, but are smaller and paler.

We visited the Myitkyo swamp in early July 1940,

> " but yet I know, where'er I go,
> that there hath passed away a glory from the earth,"

and the things which Oates has seen we now can see no more ; his vast dismal swamp has shrunk, partly due to a change in the course of the Sittang, to a small remnant in which the purple heron disdains to breed.

STATUS AND DISTRIBUTION. Breeds in Africa, southern Europe, and southern Asia. It is common throughout the plains of Burma and probably breeds on most suitable jheels, but no actual colonies have been reported in recent years.

GREY HERON

Ardea cinerea Linnaeus, SWEDEN
SUBSPECIES : *rectirostris* Gould, S. INDIA

LOCAL NAME. Burmese : *nga-hit.*

IDENTIFICATION. Plate XXVIII, fig. 1, p. 532. Length 40 inches. Bill yellow in breeding plumage, brown in winter. It flies with head drawn back, legs extended behind, and slow, regular beats of the broad, rounded wings, which are grey with black tips. Young birds are much darker and browner grey, with the neck nearly all grey and the fore-neck more conspicuously streaked with black.

VOICE. The ordinary note is a loud, harsh *frarnk*. A great variety of weird and raucous noises emanate from a heronry.

HABITS AND FOOD. The grey heron has a much wider ecological range than the purple heron, and frequents almost any water that is not too deep and shelving to wade in. It is typically a solitary bird, but in Shwebo district flocks comprising up to twenty birds are seen as frequently as solitary birds (Roseveare). Stanford observed large gatherings on backwaters of the Irrawaddy (Southern Burma) in

December and January, and found it common on the tide-line in company with *Egretta alba*. It perches freely on trees, but spends much of its time on the ground and is often seen standing erect and motionless, with the long slender neck sunk between the shoulders in the attitude depicted in the plate ; when alert or suspicious the neck is stretched upwards with only a slight curve, and when fishing the bird walks slowly and noiselessly along in shallow water with the neck curved in an " S," ready to be shot out to seize its prey ; it eats fish, small mammals, birds, molluscs, insects and crustacea, and ejects in the form of pellets the fish-scales, fur, and hard remains of insects. Soaring flights are not uncommon, but neither as regular nor as characteristic as in the storks.

NEST AND EGGS. Sewell found nests in *letpan* trees in Kyaukse district, as many as thirty nests in one tree. Macdonald reported that in the Myingyan district he had taken eggs in March, July, August, and September. Stanford reported a colony of about ten pairs with nests half-built on the 11th February in a huge *ficus* tree in the Kwingauk police station compound, Henzada district. No other heronries have been reported, but probably exist round many jheels. The eggs, normally 3 in number, are a delicate sea-green in colour when fresh, but soon fade.

STATUS AND DISTRIBUTION. Widespread in the old world and a common resident throughout Burma except Arakan, where it is a winter visitor, arriving in November (Christison). Odd birds have been seen on the Kokine and Hlawga lakes, and occasionally on the lake at Maymyo.

DUSKY GREY HERON

Ardea sumatrana Raffles, SUMATRA
SUBSPECIES : *sumatrana* Raffles, SUMATRA

IDENTIFICATION. Length 45 inches. A large and little known species confined to the coast and tidal estuaries and living in mangrove swamps. Bill black with some yellow at the base, legs and feet black with pale yellow soles.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A Malaysian species, extending to Burma, southern Indo-China, and northern Australia. Recorded from Arakan and Tenasserim and not uncommon in Mergui district.

GREAT WHITE-BELLIED HERON

Ardea imperialis Stuart Baker, SIKKIM TERAI

IDENTIFICATION. Length 50 inches. Distinguished from the grey heron by great size and length of neck, and by the white under-parts contrasting with

the dark slaty-brown upper-parts. It is said to have a loud deep croak, but often rises silently. Frequents chiefly rivers and streams, occasionally swamps.
NEST AND EGGS. Very little is known about the breeding of this bird. A nest found by Thom on the Lemru river in Arakan in April was a huge structure of sticks high up in a tall tree and contained 4 eggs, which only differed from eggs of the grey heron in their greater size.
STATUS AND DISTRIBUTION. This fine heron, if held to be a distinct species, has a restricted range from Sikkim eastwards to Burma. I noticed a number of solitary birds on the upper waters of the Mali Hka in the Fort Hertz subdivision, where it seems to replace the grey heron, and Stanford notes it as common along both sides of the first defile at certain times of the year. Other records are from Arakan, the northern Chin Hills, once on the Madaya river in Mandalay district, and three solitary birds in the Pegu Yomas (Toungoo and Pegu districts). It seems to be not uncommon in northern Burma, but rare in Central and Southern Burma.

[NOTE.—This may be only a subspecies of *sumatrana*.]

LARGE EGRET

Egretta alba (Linnaeus), EUROPE
SUBSPECIES : *modesta* (Gray), INDIA

LOCAL NAME. Burmese : *byaing-ngan.*
IDENTIFICATION. Plate XXVIII, fig. 2, p. 532. Length 35 inches. The bill becomes yellow outside the breeding season. For distinctions from the intermediate egret see under that species.
VOICE. Generally silent, but a harsh, rasping call, *kraa-krr* is uttered on taking wing.
HABITS AND FOOD. This beautiful egret is a familiar bird of the paddy plains during the rains, and after the paddy has been reaped it moves to rivers, jheels, and streams. It is a common bird of the coastal mudflats and as the tide comes in large numbers can be seen belly-deep in the shallows, often 200 to 300 yards out to sea. In the cold weather it wanders up some of the wide sandy streams of the Pegu Yomas.
NEST AND EGGS. Breeds in colonies during the rains, often in company with other egrets (see under the next species).
STATUS AND DISTRIBUTION. A cosmopolitan species, and a common resident throughout Burma.

INTERMEDIATE EGRET

Egretta intermedia (Wagler), JAVA
SUBSPECIES : *palleuca* Deignan, N. SIAM

LOCAL NAME. Burmese : *Tharrawaddy byaing.*
IDENTIFICATION. Length 28 inches. Considerably smaller than the

large egret, which approximates in size to a grey heron, whereas the intermediate egret is little larger than the little egret ; when the two are seen side by side the difference is obvious, the large egret having much thicker legs, larger feet and more massive bill. In breeding plumage both have black bills and back plumes, but the intermediate egret has breast plumes which the large egret lacks ; breast plumes seen as early as the 23rd January and as late as the 7th September, but back plumes not before the 14th May, on which date some birds in full breeding plumage and others showing no sign of it were seen (Roseveare). In non-breeding plumage there is no observable difference between the large and intermediate egrets other than size and both have yellow bills from July or August onwards.

VOICE. Similar to that of the large egret, but less deep in tone.

HABITS AND FOOD. Similar to those of other egrets.

NEST AND EGGS. A large and interesting breeding colony of large and intermediate egrets, little cormorants and darters, in *kokko* trees in the compound of the forest range officer, Penwegon, Pegu district, was kept under observation for four years (1938–41). Two young birds that fell to the ground one September were taken to the Rangoon zoo and studied at leisure ; one was a large egret and the other an intermediate egret. Most eggs were laid in July, and by the end of September most of the young birds were ready to fly. Such colonies are common in Burma. Stanford visited a big colony at Mohnyin on the 24th May ; " when the colony was just commencing to build and the trees were festooned with quarrelling egrets, all ruffling out their plumes, I found the majority had black or nearly black beaks."

STATUS AND DISTRIBUTION. Widespread in the oriental region. Oates described it as rare in southern Burma, but it is common along the Arakan coast (Buxton) and in Central Burma (Minbu and Shwebo districts, Roseveare) ; owing to confusion with the large egret in the past it is difficult to define its status, though it is evidently as widespread as the large egret but probably less common.

LITTLE EGRET

Egretta garzetta (Linnaeus), " IN ORIENTE "
SUBSPECIES : *garzetta* (Linnaeus), " IN ORIENTE "

LOCAL NAME. Burmese : *byaing*.

IDENTIFICATION. Plate XXVIII, fig. 3, p. 532. Length 22 inches. The pale yellow feet, conspicuous in flight, are diagnostic ; the black

bill at all seasons separates it from the cattle egret, which has the bill yellow at all seasons.

VOICE. Generally silent except in the breeding colony.

HABITS AND FOOD. This is a typical bird of the paddy fields from the break of the rains till the reaping of the crop; at other times of the year it frequents jheels, rivers, and streams; in the cold weather it occurs singly and in small flocks far up the forest streams of the Pegu Yomas, and the heaps of white feathers not infrequently seen in the stream-beds testify to the toll that is taken of these birds by hawks.

To appreciate the beauty of the white egrets they should be watched on some late afternoon in the middle of the rains, when the sun breaks through the monsoon vapours just before setting and lights up the emerald-green and yellow patchwork carpet of the fields; as the sun sets, line after line of egrets, dazzling white against the dark purple cloud-capped background of the hills, wing their slow and leisurely way with regular beats of the broad, rounded wings to roost among the village trees.

NEST AND EGGS. Breeds during the rains in colonies in trees, often in *kokko* trees in the centre of towns and villages, and generally but not always in company with other egrets, herons, and cormorants. The eggs, 4 or 5 in number, are a delicate sea-green when fresh, but soon fade.

STATUS AND DISTRIBUTION. Widespread in the old world and a common resident throughout Burma.

REEF EGRET

Egretta sacra (Gmelin), TAHITI

IDENTIFICATION. Length 21–24 inches. A dimorphic species, one phase being pure white and the other dark slaty-black except for the white chin, and intermediate piebald birds are common. In breeding plumage it has a full crest and both breast and back plumes. Legs pale yellowish-green to almost black, with lemon-yellow soles conspicuous in flight. A purely coastal species, said to be very quiet and solitary outside the breeding season, frequenting both rocky reefs and mangrove swamps.

NEST AND EGGS. Breeds during the rains in colonies in mangrove swamps, coconut palms, or scrub-jungle. On the 19th May, Shopland found 8 or 9 nests in a patch of thorny jungle near the centre of Oyster Island, off the Arakan coast. The nests were from 1 to 3 feet from the ground, and were made of dead sticks and leaf-stalks; no nest contained more than 3 eggs. Hopwood visited this colony and found the birds breeding in the scrub on the edge of the island. There is a large colony on the Andamans, where the birds breed on

rocks and mangrove trees. The eggs resemble those of the cattle egret but are smaller.

STATUS AND DISTRIBUTION. Common on the coasts of the eastern Indian ocean and western Pacific, and on the coast and islands of Burma.

CATTLE EGRET

Ardeola ibis (Linnaeus), EGYPT
SUBSPECIES : *coromanda* (Boddaert), COROMANDEL

LOCAL NAME. Burmese : *kywe-gyaung-byaing*.

IDENTIFICATION. Plate XXVIII, figs. 7, 7*a* and 7*b*, p. 532. Length 20 inches. The yellow bill distinguishes it from the little egret at all seasons, and the black legs from the reef egret ; in non-breeding plumage the differently shaped bill and small size distinguish it from the large and intermediate egrets.

VOICE. Silent except at the breeding colony, where it utters a variety of croaking and guttural notes.

HABITS AND FOOD. The cattle egret differs from the other white egrets in being found in flocks at all times of the year, whereas the others tend to be solitary outside the breeding season, and in its constant attendance on grazing cattle, whence it derives its name ; for though it feeds sometimes on small fish, tadpoles and aquatic insects, its chief food consists of grasshoppers and flies, which it obtains off the grass and off the animals themselves ; it stalks about round their legs and often perches on their backs.

NEST AND EGGS. Nest construction starts at the end of April or in early May, usually in the *kokko* trees that have been planted for shade in most towns in Burma, sometimes in mango trees or bamboo clumps. The eggs are white with a faint blue or green tinge.

STATUS AND DISTRIBUTION. Africa and the warmer parts of Europe and Asia. In Arakan " rather scarce and local ; parties arrive about the 1st October and winter, leaving in April " (Christison). Common elsewhere in Burma where cattle and irrigated paddy fields occur, and goes up to 6,000 feet in the Shweli valley in Yunnan.

INDIAN POND HERON

Ardeola grayi Sykes, DECCAN

LOCAL NAME. Burmese : *byaing-auk*.

IDENTIFICATION. Plate XXVIII, fig. 5, p. 532. Length 18 inches. It escapes notice by its dingy coloration till it springs to life with

a flash of white wings. It has to be distinguished from the Chinese and Javan pond herons.

KEY TO POND HERONS (adults in breeding plumage)

A. Back claret-brown ; neck dark olive-buff . . . . *A. grayi*
B. Back slate-colour ; neck not olive-buff.
a. Upper neck clay-colour . . . . . *A. speciosa*
b. Upper neck prussian red . . . . . *A. bacchus*

In non-breeding plumage *grayi* and *bacchus* are not distinguishable

VOICE. It usually rises with a harsh croak.

HABITS AND FOOD. The paddybird, as the pond heron is sometimes called, is one of the most familiar of Burmese birds, and is found on almost every village pond. No puddle is too small, no water too dirty for its attention. It is usually seen standing motionless on the mud or ankle-deep in water, or stalking along, moving each foot with slow caution, and every now and then capturing its prey with a quick stab of its bill. Along forest streams it is commonly seen singly, occasionally in twos, and on the huge expanses of grass-covered mud along the coast it collects in hundreds.

NEST AND EGGS. Breeds in colonies during the rains, usually with cattle egrets, in *kokko*, mango, *ficus* and other trees, and in bamboo clumps, and Oates thought they bred in the reeds of the Myitkyo swamp, but did not actually see any nests. The eggs, 4 to 6 in number, are a deep sea-green when fresh, but soon fade.

STATUS AND DISTRIBUTION. Widespread in the oriental region and a common resident throughout Burma in the plains. Not recorded from Yunnan.

CHINESE POND HERON

Ardeola bacchus Bonaparte, MALAYA

IDENTIFICATION. See under *grayi*. The chestnut head and neck in breeding plumage, which is assumed in early April, are distinctive.

NEST AND EGGS. According to Stuart Baker, it breeds in Burma in mixed colonies with other herons and egrets.

STATUS AND DISTRIBUTION. Recorded as breeding in eastern Assam, Burma, and China ; Manchuria, Japan, Indo-China, Malaya, and Borneo fall within its range, but in the southern part of its range it is a winter visitor only. In Burma it is greatly out-numbered by *grayi* and there are few definite records, but Stanford saw two in Myitkyina district, Smith saw one on the Meiktila lake and collected another on the Hlawga lake, and several observers have reported it from the Southern Shan States and Tenasserim. It occurs in western Yunnan.

PLATE XXVIII

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1. GREY HERON (adult) 526
Ardea cinerea rectirostris.

2. LARGE EGRET (adult, summer) 528
Egretta alba modesta.

3. LITTLE EGRET (adult, summer) 529
Egretta garzetta garzetta.

4. PURPLE HERON (adult) 525
Ardea purpurea manillensis.

5. INDIAN POND HERON (adult, summer) 531
Ardeola grayi.

6. LITTLE GREEN HERON (adult) 533
Butorides striatus connectens.

7. CATTLE EGRET (adult, winter) 531
Ardeola ibis coromanda.

7*a* and 7*b*. CATTLE EGRET (adult, summer) 531
Ardeola ibis coromanda.

8. BLACK BITTERN (adult) 537
Dupetor flavicollis flavicollis.

9. CINNAMON BITTERN (adult male) 536
Ixobrychus cinnamomeus.

9*a*. CINNAMON BITTERN (adult female) 536
Ixobrychus cinnamomeus.

10. NIGHT HERON (adult) 534
Nycticorax nycticorax nycticorax.

PLATE XXVIII

1

4

2

3

5

6

7a

7b

7

8

9

9a

10

ONE FOOT

0" 6" 12"

0 150 300

300 mm.

1940.

JAVAN POND HERON

Ardeola speciosa (Horsfield), JAVA
SUBSPECIES : *continentalis* Salomonsen, BANGKOK

IDENTIFICATION. See under *grayi*.
STATUS AND DISTRIBUTION. An Indo-Chinese species which has been recorded from Tenasserim, but nothing is known about its status there.

LITTLE GREEN HERON

Butorides striatus (Linnaeus), SURINAM, S. AMERICA
SUBSPECIES : *amurensis* Schrenck, AMURLAND
connectens Stresemann, KWANGSI, CHINA
abbotti Oberholser, MALAYA

IDENTIFICATION. Plate XXVIII, fig. 6, p. 532. Length 18 inches. In the field the bird appears slate-grey rather than green, and invariably raises its crest on alighting. In the breeding season from March onwards the legs are a conspicuous orange.
VOICE. The only note is a deep, stifled croak.
HABITS AND FOOD. When not breeding this is a solitary and secretive little heron, and is the only one commonly seen along streams in deep forest ; it is typically flushed from bushes by the water's edge or flies up into them if disturbed from the stream-bed ; I once observed one in the hot weather at the last remaining wallow along an otherwise bone-dry stretch of stream in dry bamboo forest. It is also found along tidal creeks in mangrove forest. In the Myitkyina district, Stanford notes that " during the rains this bird may be watched crouching among the shingle on the river's edge or hopping with great agility from stake to stake of the fences put out in the shallows by fishermen ; from October onwards only solitary birds can be seen in secluded pools along the river."
NEST AND EGGS. Stanford notes that it " breeds in gardens in the Civil Station at Myitkyina in tamarind, *Araucaria*, *Ficus*, and mango trees. In 1934 they were back in their breeding haunts by the 28th March, and I saw one building on the 1st April. They have a long breeding season, as in 1933 two broods, which had just left the nest, were seen on the 4th and 5th July, and young were being fed in my garden up to the 6th October. Throughout the breeding season these birds are no more crepuscular or shy than is the cinnamon bittern, and individuals can be seen flying to and fro from their nests all day, or chasing each other. The nests look haphazard affairs, usually high up in trees, and seemingly little bigger than a pigeon's nest ; I have

known the young fall out of them, but the only nest examined was a solid well-made structure of sticks lined with a little grass, which retained the eggs intact when the tree was felled. In late April 1936 a pair evicted a pair of breeding *Corvus insolens* at the top of a leafless tamarind tree, and built a small platform of sticks beside the nest, on which they sat all day. They did not appear to mind the sun at all, and no crow dared approach the tree. I saw this pair feeding young in the crow's nest on the 22nd May." The eggs closely resemble those of the pond heron.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and not uncommon throughout Burma in suitable localities.

NIGHT HERON

Nycticorax nycticorax (Linnaeus), S. EUROPE
SUBSPECIES : *nycticorax* (Linnaeus), S. EUROPE

LOCAL NAME. Burmese : *lin-wet* (twilight pig).

IDENTIFICATION. Plate XXVIII, fig. 10, p. 532. Length 24 inches. A small, heavy heron, largely nocturnal in habits, sleeping by day in thick trees. In flight it is a compact-looking bird with the closely retracted head appearing to merge directly into the rather stout body, so that the black of the crown and mantle form a continuous area contrasting with the grey of the broad, rounded wings and tail. It has a drooping black crest and three long filament-like white feathers on the nape. Young birds are dull brown above, spotted and streaked with buffish-white ; under-parts dull greyish with dark streaks.

VOICE. The call is a hoarse croak or quack, *wock* or *kwaak*, and may sometimes be heard by day from a bird concealed in the foliage of a tree, but is typically heard at dusk when the birds are flighting out to their feeding-grounds.

HABITS AND FOOD. The night heron is well named, for it is normally nocturnal in habits and shy and secretive by nature. In Katmandu, Nepal, there was an ornamental pond in the centre of the town, with a constant stream of traffic and pedestrians going by, and round the stone-work of this pond a number of night herons used to sit all day long, without a shred of cover, completely indifferent to the noise and turmoil around them ; but I have never seen them behave in this remarkable manner anywhere in Burma. They roost in colonies, either in thickly foliaged trees or in *ponzo*, waiting for dusk to fall ; then the whole colony moves off in a continuous stream, each

bird flying separately, and spreads far afield for the night's fishing, to return at dawn to the roost.

NEST AND EGGS. Oates reported that it bred in immense numbers in the Myitkyo swamp, and although it does not do so now a number of large breeding colonies are known in the Henzada and Insein districts and in the Myitmaka drainage, and colonies are often mixed up with cattle egrets and little cormorants.

STATUS AND DISTRIBUTION. Almost cosmopolitan, and a common resident throughout the plains of Burma.

TIGER BITTERN

Gorsachius melanolophus (Raffles), BENKULAN, SUMATRA
SUBSPECIES : *melanolophus* (Raffles), BENKULAN, SUMATRA

IDENTIFICATION. Length 19 inches. Black crown and crest and light rufous colour of the upper-parts unmistakable. A shy and retiring bird of streams in evergreen forest, said to be mainly insectivorous.

NEST AND EGGS. Not described from Burma. It usually nests singly in high trees, sometimes in reeds.

STATUS AND DISTRIBUTION. Widespread in the oriental region, but rather rare. In Burma it has been recorded from Ramree Island, the Southern Shan States, Karenni, and Tenasserim, and goes up to 4,000 feet.

YELLOW BITTERN

Ixobrychus sinensis (Gmelin), CHINA

IDENTIFICATION. Length 14 inches. Small size, yellowish-buff colour with black primaries and tail and black crown, are distinctive features. Yellow legs conspicuous. Frequents *kaing* grass, bull rushes and similar cover round jheels and swamps.

NEST AND EGGS. Breeds in July and August in the *kaing* grass areas of the Myitmaka drainage and in September in reed-beds near the Arakan coast ; the nest is a pad of dead *kaing* leaves, small twigs, etc., and several nests may be found within a few yards of each other. The eggs, 3 to 5 in number, are a pale milky-blue.

STATUS AND DISTRIBUTION. Widespread in south-eastern Asia and the south-western Pacific. It has not been observed in northern Burma, but elsewhere is common in suitable jheels and swamps. To what extent it is migratory is uncertain. In Southern Burma Stanford thought it might be a summer visitor only, and it may move down to Malaysia in winter, where most birds are thought to be winter visitors (according to Delacour). On the other hand it has been collected in Mandalay district in January, so that some birds at least must winter in Burma.

CINNAMON BITTERN

Ixobrychus cinnamomeus (Gmelin), CHINA

LOCAL NAMES. Burmese : *sat-byaing* or *ye-bok*.
IDENTIFICATION. Plate XXVIII, figs. 9 and 9*a*, p. 532. Length 15 inches. In flight the male appears bright cinnamon-chestnut and is unmistakable ; the female is chestnut-brown above with the crown blackish, and buffy-rufous below, streaked with dark brown from chin to tail ; except in old birds, the wings are spotted with buff. Young birds resemble the female, but are more definitely barred and spotted above, and more brown, less chestnut, in colour.
VOICE. One call is a slight croak, or the syllable *creck* repeated about once per second, and another resembles the clucking of a domestic hen.
HABITS AND FOOD. This species is neither crepuscular nor shy in the breeding season, when it becomes conspicuous and flies about in broad daylight, but during the rest of the year it is secretive and not often seen. Stanford " once watched a male bird displaying at midday, flying in front of the female with very slow, stiff beats of the wings, which reminded me of the nuptial flight of a long-eared owl or a greenfinch," and notes that the yellow bittern occasionally performs in the same way.
NEST AND EGGS. Breeds during the rains in *kaing* grass or in scrub-jungle round swamps. Two nests containing young birds were found on the 10th June in the botanical gardens in Maymyo. Stanford found it breeding in July near Henzada, in bamboo clumps along with little cormorants, cattle egrets, and black bitterns. The eggs, 2 to 5 in number, are dull white.
STATUS AND DISTRIBUTION. Widespread in the oriental region, and also in north-eastern Asia. A common resident throughout Burma and goes up to 6,000 feet in North-East Burma. It is often seen during the rains on the outskirts of Rangoon and occasionally round Maymyo.

SCHRENCK'S BITTERN

Ixobrychus eurhythmus (Swinhoe), AMOY, CHINA

IDENTIFICATION. Resembles the yellow bittern in size and general appearance, but has a dark brown crown ; chestnut sides to the neck, and the mantle rich dark brown ; young birds are dark brown above spotted with white on the wings and back, and buff below with dark streaks on the throat and upper breast. Legs green.

STATUS AND DISTRIBUTION. Breeds in south-eastern Siberia and Japan, migrating south in winter. Milner obtained two at Yedwingon, Amherst district, in September 1935, the only record for India or Burma.

BLACK BITTERN

Dupetor flavicollis (Latham), INDIA
SUBSPECIES : *flavicollis* (Latham), INDIA

IDENTIFICATION. Plate XXVIII, fig. 8, p. 532. Length 24 inches. Very long neck, dark appearance, and slender build distinguish this bird when on the alert.

VOICE. Not described from Burma.

HABITS AND FOOD. This bird is widespread in the plains during the rains, when it flies about a good deal by day like other bitterns, and is commonly seen flying overhead singly at dusk. In the cold weather it seems to retire to streams in evergreen forest ; it is a characteristic bird of the forest streams in the Arakan Yomas of the Bassein district where single birds are frequently flushed from pools, often with a pond heron, and we noted several on similar streams at 3,000–4,000 feet on Nattaung in April.

NEST AND EGGS. Have been found in various districts of Southern Burma by a number of collectors, in bamboos or bushes, and Livesey found them breeding, several pairs together, among a colony of egrets, on rushes and bushes in the Inle lake. The nest is built of twigs, *kaing* grass stems and water plants, and the eggs, 3 to 5 in number, are a very pale green when fresh.

STATUS AND DISTRIBUTION. Widespread in the oriental region, extending to Australia. It breeds commonly throughout Burma in the rains, but is seldom seen in the cold weather in the plains ; some birds are local migrants to forest streams, but whether any birds leave Burma altogether is uncertain.

EUROPEAN BITTERN

Botaurus stellaris (Linnaeus), SWEDEN
SUBSPECIES : *stellaris* (Linnaeus), SWEDEN

IDENTIFICATION. Length 30 inches. Very large size and golden-brown coloration mottled with black distinguish this from other bitterns. It flies with slow rather owl-like action over the tops of the reeds, and the rounded wings and trailing green legs are noticeable. On the ground it stands with the neck either retracted or fully extended nearly vertically upwards in the well-known camouflage pose.

STATUS AND DISTRIBUTION. Widespread in the old world. Stanford notes that

" it will almost certainly be found to occur regularly in the cold weather on jheels where there are heavy beds of reeds or rushes, such as the Inle lake or Wetlet." Actual records to date are as follows :—Hokat jheel south of Myitkyina (one shot out of two seen) ; one shot by Harington near Bhamo ; one shot by Sewell on the 22nd April in the Kyaukse district ; one seen by Stanford at Bawle island, Insein district, and two shot near Pegu in the eighties.

Order ANSERIFORMES

Family ANATIDAE

SWANS, GEESE, AND DUCKS

Thirty-four species of ducks and geese are known to occur in Burma, but of these only six are resident ; the remainder are winter visitors, arriving in September or October and leaving again in March for their breeding haunts on the Tibetan plateau or further north ; most of them belong to species that are familiar to the wildfowler in far-away Britain : the wigeon, the pintail and the mallard, for example, that come to Burma are the same (though probably not from the same breeding locality) as the birds to be found in a wild Scottish estuary or being fed with crumbs beside the placid waters of St. James's Park. The resident species are : the comb duck, white-winged wood duck, cotton teal, the two whistling ducks, and the grey duck ; all except the grey duck breed in trees, making their nests in a natural hollow or in the depression of a big fork, and often roost and perch in the branches.

When looking at Plates XXIX and XXX in this book it must be remembered that the visiting drakes are seldom seen in the full adult plumage there depicted. There is good evidence that old drakes do not migrate so far south as the females and young, the former far out-numbering the latter in the north of the winter range, whereas in the south the reverse is true. Burma being on the southern fringe of the winter range of most species, adult drakes are in a minority ; those that do come would probably be moulting from eclipse into normal or full plumage on first arrival (the eclipse plumage lasts from July to September or December according to species), but from December onwards they should be in full plumage.

The jheels of the Irrawaddy valley, from Myitkyina to Mandalay, and the big Wetlet jheel in Shwebo district, attract the migrant

ducks in large numbers, and furnished good sport in the days when it was still possible to assemble the half-a-dozen or more guns required to shoot them properly. The shooting was similar to that on the well-known lake south of Imphal in Manipur, and a perusal of the records maintained by Higgins (1933–34) will give a good idea of the composition of an average bag obtained on any of the Burma jheels.

The popular division of the family into swans, geese, and ducks, though it has no scientific basis, is, nevertheless, a useful one. Swans hardly concern Burma, but there is a sight record of a small swan near Bhamo that might have been Alpheraky's swan, *Cygnus bewicki jankowskii* Alpheraky, a species breeding in Trans-Baikalia and eastern Siberia and wintering in China, but once obtained in India. Ducks are smaller, shorter-necked, narrower-winged birds than geese, and much more aquatic ; like geese and swans they fly with the neck extended, though the wing-beats are considerably more rapid, but unlike them the sexes usually differ conspicuously in plumage and have quite different call-notes. A side-to-side waggling movement of the tail is common and the sleeping position is with the bill tucked under the shoulder feathers.

The Burmese name for duck in general is *be*, and the Chinghpaw name is *hkai-pyek*.

Sub-family CAIRININAE

PERCHING DUCKS

Ducks with a rather long hind toe lacking a lobe, the neck shorter than the body, upper-parts (especially in the male) more or less glossy, and a rather long tail.

COMB DUCK

Sarkidiornis melanotos (Pennant), CEYLON

LOCAL NAME. Burmese : *mauk-tin*.

IDENTIFICATION. Plate XXIX, fig. 1, p. 544. Length 30 inches (male), 24 inches (female). The upper-parts of the male are black, brilliantly glossed with metallic green, purple and bronze, and the fleshy comb at the root of the bill is most developed in the breeding season. The female is markedly smaller and duller and lacks the comb. The flight is powerful and fairly rapid.

VOICE. The ordinary note of the male is a low, grating noise, but loud trumpet-like calls are uttered when the birds are disturbed near the nest.

HABITS AND FOOD. Essentially a tree duck, frequenting jheels that have a few trees round their margins, in which it roosts at night. It feeds largely on rice, but roots, seeds, and shoots of water plants are also eaten.

NEST AND EGGS. Breeds from June to September, usually in hollow trees ; one nest, found on the 31st July in the Myitmaka drainage in a hole in a tree, contained six fresh eggs of the comb duck and five fresh eggs of the cotton teal, and the local villagers asserted that these two species frequently lay eggs in the same hole. Harington found one nest in a hole in the bank of a river caused by a stone having fallen out, in which a small amount of grass and weeds had been collected for the eggs to lie on. The eggs usually number 7 to 12, but Livesey found one nest in India containing 47 eggs.

STATUS AND DISTRIBUTION. Africa, India, Ceylon, and Burma. Apart from one of a pair shot at Hkamho near Fort Hertz it has not been observed in northern Burma, but is widespread in Central and Southern Burma, though becoming scarce owing to persecution by Burmans. A flock of twenty to thirty birds has been seen on the Hlawga lake, near Rangoon, on the 1st April.

WHITE-WINGED WOOD DUCK

Cairina scutulata (Müller), JAVA

LOCAL NAME. Burmese : *mandali*.

IDENTIFICATION. Plate XXIX, fig. 2, p. 544. Length 30 inches (male), 24 inches (female). The upper-parts and breast of old males glint with metallic green in sunlight, and the base of the bill becomes swollen and red in the breeding season. The female is smaller and duller than the male.

VOICE. The call of the male is a trumpet-like *cronk, cronk* (Milner describes it as a very mournful note, more a wail than a cronk), usually heard when the birds are flighting at dusk, and the female whistles on the wing.

HABITS AND FOOD. A bird of streams and pools in evergreen forest, usually seen solitary or in pairs, occasionally more. It is one of the most characteristic birds of the Shweli river ; it seems to spend the day on small pieces of water or up small streams in remote parts of

the forest, coming out to the river at dusk to remain there all night and return to the jungle soon after dawn ; it is commonly heard flying up and down the river at dawn and dusk. In the Jade Mines area Stanford noted them flighting out regularly at dusk to feed on wet stubble where the streams ran out into the fields.

NEST AND EGGS. Not described from Burma, but in India it nests in hollow trees.

STATUS AND DISTRIBUTION. A Malaysian species, extending through Burma to Assam. By no means uncommon in the evergreen forests of northern Burma, as far south as the upper part of the Mu valley, and in the Shweli valley in Mongmit State ; also in the evergreen forests of the Arakan Yomas in the Bassein district. In the Pegu Yomas it is more local, and confined to the Tharrawaddy and Insein districts (during three years spent in the deciduous forests at the northern end of the Tharrawaddy district I never saw it).

COTTON TEAL

Nettapus coromandelianus (Gmelin), COROMANDEL
SUBSPECIES : *coromandelianus* (Gmelin), COROMANDEL

LOCAL NAME. Burmese : *kalagat.*

IDENTIFICATION. Plate XXIX, figs. 3 and 3*a*, p. 544. Length 13 inches. The smallest of the Burmese ducks. The male in full plumage is largely white, with the crown metallic dark brown ; a broad black collar ; upper-parts metallic green and purple ; a white patch on the wing, prominent in flight ; bill black, eye red, feet black. The female is brown where the male shows his metallic hues ; a brown line through the eye ; head and neck speckled with brown ; no white patch on the primaries. Young birds resemble the female, but are more marked about the head with brown and more banded with light brown on the flanks. The male in eclipse plumage resembles the female, but retains some green on the wings and also the white patch.

VOICE. Very noisy on the wing, uttering a peculiar note that has been likened to the words *fixed bayonets*, or *ka-kalaga.*

HABITS AND FOOD. Common on most jheels and a familiar bird in Burma from its habit of visiting small patches of water, often near villages, that do not attract other ducks. It flies fast with rapid wing-beats and dives well, feeding on aquatic plants and insects.

NEST AND EGGS. Have been taken in the Myitmaka drainage in July and August, usually from a hole in a tree, but once from a hole

in an ant-hill which had been built up round the base of a tree, and once from a nest of grass on top of an ant-hill.

Livesey describes their breeding in the Shan States. "They fight and chase each other a great deal during April and May, and about mid-June begin to take little excursions into the forest in small parties numbering three to seven or more. The sexes are mixed together and there seems to be no rivalry or ill-feeling. They all go and sit on some dead tree in the forest and then a lot of talking goes on, while the females search about for holes in which to nest, looking into all and any from 6 feet up to 70, in great trees. They lay in the end of June and in July, but are then very quiet and difficult to locate. They are said to run a communal nest . . . and I have myself seen two females enter the same hole one after the other. The local people . . . say they often get 30 or 40 eggs from the same nest and sometimes as many as 90."

Sir Harcourt Butler (1924) describes the finding of a nest in a box-like hole at the end of a coping on the roof of Government House, Rangoon, 68 feet from the ground. There were thirteen young birds, which had apparently been pushed out by the mother and had fallen to the ground; a servant, who saw some of them falling, was emphatic that they fell like a stone for a long distance and then fluttered and broke the fall as they approached the ground. He did not see any of them being carried down by the mother in her feet.

STATUS AND DISTRIBUTION. Widespread in the oriental region, and common throughout Burma.

MANDARIN DUCK

Aix galericulata (Linnaeus), CHINA

IDENTIFICATION. Length 19 inches. Apart from its wonderful plumage, this species is easily distinguished from all other ducks by its wings, which are shaped more like those of a pigeon, the quills being pointed and long-drawn. The male has a long full crest, copper-red in front and metallic green behind, and white at the sides; a ruff of bright chestnut hackles round the neck; breast purplish-maroon; under-parts white; the wing is adorned on the inner side with a fan, 3 inches broad, of chestnut and blue; bill rosy-red. The female is a brown bird with conspicuous silvery-grey and steely-blue primaries. The young male resembles the female.

STATUS AND DISTRIBUTION. Breeds in central and southern China, Formosa, and Japan. McCoard flushed two from a small strip of water about 25 miles south of Gangaw, Pakokku district, and shot one, early in December 1933; part of the wing was sent to Ticehurst, who confirmed the identification. In Manipur 3 or 4 were shot in one day in 1934 (Higgins, *in litt.*)

Sub-family ANSERINAE

KEY TO THE GREY GEESE

A. Nail at tip of upper mandible white or nearly so.
  a. Little or no white on forehead ; rump grey . . . *A. anser*
  b. A good deal of white round base of bill ; rump dark greyish-brown . . . . . *A. albifrons*
B. Nail at tip of upper mandible black or nearly so. . . *A. fabalis*

Records of any grey geese other than *A. anser* would be of great interest, and whenever possible the skin, or at least the head and bill, should be preserved, together with careful notes on the colours of the soft parts when fresh, and sent to a museum for identification ; this applies particularly to *A. fabalis*, the subspecies of which can only be determined by an expert.

GREY LAG GOOSE

Anser anser Linnaeus, SWEDEN
SUBSPECIES : *rubrirostris* Swinhoe, SHANGHAI

LOCAL NAME. Burmese : *ngan.*
IDENTIFICATION. Plate XXIX, fig. 4, p. 544. Length 30–35 inches, the largest of the grey geese that visit Burma. The large stout bill, heavy head, and pale grey fore-wing and rump are noticeable in the air ; general colour brownish-grey, browner in some birds, greyer in others. Old birds have black markings on the abdomen, which are absent on young birds.
VOICE. A loud, deep, sonorous *aahng-ung-ung* is uttered on the wing.
HABITS AND FOOD. Grey geese in winter are thoroughly gregarious, usually seen in parties numbering half a dozen to several hundred birds. They frequent jheels and sandbanks and are purely terrestrial, never perching even on low objects, and owing to the forward position of the legs they walk easily and well, much better than the ducks and with none of the waddle of the domestic goose. They are normally diurnal feeders, unless their feeding-grounds are much disturbed by day, but in Burma they prefer to spend the hot hours on the river sandbanks or on some secluded backwater of the jheel, flighting in the mornings and evenings from and to their feeding-grounds, and grazing through the night on the crops and fresh young greenstuff on the shore. Though much less aquatic than ducks, they swim buoyantly and well, and wounded birds often escape by diving.

They rise easily from the ground, less easily from water. The flight is direct, with regular wing-beats, and is faster than it appears. Flocks moving some distance, or migrating, fly in " V " formation,

usually with one arm of the " V " much longer than the other, and sometimes in trailing lines ; each bird maintains a regular distance from its neighbour and an old bird always acts as leader ; on shorter flights the formation is often much more irregular, but the birds maintain an even spacing. Preparatory to settling they plane down in a wide sweep with wings extended, braking when about to pitch, with wings turned sharply forwards and downwards and the tail spread, dropping almost vertically with a vigorous rotary action of the wings. They are acute and wary birds, and, although they settle unconcernedly quite close to Burmans ploughing with buffaloes, they soon learn to know the range of a gun.

STATUS AND DISTRIBUTION. A palaearctic species wintering in considerable numbers in northern and Central Burma (but not recorded farther south) from November to early March.

[NOTE.—Witherby retains this subspecies as recognisable but remarks that its status is somewhat obscure and its distribution uncertain. Birds visiting Burma presumably belong to this subspecies, which breeds in Siberia.]

WHITE-FRONTED GOOSE

Anser albifrons (Scopoli), ITALY
SUBSPECIES : *albifrons* (Scopoli), ITALY

IDENTIFICATION. In general appearance similar to the grey lag goose, but smaller (length 26–30 inches) and darker in colour ; adults are easily distinguished by a prominent white patch at the base of the bill and black barring on the breast ; both these features are lacking in young birds, but as they are usually with adults recognition is simplified. In flight the forewing is not noticeably paler than the rest. The note is described as higher pitched and more laughing in quality than that of the grey lag goose, uttered in quicker time with a curious metallic ring : *kow-yow* or *kow-lyow*.

STATUS AND DISTRIBUTION. A northern holarctic species. A rare winter visitor to northern India, Burma, and China ; its occurrence in Burma rests on the two records given in the *F.B.I.*, one from the Chindwin and one from Fort Stedman.

[NOTE.—*erythropus* (Linnaeus), N. EUROPE, is a smaller form, wing under 15 inches, with a lemon-yellow ring round the eye, recorded as a straggler in Assam.]

BEAN GOOSE

Anser fabalis (Latham), GT. BRITAIN
SUBSPECIES : *middendorfi* Sewertzow, TURKESTAN

IDENTIFICATION. Length 28–35 inches. A dark brownish-grey in colour, much darker and more sooty in appearance than the grey lag goose and less heavily built. Head and neck not darker than the back but usually distinctly con-

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1. COMB DUCK (adult male) 539
Sarkidiornis melanotos.

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Nettapus coromandelianus coromandelianus.

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7. RUDDY SHELDUCK or BRAHMINY DUCK (adult male, winter) . 548
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Anas platyrhyncha platyrhyncha.

10. GREY DUCK (adult) 550
Anas poecilorhyncha haringtoni.

PLATE XXIX

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ONE FOOT
300 mm.

trasted with the paler chest. The fore-wing is as dark as the rest. Legs orange or orange-yellow ; bill orange-yellow and black. The least vocal of the grey geese, and the note is described as very gruff and usually disyllabic, slightly reminiscent of the bleating of sheep.

STATUS AND DISTRIBUTION. A northern palaearctic species, one specimen of which was obtained on the 24th December 1901 by Whitehead at Myitkyina ; it was with a bar-headed goose and two brahminy ducks. There are no other records from Burma.

[NOTE.—*serrirostris* Swinhoe, AMOY, CHINA, might occur, and *neglectus* Sushkin, E. RUSSIA (a form with slender pink bill and pink feet) has been recorded in Assam. For two occurrences of *brachyrhynchus* Baillon, FRANCE, in India, see JBNHS, vol. 46, p. 185. The systematics of this species are still imperfectly worked out.]

BAR-HEADED GOOSE

Anser indicus (Latham), INDIA

LOCAL NAME. Burmese : *taw-ngan.*

IDENTIFICATION. Plate XXIX, fig. 6, p. 544. Length 30 inches. The nail at the tip of the upper mandible is black. Young birds have the crown dark brown and no black bars on the head.

VOICE. A deep, sonorous note uttered by several birds in unison is usually referred to as " gaggling."

HABITS AND FOOD. This is more typically a bird of the Irrawaddy and Chindwin sandbanks than the grey geese ; most flocks consist of six to twenty birds, but Baillie reports seeing a flock of 200 on the Chindwin below Minya village. It is not often seen on jheels away from the river, but according to the local boatmen it frequents the Paunglin jheel, Minbu district, in fair numbers early in the cold weather. The birds feed by night in the bean crops and cultivation along the river banks and there may be a well-marked morning and evening flight ; except when taking very short flights they fly high with sustained wing-beats in a wide " V " formation or else in long lines.

STATUS AND DISTRIBUTION. Breeds on the salt lakes of Ladakh and Tibet in May and June, and winters in India and Burma, arriving in October and leaving in March. It is found in small numbers in North-East Burma, is common on the Chindwin and along the Irrawaddy in Central Burma, extending down to Prome, where seventeen have been shot in one day ; there is a record of some having been seen at Pa-an on the Salween north of Moulmein.

[NOTE.—The RED-BREASTED GOOSE, *Branta ruficollis* Pallas, is a northern palaearctic species that has been seen in Assam, but never recorded from Burma.]

The remaining ducks are divisible into five sub-families : the tree or whistling ducks (*Dendrocygninae*), sheldrakes (*Tadorninae*), surface-feeders (*Anatinae*), diving ducks (*Aythyinae*), and sawbills (*Merginae*).

Sub-family DENDROCYGNINAE

WHISTLING DUCKS

Goose-like ducks with long legs and a long neck, broad wings and a shrill, whistling voice.

LESSER WHISTLING DUCK

Dendrocygna javanica (Horsfield), JAVA

LOCAL NAME. Burmese : *sit-sali*.

IDENTIFICATION. Plate XXIX, fig. 5, p. 544. Length 17 inches. Can only be confused with the next species, which has creamy-white as opposed to chestnut upper tail-coverts, a black line down the back of the neck, and buff patches on the sides of the body near the tail.

VOICE. A regular sibilant whistle, not very clear, and by no means harsh or shrill, is uttered constantly on the wing, especially when first rising off the water.

HABITS AND FOOD. Frequents jheels with some trees in the vicinity, which it uses for roosting and breeding purposes. Stanford notes that they feed in shallow water with head and neck outstretched and lying flat on the surface, though when sitting on dry land they are remarkably upright. Milner noted " flocks of a hundred and over sitting on the islands of *bedabin* that float up and down on the tidal creeks between Myaungmya and the sea."

NEST AND EGGS. Breeds in the rains from June to September, and usually lays its eggs in hollow trees, but Oates found nests built on thick matted cane-brakes in paddy fields. The eggs, 8 to 10 in number, are ivory-white when fresh, but soon become stained.

STATUS AND DISTRIBUTION. Widespread in the oriental region. It is found in most parts of Burma, but is much persecuted by every villager with a gun and is less common than it used to be. It is much more in evidence in the rains than at other times. Stanford records gatherings of paired birds aggregating as many as twenty, and many birds may be summer visitors to Burma to breed ; nevertheless, some certainly winter on the more secluded jheels.

GREATER WHISTLING DUCK

Dendrocygna bicolor (Vieillot), PARAGUAY
SUBSPECIES : *bicolor* (Gmelin), NOVO HISPANIA

LOCAL NAME. Burmese : *sit-sali*.
IDENTIFICATION. Plate XXIX, fig. 8, p. 544. Length 20 inches. Can only be confused with the lesser whistling duck (*q.v.*) ; the flight is stronger and faster.
VOICE. On the wing it utters a sibilant whistle, shriller than that of the lesser whistling duck and consisting of a double note and not a single one.
HABITS AND FOOD. Similar to those of the lesser whistling duck.
NEST AND EGGS. Breeds during the rains.
STATUS AND DISTRIBUTION. This species has a remarkable distribution from Burma to South America. It used to be common in Central Burma and the plains of Southern Burma, but is probably decreasing in numbers owing to persecution. Stuart Baker states that he has one record of its occurrence in Tenasserim, and that Hopwood obtained it in Arakan.

Sub-family TADORNINAE

SHELDUCKS

The shelducks approach geese in various ways (flight, carriage, largely terrestrial habits, similarity of sexes in plumage, the male assisting in the care of the young), but the resemblance is superficial rather than fundamental and as a group they are not far from the surface-feeders.

COMMON SHELDUCK

Tadorna tadorna (Linnaeus), SWEDEN

IDENTIFICATION. Length 24 inches. A large duck with goose-like poses and carriage, mainly white in colour with a boldly contrasted pattern of black and chestnut, while at close quarters the bright red bill and pink feet are also conspicuous. Head and neck black with metallic green lustre, and traces of a chestnut band round the breast.
STATUS AND DISTRIBUTION. A palaearctic species, and an occasional straggler to Burma. Oates obtained one in the Myitkyina district. Stanford recorded it from Posagon on the Upper Chindwin in December 1924, Smith saw a flock of 6 with some brahminy ducks on a jheel near Kyettagaung, Katha

district, in January 1916, Milner had one brought to him in Sagaing in December 1914, Harington recorded one from Meiktila, Roseveare saw it twice on the Wetlet jheel, Shwebo district, and Stanford saw a pair on a backwater of the Irrawaddy ten miles above Henzada. It has also been reported from Arakan (a flock of 7 on the 2nd November, Christison), 12 flying south in December, and 6 three days later (Buxton). There are no Yunnan records.

RUDDY SHELDUCK or BRAHMINY DUCK

Tadorna ferruginea (Vroeg), TARTARY

LOCAL NAME. Burmese : *hintha*.

IDENTIFICATION. Plate XXIX, fig. 7, p. 544. Length 25 inches. Black primaries and a white patch on the wing, nearly concealed at rest, are conspicuous in flight. The female has no black collar. Young birds are like the female, but duller, and have the back vermiculated with brown and pale rufous and the tail narrowly barred and tipped with rufous.

VOICE. A loud melodious *ah-onk*, with variants, is uttered freely. The voices of the male and female are said to be distinguishable, the former having more "o" sound and the latter more "a" sound.

HABITS AND FOOD. Banks of clean sand are what the brahminy duck requires, resembling in this respect the bar-headed goose. It is not typically a bird of the jheels, though it may be met with occasionally, and it has not been observed on the coastal mudflats ; but along the Irrawaddy it is probably the commonest duck in winter, and although it may arrive in flocks these break up into pairs as soon as the winter quarters have been chosen ; several pairs may collect together, but it is very unusual to see more than twenty-five or thirty birds in any one gathering.

STATUS AND DISTRIBUTION. A southern palaearctic species. In winter it is the commonest duck on the Irrawaddy and Chindwin rivers in northern and Central Burma, and also occurs on the larger rivers of Southern Burma and Arakan ; Davison saw it on Kolan Island in the Mergui Archipelago, but not on the mainland of Tenasserim. It is occasionally seen on inland lakes and jheels and pairs or small flocks regularly visit the Maymyo lake for a few days on first arrival in October or early November. It is probably the first of the migratory duck to arrive (except in Arakan, where it does not appear till the end of November) and one of the last to depart, staying till early in April.

Sub-family ANATINAE

SURFACE-FEEDERS

These are relatively slender-built birds and get most of their food in shallow water, securing it from the surface or from mud, either with a quick, dabbling motion of the mandibles (by which the water is strained through the bill and solid particles retained) or, where the water is slightly deeper, by " up-ending " with the head and front part of the body submerged and the tail in the air, maintaining the position by paddling with the feet. Young birds dive fairly freely, but adults only more or less exceptionally or if wounded. Though often resting on the water, most species come freely to the shore and walk with ease, carrying the body nearly horizontal, and feeding to a varying extent on land ; like storks, they are fond of resting on one leg. They rise easily and directly off the water, not pattering over the surface like the diving ducks, and fly with considerably less rapid wing-beats ; they do not glide in ordinary flight, but when preparing to pitch they descend in a long, slanting glide, finally braking and dropping to the water with the neck craned forward, but the body hanging down so that they strike the surface first with their feet. All ducks rise and pitch into the wind whenever possible.

There is generally a conspicuously coloured and often metallic patch on the wing, known as the speculum, usually duller in the female than in the male, and this is frequently helpful in identification. About midsummer the male assumes his eclipse plumage in which he looks like the female, except that he retains his characteristic wing-plumage ; this is replaced by the full plumage, which is assumed between September and December by most species. The female's eclipse, which is assumed some weeks later when the young are well grown, scarcely differs from the plumage it replaces, and can be ignored for field purposes. The hind toe is either not lobed or very narrowly lobed, a useful distinction from the diving ducks and sawbills.

MALLARD

Anas platyrhyncha Linnaeus, SWEDEN
SUBSPECIES : *platyrhyncha* Linnaeus, SWEDEN

LOCAL NAME. Burmese : *be-gaung-sein.*
IDENTIFICATION. Plate XXIX, fig. 9, p. 544. Length 23 inches. Differs from other ducks found in Burma in that the four middle

tail-feathers of the drake are curled upwards. The general colour of the drake is grey, the effect being produced by a fine pencilling of dark brown and white ; there is a white ring round the neck. The violet-purple speculum, bordered by white on both sides, is present on the wings of both sexes and when visible at once identifies the mottled brown and buff female.

VOICE. The loud, coarse *quark* is peculiar to the female. The drake's note is much more subdued, but higher-pitched, a rather grating *quek* or *quek-ek-ek*.

HABITS AND FOOD. The mallard is found in pairs or small flocks on lakes, jheels, and backwaters surrounded by cultivation. It is a typical surface-feeder in habits, though it will occasionally dive for food in 2–3 feet of water. It rises straight off the water when flushed and can hover after a fashion, when uncertain whether to pitch or not. It walks easily with a less pronounced waddle than the domestic duck and the carriage is nearly horizontal instead of markedly upright. Flocks have a regular flight to and from their feeding-grounds.

The flight is swift with a characteristic action, in which the wings are not depressed much below the level of the body ; the strokes, though less rapid than in many species, produce a whistling sound. Birds do not adopt any marked formation in flight, but on migration they fall into orderly wedge-shaped flocks or long, wavering, slanting lines that continually change.

STATUS AND DISTRIBUTION. A holarctic species ; the nearest breeding stations to Burma are in Tibet and Kashmir. It is probably a regular winter visitor to northern Burma in small numbers, and has been obtained in recent years in a number of places in the Upper Chindwin, North-East Burma, Central Burma, and Mongmit State (Northern Shan States). Owing to its shyness it is the first species to leave a jheel when shots are fired, and is therefore often overlooked. There are two Yunnan records, and it is a straggler to Malaysia.

SPOTBILL or GREY DUCK

Anas poecilorhyncha Forster, CEYLON
SUBSPECIES : *poecilorhyncha* Forster, CEYLON
haringtoni (Oates), SHAN STATES
zonorhyncha Swinhoe, NINGPO, CHINA

LOCAL NAMES. Burmese : *wun-be* or *gya-ma*.

IDENTIFICATION. Plate XXIX, fig. 10, p. 544. Length 24 inches. Key to the subspecies :

A. A broad white band behind green speculum.
a. A red spot on each side of base of bill . . . *poecilorhyncha*
b. No red spots on bill . . . . . *haringtoni*
B. No white band behind blue speculum . . . . *zonorhyncha*

The long white bar on the closed wing and the very dark tail and lower back are conspicuous features. Feet bright red to orange.

VOICE. The ordinary note is a *quark*, similar to that of the mallard.

HABITS AND FOOD. This is a common duck of the Irrawaddy and other large rivers such as the Shweli, and every jheel that contains duck in quantity will hold a few of these birds. They tend to keep to themselves, but have been seen associating with mallard. It is a typical surface-feeder in habits, and does some damage to paddy growing round jheels, trampling down a great deal more than it eats.

NEST AND EGGS. Have been taken at Prome on the 14th July (Mackenzie), at Pakokku on the 14th November (Macdonald) and in the Shan States on the 14th June (Harington), but eggs may be laid in almost any month of the year. According to Livesey, these ducks are very common on the Inle lake, where the breeding season seems to be very late in the year. All the flight-feathers are moulted at once after breeding, and while the quills are growing the birds stick very closely to thick cover and are very hard to dislodge from it. The nest is usually well concealed in herbage on the ground, and may be some distance from water, and the eggs, 8 to 10 (occasionally up to 14) in number, are typical duck's eggs.

STATUS AND DISTRIBUTION. Widespread in south-eastern Asia to Australia and the Pacific Islands, extending northwards to China and eastern Siberia. The status of the different subspecies in Burma is obscure; so far as we know at present *poecilorhyncha* has been obtained in Arakan and the Upper Chindwin, *zonorhyncha* in Myitkyina district and the Southern Shan States, with a sight record from Shwebo district on the 7th May (Roseveare), and *haringtoni* is a resident more or less throughout Burma, but is commoner in the dry zone and in the Shan States than elsewhere. Stanford found it rare in Myitkyina district, though occurring as far north as Fort Hertz, and it becomes rare south of Prome; Milner saw two birds on the Ataran river.

CRESTED or FALCATED TEAL

Anas falcata Georgi, ASIATIC RUSSIA

IDENTIFICATION. The male in full plumage shows remarkable peculiarities; it has a bushy, silky, mane-like crest, and long sabre-shaped feathers overlying the primaries; tail obscured by the tail-coverts, head bronze and green; throat

and fore-neck white with a dark green collar ; rest of body appears grey, being finely pencilled with black and white ; wings pale grey with a dark green speculum ; bill black and feet grey. The female is mottled dark and light brown and closely resembles the female gadwall, from which it can be distinguished by lack of brown in the speculum, entirely black bill, and 14 instead of 16 tail-feathers. In flight this duck closely resembles the common teal, making the same " swish swish " with its wings, but its loud piercing whistle is distinctive ; whilst swimming about it utters a note very like the chuckling of a drake mallard.

STATUS AND DISTRIBUTION. Breeds in eastern Siberia, migrating south in winter and straggling to Burma and India. It has been recorded from Arakan, North-East Burma, and Central Burma, but has probably been much overlooked.

GADWALL

Anas strepera Linnaeus, SWEDEN

IDENTIFICATION. Plate XXX, fig. 2, p. 556. Length 20 inches. A large, rather dull-coloured duck, at a distance looking fairly uniform grey-brown with black above and below the tail. The speculum is black and white, the white often concealed at rest, but showing as a conspicuous bar in flight. The female is mottled dark and light brown with a white belly ; the speculum is like that of the male, but the chestnut patch in front of it is much smaller. The legs and feet are like those of the male, but the bill is orange at the sides. For distinctions from a female falcated teal see under that species. In flight the wings look more pointed than a mallard's and the strokes are rather more rapid, resembling the flight of a wigeon and producing a low whistling sound.

VOICE. The note of the female is a *quark*, less loud and coarse than that of the mallard duck ; the ordinary note of the male has been described as a chuckling croak.

HABITS AND FOOD. The gadwall is a typical surface-feeder, found in small flocks wherever other ducks congregate, but preferring those jheels that have plenty of bushes and *kaing* grass round their edges. When disturbed it rises quickly and cleanly from the water.

STATUS AND DISTRIBUTION. A holarctic species. A regular winter visitor to Burma in small numbers and may form about 5 per cent. of the bag of duck on one of the Irrawaddy or Chindwin jheels ; it is much commoner in the north than in the south, and Milner's record of two small lots on the Ataran river in northern Tenasserim is the only one south of Prome. It arrives in late October and leaves in February.

EUROPEAN WIGEON

Anas penelope Linnaeus, SWEDEN

IDENTIFICATION. Plate XXX, fig. 1, p. 556. Length 19 inches. The plate shows the adult male, an unmistakable bird, but rarely seen in Burma. The female is mottled dark and light brown, and can be distinguished from the other surface-feeders by the small, short bill, more red in the plumage, and pointed tail. Young males resemble the female, but have the crown and upper-parts duskier, the flanks richer in colour, and the characteristic wing pattern with white shoulders. A broad white patch shows on the fore-wing in flight, and the white bellies of both sexes are also conspicuous; the flight is rapid, but not as swift as that of teal, and the rather long narrow wings are depressed further below the body on the downstroke than they are by mallard. The birds rise straight off the water and twist and swerve to some extent, but not as much as teal.

VOICE. The call of the male is a distinctive, loud, musical whistle, *whee-oo*, uttered with the bill open. The female utters a purring growl.

HABITS AND FOOD. A typical surface-feeder, but less addicted to "up-ending" than some of the others, the wigeon is one of the shy species and like mallard and pintail disappears from a jheel as soon as shots are fired. A flock generally flies in line formation, the line nearly always irregular and altering much in shape as the birds fly, and they make a peculiar rustling noise, very different from the noise made by other ducks.

STATUS AND DISTRIBUTION. A northern palaearctic species, visiting Burma from November to March; it is not particularly common, and has not been recorded south of Insein (Bloech shot it in the Insein and Pegu districts). An erratic passage migrant in Arakan, where huge flocks were seen flying northwards over the Dalet *chaung* in the first half of February 1945 (Christison). There is one record from Yunnan.

GREEN-WINGED or COMMON TEAL

Anas crecca Linnaeus, SWEDEN
SUBSPECIES: *crecca* Linnaeus, SWEDEN

LOCAL NAMES. Burmese: *be-gya* or *be-daung-gya*.

IDENTIFICATION. Plate XXX, fig. 3, p. 556. Length 15 inches. Except for the cotton teal this is the smallest duck found in Burma. At long range the male appears greyish with a dark head, a yellow-buff patch on either side of the black under tail-coverts, and a

whitish band along the side of the wing. The abdomen is white. The speculum is half metallic green, half black. The female is mottled dark brown and whitish, but has a speculum like the male, only not quite so bright and with no buff; by it she can be distinguished from the very similar female garganey, as well as by her narrower bill, which does not show a fringe. The young male resembles the female. In flight the female shows two narrow but distinct white wing-bars and the male shows a very broad and prominent anterior bar, but only a very faint posterior one. The birds shoot upwards when flushed, frequently wheeling and twisting in almost wader-like fashion, and the flight is very swift and strong.

VOICE. The note of the male is a low far-sounding musical *krit, krit*, that of the female a short, sharp *quack*, seldom used except when alarmed.

HABITS AND FOOD. In Myitkyina district Stanford notes that "it gathers in extraordinary numbers on secluded jheels and pools on the grass-plains, and I have seen birds flighting in hundreds from all directions to a patch of wet paddy stubble, near which not one was to be seen by day." It has a habit of dropping down to small rivers such as the Adung and the Ngawchang, where other ducks are not seen.

STATUS AND DISTRIBUTION. A holarctic species. This is the commonest duck in northern Burma, arriving in late September (earliest in Arakan the 10th October) and leaving in March (Rippon noted that they remain up to mid-May in the Southern Shan States), but in Central and Southern Burma it is outnumbered by the garganey; both species reach Malaysia.

[NOTE.—The BAIKAL TEAL, *Anas formosa* Georgi, breeds in Siberia, Japan, and northern China, and is a rare winter visitor to India; it has been twice recorded from Manipur but never from Burma. The speculum shows bands of cinnamon, bronze-green, black and white.]

GREY TEAL

Anas gibberifrons S. Müller, CELEBES
SUBSPECIES: *albogularis* (Hume), ANDAMAN IS.

IDENTIFICATION. Length 17 inches. Sexes almost alike. Distinguished from common teal by larger size and very dark plumage, almost chocolate in colour; throat, fore-neck and a ring round the eye white; a white patch in front of the speculum, which is velvet-black with a longitudinal bronze-green streak in the middle.

STATUS AND DISTRIBUTION. A Malaysian species, breeding in the Andamans and once obtained near Bassein.

COMMON PINTAIL

Anas acuta Linnaeus, SWEDEN
SUBSPECIES : *acuta* Linnaeus, SWEDEN

LOCAL NAME. Burmese : *be-yit.*

IDENTIFICATION. Plate XXX, fig. 4, p. 556. Length 22 inches, the long tail-feathers of the drake 4 inches extra. A slender, graceful duck with a long neck and pointed tail ; at long range it looks a mainly grey bird with dark head and neck and a white band extending down the side of the neck to join the white breast ; the back of the neck is black ; adult drakes in full plumage are commonly seen in Burma. The female is much like the mallard duck, but the combination of more delicate form, slender neck, and pointed tail (not elongated like the drake's), with a grey as opposed to a dark olive bill, readily separate her at a reasonable range. She is perhaps more likely to be confused with the female gadwall, but the absence of white on the wing and of orange on the bill should prevent this. The immature male resembles the female. They rise from the water with some difficulty, but the flight is very swift with quick wing-beats, which produce a low hissing sound ; wing-action more like wigeon than mallard. Both sexes show a light hinder border to the wing in flight.

VOICE. Usually silent, but the female sometimes quacks.

HABITS AND FOOD. The pintail is a very shy duck, usually seen in flocks that may number twenty to several hundred birds, which keep well out in the middle of the jheel and disappear at once if shots are fired. In Arakan they frequent inaccessible mangrove swamps by day, and feed in the shallow, weedy freshwater pools at night.

STATUS AND DISTRIBUTION. A holarctic species. It visits Burma from October to mid-February, and is probably one of the commonest of the larger migratory ducks. It is found throughout the country, but is commoner in northern and Central Burma than further south. Davison recorded that one was shot 19 miles out of Moulmein on the Amherst road, the most southerly record to date ; it does not reach Malaya, but straggles to Borneo.

GARGANEY

Anas querquedula Linnaeus, SWEDEN

LOCAL NAME. Burmese : *be-bya-galay.*

IDENTIFICATION. Plate XXX, fig. 5, p. 556. Length 16 inches. The

outstanding feature of the male in full plumage at any distance is the broad white band extending from eye to nape; the pale blue-grey fore-wing, conspicuous in flight, at once distinguishes it from the common teal, even in immature plumage. The speculum is metallic green, bordered with white in front and behind. The female is mottled dark brown and whitish and closely resembles the female common teal, but she has only a very obscure speculum, which at once separates her on the wing; on the water she can only be distinguished at close range, by the pure white instead of speckled brownish throat, whitish spot at base of bill, and more pronounced white eyebrow. The young male has the speculum of the adult, but otherwise resembles the female. The flight is rapid, but generally without the sudden turns and downward plunges of the common teal, and always when garganey are flying overhead a pattering, whistling swish of wings is heard, intensified almost to a roar as they drop down from a height of perhaps 300 feet to the surface of the water.

VOICE. The note of the female is a *quack*, like the female common teal's, but is seldom uttered.

HABITS AND FOOD. Usually seen in large flocks which feed mostly at night and during the day keep to the more open sheets of water, where they float about in the centre in the dense, closely packed masses that are very characteristic of garganey; even in flight they do not straggle much. They feed largely on vegetable matter, rice being a favourite article of diet.

STATUS AND DISTRIBUTION. A palaearctic species. It is distributed throughout Burma from mid-September to April (latest dates the 7th May, Roseveare, and mid-May in the Southern Shan States, Rippon), is the most abundant of the migratory ducks that visit Burma and also one of the earliest to arrive; in a bag of duck shot on any of the big jheels of Central Burma it nearly always outnumbers any other species, but in North-East Burma it is a scarce passage migrant and does not seem to winter. The garganey and the common teal are the only species of duck that have been observed on tidal creeks near the sea in Southern Burma (except for the single record of a grey teal). At Maymyo during October and November flocks of garganey used to arrive regularly on the open waters of the lake at about 8 a.m., spend the day there, and depart again about an hour before dusk in the direction of Mandalay. In Yunnan it has been recorded at 5,500 feet.

PLATE XXX

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1. EUROPEAN WIGEON (adult male, summer) 553
   Anas penelope.

2. GADWALL (adult male, summer) 552
   Anas strepera.

3. COMMON TEAL (adult male, summer) 553
   Anas crecca crecca.

4. COMMON PINTAIL (adult male, summer) 555
   Anas acuta acuta.

5. GARGANEY (adult male, summer) 555
   Anas querquedula.

6. COMMON SHOVELLER (adult male, summer) 557
   Anas clypeata.

7. TUFTED DUCK (adult male, summer) 560
   Aythya fuligula fuligula.

8. WHITE-EYED POCHARD (adult male, summer) . . . 559
   Aythya nyroca nyroca.

9. GREAT CRESTED GREBE (adult, summer) 563
   Podiceps cristatus cristatus.

10. LITTLE GREBE (adult, summer) 564
    Podiceps ruficollis capensis.

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9
10
ONE FOOT
300 mm.
1934

COMMON SHOVELLER

Anas clypeata (Linnaeus), SWEDEN

IDENTIFICATION. Plate XXX, fig. 6, p. 556. Length 20 inches. The outstanding character on the water or in flight is the enormous spatulate bill. Adult drakes are changing from eclipse to full plumage in November and December. The female is mottled dark and light brown, with a general tawny hue ; the wing has a grey or grey-brown shoulder and the speculum is a duller green than the male's. The immature male has the brilliant wing colouring of the adult, but otherwise resembles a dark and red version of the female. It is active in flight with rapid wing-beats, but the flight is less swift than a mallard's. It rises almost as abruptly as a teal with a loud rattle of wings and will twist and take " headers " like that species, though it is by no means so agile. The flight is like that of wigeon and gadwall, but the noise made by the wings is very distinctive.

VOICE. Rather a silent bird. The flight call of the male is a low, guttural *took, took* ; the female at times utters a creaking *quack*.

HABITS AND FOOD. The shoveller is more easily approached than most of the other ducks. The bill is developed for sieving mud and muddy water for minute living organisms and aquatic seeds, and for this reason it is usually found, solitary or in small flocks, in the shallows round the margins of the jheels, especially where ploughing is in progress ; it may even be seen on village ponds. It is a poor swimmer and diver.

STATUS AND DISTRIBUTION. A holarctic species. It arrives in Burma with the main migration of ducks soon after the middle of October and leaves in early March ; most birds pass through the Myitkyina district to winter in Central Burma, but it becomes rare south of Mandalay ; there are several records from Southern Burma and Milner saw a small flock on the Ataran river. It winters in Arakan in small numbers (Christison).

PINK-HEADED DUCK

Rhodonessa caryophyllacea (Latham), INDIA

IDENTIFICATION. Length 24 inches. The male is glossy dark brown with a wing-bar and the under-surface of the wings buff ; whole head and neck, except for the broad black band down the throat and front of the neck, a crude and brilliant rose-pink that does not harmonise with the bright red eye. The female is duller, with no black on the throat, but with a black streak along the crown. Young birds have the head and neck rosy-white but otherwise resemble the female. A shy and secretive forest duck.

NEST AND EGGS. Not described from Burma.

STATUS AND DISTRIBUTION. A bird of the dense sub-montane jungles from Nepal eastwards to Burma. In Burma it is a very rare duck of uncertain status. Blyth recorded it from Arakan and Bhamo many years ago. Jardine shot a female at Singu, Mandalay district, on the 25th December 1908, and records that Oates mentioned four as being shot near Mandalay. Stanford considers it is likely to occur in the evergreen forests of northern Burma, and it may do so, but throughout its range it seems to be a species that is on the verge of extinction.

Sub-family AYTHYINAE

DIVING DUCKS

The broadly lobed hind toe separates this sub-family from all the preceding ones. The diving ducks are typically shorter-bodied, more stocky birds than the surface-feeders, with the legs set far back; this causes them to walk clumsily with an upright carriage, and except for breeding purposes they do not come much to land. As a rule they like open water unobstructed by surface weeds and water plants, except round the edges. They swim surprisingly fast and to escape from a pursuing boat they often prefer swimming to flight. With the exception of the goldeneye they rise from the water with more or less effort, pattering along the surface before getting under way, and they alight more awkwardly. The wings are broad and tend to narrow more abruptly to a point than in surface-feeders, and in flight the wing-action is more rapid, the thicker neck often more noticeable, and the feet stick out beyond the tail. The eclipse tends to be less marked and there is not generally a distinct speculum, though white patches and bars on the wings are frequent. They habitually dive for their food and " up-end " only rarely or not at all.

RED-CRESTED POCHARD

Netta rufina (Pallas), CASPIAN SEA

IDENTIFICATION. Length 22 inches. The adult male is distinctive, with a rich chestnut head, a soft bushy crest that makes the head look large, a crimson bill, and a broad white wing-patch, extending nearly the whole length of the expanded wing. The female is the only more or less uniform brown duck with a pale cheek; bill black, reddish towards the tip; wings as in the male but the white patch is duller. The immature male resembles the female but is darker, with some indications of a crest. The flight is strong and swift with rapidly moving wings producing a whistling sound.

STATUS AND DISTRIBUTION. A southern palaearctic species. It is probably a regular winter visitor to Burma in small numbers, arriving in the latter part of October and leaving in March ; it has been recorded only from the Upper Chindwin, northern and Central Burma and the Southern Shan States. A solitary male seen on the Maymyo lake on the 22nd March with a party of tufted duck was on passage.

EUROPEAN POCHARD

Aythya ferina (Linnaeus), SWEDEN
SUBSPECIES : *ferina* (Linnaeus), SWEDEN

IDENTIFICATION. Length 18 inches. A squat heavily-built duck. The male has conspicuously tri-coloured plumage, the head being rich chestnut, the breast, rump and stern black, and the body pale clear grey, whiter below, this colour being produced by a fine pencilling of black on a white ground. Eye bright red. The female is dull brown with a hoary whitish appearance about the base of the bill, cheeks and throat, and a dark grey body ; tail-coverts not black. Eye brown. Immature males are much like the females. In flight the absence of any white on the wing distinguishes it from the white-eyed pochard and tufted duck. On the wing it is a straight and strong flier with quick beats of the short wings, which make a peculiar rustling sound. The note is a harsh croak.
STATUS AND DISTRIBUTION. A palaearctic species. It is a rare, though probably regular, winter visitor to northern Burma, Central Burma, and the Shan States.

WHITE-EYED POCHARD

Aythya nyroca Guldenstadt, SOUTH RUSSIA
SUBSPECIES : *nyroca* Guldenstadt, SOUTH RUSSIA
baeri (Radde), AMUR, SIBERIA

IDENTIFICATION. Plate XXX, fig. 8, p. 556. Length 16 inches. The white eye of the male contrasting with the reddish-brown head is distinctive. The female is much duller and darker in colour, has not the white belly so clearly defined from the breast, and has grey eyes, but is otherwise similar. The adult male of *baeri* has the head and neck black glossed with green, but females and young males are difficult to distinguish in the field ; they have some blackish on the sides of the head and neck, and the female is easily separated by wing measurement (193–215 mm., as against 176–185 mm.) The white wing-mark is often hidden on the swimming bird, but in flight or when the wings are flapped this mark shows as a broad, roughly crescentic white band on the flight-feathers and is very conspicuous.
VOICE. The harsh call resembles that of the common pochard and is expressed by the syllables *kek-kek-kek* or *koor-kirr-kirr*.

HABITS AND FOOD. The white-eye may be found on any type of water, fresh or salt, in the hills or plains or along the sea coast ; by preference, however, it is a bird of the more secluded and weedy jheels, where the shores are overgrown with herbage and occasional patches of open water are surrounded by water-lilies and rushes ; in such places it is found in small flocks, but the individuals scatter amongst the cover to rest, and rise only two or three at a time. It is an expert swimmer and diver, and prefers water 3–4 feet deep for feeding purposes.

STATUS AND DISTRIBUTION. A southern palaearctic species. The subspecies *nyroca* is a common winter visitor to Arakan, northern Burma, and Central Burma ; in the Myitkyina district it is found in considerable flocks on the river between Myitkyina and Sinbo when the birds first arrive, but these flocks soon pass on further south. The subspecies *baeri* seems to be more irregular, but has been recorded from Arakan, the Upper Chindwin, Bhamo, Central Burma, Southern Burma, and the Northern Shan States. Christison describes both as passing through Arakan on passage in November and December, and again in February and March.

SCAUP DUCK

Aythya marila (Linnaeus), LAPLAND
SUBSPECIES : *marila* (Linnaeus), LAPLAND

IDENTIFICATION. Length 19 inches. The adult male has a deep black-green head, black breast, rump and stern ; back coarsely pencilled black and white ; flanks and belly white. The broad white band round the base of the bill distinguishes the dark brown female and is always broader and more sharply defined than in female or immature tufted duck ; general colour pattern as in the male, but the black replaced by brown. Some immature birds are difficult to separate from tufted duck.

STATUS AND DISTRIBUTION. A northern holarctic species. It is a rare winter visitor to India, and only one has been obtained in Burma, a female shot on the Katcho jheel near Myitkyina on the 10th November 1935.

TUFTED DUCK

Aythya fuligula (Linnaeus), SWEDEN
SUBSPECIES : *fuligula* (Linnaeus), SWEDEN

LOCAL NAMES. Burmese : *myo-ma* or *nyoo-hmat.*

IDENTIFICATION. Plate XXX, fig. 7, p. 556. Length 17 inches. The crest hanging from the nape is not always obvious from a distance,

unless blown clear of the head by the wind. In flight both sexes show a broad white wing-bar, and the general appearance is black with a white belly. The female and young male are very dark brown, the former showing some whitish on the sides above the water-line in winter, and there is usually a little whitish at the base of the bill. The crest is much shorter than in the adult drake, but usually perceptible, and helps to distinguish them from immature scaup. Flight and gait very much as in common pochard, but it flies almost as fast as a pintail.

VOICE. The note of the female is the usual harsh growling *kur-r-r*, *kur-r-r*, common to the females of most diving ducks.

HABITS AND FOOD. Similar to those of the common pochard; it likes jheels and lakes with plenty of open water.

STATUS AND DISTRIBUTION. A palaearctic species. A common winter visitor to northern and Central Burma, rare in Southern Burma (Stanford records it from the Prome district), and occurs in the Shan States. Small flocks used to visit the Maymyo lake on passage, and sometimes winter there. Apart from the common and garganey teal it is probably the duck most commonly seen during a day's shoot on the Irrawaddy or Chindwin. Forrest obtained one in the Shweli valley in Yunnan as late as June, and two were seen on the Wetlet jheel on the 2nd July (Roseveare).

COMMON GOLDENEYE

Bucephala clangula (Linnaeus), SWEDEN
SUBSPECIES: *clangula* (Linnaeus), SWEDEN

IDENTIFICATION. Length 18 inches, the female considerably smaller. The male is mostly white, with dark glossy green head and a white patch at the base of the bill. The golden-yellow eye is noticeable at some distance in bright sunlight. The female is a chocolate-headed mottled grey bird with the wing-patch showing as a white mark on the side. The neck looks very short in flight and the short bill and peaked crown give a triangular outline to the head; the wings appear black with a conspicuous broad white patch on the basal half extending nearly to the front edge of the wing. It rises more easily and directly from the water than the other diving ducks, and the wing-beats are especially rapid, producing a characteristic loud "singing" or "ringing." sound. In India it seems to frequent chiefly fast-running rivers and streams.

STATUS AND DISTRIBUTION. A holarctic species. It is a rare winter visitor to India and the only record for Burma is one obtained by Macdonald in the Myingyan district in December 1900.

[NOTE.—The LONG-TAILED DUCK, *Clangula hyemalis* (Linnaeus), SWEDEN, is a northern holarctic species which has not been recorded from Burma, but

there are four recent records from India, including one from Assam. The mainly white head, white flanks and belly of both sexes and the drake's long pointed tail are distinctive features.]

Sub-family MERGINAE

SAWBILLS

These are also diving ducks, but a very distinct group recognised by their slender, tapering bills and the more or less distinct crested or mane-like development of the feathers at the back of the head ; they resemble the members of the previous sub-family in having a broad lobe on the hind toe. The outline in flight is characteristic, with the head and slender neck held stiffly in a straight line with the body, giving an elongated appearance in contrast to other ducks, which fly with the head bent slightly downwards. They dive for their food and are primarily fish-eaters. They are more graceful, lively birds than the typical diving ducks, come to land more, and walk better.

SMEW

Mergus albellus Linnaeus, MEDITERRANEAN SEA

IDENTIFICATION. Length 16 inches, female smaller. A much smaller and shorter-billed bird than other sawbills. The adult drake attracts attention by mainly pure white plumage with black patch on the face and black band from behind the eye to the nape ; in flight he shows much more black, the wings being black with a prominent white patch on the coverts, giving a pied appearance. Female and young are quite as characteristic, with pure white throat and cheeks contrasting with rufous of rest of head ; back, breast and flanks grey ; belly white. In flight the white wing-patch is smaller and less sharply defined than in the male but still quite conspicuous. Generally silent. Flight rapid and noiseless. Frequents fast-running streams.

STATUS AND DISTRIBUTION. A northern palaearctic species. A rare visitor to Burma. Freeman shot one in the Upper Chindwin and Power reported seeing some on the Mali Hka at Nawnghkai, near Fort Hertz.

GOOSANDER

Mergus merganser Linnaeus, SWEDEN
SUBSPECIES : *merganser* Linnaeus, SWEDEN

IDENTIFICATION. Length 26 inches, female smaller. The male is mostly white with a bottle-green head and black back ; breast and sides suffused with pink ; bill and legs blood-red. In flight the black and white appearance is striking.

The female is ashy-grey above, white below, and the chestnut head contrasts with the whitish neck and a white patch on the throat. A white wing-patch, often concealed by the flank feathers, is prominent in the spread wing. Frequents fast-running streams and rises with difficulty, splashing and flapping along the surface like a cormorant and flying close to the water. In Burma it is nearly always seen in small flocks consisting almost entirely of males.

STATUS AND DISTRIBUTION. A holarctic species. A winter visitor to northern Burma, to date recorded only from the Myitkyina district, where it is common on the Irrawaddy and its tributaries, but likely to occur in the Upper Chindwin. One was seen by Power at Nawnghkai, near Fort Hertz, on the 3rd and 21st May.

Order PODICIPITIFORMES

Family PODICIPITIDAE

GREBES

This family is distributed over Europe, Asia, and America. The grebes are well adapted for an aquatic life and are adept at diving; the young are covered with down when they hatch and are able to swim at once. The sexes are alike.

GREAT CRESTED GREBE

Podiceps cristatus (Linnaeus), SWEDEN
SUBSPECIES: *cristatus* (Linnaeus), SWEDEN

IDENTIFICATION. Plate XXX, fig. 9, p. 556. Length 18 inches. The plate shows the breeding plumage. A long-necked bird at once distinguished by the ear-tufts and ruff, and by the very small wings; under-parts pure silky-white, and some white on the wings. In winter the colours are duller and the ear-tufts and ruff incompletely developed, the ruff being indicated by rufous and blackish shading on the sides of the head. First-winter birds have inconspicuous ear-tufts and the sides of the head pure white or merely tinged dusky. It has a humpbacked appearance in flight, with the feet extended behind; the wing-beats are rapid, giving a laboured effect.

VOICE. The note is a harsh *krek-krek*. Many and varied breeding notes have been described.

HABITS AND FOOD. The great crested grebe keeps to open water on lakes and jheels, and spends its time diving for fish, sometimes in

company with flocks of cormorants. When rising it patters over the water for some distance before getting clear, but when approached it is disinclined to take wing and prefers to dive and retreat to open water at a safe distance. It swims with the body low in the water and the slender neck erect, but when at rest the head is sunk on the shoulders and the bill is often buried in the feathers at one side of the neck. At diving it is even more proficient than the diving ducks, swimming farther under water and staying down longer.

STATUS AND DISTRIBUTION. A palaearctic species, extending to Australia. It breeds in Tibet, Kashmir, and even Assam, but there is no evidence that it breeds in Burma, and it seems to be a regular winter visitor in small numbers. It has been recorded from North-East Burma (about 10 seen or obtained in the Myitkyina district), Central Burma (Garthwaite counted 40 to 50 birds on one jheel in the Mandalay district at Christmas and there are several other records), Maymyo (where it has been seen on the lake), and the Southern Shan States.

LITTLE GREBE

Podiceps ruficollis (Pallas), HOLLAND
SUBSPECIES : *capensis* Salvadori, SHOA, E. AFRICA
poggei (Reichenow), CHIHLI PROVINCE, CHINA

LOCAL NAMES. Burmese : *ye-wun-be* or *ta-si-hmoke.*

IDENTIFICATION. Plate XXX, fig. 10, p. 556. Length 9 inches. The smallest of the true water-birds of Burma, swimming low in the water and disappearing under it at the least provocation. In breeding plumage there is a bright yellow patch in front of the eye, which contrasts with the chestnut head and is very noticeable. Birds with the chestnut head of breeding plumage have been seen as early as the 16th April, and others with the sides of the head still chestnut as late as the 31st January (Roseveare). In winter plumage the crown and hind-neck are brown, the chin white, and the chestnut of the neck is replaced by rusty-red.

VOICE. It has a curious tittering note, a shrill rippling whinny audible for some distance, and the alarm-note is a sharp *tuit, tuit.*

HABITS AND FOOD. The little grebe or dabchick is found in small flocks on lakes and jheels, diving persistently without disturbing the surface of the water. A rather exceptional occurrence was that of a solitary bird found on a tank overgrown with water-lilies in the midst of dry forest, far from other water ; it was seen on the 25th July in Meiktila district.

NEST AND EGGS. Breeds during the rains, and most eggs are probably laid in July and August. The nest is a heap of rotten weeds floating on the water, and the bird when leaving the nest quickly covers the eggs with some of the weeds, a habit common to most grebes. The eggs, 3 to 7 in number, are white when fresh, but quickly stain to a dark earthy-brown.

STATUS AND DISTRIBUTION. Widespread in the old world, and a common resident throughout Burma in suitable localities.

A SYSTEMATIC LIST OF THE BIRDS OF BURMA

REFERENCE. *F.B.I.* No. refers to the bird's number in the *Fauna of British India—Birds*—second edition.

Under "Distribution"—

"R" denotes that the bird is a resident

"M" denotes that the bird is a migrant

"U" denotes uncertainty as to whether the bird is a resident or migrant.

Where the letters "*R*," "*M*" or "*U*" occur in *italics* they denote that the bird has only been recorded from that part of the Distribution Area noted in the Remarks column.

Column numbers correspond with Distribution Area numbers shown on the Map at the end of this book.

F.B.I. No.	Scientific Name	English Name	DISTRIBUTION: 1 Arakan	2 Chin Hills	3 Upper Chindwin	4 North-East Burma	5 Central Burma	6 Southern Burma: Arakan Yomas	6 Southern Burma: Pegu Yomas	6 Southern Burma: Plains	6 Southern Burma: Karen Hills	7 Northern Shan States	8 Southern Shan States	9 Karenni	10 Tenasserim	ELEVATION at which the bird is normally found.	REMARKS Including isolated records of the bird's occurrence.
	Order PASSERIFORMES																
	Family CORVIDÆ																
(5)	Corvus macrorhynchos levaillanti	*Jungle Crow*	R	R	R	R	R	R	R	R	R	R	R	R	*R*	Up to 7000′	North
(8)	„ „ andamanensis	„ „	....	....	....	....	....	....	....	....	....	....	....	....	*R*	....	South
(—)	„ „ subsp.	„ „	....	....	....	*R*	....	....	....	....	....	....	....	....	....	6000′–12000′	Yunnan border
(11)	„ splendens splendens	*House* „	*R*	....	....	....	....	....	....	....	....	....	....	....	....	....	North
(13)	„ „ insolens	„ „	*R*	R	R	R	R	R	R	R	R	R	R	R	R	Up to 5000′	South
(17)	Pica pica sericea	*European Magpie*	....	....	....	R	*R*	....	....	....	....	R	R	....	....	„ „ 7000′	Mogok hills
(21)	Kitta erythrorhyncha magnirostris	*Red-billed Blue* „	R	R	R	R	R	R	R	R	R	R	R	R	....	„ „ 5000′	
(—)	„ „ alticola	„ „ „	....	....	....	*R*	....	....	....	....	....	....	....	....	....	Above 4000′	Yunnan border
(22)	„ flavirostris flavirostris	*Yellow-billed* „ „	....	....	....	R	....	....	....	....	....	....	....	....	....	„ 6000′	
(—)	„ „ schäferi	„ „ „	....	R	?	....	....	....	....	....	....	....	....	....	....	„ „	
(24)	„ chinensis chinensis	*Green* „	R	R	R	R	R	R	R	R	R	R	R	R	R	Up to „	
(28)	Crypsirina vagabunda sclateri	*Rufous Treepie*	R	R	R	R	....	R	....	....	....	....	....	....	....	„ „ 7000′	
(29)	„ „ kinneari	„ „	....	....	....	R	R	R	R	R	R	R	R	R	....	„ „ „	
(30)	„ „ saturatior	„ „	....	....	....	....	....	....	....	....	....	....	....	....	R	„ „ „	
(32)	„ formosae himalayensis	*Grey* „	....	R	....	R	R	....	....	....	....	R	R	....	....	„ „ „	
(33)	„ „ assimilis	„ „	R	....	R	....	....	R	....	....	R	....	R	R	R	„ „ „	
(34)	„ frontalis	*White-naped* „	....	....	R	R	....	....	....	....	....	....	....	....	....	„ „ 3500′	
(36)	„ temia	*Black Racket-tailed* „	....	....	....	....	....	R	R	R	....	....	R	R	....	Below 3000′	
(37)	„ cucullata	*Hooded* „ „	....	....	*R*	*R*	R	....	R	R	....	....	....	....	....	„ „ „	South
(38)	Platysmurus leucopterus	*White-winged Jay*	....	....	....	....	....	....	....	....	....	....	....	....	*R*	„ „ „	South from Tavoy
(40)	Garrulus glandarius leucotis	*European* „	R	....	....	R	R	R	R	....	....	R	R	R	*R*	Up to 5000′	North
(41)	„ „ oatesi	„ „ „	....	R	R	....	....	....	....	....	....	....	....	....	....	„ „ „	
(—)	„ „ sinensis	„ „ „	....	....	....	R	....	....	....	....	....	....	....	....	....	Above 6000′	
(732)	Platylophus galericulatus ardesiacus	*Crested Malay* „	....	....	....	....	....	....	....	....	....	....	....	....	*R*	....	South
(—)	Nucifraga caryocatactes yunnanensis	*European Nutcracker*	....	....	....	R	....	....	....	....	....	....	....	....	....	Above 6000′	
	Family PARIDAE																
(—)	Parus major nepalensis	*European Great Tit*	R	R	R	R	R	R	....	R	....	....	....	....	....	Below 4000′	
(56)	„ „ thibetanus	„ „ „	....	....	....	R	....	....	....	....	....	....	....	....	....	Above 5000′	
(—)	„ „ vauriei	„ „ „	....	....	....	?	....	....	....	....	....	....	....	....	....	....	
(—)	„ „ nubicolus	„ „ „	....	....	....	....	....	....	....	....	....	....	*R*	....	....	....	Kengtung

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Family CHARADRIIDAE

Sub-family ARENARIINAE

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Family SCOLOPACIDAE

Sub-family TRINGINAE

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Order ANSERIFORMES

Family ANATIDAE

Sub-family CAIRININAE

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BIBLIOGRAPHY

A CENTURY has elapsed since Phayre and Abbott opened the first chapter of ornithology in Burma with their collections from Arakan, which were examined by Blyth of the Calcutta Museum ; during the next twenty-five years a number of collectors, including Tickell, Lloyd; Beavan, Olive, de Wet, Hough, and Shopland, continued to send specimens to Blyth, who eventually published a list of the birds of Burma, and to Lord Walden. The second chapter opened in 1873 with the appearance of the first number of *Stray Feathers* under the editorship of Allan Hume, one of the greatest ornithologists of the century, but a member of the Indian Civil Service whose increasingly onerous duties eventually forced him to give up the study of birds altogether ; in addition to a complete volume written by Hume and Davison on the birds of Tenasserim, *Stray Feathers* included a number of important papers on Burma birds by Oates, Armstrong, Bingham, Feilden, and others. All this early work was ably summarised by Oates in his great book *Birds of British Burmah*, which was published in 1883, and in this bibliography references are given only to books and papers (except for *Stray Feathers*) published after that date.

British Burma in 1883 comprised the provinces of Arakan, Pegu, and Tenasserim, and it was not till two years later that "Upper Burma" was brought under British rule, and vast new areas were thereby thrown open to ornithologists. The third chapter, from 1883 down to 1906 (when Macdonald published his Myingyan list) is largely the history of the exploration of Upper Burma and the Shan States ; Bingham, Thompson, Craddock, Rippon, Wood, Mears and Macdonald all published regional lists of birds. In 1902, however, Harington published the first of his notes on nests and eggs, and largely under the influence of Stuart Baker this branch of ornithology received increasing attention down to 1930 ; in addition to Harington, a number of naturalists including Cook, Hopwood (J. C.), Mackenzie, Marlow, Smith, Wickham, and Livesey concentrated on finding and describing nests and eggs, and all this work was summarised by Stuart Baker in his work on nidification.

The last phase began in 1930 when Ticehurst, a doctor with a practice in Kent, who devoted his spare time to the taxonomic study

of birds, started to specialise on the birds of Burma and succeeded in impressing on a number of naturalists the importance of obtaining further material from Burma for taxonomic study ; collections were made by Stanford, Villar, Smith, Garthwaite, and Smythies all over Burma and worked out by Ticehurst. A number of important collections were also made in the 'thirties on behalf of foreign museums ; Vernay led expeditions to northern Tenasserim and Siam, the Upper Chindwin, and the Laukkaung subdivision of the Myitkyina district, and Heinrich made a large collection for the Berlin museum in Central Burma and on Mt. Victoria.

The bibliography that follows is largely the work of Ticehurst, whose knowledge of the literature on Burma birds was unrivalled, and who before his death had compiled a very complete list up to 1939 ; this list was brought up to date and arranged in chronological order by Stanford, thereby greatly facilitating its casting into final form for printing ; to this list I have added references to a number of books dealing with neighbouring areas of the oriental region that have recently appeared, and also to a number of papers published in the U.S.A. in the past ten years revising various families, genera, and species.

Apart from abbreviations normally used in such lists, I have used the following :—

BNHS—Bombay Natural History Society.
JBNHS—*Journal of the Bombay Natural History Society.*

I have entered in square brackets a few explanatory remarks. These do not appear in the titles of the books or papers concerned.

AITKEN, E. H. (EHA).
1905. *A Naturalist on the Prowl* (ed. 3). Thacker Spink, Calcutta.
1927. *The Tribes on my Frontier* (ed. 10). Thacker Spink, Calcutta.
ALI, SALIM
1946. *The Book of Indian Birds* (ed. 4). BNHS, Bombay.
ALLAN, C. W.
1909. " Doves Nesting on the Ground." JBNHS, vol. 19, p. 523.
AMADON, D.
1943. " The Genera of Starlings and their Relationships." *Amer. Mus. Novitates*, No. 1247.
1944. " The Genera of *Corvidae* and their Relationships." *Amer. Mus. Novitates*, No. 1251.
AMADON, D., AND S. G. JEWETT, JR.
1946. " Notes on Philippine Birds." *Auk*, vol. 63.

BAKER, E. C. STUART

1913. *Indian Pigeons and Doves.* BNHS, Bombay.

1921–30. *Game Birds of India, Burma and Ceylon,* 3 vols. BNHS, Bombay.

1922–30. *Fauna of British India (birds),* (ed. 2), 8 vols. Taylor & Francis, London.

1932–35. *Nidification of Birds of the Indian Empire,* 4 vols. Taylor & Francis, London.

1942. *Cuckoo Problems.* Witherby, London.

BANGS, O.

1921. "The Birds of the Amer. Mus. of Nat. Hist. Asiatic Zoological Expedition of 1916–17." *Bull. Amer. Mus. Nat. Hist.,* vol. 44, p. 575. [Coll. Andrews & Heller. Some specimens were obtained on the Shan States–Yunnan border, at Malipa, Mengting, etc.]

1932. "Birds of Western China obtained by the Kelly-Roosevelt expedition." *Field Mus. of Nat. Hist. publication,* No. 314, Zoo. series, vol. 18, p. 343.

BANGS, O., AND J. L. PETERS

1928. "Birds collected by Dr. Joseph F. Rock in western Kansu and eastern Tibet. *Bull. Mus. Comp. Zoo. Harvard,* vol. 68, p. 313.

BATES, R. S. P.

1930. *Bird-life in India.* BNHS, Bombay.

BEEBE, W.

1918–22. *A Monograph of the Pheasants,* 4 vols. Witherby, London.

BELL, C. N.

1912. "Duck in Burma." JBNHS, vol. 22, p. 399.

BELL, E. N.

1911. "Snipe Shooting in Upper Burma." JBNHS, vol. 21, p. 271.

BINGHAM C. T.

1894–95. "Collecting Ways and Collecting Days."
I. "Ataran." JBNHS, vol. 8, p. 346.
II. "The Limestone Rocks." JBNHS, vol. 9, p. 473.

1897. "The Great Indian Hornbill in the wild state." JBNHS, vol. 11, p. 308.

1903. "A Contribution to our Knowledge of the Birds occurring in the Southern Shan States, Upper Burma." *Ibis,* 1903, p. 584.

BINGHAM, C. T., AND H. N. THOMPSON

1900. "On the Birds Collected and Observed in the Southern Shan States of Upper Burma." *J. Asiatic Soc., Bengal,* vol. 69, part 2, p. 102.

BLANDY, R.

1918*a*. The Breeding Habits of Mrs. Hume's Pheasant." JBNHS, vol. 26, p. 288.

1918*b* "Note on Khalij Pheasants in the Chin Hills. JBNHS, vol. 26, p. 289.

BLOECH, E. O.

1915. "Snipe in Lower Burma." JBNHS, vol. 23, p. 777

1929. "Notes on Woodcock in Lower Burma. JBNHS, vol. 33, p. 715.

BUTLER, SIR H.

1924. "The Cotton Teal." JBNHS, vol. 30, p. 702

CAREY, B. S.
1900. "The Great Crested Grebe in Burma." JBNHS, vol. 13, p. 186.
CHANCE, E.
1940. "The Truth about the Cuckoo." *Country Life*, London.
CHASEN, F. N.
1935. "A Handlist of Malaysian Birds." Raffles Museum, Singapore, *Bull. No.* 11.
CHRISTISON, SIR P., A. BUXTON AND A. M. EMMET, ASSISTED BY DILLON RIPLEY
1946. "Field Notes on the Birds of Coastal Arakan and the Foothills of the Yomas," JBNHS, vol. 46, p. 13.
COMBER, E.
1905*a*. "On the Occurrence of the Lady Amherst's Pheasant in Burma," JBNHS, vol. 16, p. 512.
1905*b*. "Interesting Birds from the Shan States." JBNHS, vol. 16, p. 739.
COOK, J. P.
1911. "Uncommon Birds in Burma." [Rufous-bellied hawk-eagle and Tickell's staphidia at Thandaung.] JBNHS, vol. 21, p. 265.
1912*a*. "Nidification of the Tweeddale Scimitar Babbler" (*Pomatorhinus nuchalis*). JBNHS, vol. 21, p. 659.
1912*b*. "Notes on some of the Bird Life at Thandaung." JBNHS, vol. 21, p. 668.
1912*c*. "Nidification of Burmese Great Black Woodpecker (*Thriponax feddeni*)." JBNHS, vol. 21, p. 1081.
1912*d*. "Notes on the Habits of Swinhoe's Reed Warbler (*Urosphena squamiceps*) and on the Nesting of the Great Black Woodpecker (*Thriponax feddeni*)." JBNHS, vol. 21, p. 1085.
1913. "A List of Kalaw Birds, with Bird-nesting Notes." JBNHS, vol. 22, p. 260.
COOKE, F. H.
1928. "Woodcock in Burma." JBNHS, vol. 33, p. 207.
COUCHMAN, G. H. H.
1893. "Notes on the Flora and Fauna of the Kachin Hills." JBNHS, vol. 7, p. 447.

DEIGNAN, H. G.
1942. "A Revision of the Indo-Chinese Forms of the avian genus *Prinia*." Smithsonian Misc. Coll., vol. 103, No. 3.
1945. "The Birds of Northern Thailand." *U.S. Nat. Mus. Bull.*, No. 186.
1946. "The Races of the Scarlet Minivet (*Pericrocotus flammeus* Forster). *Auk*, vol. 63, p. 511.
1947*a*. "The Races of the White-throated Flycatcher-Warbler (*Abroscopus superciliaris* Blyth)." *Proc. Biol. Soc. Washington*, vol. 60, p. 19.
1947*b*. "The Races of the Gray-headed Flycatcher (*Culicicapa ceylonensis* Swainson)." *Auk*, vol. 64, p. 581.
1947*c*. "The Races of the Minivet *Pericrocotus peregrinus* (Linnaeus) in South-eastern Asia." *J. Washington Acad. Sciences*, vol. 37, No. 7, p. 254.

DEIGNAN, H. G.—*continued.*
1947*d*. "A Review of the Races of the Spotted Babbling Thrush (*Pellorneum ruficeps* Swainson." *Smithsonian Misc. Coll.*, vol. 107, No. 14.
1948*a*. "The Races of the Black-throated Sunbird (*Aethopyga saturata* Hodgson)." *J. Washington Acad. Sciences*, vol. 38, No. 1, p. 21.
1948*b*. "Races of the Bulbul (*Microscelis charlottae* Finsch) and its Relatives." *Proc. Biol. Soc. Washington*, vol. 61, p. 1.
1948*c*. "The Races of the Silver-breasted Broadbill (*Serilophus lunatus* Gould). *J. Washington Acad. Sciences*, vol. 38, p. 108.
1948*d*. "The Races of the Red-whiskered Bulbul, *Pycnonotus jocosus* (Linnaeus)." *J. Washington Acad. Sciences*, vol. 38, No. 8, p. 279.
1949 "Races of *Pycnonotus cafer* (Linnaeus) and *P. aurigaster* (Vieillot) in the Indo-Chinese Subregion." *J. Washington Acad. Sciences*, vol. 39, No. 8, pp. 273-279.

DELACOUR, J.
1942. "The Bush Warblers of the Genera *Cettia* and *Bradypterus* with Notes on Allied Genera and Species." *Ibis*, 1942, p. 509, and 1943, pp. 27, 343.
1943*a*. "A Revision of the Genera and Species of the Family *Pycnonotidae* (Bulbuls)." *Zoologica*, vol. 28, No. 4.
1943*b*. "A Revision of the Subfamily *Estrildinae* of the Family *Ploceidae*." *Zoologica*, vol. 28, No. 11.
1944. "A Revision of the Family *Nectariniidae* (Sunbirds)." *Zoologica*, vol. 29, No. 4.
1946*a*. "Les Timaliinés." *L'Oiseau et la R.F.O.*
1946*b*. "Notes on the Taxonomy of the Birds of Malaysia." *Zoologica*, vol. 31, part 1.
1947. *Birds of Malaysia*. Macmillan, New York.

DELACOUR, J., AND P. JABOUILLE
1931. *Les oiseaux de l'Indochine Française*. 4 vols. Paris.

DELACOUR, J., AND E. MAYR
1945*a*. "The Family *Anatidae*." *Wilson Bull.*, vol. 57, No. 1, p. 3.
1945*b*. "Notes on the Taxonomy of the Birds of the Philippines." *Zoologica*, vol. 30, No. 3.
1946. *Birds of the Philippines*. Macmillan, New York.

DRUMMOND, J. G. P.
1923. "The Burmese Barred-back Pheasant (*Phasianus humiae burmanicus*)." JBNHS, vol. 29, p. 562.

EVANS, G. H.
1901. "On the Occurrence of the White-winged Wood Duck (*Asarcornis scutulatus*) in Upper Burma." JBNHS, vol. 13, p. 532.
1904*a*. "The Black Stork ? (*Ciconia nigra* ?)." JBNHS, vol. 16, p. 159.
1904*b*. "The Great White-bellied Heron (*Ardea insignis*)." JBNHS, vol. 16, p. 160.
1904*c*. "Late Stay of Snipe." JBNHS, vol. 16, p. 161.
1904*d*. "The Nidification of the Little Blue-winged Pitta (*Pitta cyanoptera*) in Upper Burma." JBNHS, vol. 16, p. 171.

EVANS, G. H.—*continued.*
1914. " Late Stay of Snipe." JBNHS, vol. 23, pp. 160, 161.
1921. " The Food of the Burmese Roller (*C. affinis*) and of the Ashy Drongo (*D. nigrescens*)." JBNHS, vol. 27, p. 955.

FINN, F.
1911. *Game-birds of India and Asia.* Thacker Spink, Calcutta.
1920. *How to Know the Indian Waders.* Thacker Spink, Calcutta.
1921. *Waterfowl of India and Asia.* Thacker Spink, Calcutta.

FLETCHER, T. B., AND C. M. INGLIS
1936. *Birds of an Indian Garden* (ed. 2). Thacker Spink, Calcutta.

GARTHWAITE, P. F.
1937. " Occurrence of the Great Crested Grebe (*Podiceps cristatus cristatus* Linnaeus) at Maymyo, Upper Burma." JBNHS, vol. 39, p. 640.

GARTHWAITE, P. F., AND C. B. TICEHURST
1937. " Notes on some Birds recorded from Burma." JBNHS, vol. 39, p. 553.

GHIGI, A.
1909. " Ricerche di sistematica sperimentale sul genre *Gennaeus.*" *Mem. d. R. Accad. d. Sci. dell' Ist. di Bologna,* ser. vi, vol. 6.

GREENWAY, J. C., JR.
1933. " Birds of North-west Yunnan." *Bull. Mus. Comp. Zoo.,* vol. 74, p. 109.

GWYER, C.
1914. " Swinhoe's Snipe (*G. megala*) in Burma." JBNHS, vol. 22, p. 804.

HANNA, J. R. M.
1926. " Comments on Mr. J. K. Stanford's ' Occurrence of the Sheldrake and Lapwing in Upper Burma'." JBNHS, vol. 32, p. 220.

HARINGTON, H. H.
1902. " Notes on Birds Nesting in the Southern Shan States of Burma." JBNHS, vol. 14, p. 596.
1903. " Birds Nesting in Southern Shan States of Burma." JBNHS, vol. 15, p. 140.
1904*a*. " The Nesting of (474) *Lanius collurioides* (The Burmese Shrike) and (512) *Artamus fuscus* (The Ashy Swallow Shrike) in Upper Burma." JBNHS, vol. 15, p. 519.
1904*b*. " The Nesting of (117) *Pomatorhinus nuchalis* (The Tweeddale Scimitar Babbler)." JBNHS, vol. 15, p. 519.
1904*c*. " The Koel Laying in the Nest of *Pica rustica*, the Magpie." JBNHS, vol. 15, p. 520.
1904*d*. " The Lapwing or Peewit (*Vanellus vulgaris*)." JBNHS, vol. 15, p. 723.
1904*e*. " Notes on the Nesting of some Birds in the Upper Chindwin District, Burma." JBNHS, vol. 16, p. 166.
1905. " The Nesting of some Birds in Burma which have not been recorded before." JBNHS, vol. 16, p. 740.
1906. " The Variation in the Colour of the Eggs of the Dark Grey Bush Chat (*Oreicola ferrea*)." JBNHS, vol. 17, p. 249.

HARRINGTON, H. H.—*continued.*
1908. "Some Notes on Birds Nesting in Burma." JBNHS, vol. 18, p. 686.
1909*a*. *Birds of Burma*. Rangoon Gazette Press, Rangoon.
1909*b*. "A List of the Birds of the Bhamo District of Upper Burma." JBNHS, vol. 19, pp. 107, 299.
1909*c*. "Some Rangoon Birds." JBNHS, vol. 19, p. 358.
1910*a*. "A Further List of Birds of the Bhamo District, Upper Burma." JBNHS, vol. 20, p. 373.
1910*b*. "The Indian White-Eye (*Zosterops palpebrosa*)." JBNHS, vol. 20, p. 520.
1911. "Some Maymyo Birds." JBNHS, vol. 20, p. 1002, and vol. 21, p. 585.
1912. "Chinese Grey Duck in Burma." JBNHS, vol. 21, p. 1086.
1914*a*. "A New Swift from Burma—the Burmese Swift (*Micropus pacificus cooki*)." JBNHS, vol. 23, p. 155.
1914*b*. "Notes on the Nidification of some Birds from Burma (Sinlum Kaba)." *Ibis*, 1914, p. 1.

HARTING, J. E.
1883. "On the *Totanus haughtoni* of Armstrong." *Ibis*, 1883, p. 133.

HIGGINS, J. C.
1933–34. "Game Birds and Animals of Manipur." JBNHS, vol. 36, pp. 406, 591, 845; vol. 37, pp. 81, 298.

HOPWOOD, J. C.
1906*a*. "Albinism in the Malay Spotted Dove (*Turtur tigrinus*) near Kindat, Upper Chindwin." JBNHS, vol. 17, p. 249.
1906*b*. "The Green Thrush (*Cochoa viridis*) Breeding in Burma." JBNHS, vol. 17, p. 249.
1906*c*. "The Falcated Teal (*Eunetta falcata*) in Upper Burma." JBNHS, vol. 17, p. 249.
1908*a*. "A Further List of Birds from the Chindwin, Upper Burma." JBNHS, vol. 18, p. 432.
1908*b*. "Notes on Nidification of Various Birds in the Upper Chindwin and at Maymyo, Upper Burma." JBNHS, vol. 18, p. 494.
1908*c*. "A Note on the Distribution of the Burmese Grey Duck or Spotbill (*Palionetta haringtoni* Oates)." JBNHS, vol. 18, p. 498.
1909. "Occurrence of the Spoonbill (*Platalea leucorodia*) in Lower Burma." JBNHS, vol. 19, p. 261.
1912*a*. "Notes on some Birds from the Chindwin Valley." JBNHS, vol. 21, p. 1089.
1912*b*. "A List of Birds from Arakan." JBNHS., vol 21, p. 1196.
1914*a*. "Occurrence of the Smew (*Mergus albellus*) in the Upper Chindwin." JBNHS, vol. 22, p. 808.
1914*b*. "Occurrence of the Falcated Teal (*Eunetta falcata*) in the Upper Chindwin." JBNHS, vol. 23, p. 365.
1919. "Notes on some Nests recently found in South Tenasserim." JBNHS, vol. 26, p. 853.
1921. "The Nidification of the Masked Finfoot (*Heliopais personata*)." JBNHS, vol. 27, p. 634.

HOPWOOD, J. C., AND J. M. D. MACKENZIE
1917. "A List of Birds from the North Chin Hills." JBNHS, vol. 25, p. 72.

HOPWOOD, S. F.
1926. "The Red-legged Falconet (*Microhierax eutalmus*) hawking butterflies." JBNHS, vol. 31, p. 826.

HUME, A. O.
1873–88. *Stray Feathers*, 11 vols. Calcutta.

INGLIS, C. M.
1918. "An Addition to the Game Birds of Burma. The Long-billed Hill Partridge (*Rhizothera longirostris* Temminck) in Tenasserim." JBNHS, vol. 26, p. 291.
1919*a*. "Nidification of Stone's Pheasant (*Phasianus elegans*). A Correction." JBNHS, vol. 26, p. 673. [Correcting vol. 25, p. 360.]
1919*b*. "The Black-breasted Khalij Pheasant (*Gennaeus horsfieldi horsfieldi*) east of the Irrawaddy." JBNHS, vol. 26, p. 848.

JARDINE, E. R.
1909. "Occurrence of the Pink-headed Duck (*Rhodonessa caryophyllacea*) in Burma." JBNHS, vol. 19, p. 264.

JONES, A. J., AND N. T. WHITE
1931. "Occurrence of the Mallard (*Anas platyrhyncha*) in Upper Burma." JBNHS, vol. 34, p. 577.

KEDDIE, D. L.
1906. "Note on the Burmese Button Quail." JBNHS, vol. 17, p. 237.

KENNY, E. C.
1919. "Migration of Snipe in Burma." JBNHS, vol. 26, p. 850.

KINNEAR, N. B.
1910. "Pied Imperial Pigeon and Sheldrake in Arracan." JBNHS, vol. 20, p. 518.
1913. "Turnstone (*Calidris arenaria*) in Lower Burma." JBNHS, vol. 22, p. 200.
1934. "On the Birds of the Adung Valley, North-East Burma." JBNHS, vol. 37, p. 347.

LA TOUCHE, J. D.
1923–24. "On the Birds of South-East Yunnan, S.W. China," *Ibis*, 1923, pp. 300, 369, 629, and 1924, p. 284.
1925–34. *Handbook of the Birds of Eastern China*, 2 vols. Taylor & Francis, London.

LANE, W. H.
1904. "Late Stay of Snipe." JBNHS, vol. 15, p. 708.

LIVESEY, T. R.
1933*a*. "Notes on the Habits of Radcliffe's Sibia (*Leioptila melanoleuca radcliffei* Stuart Baker)." JBNHS, vol. 36, p. 993.
1933*b*. "Cuckoos in the Southern Shan States." JBNHS, vol. 36, p. 997.
1933*c*. "Nidification of the Giant Nuthatch (*Sitta magna* Wardlaw Ramsay)." JBNHS, vol. 36, p. 1001.
1933*d*. "The Nesting of the Shahin Falcon (*Falco peregrinus*) on a Tree." JBNHS, vol. 36, p. 1003.
1935*a*. "Bird notes from Burma." [Laggar Falcon breeding in Karenni, Cineraceous Vulture observed in Bhamo district and Northern Shan States, Starling seen at Bhamo.] JBNHS, vol. 38, p. 187.

LIVERSEY, T. R.—*continued.*
1935*b*. "Nidification of the Shan States Barwing (*Actinodura ramsayi ramsayi* Walden)." JBNHS, vol. 38, p. 187.
1935*c*. "Peregrine and Spur-winged Plover." JBNHS, vol. 38, p. 190.
1935*d*. "The Status of the Brown Shrike (*Lanius cristatus cristatus* Linnaeus) in the Southern Shan States, Burma." JBNHS, vol. 38, p. 397.
1935*e*. "Habits of the Burmese Stone Chat (*Saxicola caprata burmanica* Stuart Baker)." JBNHS, vol. 38, p. 398.
1935*f*. "Cuckoos in the Southern Shan States." JBNHS, vol. 38, p. 401.
1936*a*. "Does the Japanese Grey Quail (*Coturnix c. japonicus* Temm. and Schleg.) breed in the Shan States?" JBNHS, vol. 38, p. 830.
1936*b*. "The Brown Wood Owl (*Strix indranee* Sykes)." JBNHS, vol. 38, p. 827.
1936*c*. "Cuckoo Problems." JBNHS, vol. 38, p. 734.
1937*a*. "The Egg-laying of the Khasia Hills Cuckoo (*Cuculus canorus bakeri* Hartert)." JBNHS, vol. 39, p. 623.
1937*b*. "Cuckoo Incidents." JBNHS, vol. 39, p. 626.
1939*a*. "Egg-laying of the Khasia Hills Cuckoo (*C. c. bakeri*) in the Nest of the Burmese Stone Chat (*Saxicola caprata burmanica*)." JBNHS, vol. 40, p. 125.
1939*b*. "Cuckoo Problems." JBNHS, vol. 40, p. 127.
1939*c*. "Cuckoo Problems." JBNHS, vol. 40, p. 329.
1939*d*. "Egg Stealing by the Khasia Hills Cuckoo (*Cuculus canorus bakeri* Hartert)." JBNHS, vol. 40, p. 561.
1939*e*. "Call Notes of the Burmese Plaintive Cuckoo (*Cacomantis merulinus querulus*)." JBNHS, vol. 40, p. 564.
1939*f*. "The Shan Brown Wood Owl (*Strix indranee shanensis* Baker)." JBNHS, vol. 40, p. 567.
1939*g*. "The Nidification of the Burmese Barred-back Pheasant (*Syrmaticus humiae burmanicus*)." JBNHS, vol. 40, p. 568.
1939*h*. "Vultures Feeding at Night." JBNHS, vol. 40, p. 755.

LOWE, W. P.
1933. "A Report on the Birds Collected by the Vernay Expedition to Tenasserim and Siam." *Ibis*, 1933, pp. 259, 473.

MACDONALD, A.
1927. "Occurrence of the Wood Snipe (*Gallinago nemoricola*) in Burma." JBNHS, vol. 31, p. 1033.

MACDONALD, K. C.
1901*a*. "Occurrence of Bonelli's Eagle and the Golden-Eye Duck at Myingyan." JBNHS, vol. 13, p. 700.
1901*b*. "Occurrence of the Laggar Falcon in Burma." JBNHS, vol. 14, p. 142.
1904. "Occurrence of the White-throated Rock Thrush, *Petrophila* (*Monticola*) *gularis*, in Burma." JBNHS, vol., 15, p. 727.
1905. "First Record of the Nidification of the Indian Hobby (*Falco severus*)." JBNHS, vol. 16, p. 518.

MACDONALD, K. C.—*continued*.

1906. "List of Birds found in the Myingyan District of Burma." JBNHS, vol. 17, pp. 184, 492.

1908. "Notes on Birds in the Amherst District, Lower Burma." [Occurrence of *Cerasophila thompsoni* on the Dawnas and Nesting of *Falco severus*.] JBNHS, vol. 18, p. 912.

1909. "The White-winged Wood Duck (*Asarcornis scutulata*) in Tenasserim." JBNHS, vol. 19, p. 263.

MACKENZIE, J. M. D.

1916. "Nidification of the Golden Weaverbird (*Ploceella javanensis*)." JBNHS, vol. 24, p. 821.

1918*a*. "Some Further Notes on Cuckoos in Maymyo." JBNHS, vol. 25, p. 742.

1918*b*. "A Few Notes on the Nests and Eggs of some of the Burmese Scimitar Babblers." JBNHS, vol. 25, p. 748.

1919. "Nidification of the Smaller Streaked Spiderhunter (*Arachnothera aurata*)." JBNHS, vol. 26, p. 669.

1929. "Nidification of Bingham's White-headed Bulbul (*Cerasophila thompsoni*)." JBNHS, vol. 33, p. 991.

MARTEN, J.

1906. "The Nesting of the Black-backed Forktail (*Henicurus immaculatus*)." JBNHS, vol. 17, p. 533.

MAYR, E.

1938. "Birds of the Vernay-Hopwood Chindwin Expedition." *Ibis*, 1938, p. 277.

1940. "*Pericrocotus brevirostris* and its double." *Ibis*, 1940, p. 712.

1941. "Die geographische variation der farbungstypen von *Microscelis leucocephalus*." *J. für Ornithologie*, vol. 89, part 4.

1942. *Systematics and the Origin of Species*. Columbia University Press, New York.

1945. *Birds of the South-west Pacific*. Macmillan, New York.

MAYR, E., AND D. AMADON

1947. "A Review of the *Dicaeidae*." *Am. Mus. Novitates*, No. 1360.

MEARS, A., AND E. W. OATES

1907. "On Birds of the Chindwin, Upper Burma." JBNHS, vol. 18, p. 78.

MILNER, C. E.

1915. "The Orange-bellied Chloropsis in the Katha District, Upper Burma." JBNHS, vol. 23, p. 776.

1931*a*. "The Occurrence of the Spotbill or Grey Duck (*Anas p. poecilorhyncha*) in Upper Chindwin, Burma." JBNHS, vol. 35, p. 209.

1931*b*. "Occurrence of the Bronze-capped or Falcated Teal (*Eunetta falcata*) in Burma." JBNHS, vol. 35, p. 899.

1936. "Occurrence of Shrenk's Bittern (*Ixobrychus eurythmus* Swinhoe) in Amherst District, Tenasserim." JBNHS, vol. 38, p. 834.

MOORE, A. C.

1943. "Occurrence of the Chinese Hawk-Eagle (*Spizaëtus n. fokiensis* Kirke-Swann) in the Chin Hills." JBNHS, vol. 43, p. 106.

NISBETT, W. G., AND F. FINN
1900. "Notes on some Kalij Pheasants from the Kachin Hills in the possession of the BNHS." JBNHS, vol. 13, p. 521.

OATES, E. W.
1883*a*. *Birds of British Burmah*, 2 vols. Rangoon.
1883*b*. "On a New Species of *Polyplectron*." [*P. helenae* from Upper Burma]. *Ibis*, 1883, p. 136.
1888. "On the Birds of Bhamo, Upper Burma." *Ibis*, 1888, p. 70.
1894. "On some Birds collected on Byingyi Mt., Shan States." *Ibis*, 1894, p. 478.
1895. "Notes on some Birds from the Ruby Mines District, Burma." JBNHS, vol. 10, p. 108.
1898. "On a New Species of Pheasant from Burma." [*Calophasis burmanicus*]. *Ibis*, 1898, pp. 124, 311.
1903. "On the Silver Pheasants of Burma." *Ibis*, 1903, p. 93.
1904. "On some New Species of Silver Pheasants obtained in Burma by Capt. W. G. Nisbett, Lieut. R. Clifford and others." JBNHS, vol. 16, p. 112.
1906*a*. "On some New Species of Silver Pheasants from Burma." JBNHS, vol. 17, p. 10.
1906*b*. "On the Species of Bean-Geese." JBNHS, vol. 17, p. 38.
1907. "On a New Species of Grey Duck (*Polionetta haringtoni*) from Burma." JBNHS, vol. 17, p. 558.
1909. "Note on the Chinese Crimson Horned Pheasant (*Tragopan temminckii*)." JBNHS, vol. 19, p. 260.

OATES, E. W., AND W. T. BLANFORD
1889–98. *Fauna of British India (birds)*. (Ed. 1), 4 vols. Taylor & Francis, London.

OSMASTON, B. B.
1916. "Notes on Cuckoos in Maymyo." JBNHS, vol. 24, p. 359.

PERSHOUSE, S.
1909. "On the Habits of Birds when Danger—supposed or otherwise—Threatens their Nests." JBNHS, vol. 19, p. 528.
1916. "Notes on some Bulbuls from the Bhamo District (Sinlum Kaba, Kachin Hills)." JBNHS, vol. 24, p. 592.

PETERS, J. L.
1931–45. *Check-list of Birds of the World*. [5 vols. issued to date]. Harvard University Press, Cambridge (U.S.A.).

PRATER, S. H.
1923. "The Occurrence of the White-headed Black Bulbul (*Hypsipetes leucocephalus*) within Indian limits." JBNHS, vol. 29, p. 559.

RADCLIFFE, H. D.
1910. "Roller Catching its Prey in the Water." JBNHS, vol. 20, p. 225

RIDGWAY, R.
1912. *Color Standards and Nomenclature*. Washington.

RILEY, J. H.
1926. "A Collection of Birds from the Provinces of Yunnan and Szechwan, China, made for the National Geographic Society by Dr. Joseph F. Rock." *Proc. U.S. Nat. Mus.*, vol. 70, p. 1.
1930. "Birds collected in Inner Mongolia, Kansu and Chili by the National Geographic Central China Expedition under the Direction of F. R. Wulsin." *Proc. U.S. Nat. Mus.*, vol. 77, p. 1.
1931. "A Second Collection of Birds from the Provinces of Yunnan and Szechwan, China, made for the National Geographic Society by Dr. Joseph F. Rock." *Proc. U.S. Nat. Mus.*, vol. 80, p. 1.
1938. "Birds from Siam and the Malay Peninsula." [Smith & Abbott collection, includes some specimens from Tenasserim and the Salween.] *U.S. Nat. Mus. Bull.*, No. 172.

RIPLEY, S. DILLON
1942. "The Species *Eurystomus orientalis*." *Proc. Biol. Soc. Washington*, vol. 55, p. 169.
1945. "The Barbets." *Auk*, vol. 62, p. 542.

RIPPON, G.
1896. "Notes on some Birds obtained at Kalaw in the Southern Shan States." *Ibis*, 1896, p. 357.
1897. "An Additional List of Birds obtained at Kalaw, Southern Shan States, during April–May 1896." *Ibis*, 1897, p. 1.
1901. "On the Birds of the Southern Shan States, Burma." *Ibis*, 1901, p. 525.

ROBINSON, H. C., AND C. B. KLOSS
1921–24. "The Birds of S.W. and Peninsular Siam." *J. Nat. Hist. Soc. Siam*, vol. 5, Nos. 1–3.

ROBINSON, H. C., AND F. N. CHASEN
1927–39. *The Birds of the Malay Peninsula*, 4 vols. [incomplete, vol. 5 never issued]. Witherby, London.

ROBINSON, S. M.
1911. "Nesting Notes from Lower Burma." JBNHS, vol. 21, p. 261.
1924*a*. "Nest of Mrs. Gould's Yellow-backed Sunbird (*Aethopyga gouldiae*)." JBNHS, vol. 29, p. 1052.
1924*b*. "Nesting of Walden's Yellow-backed Sunbird (*Aethopyga sanguinipecta*)." JBNHS, vol. 29, p. 1053.

ROSEVEARE, W. L.
1949. "Notes on Birds of the Irrigated Area of Shwebo District, Burma." JBNHS, vol. 48, pp. 515, 729.
1950. "Notes on Birds of the Irrigated Area of Minbu District, Burma," JBNHS, vol. 49, p. 244.

ROTHSCHILD, LORD
1926. "On the Avifauna of Yunnan, with Critical Notes." *Novitates Zoologicae*, vol. 33, p. 189. [References are given to earlier papers by Rothschild on birds collected by Forrest, and to other papers on the birds of Yunnan.]
1927. "Supplemental Notes on the Avifauna of Yunnan." *Novitates Zoologicae*, vol. 33.

SALOMONSEN, F.
1933. " Revision of the Group *Tchitrea affinis* Blyth." *Ibis*, 1933, p. 730.
SALVADORI, COUNT T.
1886. " Viaggio di L. Fea in Birmania." [Bhamo]. *Ann. del. Mus. Civico di Storia Nat. di Genoa*, vol. 4, p. 568.
1888. " Viaggio di Leonardo Fea nella Birmania." [Tenasserim.] *Ann. Mus. Civ. Genoa*, vol. 5, p. 1, 554.
1889. " Viaggio di Leonardo Fea in Birmania." [Karen Hills, Toungoo, and Tenasserim (Malewun)]. *Ann. Mus. Civ. Genoa*, vol. 7, p. 369.
SCHAUENSEE, BARON R. M. DE
1934. " Zoological Results of the third de Schauensee Siamese Expedition. Part II, Birds from Siam and the Southern Shan States." *Proc. Acad. Nat. Sci., Philadelphia*, vol. 86, p. 165.
1946. " On two Collections of Birds from the Southern Shan States, Burma." *Proc. Acad. Nat. Sci., Philadelphia*, vol. 98, p. 99.
SERLE, W.
1947. " *Sauropatis chloris chloris* breeding in Arakan." *Ibis*. 1947. p. 124.
SETH-SMITH, D.
1906. " The Booming of the Button Quail." JBNHS, vol. 17, p. 238.
SEWELL, J. H.
1898. " The Comb Duck or Nukhta." JBNHS, vol. 11, p. 547.
1899. " Birds of the Kyaukse District." JBNHS, vol. 12, p. 758.
SLATER, A. F. M.
1919. " Late Stay of Pintail Snipe (*Gallinago stenura*) in Burma." JBNHS, vol. 26, p. 850.
SMITH, H. C.
1942. *Notes on Birds of Burma*. Simla (privately printed).
SMITH, H. C., P. F. GARTHWAITE AND B. E. SMYTHIES, ASSISTED BY C. B. TICEHURST
1940. " Notes on the Birds of Nattaung, Karenni." JBNHS, vol. 41, p. 577.
1943. " On the Birds of the Karen Hills and Karenni found over 3,000 feet." JBNHS, vol. 43, p. 455 and vol. 44, pp. 60, 221.
SMYTHIES, B. E.
1944. " A Record of Hodgson's Frogmouth (*Batrachostomus javensis hodgsoni*) and the Cochin-China Spinetail (*Hirundapus caudacutus* ssp.) from Northern Burma." JBNHS, vol. 44, p. 593.
1949. " A Reconnaissance of the N'Mai Hka Drainage, Northern Burma," *Ibis*, 1949, p. 627.
STANFORD, J. K.
1926. " Occurrence of the Sheldrake (*Tadorna tadorna*) and Lapwing (*Vanellus vanellus*) in Upper Burma." JBNHS, vol. 31, p. 823.
1932*a*. " Occurrence of the White-throated Babbler (*Argya gularis* Blyth) in Lower Burma." JBNHS, vol. 36, p. 262.
1932*b*. " A Note on the Buntings of Burma." JBNHS, vol. 36, p 263.
1932*c*. " The Short-eared Owl (*Asio f. flammeus*) in Burma." JBNHS, vol. 36, p. 265.
1932*d*. " The Occurrence of the Lesser Kestrel (*Cerchneis naumanni*) and Knot (*Tringa c. canutus*) in Burma." JBNHS, vol. 36, p. 265.

STANFORD, J. K.—*continued.*

1934. "Nuptial Performance of the Spur-winged Plover (*Hoplopterus ventralis* Wagler)." JBNHS, vol. 37, p. 223.

1935*a*. "Some little-known Birds of Northern Burma." JBNHS, vol. 38, p. 185.

1935*b*. "On the Occurrence of the Tibetan Siskin (*Spinus thibetanus* Hume) in Northern Burma." JBNHS, vol. 38, p. 189.

1935*c*. "Some Notes on Woodcock (*Scolopax r. rusticola* Linnaeus) in Burma." JBNHS, vol. 38, p. 192.

1935*d*. "On the Occurrence of the Ibisbill (*Ibidorhyncha struthersii* Gould) in Upper Burma." JBNHS, vol. 38, p. 403.

1935*e*. "Some Rare Birds in Northern Burma." JBNHS, vol. 38, p. 404.

1936*a*. "Probable Breeding of the Black-winged Stilt (*Himantopus h. himantopus* Linnaeus) in the Shwebo District, Upper Burma." JBNHS, vol. 38, p. 624.

1936*b*. "Some Rare Birds in Northern Burma." JBNHS, vol. 38, p. 625.

1936*c*. "On the Breeding of the Pied Harrier (*Circus melanoleucus* Pennant) in Northern Burma." JBNHS, vol. 39, p. 179.

1937*a*. "Occurrence of the Rufous Short-toed Lark (*Calandrella brachydactyla dukhunensis* Sykes) in Northern Burma." JBNHS, vol. 39, p. 623.

1937*b*. "Occurrence of the Chinese Lesser Kestrel (*Cerchneis naumanni pekinensis* Swinhoe). in Northern Burma." JBNHS, vol. 39, p. 633.

1937*c*. "On the Breeding of the Oystercatcher (*Haematopus ostralegus* subsp.) and other Birds in the Bengal Sunderbunds." JBNHS, vol. 36, p. 867.

1940. "Bird Notes from the Dry Zone of Upper Burma." JBNHS, vol. 40, p. 571.

1942. "Some Ornithological Results of the Vernay-Cutting Expedition of 1938–39 to Northern Burma." JBNHS, vol. 42, p. 242.

1945 "Variations in Bird Songs and Call-notes in Different Localities." *Ibis*, 1945, p. 102.

1946. "Some Suggestions for Field Ornithologists in Post-war Burma." JBNHS, vol. 46, p. 478.

1947. "Bird Parties in Forest in Burma." *Ibis*, 1947, p. 507.

STANFORD, J. K., AND C. B. TICEHURST

1931. "The Birds of the Prome District of Lower Burma." JBNHS, vol. 34, pp. 666, 901, and vol. 35, p. 32.

1935*a*. "Notes on the Birds of the Sittang-Irrawaddy Plain, Lower Burma." JBNHS, vol. 37, p. 859.

1935*b*. "Notes on some New or Rarely Recorded Burmese Birds." *Ibis*, 1935, pp. 38, 249.

1938–39. "On the Birds of Northern Burma." *Ibis*, 1938, pp. 65, 197, 391, 599, and 1939, pp. 1, 211.

STANFORD, J. K., AND H. C. SMITH

1936. "The Nesting of the Indian Crested Swift (*Hemiprocne coronata*) in Upper Burma." JBNHS, vol. 39, p. 125.

STANFORD, J. K., AND E. MAYR

1940–41. "The Vernay-Cutting Expedition to Northern Burma." *Ibis*, 1940, p. 679, and 1941, pp. 56, 213, 353, 479.

STOCKLEY, C. H.
1921. "Quaint Beasts and Queer Habits." [Pheasants and jungle-fowl in Burma.] JBNHS, vol. 28, p. 204.
1923*a*. "Some Notes on Indian Game Birds." JBNHS, vol. 29, p. 278.
1923*b*. "A Journey to Siam and back." JBNHS, vol. 29, pp. 169, 378, 718, 974, and vol. 30, p. 418.
STRESEMANN, E., AND G. HEINRICH
1940. "Die Vögel des Mount Victoria." *Mitt. Zool. Mus., Berlin*, vol. 24, p. 151.
SUTHERLAND, W.
1896. "Strange Behaviour of Crows." JBNHS, vol. 10, p. 527.
SYMNS, J. A. M.
1940*a*. "Some Birds of Lower Burma." JBNHS, vol. 42, p. 198.
1940*b*. "Some Birds of the Oilfields." JBNHS, vol. 42, p. 198.
1941. "Some Notes on Burmese Birds." JBNHS, vol. 42, p. 663.

TICEHURST, C. B.
1933*a*. "Notes on some Birds from Southern Arakan." JBNHS, vol. 36, p. 920.
1933*b*. "The Occurrence of the Lesser Kestrel (*Cerchneis naumanni* Fleisch) in Burma." JBNHS, vol. 36, p. 508.
1936. "The Brown Shrike (*Lanius cristatus* Linnaeus) in Burma and Assam." JBNHS, vol. 38, p. 824.
1938. "A Systematic Review of the Genus *Phylloscopus*." *British Museum, London.*
1939*a*. "A New Race of *Aethopgya nipalensis* from Karenni." *Ibis*, 1939, p. 755.
1939*b*. "Additional Information on Northern Burmese Birds." *Ibis*, 1939, p. 768.
THOMPSON, H. N., AND W. H. CRADDOCK
1902. "Notes on the Occurrence of Certain Birds in the Southern Shan States of Burma." JBNHS, vol. 14, p. 600.
TURNER, G. M.
1931*a*. "Further Record of the Mallard (*Anas platyrhyncha*) occurring in Burma." JBNHS, vol. 35, p. 209.
1931*b*. Occurrence of the Tufted Pochard (*Nyroca fuligula*) and the Eastern White-Eye (*Nyroca baeri*) in Burma." JBNHS, vol. 35, p. 210.

VENNING, F. E. W.
1910. "Occurrence of the Eastern Solitary Snipe (*G. solitaria*) at Haka, Chin Hills." JBNHS, vol. 20, p. 219.
1911. Occurrence of Swinhoe's Snipe (*Gallinago megala*) at Myitkyina, Upper Burma." JBNHS, vol. 21, p. 269.
1912. "Some Birds and Birds' Nests from Haka, Chin Hills." JBNHS, vol. 21, p. 621.
1913. "Early Nesting of the Indian Pied Kingfisher (*Ceryle varia*) in Burma." JBNHS, vol. 22, p. 199.

VIDAL, G. W.
1886. "List of Bird Skins from Burma and other parts of India presented to the Society by Mr. G. W. Vidal, C.S." JBNHS, vol. 1, p. 136.

WALL, F.
1899. "The Palm Swift." JBNHS, vol. 12, p. 579.
WARD, F. KINGDON
1921. "Some Observations on the Birds and Mammals of Imaw Bum." JBNHS, vol. 27, p. 754.
1944. "A Sketch of the Botany and Geography of North Burma." JBNHS, vol. 44, p. 550, and vol. 45, p. 16.
1946. "Additional Notes on the Botany of North Burma." JBNHS, vol. 46, p. 381.
WATSON, H. W. A.
1914. "Notes on the Habits of the Kalij Pheasant." JBNHS, vol. 23, pp. 159, 582. [The same note printed twice.]
WHISTLER, H.
1929. "The migration of the Pied Crested Cuckoo (*Clamator jacobinus*)." JBNHS, vol 33, p. 136.
1949. *Popular Handbook of Indian Birds* (ed. 4). Gurney & Jackson, London.
WICKHAM, P. F.
1918. "Miscellaneous Notes on some Birds in the Chin Hills, Burma." JBNHS, vol. 25, p. 750.
1923. "A Note on the Eastern Red-legged Falcon (*Erythropus amurensis*)." JBNHS, vol. 29, p. 292.
1924. "Nesting of Bingham's White-headed Bulbul (*Cerasophila thompsoni*)." JBNHS, vol. 30, p. 223.
1929. "Notes on the Birds of the Upper Burma Hills." JBNHS, vol. 33, p. 800 and vol. 34, pp. 46, 337.
WICKHAM, P. F., AND E. C. STUART BAKER
1906. "Nesting of the Malayan Banded Crake (*Rallina fasciata*)." JBNHS, vol. 17, p. 228.
WITHERBY, H. F., AND OTHERS
1938–41. *Handbook of British Birds*, 5 vols. Witherby, London.
WOOD, H., AND F. FINN
1902. "On a Collection of Birds from Upper Burma." [Pakokku district.] *J. Asiatic Soc. Bengal*, vol. 71, part 2, p. 121.
WOOD, J. D.
1949. "Probable Pomatorhine Skua off Burma." *Ibis*, vol. 91, p. 690.
WOOD, W. S.
1927. "Is the Large Hornbill (*D. bicornis*) Carnivorous?" JBNHS, vol. 32, p. 374.

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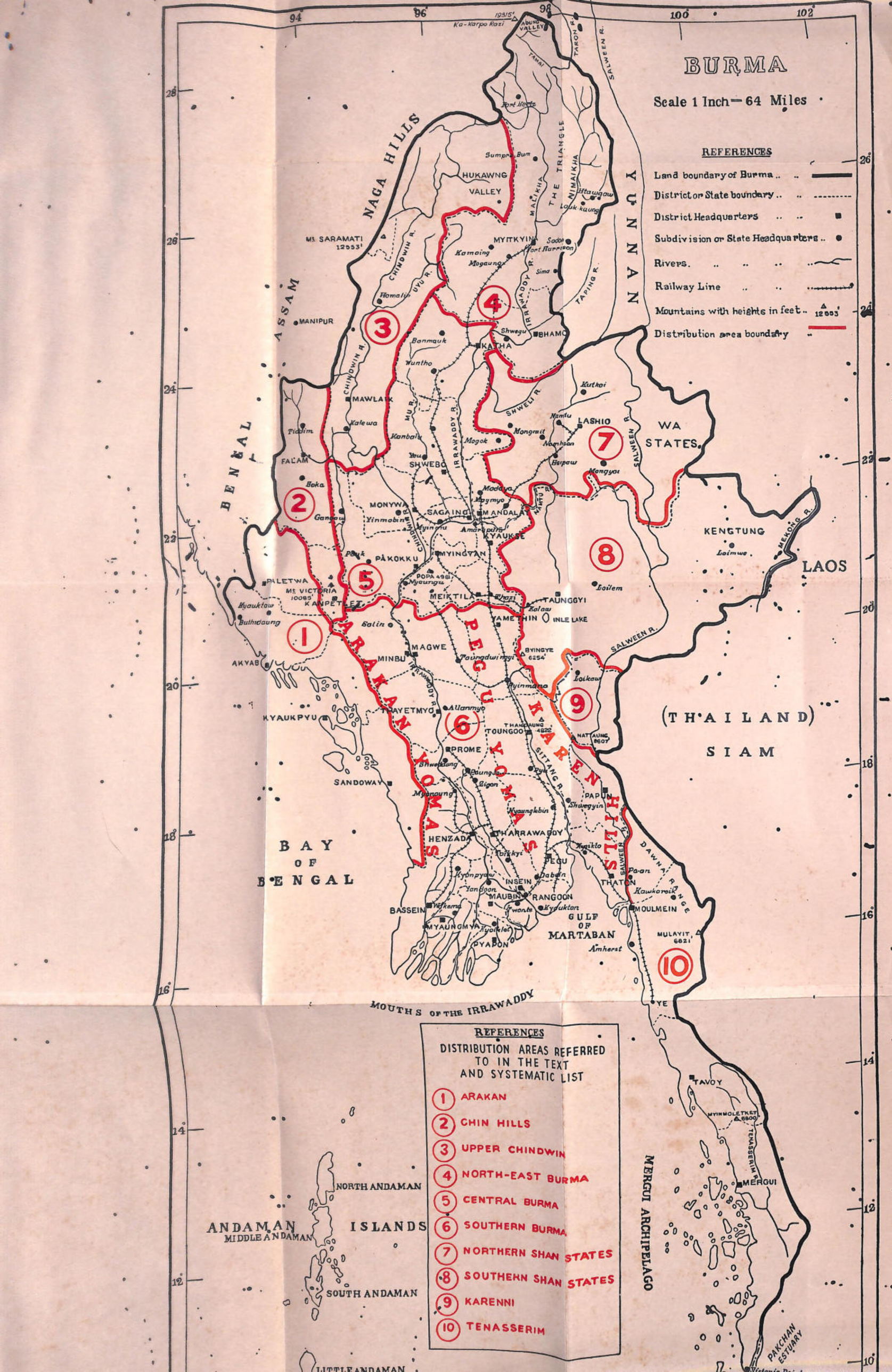

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