

THE BIRDS
OF THE BRITISH ISLES
AND THEIR EGGS



A HANDY POCKET GUIDE
WITH DESCRIPTIVE TEXT
BY T. A. COWARD, F.Z.S.

5 5 42

8

42





FOR THE PEOPLE
FOR EDUCATION
FOR SCIENCE

LIBRARY
OF
THE AMERICAN MUSEUM
OF
NATURAL HISTORY

THE WAYSIDE
AND WOODLAND
❧ ❧ SERIES

THE BIRDS
OF
THE BRITISH ISLES
AND THEIR EGGS



THE BIRDS
OF THE BRITISH ISLES
AND THEIR EGGS

BY

T. A. COWARD, F.Z.S., F.E.S.

AUTHOR OF
"BIRDS OF CHESHIRE," "VERTEBRATE FAUNA OF CHESHIRE,"
"MIGRATION OF BIRDS"

FIRST SERIES

COMPRISING
FAMILIES CORVIDÆ TO SULIDÆ

WITH

242 ACCURATELY COLOURED ILLUSTRATIONS
BY ARCHIBALD THORBURN AND OTHERS

REPRODUCED FROM LORD LILFORD'S WORK

"COLOURED FIGURES OF THE BIRDS OF THE BRITISH ISLANDS"

AND 65 PHOTOGRAPHIC ILLUSTRATIONS

BY RICHARD KEARTON

AND OTHERS

LONDON
FREDERICK WARNE & CO. LTD.
AND NEW YORK

1919

THE
LIBRARY OF THE
BRIEFING OFFICE
PARLIAMENTS HOUSE
PARLIAMENTS SQUARE
LONDON W.C.2

20 82015-May 25

COPYRIGHT

1919

(All rights reserved)

PRINTED IN GREAT BRITAIN.

P R E F A C E.



THE addition of another volume to the extensive library of books on British birds and their eggs demands explanation rather than apology for there is a call for a Handy Pocket

This volume is a copy of the first Edition which was printed in December, 1919, and published in February, 1920.

Illustrations of eggs are selected types from "Illustrations of the Eggs of British Birds."

The task of producing and condensing a history of British birds leads to two discoveries—first that the writer is ignorant about certain facts, and secondly, that when the information is sought elsewhere it is often not to be found, or the "doctors disagree." Indeed, there is still a wide field open for workers on the habits, plumages and domestic economy of versatile birds. It is my hope that these pages will help and guide those who are interested in birds but have not taken up ornithology as a systematic study.

Space forbids full details of plumage, structure and habits; fuller descriptions must be sought in longer treatises, perhaps the most up-to-date of which is the "Practical Handbook of British Birds" edited by H. F. Witherby. Further particulars

of distribution may be found in the "Hand-List," in which Mr. Witherby was assisted by the Rev. F. C. R. Jourdain and Drs. E. Hartert and N. F. Ticehurst. Much useful information on habits is to be found in the "British Bird-Book," edited by F. B. Kirkman, in the standard works of Dresser, Macgillivray, Newton, Saunders, Seebohm, Sharpe and Yarrell, and in the pages of the *Zoologist* and the magazine *British Birds*. As, however, conflicting statements repeatedly appear in these works, it is necessary for the student to make copious notes of his observations and check the statements, whenever possible, by personal experience. To all the living ornithologists quoted and to the past masters of the study I am grateful. My main sources of information, however, are my own experiences and note-books, carefully kept and indexed for nearly forty years, and constant close observation of British bird life.

Plumages and measurements, whenever possible, have been checked from actual specimens, using my own notes of birds examined in the flesh rather than details supplied in books or by comparison with dried skins. In all cases I have compared my notes with the fine Dresser collection of Palæarctic birds in the Manchester Museum.

The colour and size of eggs vary considerably ; it has not been possible to figure more than one type of each, and these show the normal size. There is much diversity of opinion about the period of incubation, and as I cannot check many of the statements from personal experience I have decided to make no reference to this point in most species. I am convinced that it is more variable than is usually supposed.

The black and white illustrations are from photographs by Miss E. L. Turner on Plates 21, 51, 55, 62, 96, 121, 151 and 156 ; by Mr. Richard Kearton on Plates 3, 8, 19, 24, 27, 30, 38, 48, 52, 56, 61, 68, 71, 74, 81, 88, 91, 93, 98, 103 (1), 106, 109, 126, 128, 139, and on the four end papers ; by Mr. T. Taylor on 5, 6, 10, 22,

29, 32, 37, 47, 66, 77, 82, 86, 100, 103 (1), 111, 115, 122, 133, 136, 143, 149 and 154 ; by Mr. R. Chislett on 17, 73, 95, 105, 112 ; and by Mr. T. Baddeley on 153. I am grateful to each of these for their help, and to Miss Turner in particular for special permission to use Plates 21 and 62.

T. A. COWARD.

THE BIRDS OF THE BRITISH ISLES AND THEIR EGGS.

PART I.

INTRODUCTION.

THE title of a bird to rank as British is a matter of personal opinion. When, in 1882, a Committee of the British Ornithologists' Union issued a "List" the number accepted was 376, and in 1889, Howard Saunders, in the second edition of his "Manual," included 384, although rejecting some species accepted by other members of the Committee. By the inclusion of geographical races or sub-species, and the addition of many accidental stragglers of recent occurrence, the editors of "A Hand-List of British Birds," 1912, raised the number to 469, and the revised B.O.U. list of 1915 brings it to 475. There have been a few additions in the last four years.

Although advance of knowledge increased the list, sound criticism cast out many species formerly included, either because of slender identification or the presumptive evidence that the birds had escaped from captivity. Further information may prove that some of the rejected species, especially those whose natural habitat is America, are genuine wild visitors; it may also cause the rejection of some at present accepted. The B.O.U. list is analysed as follows—Residents, 141; Summer Visitors, 47:

Winter Visitors, 46 ; Birds of Passage, 30 ; Occasional Visitors, 61 ; Rare Visitors, 149 ; Extinct, 1. The difference between "occasional" and "rare" was taken as over or under 20 occurrences. The birds described in the following pages are taken from this list, although geographical races or sub-species, where trinomials are used, are treated under species headings, and later additions are included.

Grouping of birds according to time and frequency of appearance is misleading ; many species cannot be placed in a single group. Individuals of certain species remain with us all the year round as permanent residents, though others of the same kind are visitors in summer or winter only, and some migrating through our islands come into the fourth group. Numbers of species, like the Song-Thrush and Starling, are in the first four classes, and even the Swallow, a typical summer visitor, is also a bird of passage.

The classification and nomenclature adopted is that of the B.O.U. list, for though there are many differences of opinion the majority of British ornithologists are agreed about these difficult problems. In the list strict laws of priority have been overruled in a few cases in order to prevent confusion ; for example, the *Turdus musicus* of Linnæus in the 10th edition of the *Systema Naturæ* is certainly the Redwing, but in the 12th he gave this name to the Song-Thrush, and it has been so generally accepted for the latter bird that the Committee decided to retain it.

Systematic "ringing" or marking birds has thrown much light on the complicated problems of migration, but more is needed. Geographically the British Isles are of service to migratory birds ; they form the true home of some, the winter home of others ; the resting place for long distance travellers and a temporary refuge for lost wanderers or birds of passage storm-driven or wind-drifted from their normal routes. Theories as to height and speed at which birds travel have received

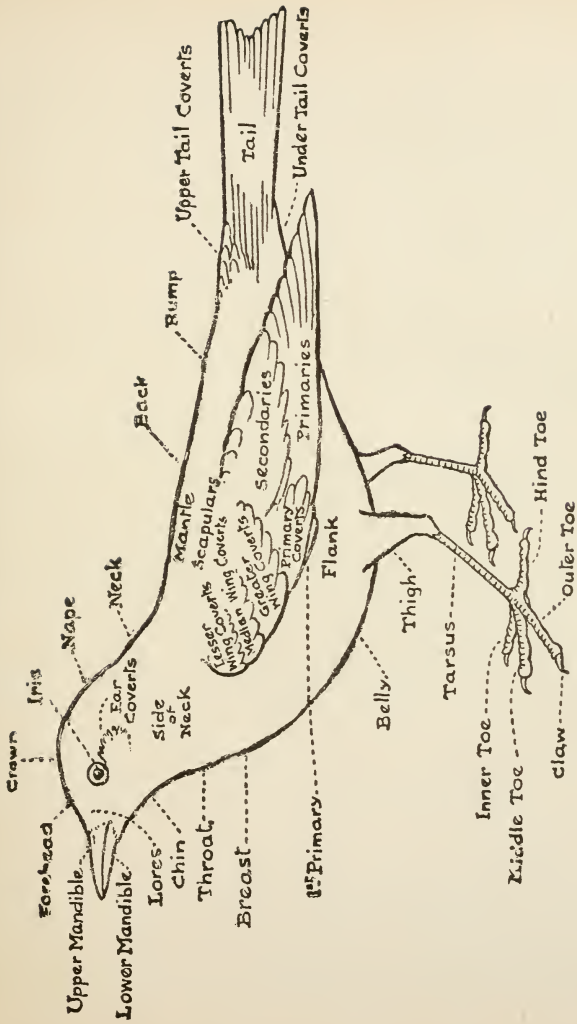
support from observations of a few airmen during the war ; I am convinced that large numbers of birds frequently if not regularly pass over our islands at too great a height for normal observation, assisted, especially in autumn, by cyclonic movements—in fact, carried on the wind. When meteorological conditions fail or physical strength is overstrained, parties or individuals drop to a lower altitude and alight ; it is thus that the list of rarer visitors is swelled. The birds which reach our shores, wearied or dying, or which crowd round coastwise lights, coming in *against* the wind, are contending with unforeseen adverse circumstances. Visible migration is seldom normal migration. Only by some such theory can we explain the repeated occurrence of unfamiliar species on such isolated rocks as Fair Island and St. Kilda, unless we accept the unlikely supposition that every autumn vast numbers of birds migrate westward to perish in the Atlantic, a few finding a temporary asylum on these islands. The fact that many of these birds are met with in the same places in spring cannot be explained in this way.

It is an extraordinary fact that, although all ornithologists are interested in migration and for centuries field naturalists have been keeping notes of the arrival and departure of birds, we still know very little about actual times and seasons. Formerly it was not uncommon to find the statement that this or that species arrived or departed on or about a particular day of the month ; there are still recorders who give one date as the average. As a matter of fact, birds are more variable in their habits than is generally admitted. Certainly within recent years we have had many earlier and later dates recorded than are given in most text-books. This to some extent is due to an increased interest in birds, extended now to the younger folk through the medium of education, and to the fact that the Press has realised that natural history is popular. A considerable amount of unreliable “knowledge” is now circulated. There are nature students and field naturalists who are so keen about

making "records" (a misapplied and evil term) that they hear the Chiffchaff when the Great Tit sings, the Cuckoo when a distant dog barks, and see the Swallow when the Starling hawks for flies, or the Fieldfare when the Mistle-Thrush passes over. Yet apart from these imaginations we are faced with one of two conclusions—either birds are changing their habits or we have failed in the past to make accurate observation.

Much of this is due to the fact that a large number of the birds we see do not remain with us all summer or winter, but are on passage—that is to say, they are travelling through Britain to or from breeding haunts and winter quarters beyond the limits of our land. The times and seasons of these passage birds do not always agree with those of our more permanent summer or winter visitors, although in many cases the species are the same. Many more northerly breeders come through after our summer residents have begun to nest, and, in some cases, the returning birds pass after ours have departed. Northward migration begins to be visible in February, and lasts until the end of June or even the beginning of July. Southward movements may be noticed before the end of July, and in August many of our birds leave us, but throughout September and October, even until the early days of November, there are birds constantly passing south. In November, December and January we may have extra winter movements, caused by abnormal weather conditions here or abroad. There is practically no season when movement of one kind or another cannot be seen, and now we realise that all those sporadic and local movements, which were formerly looked upon as purely casual, are intimately connected with the migration habit.

For the study of geographical distribution the world has been divided into zoological regions, now usually accepted as six or seven well-defined areas. The Palæarctic embraces Europe, Africa north of the Sahara and Asia north of the Himalayas. The Nearctic is America north of Mexico, and the two together



the Holarctic Region. The remainder of Africa and southern Arabia is the Ethiopian, whilst the Oriental or Indian Region includes southern Asia and the Malays. Australia, New Guinea and the southern Pacific form the Australasian Region, from which Huxley separated the New Zealand area. South and Central America are the Neotropical Region. The British Isles lie on the western boundary of the Palæarctic, and are influenced by that region, the Nearctic, and in summer by the Ethiopian.

The chart, mapping the topography of a typical bird, will explain the terms used in descriptions; technicalities are avoided wherever possible. I have endeavoured to point out salient characters, noticeable in birds in the field, rather than complicated descriptions of plumage. The illustrations of birds which vary so greatly in size cannot all be on the same scale; I have therefore endeavoured to depict them on the plates to show as much detail as space permitted. The measurements supplied at the end of each description are merely to indicate size; birds of one species vary greatly in size as well as plumage; only by giving extremes of a large number of specimens can we arrive at anything like accuracy. The length, measured from the tip of the bill to the tip of the longest tail feather, is always a rough, uncertain measurement, utterly unreliable if taken from a dry skin. Although millimetres are now usual for scientific measurement, I believe that for the general reader inches and tenths are preferable.

There is one point which the town-dweller must remember. The illustrations are of birds at their best, bright and clean, and do not represent the soot-soiled specimens that are met with in manufacturing districts or near large cities.

The songs and calls of birds are a great difficulty to the novice, and, often enough, to the expert. In many cases it is impossible to give a correct impression by any combination of letters, with some even instruments utterly fail to provide an imitation which can be recognised.

BIRD PROTECTION.

The wild bird is a national asset. It is not and should not be treated as private property, even when it occurs on private land ; the fact that we have Acts of Parliament to protect birds even on private land proves that they are free. They are every one's not any one's property. How far any particular species is of value or inimical to the public weal is a matter of individual opinion and, to a great extent, of sentiment, but in a land ruled by a majority, we, nominally, bow before the opinion of that majority. The laws framed for the protection of birds specify those species which the majority, not the individual, consider worthy of preservation.

The earliest statutes for the protection of certain birds were tainted with the idea of Royal or private ownership ; they were framed with the limited outlook that anything of value belonged not to the land but to the owner of the land ; the feudal system embraced birds. Restriction of the destruction of birds and their eggs was enforced not for the sake of the bird but to prevent trespass, to safeguard sport and satisfy the appetite of the few. For instance, "An Act to avoide destruction of Wilde Fowle" passed in 1534, protected the Bittern, Bustard, Crane, Heron and Spoonbill, but it was really a Game Law, for these were birds of the chase or table.

In the seventeenth and eighteenth centuries the study of birds, or Ornithology, grew in popularity, but it was not until the middle of the last century that public opinion was really roused in favour of our avian fauna. Love of sport and the improvement of the shot-gun, as well as the steadily growing collecting habit, was causing wholesale destruction of certain species, and those who really cared about birds realised that some check must be put upon wholesale slaughter. The matter was brought up in Parliament with entirely fresh ideas, and in 1870 an "Act for

the preservation of Sea-Birds" came into operation. Three years later it was followed by one for the "protection of certain wild birds during the breeding season," and in 1877 by a more general "Act for the preservation of Wild Fowl."

In these Acts, especially in so far as they referred to wild fowl, there was the suggestion that the wild bird was only of value if edible or suitable for sport. In 1880 they were repealed, and the first really disinterested attempt to save the situation was provided by the "Wild Birds Protection Act." However critical we may be of the clauses and working of this Act, it was framed by honest men with the welfare of birds at heart, and in spite of its many shortcomings laid the foundation for saner methods. Moreover, though few results were noticeable at first, it undoubtedly checked some of the worst transgressors, the very fact that there was a law making them pause. The main clause provided a close season for wild birds during the months March to July inclusive. It prohibited shooting, trapping, snaring and the exposure of birds for sale during the breeding season, and it gave special protection at all seasons to a number of specified birds. But it had one great fault—the recognition of private ownership, for, except with regard to the scheduled species, it did "not apply to the owner or occupier of land, or to any person authorised by the owner or occupier of any land, killing or taking any wild bird on such land not included in the schedule hereto annexed." The ostensible reason for the exemption was to provide for the destruction of crop-devouring Sparrows and other destructive birds; it was put in for the sake of the farmer and market gardener, but it also gave freedom to the game-preserve and his keepers. So long as there are game laws and private sporting rights such consideration is fair, but, unfortunately, neither farmer nor keeper paid much attention to the schedule. Specially protected and valuable birds from the economic outlook were and still are destroyed, and it is most difficult to secure a conviction. Sea-

birds were protected within territorial waters, but it was, naturally, difficult to prove that the offence had not been committed on the "high sea." The Island of St. Kilda, where the inhabitants mainly depend upon the flesh, oil and feathers of sea-fowl, was excepted from operation of the Act.

In less than a year so many debatable questions had arisen that it was deemed necessary to provide another Act "to explain the Wild Birds Protection Act, 1880." Injustice or imagined injustice to poultry dealers and vendors of caged birds, both of whom imported foreign birds, was the main reason of the explanation. Points cropped up about the exposure of dead or living birds which had been killed or caught within reasonable time before the close season and which, if not exposed for sale, would have entailed loss. The Lark was added to the list of specially protected birds. Further, powers were granted to the county authorities to make application for addition of any specified bird or birds to the schedule.

As the years passed, except for some interesting work for the lawyers, no striking results were evident, and in 1894 the County Councils were permitted and even urged to apply for Orders to prevent the taking or destroying of eggs as well as birds, the species and area in which they were to be protected to be specified. These specified areas might be set aside as "reserves" or sanctuaries for all birds. Additional powers were granted to the County Councils in 1896, and the Acts were grouped as the Wild Birds Protection Acts, 1880 to 1896.

In a few counties the reserves proved invaluable, but in others there was considerable opposition from the owners of sporting rights, and those councillors who were really anxious to protect birds were forced to accept as proclaimed areas localities where few if any birds nested. Great difference of opinion existed about the value of certain species—notably of the various Owls and the Kestrel, and efforts were made to

withdraw the protection from "Owl" and "Gull" afforded by the schedule. The remarkable increase of the Black-headed Gull was looked upon as a menace to fisheries, and the spread in midland counties of the Little Owl found small favour amongst game-preservers. Egg-collecting had become a profitable profession, and immediately restrictions were put upon the taking of any particular egg, it at once went up in market value. At first the professional collectors strove to get these restrictions withdrawn, arguing that the only result was to cause fresh enmity between the small boy and the police, but later, when they realised the result on prices, little was said, for the penalty in many cases was far below the market value of the egg or bird. A man risked conviction, and if he was fined paid cheerfully, and still made a handsome profit. The Royal Society for the Protection of Birds, aided by the Society for the Prevention of Cruelty to Animals and the British Ornithologists' Union, moved in the matter, and in 1902 a further Act was passed which gave power not only to fine the offender, but to confiscate his specimens.

On preserved and private land, where the police had no power to patrol, specially protected Hawks, Owls, Cuckoos and Nightjars, as well as other species, continued to be "accidentally" destroyed; what could the keeper do when they trapped themselves in his snares for "vermin"? The cruelty of the pole-trap, on which the victim often hung for hours in torture, rather than its destructiveness, was responsible for the humane Act of 1904 which made this form of trapping illegal, but for years after it was openly defied by keepers and others simply because of the difficulty of conviction of offenders on private land. In the same year the operation of the Acts was extended to St. Kilda, where, through the rapacity of collectors, the Fork-tailed Petrel and St. Kilda Wren were in danger of extermination; the inhabitants were, however, allowed to take the abundant Fulmars, Gannets, Guillemots, Puffins and Razorbills.

An Act in 1908 made the capture of any bird by means of a hook or other instrument illegal.

The "invasion" by the Sand-Grouse in 1888, when large numbers of these interesting birds appeared in Britain and attempted to colonise, was the reason for the special Sand-Grouse Act, 1888, but as it did not come into force until February, 1889, it failed to achieve its purpose. The birds which it was hoped would establish themselves were ruthlessly shot down and their eggs taken before anything could legally be done to protect them.

Although this twenty-eight years' honestly intentioned legislation accomplished much, so much indeed that certain species increased alarmingly until many County Councils took fright and struck too abundant birds out of their lists, destruction of rare and useful birds was not really checked. Compared with the frequency of offences against the law, the number of convictions and penalties was lamentably small. This was realised by all true ornithologists, and in 1913 and the early months of 1914 a committee of experts inquired into the working of the various Acts and Orders to consider if they could be simplified and made effective. Evidence from various sources, from those whose interests were purely scientific, humane, commercial or administrative, was heard, and Mr. Montagu Sharpe drafted a new Bill, but the war prevented immediate action, and it was not until 1919 that the minutes and suggestions were published.

It was found that the complications of the various Acts and Orders made it practically impossible for the police to prevent offences. Regulations in one area were inoperative in another, and this was particularly the case in and around the County Boroughs, where the scarcity of birds was used as an excuse for saving the few pounds that would have to be expended in advertisement. The Committee discovered what the police had known for years, that the right of search, allowable under the

Game Laws, was not provided for in these Acts, and that it was not within their power to arrest and detain any one suspected of an offence until his name and address had been verified. It is unfair to blame the police for the failure of bird protection; they were so hampered by red tape and received so little public support if they attempted to carry out the law that they ceased to make efforts. Far too large a proportion of magistrates were interested in no birds except those on the game-list, and others considered that the police were wasting their time when they strove to protect mere birds. In several cases actions were brought against the police for illegal arrest and were won, but in spite of this many enthusiastic police officers, knowing that they had the spirit if not the letter of the law behind them, accomplished much good deterrent work by mere "bluff," a fact which was made public in the evidence of some of the Chief Constables. Many professional bird-catchers, however, were clever enough to study the legal points and openly defied the police. Within the last few years and especially during the war, bird protection has been a dead letter; only through the intervention of the Royal Society for the Protection of Birds and a few private individuals has anything been accomplished.

Mr. Sharpe's Bill was intended to "simplify and consolidate" the existing Acts and Orders, and it suggested a few excellent alterations, the chief one being to transpose the whole idea of protective measures. The close time was to be for all birds with the exception of the few which are proved harmful; the schedule to be not of protected but exempted species. The County Councils might apply for an extension of this schedule, which, in the draft, included only Sparrow, Starling, Rook, Crow, Wood-Pigeon, Jackdaw, Jay, Thrush and Blackbird. A second short schedule included a few very rare birds, and for these the penalties for killing or capturing were to be greatly increased to lessen the chance of profit being made if the specimens were not confiscated. A most useful clause permitted, under restric-

tions, the taking of certain rare species for scientific purposes, that is, for the national or other authorised museums, but not giving freedom to any museum to act without permission.

A perfectly justifiable criticism of any such schedule, giving permission to kill or capture certain species, is that a family or group English name, the only one which would be understood by the public, embraces several species and that the innocent might suffer with the guilty. This is of less moment when the bird scheduled is to be protected, for after all the Act is framed to protect and not to give license to destroy. Crow, covering Carrion and Hooded Crows, does not matter, but Sparrow takes protection from the innocent Tree-Sparrow and even from the Hedge-Sparrow and Reed-Bunting. A collector who shot a Rose-coloured Pastor would argue that it was a Starling, and many of our rarest visitors might be destroyed under the name Thrush.

Furthermore, the Bill fails to meet the difficulties of dealing with offences on private ground. Only by the institution of some system of watchers or plain-clothed police patrols is it possible to meet this difficulty; on the reserves privately supported watchers have done valuable protective work.

It must, however, be remembered that bird protection can never be accomplished by legislation alone, however much this may aid. Legislation to be effective requires public sympathy, and it is the public sympathy, such as it is, which has saved the bird so far and will, it is to be hoped, continue to give it security. The friends of birds have many antagonists, and some of these require reforming rather than restraint. The collector, often unconsciously selfish, is a menace to the rarer species; he is often anxious to preserve birds, except the few specimens he wants for himself, and he fails to realise that he is one of many who wish to secure a specimen before it is too late. Public collections are necessary for education, some private collecting is as necessary if we are to have any scientific work,

but it is also essential that there should be preventive measures when a species is yet far from danger of extinction. Only by self-sacrifice amongst collectors can this be accomplished.

The small boy collector is far less of a danger than many extremists believe. The two species whose eggs are more frequently taken than those of any other are the Song-Thrush and Blackbird, and yet no one can say that these two show signs of diminution in numbers. Most of us began to collect birds or eggs when we were boys, but the sooner we get over the craze the better ; interest in the specimens may degenerate into the collecting mania. I know some really good observant ornithologists who cannot refrain from adding a clutch of eggs to their already huge collection if it happens to contain well-marked eggs, and it is very seldom that a nest of eggs is unattractive.

The "man with the gun," the hedgeside moucher, is another foe of the bird. He is not often shooting for the pot, but he shoots for the sake of shooting. After all his is the sportsman's instinct, and it is doubtful if in his miscellaneous shooting he does more damage than the wealthy sportsman who allows his keepers to kill anything which is not game. On the other hand, some of our land-owning sportsmen have done more than any one else in the way of saving our rarest species ; they have made their keepers into effective watchers, and apart from this, the privacy of woods and moors, well guarded, and the destruction of some of the worst predatory foes of birds, has given seclusion and protection to many species that are not inimical to game. Some, though not all, rod fishermen are hard upon their avian competitors—the Kingfisher, Heron, Cormorant, Red-breasted Merganser and Great Crested Grebe ; there are waters, however, where any of these birds are welcomed. Professional sea-fishermen differ greatly in their attitude towards piscatorial birds, and in certain districts even the voracious Cormorant and Shag are tolerated. The plea

that Gulls or other birds were damaging the fishing industry has been used as a stalking-horse by some who wished really to obtain relaxation of the protective laws.

Feather-wearing, thoughtless women are the worst enemies of many species, though the trade in feathers is largely of imports. There are laws framed to regulate and restrict the feather trade, but until these are international the destruction of birds will continue. No plume-bearing Herons breed in Britain, but Gulls, Terns and other species are still slain for hat-decoration. Before 1880 the Great Crested Grebe had in many places been exterminated, so high was the price to be obtained for its glossy, waterproof breast. Kingfishers were slain for their plumage, but usually for house-decoration—stuffed and stuck under a glass shade—though before they were protected they were sometimes worn. I have seen a woman with practically the whole skin of a Barn-Owl formed into a hat, perfectly oblivious of the fact that she was parading a specially protected bird. Whose business was it to interfere? Some meddling outsider like myself, who would have been told that she did not know that it was protected, or that it was shot abroad, or had died a natural death! I have seen a dead Barn-Owl hanging in a poulterer's shop to call attention to his window; when I spoke to the man he pleaded ignorance and took the bird away.

The farmer is one of the worst enemies of birds. He seldom heeds the advice of those who strive to point out that certain birds are his best friends; he has his own ideas, usually those of his father and grandfather, and the birds, Rook, Starling or Lark, must suffer. The Board of Agriculture leaflets are little read; the farmer thinks he knows better than the trained scientist.

The real lover of birds looks upon them as something entirely apart from economic value; he desires to preserve birds, not because they are beautiful and please the eye and ear, nor

because they protect his crops. To him they are birds—a group of animals which attract him, and they are living creatures with a right to exist, part of Nature's great scheme. Therefore he wishes to protect them, and we should bear this in mind when striving to teach the young idea. If we get the child to have sympathy with the wild creature simply because it is a wild creature and not because it may mean something to him in *£ s. d.*, in the future, we have an embryo bird protector. The love of birds will last.

The man who studies birds for their own sakes, and without ulterior motives, has the right to criticise those who merely view birds from the economic outlook. Unprejudiced, he can estimate their worth by study of food and habits. The advocate for as well as the would-be persecutor may be misled by his zeal. The agriculturist and economist divide birds roughly into three groups—the seed-eaters, condemned as a whole, the insect-eaters, looked upon as friends, and the predacious or carnivorous species, viewed with approval or disfavour according to whether they are devouring vegetable or animal feeders. Such division is not merely misleading, it is unfair. Grain-eating, nominally vegetarian, “hard-billed” birds, even the Sparrow and Greenfinch, are not invariably raiding cereals; not only do they usually feed their young on insects, but they take the seeds of numerous troublesome weeds. Many, for instance the Linnet, Goldfinch and Redpolls, almost confine their attention to weeds or the seeds of trees. Insectivorous birds, even the useful Redbreast, Wren, Hedge-Sparrow and Tits, though they seldom touch vegetable food, do not discriminate between useful and harmful insects. Insects, or rather the many invertebrates upon which so-called insectivorous birds feed, may be divided into just the same rough groups—useful, harmful and indifferent; many lepidopterous caterpillars feed upon noxious weeds, many hymenopterous and dipterous flies are parasites upon troublesome insects. The bird kills the useful

moth and its larva, the ichneumon parasitises the particular insect upon which it feeds without consulting our wishes, and the bird devours alike the ichneumon or its victim. Spiders are a favourite food of many birds, and spiders catch flies, but the spider does not bother what its prey feeds upon. The carnivorous bird feeds alike upon Finch or Flycatcher ; it merely wishes to fulfil its own destiny, to keep itself alive.

Nature's methods are complicated, and when we strive to improve upon them we usually find that we are at fault. It is not for us to judge from our restricted outlook what bird should or should not be here, but by our protective methods to endeavour to retain, in the numbers in which Nature has ordained, each species in its proper place. Our civilisation with its unnatural restrictions and cultivations, has disturbed the face of the earth ; we should strive to rectify our own mistakes rather than make matters worse by upsetting specific proportions further. Our artificial aid or check may be the last straw which causes disaster. Once a creature becomes too scarce or too abundant natural balances are dislocated, a link in the chain is weakened and the whole becomes a danger.

RECORD KEEPING.

For the study of birds few things are of greater importance than keeping notes ; every ornithologist should keep a notebook and enter even trivial observations. He cannot begin too young. Much valuable information has been lost through neglect ; again and again we come across rare birds about which data are unobtainable. Collectors of a generation ago seldom preserved records ; they passed away, their knowledge with them.

Most of us, as we grow older, remember more or less distinctly rare birds we saw when we were young, but too juvenile

to record ; we imagined we should always remember ; sometimes we were not sure and afraid of ridicule. I have mentioned elsewhere how I saw Choughs at Llandudno in the early seventies ; when older, more experienced men scouted my information, and I ceased to mention it. Now I know that for nearly ten years later Choughs nested on the Orme. Some early observations I know were incorrect, but others I would gladly repeat. As a very small boy I was lifted up to look into a sand hole at a long-billed brilliantly plumaged bird. Possibly because I was familiar with pictures of birds my infantile brain registered a vision of a Bee-eater on its nest. Not until many years later I learnt that the bird had never been proved to nest in England, and that it nested in a hole. It may have been a Kingfisher, yet I knew the picture of that bird well. I can never satisfy myself now.

The old method of keeping notes was a diary ; a card index is better. Each species should have a card or cards, the more for each the better, for in after-life time is saved if all notes on one subject are grouped. Separate cards for plumage, habits, eggs, times of appearance, etc., are useful. Fresh cards can always be added. At the bottom of each card should be a space for later remarks, alterations, or corrections. Colours of bill, legs, eyes and bare skin of all specimens examined should be noted ; these fade in a skin. Equally important are notes on habits.

The old note-book is a joy for ever ; it is far better than a specimen, and it does not mean destruction of life. Let us remember that the main object of keeping notes is for the benefit of others, to advance knowledge, and register anything and everything which may be of future use.

PART II.

DESCRIPTIONS OF SPECIES.

Order PASSERIFORMES.

THE Passeres are the most specialised birds. Their feet, with three toes in front and one behind, are adapted for grasping branches or perching; their vocal organs are well developed for production of song.

Family CORVIDÆ. Crows.

Raven. *Corvus corax* Linn.

The Raven (Plate 2), the largest, most powerful and intelligent of the crows, has been less successful in maintaining its position than some of its relatives. In parts of Scotland, the Scottish islands, and the west of Ireland it is common, but in England and Wales is only met with in wild hilly country, and, locally, along the western and southern coasts.

Our European Raven and allied forms are found throughout the Palæarctic and Nearctic Regions. In the British Isles, except for occasional wandering, the bird is sedentary, though winter immigration has been noted in Scotland and Ireland.

It has been described as "grave, dignified and sedate"; it is more; when flying with slow but strong and measured flaps it is purposeful and determined, a great bird with heavy beak and

head. When it speaks, which it frequently does, its deep croak is sufficient for identification. Variouslly written as "pruk," "cruck," "whow" and "glog," this short, deep bark is different from any other corvine utterance. When standing on some rocky eminence the whole body lunges forward with each call, and the pointed feathers on the throat stand out like a ragged beard. Often the bird soars and wheels at a great height, its wings motionless, its flight feathers extended like fingers. It is revelling in air mastery, not seeking its prey. The food of the Raven, like that of all crows, is varied; it kills small birds and mammals, especially rats and young rabbits; the weakly lamb or disabled sheep is at its mercy, but its favourite food is carrion. Round a large carcass many will gather, driving away gulls or other would-be diners. With powerful hooked bill it pierces the hides and tears the flesh. A carcass is at first approached with caution, in sidling jumps with wings half open.

The nest, a massive structure of sticks, heather stems and roots, is built upon a ledge on some rocky outcrop or precipitous cliff-face, and withstands most winter storms. The cup is lined with soft substances—wool, rabbit fur, grass or bracken. Formerly, when the bird was less persecuted, inland and lowland haunts were inhabited, and the nest was usually built in some tall and ancient tree; "Raven trees" exist in many places whence the bird has vanished. Bosworth-Smith, who as a boy in 1855 climbed one of these trees in Dorset, found as part of the lining "a large portion of a woman's dress." The eggs, which are laid in February or March, are from three to seven in number, and are bluish-green, blotched or streaked with brown and black (Plate 12).

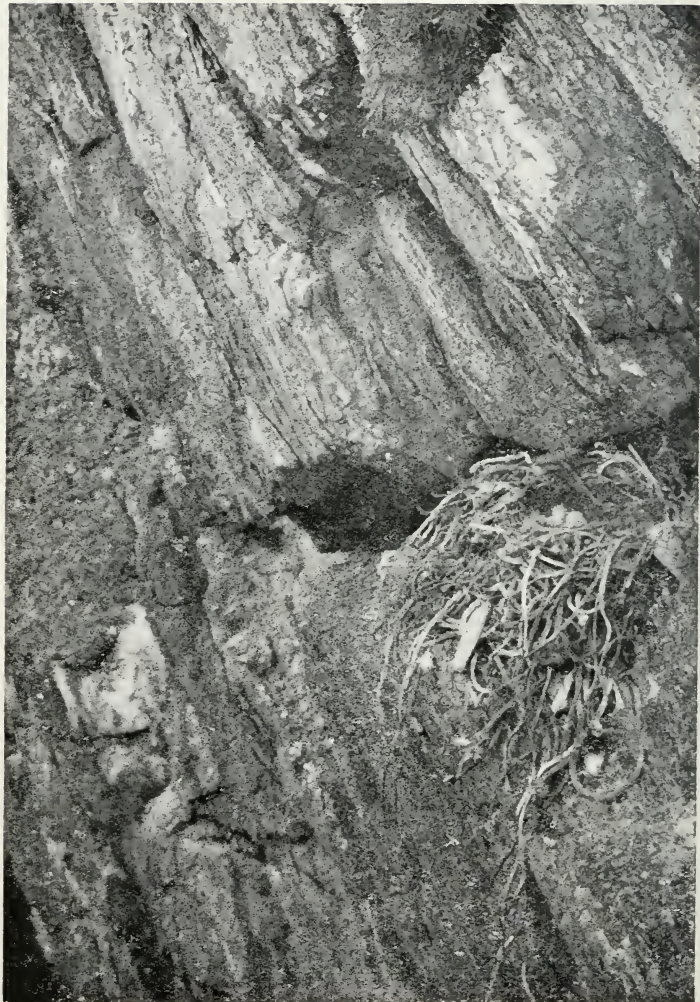
The Raven's nuptial display is little known, although one trick, that of rolling in flight, is familiar. Macgillivray and Saunders refer to its somersaults, and when descending from a height it will "shoot" like a Rook with half-closed wings, turning and twisting with great rapidity. The roll is a corkscrew

1850-1851

1 Pl. 2.



Raven.



reverse when the flight is horizontal. Some observers believe that the wings are closed and that a complete turn is made without losing elevation, but when I have seen the performance the wings were not apparently shut tightly to the sides; the bird turned belly upwards and shot forward with its own momentum, quickly recovering its normal position. Rolling is not confined to the breeding season, and is occasionally employed when the bird is attacked by a falcon. My friend Dr. W. B. Russell watched the courtship antics of a pair in North Wales. After aerial play, soaring and rolling, the male followed the female to the nest, uttering a "vibrating nuptial call" quite distinct from its sharp bark. There he caressed her, stroking her bill with his, and, when she raised her head, tickling her affectionately under the chin; then both birds opened their mandibles and pretended to bite; a lengthy "Raven's kiss."

The Raven is shy and cautious rather than cowardly, and will drive Gulls from the vicinity of its nest and spar with the passing Peregrine; yet I have seen it swerve from the assault of a Kestrel and heard it cry in alarm when boldly attacked by a pair of Lapwings.

The plumage, legs, feet and beak are black, most of the feathers glossed with blue or green. The bill is curved and decidedly hooked; the irides are dark brown. The sexes are alike; the young are duller. Length, 25 to 27 ins. Wing, 15·75 to 17 ins. Tarsus, 2·6 to 3 ins.

Carrion-Crow. *Corvus corone* Linn.

In general appearance and many of its habits the Carrion-Crow (Plate 4) is a lesser Raven, but with a slighter, less curved and smaller hooked beak. Throughout England, Wales and southern Scotland it is resident, and in spite of its

unpopularity is in places common ; in the Highlands, Ireland and the Isle of Man the Hooded Crow replaces it. Our Crow breeds in western and central Europe, and an allied form is found in eastern Asia. A few of the European birds reach us as immigrants in autumn, but many reported movements of "crows" really refer to Rooks. In October, 1911, I saw ten arrive on the Yorkshire coast a few days before the first Hoodies came in.

From the Raven the Carrion can be distinguished by size and from the Hooded Crow by its black plumage, but there is frequent confusion between it and the Rook. The beak of the Crow is stouter and in consequence looks shorter, and whereas in the adult Rook the nostrils are bare, those of the Crow are covered at all ages with bristle-like feathers. The Rook is generally gregarious, the Crow solitary, but Rooks occasionally nest in isolated trees, and Crows may feed with Rooks ; moreover Crows are often sociable in winter roosts. The most distinctive character is the voice, well described by a Dorset gamekeeper. "The Rook say 'caw,' but t'other un der say 'pawk, pawk.' He's so fond of a bit of meat." The guttural, slightly vibrant croak is distinct from any note of the Rook. The bird is garrulous, loving to perch on the top of a tree, calling three or four times in quick succession, with a slight pause between each series of croaks. The wing-beats are slower, more deliberate than those of the Rook. Though delighting in carrion of all kinds the Crow will kill and eat any small animal it can catch, and, as the gamekeeper knows, is an inveterate egg-robber. Impudent and bold when opportunity offers, its natural caution enables it to avoid most traps. Molluscs it enjoys ; when these cannot be hammered open they are repeatedly carried into the air and dropped until fractured. The Crow is more careful than gulls that the shell falls on hard ground, but seldom varies the height from which they are dropped if the first efforts fail. In the fields the bird





searches for worms, insects and grain. When feeding mutual aid may be practised. I watched a pair striving to obtain a half-picked bream, the remnant of a Heron's meal ; they sidled round on opposite sides, and when the phlegmatic bird turned its head to watch the antics of one robber, the other hopped in and secured the prize. After this they swooped at and worried a number of Black-headed Gulls, but were mobbed and driven off by a party of Lapwings with which they took liberties. There is a humorous practical joking element in the psychology of the Carrion. Although so shy and cautious the Crow, when free from persecution, becomes indifferent to the presence of man ; it is a common London bird, roosting sociably in the parks in winter.

On the cliffs the Crow nests on ledges, but in inland localities is arboreal ; the nest is similar to that of the Raven, but less bulky. The eggs, four or five in number, are seldom laid before April ; they are blotched and spotted with brown on a blue or green ground and vary considerably (Plate 12).

The plumage is black with a green or purple sheen, but the gloss is much greener than that of the Rook. The bill, legs and feet are also black ; the irides dark brown. The sexes do not vary, but the female is the smaller bird ; the young are duller. Length, about 20 ins. Wing, 13 ins. Tarsus, 2½ ins.

Hooded or Grey Crow. *Corvus cornix* Linn.

The Hooded Crow or Hoodie (Plate 4), also called the Grey, Royston or Norway Crow, is so similar in structure and habits to the Carrion that some authorities insist that they are merely geographical races of one species. Where their ranges overlap, as in northern Britain, Germany and Siberia, they interbreed and hybrids are fertile, yet the persistence of the striking plumage differences detracts from the theory. The Grey Crow breeds regularly in Scotland, Ireland, the Isle of

Man, and abundantly in the Scottish Islands ; it has frequently nested on our eastern coasts and occasionally inland. In autumn large numbers of migratory birds arrive on the east coast, many spreading over the eastern shires or proceeding inland to the midlands, where it is a well-known winter visitor. In the west of England and in Wales it is very rare. Although in the north-east and in the Solway area Greys and Carrions interbreed, the Irish Sea forms a barrier to their range in the west. In Ireland and Man there are no Carrions ; in the Lley Peninsula and Anglesey no Hoodies ; yet the two species nest on the respective coast cliffs practically within sight of one another. The Grey Crow is, as a rule, a day migrant ; in autumn it reaches our shores in small parties, following one another all day long, sometimes dropping from a height, sometimes travelling close to the waves. Abroad it breeds in northern and eastern Europe, and closely allied forms inhabit southern Europe and western Asia.

The Hoodie, with its contrasted greys and blacks, cannot be confused with either the Carrion or Rook. Seebohm, who had a wide experience, declares that the call notes of the two are indistinguishable, but Macgillivray, writing of this species, says "its voice is not so loud or clear as that of the Carrion." My own experience supports the latter view. I was with a friend in a Cheshire park, where the bird is a rare vagrant, when a "crow" spoke ; my friend thought it was a deep-voiced Rook ; I said a high-toned Carrion ; we were both wrong, it was a Hoodie. To my ears the note is pitched a little higher, but probably the tone varies. The flight is slow and heavy and usually straight.

The diet is similar to that of the Carrion, and its reputation as an egg-thief and destroyer of game is blacker than that of its black relative ; it is feared and hated on the sheep-runs. Along the shore it is a constant scavenger ; it takes birds from the nets of the wildfowlers and hunts for and destroys those

which escape partially disabled from their guns. It drops molluscs and crabs to break them after the manner of the Carrion. In the hard winter of 1916-17, when birds suffered so severely, a small party of Hoodies frequented a Cheshire mere for many weeks, subsisting on the frozen gulls and Coots which were littered over the ice. On coast cliffs the eggs of Gulls, Cormorants and other birds are stolen when their owners are absent, and it will enter the burrow of the Puffin with a similar object.

As a rule the nest is placed on or near the ground, on a cliff, in heather or a low bush, but trees are occasionally used; it closely resembles that of the Carrion, but on the coast seaweed is often interwoven in the structure. The four to six eggs are of the usual crow type, very similar to those of the Carrion; they are laid as a rule early in April.

Except for the head, throat, wings, tail and thigh feathers, which are black and mostly glossy, the plumage is ash-grey, the dark shafts giving it a streaky appearance; where black feathers mingle with the grey on the lower throat the streaky appearance is more marked. The bill and legs are black; the irides dark brown. There is only one moult, in autumn, as in other crows. The male is the larger bird, otherwise the sexes are alike. When first hatched the young are much blacker than the parents, according to Macgillivray, but in the juvenile plumage brown rather than black predominates and the eyes are "greyish-blue" (Witherby). Length, about 20 ins. Wing, 12.5 ins. Tarsus, 2.25 ins.

Rook. *Corvus frugilegus* Linn.

Resident throughout our islands and showing partiality for association with man, the Rook (Plate 7) is our best known and most respected crow. It nests in colonies close to our houses; it feeds in flocks in cultivated fields. Abroad it

ranges over northern and central Europe, but is rare in the south; throughout its range, including Britain, it is partially migratory. Regular migration is complicated by irregular movements in summer and winter; large numbers of immigrants reach our eastern shores in autumn and return in spring, and emigration is noticeable in the south-east in autumn and a more marked immigration reaches our southern shores in spring. These southern movements are supposed to be those of British-bred birds, but some immigrants from northern Europe may be birds of passage. Thus the Rook is at once a resident, a winter visitor, a summer visitor and possibly a bird of passage. In Ireland the movements are further complicated by short, irregular migrations across the Irish Sea, and by occasional abnormal westward flights that have sometimes ended in disaster in the Atlantic. Exhausted birds arriving on the west coast of Ireland and the Hebrides were supposed to be survivors from these misguided attempts to extend the range, but it is as likely that they were south-bound autumnal emigrants that had miscalculated the wind direction and weather conditions.

The feather-denuded rough skin round the base of the bill of the adult Rook, the slender and less curved beak, blue sheen and voice are characters which distinguish it from the Carrion, but in the young bird, until a year old, the nostrils are clothed with bristles and the chin feathered. At all ages, however, the feathers of the flanks hang loosely, giving the bird a more ragged, skirted appearance round the thighs than the Crow.

The Rook is a sociable bird, amiably consorting with the Jackdaw, which joins it in the fields and the winter roosts and occasionally at the rookery. In the fields the Rook follows the plough, walking erect, with sedate, slightly rolling gait, and with occasional short flights to the heels of the ploughman. The morning and evening flights, from and to the rookery or roost, are familiar to all; with steady, regular wing-beats and



1 Pl. 6.

Nest of Magpie.

C 26.



with frequent calls, the flock trails across the sky in loose formation. On reaching the destination, whether feeding ground or roost, the birds frequently descend in rapid, oblique flight, twisting and turning with wings half-closed; this is termed "shooting," and is also indulged in during nuptial display. The harsh "caw," though easily recognised, is subject to individual modulation; in most flocks one or two birds have high-pitched voices, which, however, are clearly distinct from the sharper calls of Daws. Emphasis and inflection, especially when at the rookery, suggest to our ears anger, pleasure, affection and other qualities, but the alarm note, a long harsh call, is seldom varied.

Though more of a vegetarian than other crows, the Rook is on the whole beneficial; to some extent it destroys grain and roots, but its services in checking pests, especially wireworms and "leather-jackets," the larvæ of crane flies, outweigh the damage. Infected plants and roots are torn up, and the earthen chambers in which the leather-jackets lie are dug out whole. Worms, molluscs and small mammals are eaten, and flocks frequently feed on tidal banks and the shore.

The colony or rookery is established in a clump of trees frequently close to a human habitation, and many nests may be built in one tree; nests on buildings are rare. Most of the rookeries are deserted after the young have flown, the colonies from a wide area joining forces and nightly occupying a common roost. During winter the members of a colony frequently visit the rookery, where with much conversation courtship display is indulged in; in February these visits, usually in the early morning, become more frequent, and destruction or reconstruction of old nests begins, but serious building is seldom started until March. In the nuptial display much bowing and tail-fanning is indulged in. Old nests are frequently repaired and added to until they become huge and unwieldy masses of sticks, but frequently the old structures are deliberately destroyed.

One of a pair generally mounts guard over new foundations, for the Rook is an acquisitive and pilfering bird, ready to victimise its neighbour. Earth and small sods are used to strengthen the nests, and they are lined with hair, grass and other soft material, but less wool is used than by other crows. The eggs, three to six, vary in colour, but green predominates (Plate 12); they are laid, as a rule, in March, and the young leave the nests in April. Shrill, infantile cries advertise the presence of the young; these change to a gobble of satisfaction when the parent unloads its distended pouch for their benefit. The young are fed in the fields long after they have left the nest; they follow the old birds with querulous calls and shivering wings.

The black plumage of the adult Rook of either sex is glossed with blue, purple, violet and green reflections, but is duller before the moult in autumn. Down feathers clothe the chin in winter, but are lost in spring. The chin is feathered and the nostrils covered with bristles in the young, and the plumage is browner; during the first winter the bristles are gradually lost, and by the following spring the greyish, warty denuded area is complete. The habit of digging for food is not responsible for this loss; the bare patch is a specific character of the adult bird. The legs and bill are black, the irides brown. Length, about 19 ins. Wing, 12·75 ins. Tarsus, 2·25 ins.

Jackdaw. *Corvus monedula* Linn.

The popularity of the pert and sprightly Jackdaw (Plate 11) is evident from the prefix "Jack," which, though not exactly a pet-name, is a diminutive given to several familiar animals. Throughout the British Isles it is resident, though rare or absent in north-west Scotland and many of the Scottish and Irish islands. It ranges through west and central Europe, from whence we receive many winter visitors in autumn. At





this season some, thought to be British-bred birds, leave our south coast ; return north and eastward migrations occur in spring.

The Jackdaw, a much smaller bird than the Rook, with which it freely consorts, has a proportionately shorter and straighter beak, and by some authorities is placed in a separate genus, *Colæus*. On the ground its movements are quick, almost fussy ; it walks with a strut, jerking its body ; its wing-beats in flight are rapid, readily distinguishable from those of the Rook. Its flight is less direct, more erratic, and it frequently indulges in aerial display, especially at its breeding-place ; here the birds of a colony will engage in combined evolutions without concerted action ; each individual dodges, swerves, turns, twists or dives at pleasure. These sociable performances, most noticeable in the evening, are accompanied by incessant clamour, the sharp and shrill cries of "tchack" or "cae" blending in delightful harmony. The alarm note is similar to that of the Rook, though not so deep in tone. The food is mainly insects, worms and molluscs, but eggs and young birds are freely devoured in spring, and a little fruit and corn is taken. To obtain a favourite insect, the "ked" or spurious sheep-tick, the Daw perches on the sheep's back and searches the wool ; it will also pick hair from the backs of horses and cattle as lining for its nest.

The gregarious instinct is strongly developed in the nesting habits, though less so than in the Rook ; solitary nests are exceptional. The colonies are in crag or cliff faces, woods or ruins, and the nest is usually placed in a hole or crack in rock, tree or masonry. Open nests are, however, built in trees, occasionally in rookeries ; the habit of nesting, feeding and flying with Rooks appears to be growing, and may be due to the general increase of the bird. When placed in a hole the nest may be little more than a lining, but when in branches or buildings great quantities of sticks are used ; indeed,

chimneys have been blocked by the industrious birds. I have seen a winding stairway in a tower almost filled with a pyramid of sticks, at the summit of which the cup of the nest seemed absurdly small. This cup is lined with wool, hair and grass. The four or six eggs are less spotted and blotched than those of most crows, and are bluer in ground colour (Plate 12). They are usually laid late in April.

The general plumage of the Jackdaw is black glossed with blue on the head and upper parts, duller beneath; the nape, back of neck and ear-coverts are distinctly grey in the adult bird of either sex, this grey being clearest after the moult in autumn. The young are browner, and the grey little noticeable until the second autumn. The bill and legs are black, and the irides bluish or greyish white. Saunders describes them as "white at all ages," but in a young bird in my possession they were distinctly pale blue until the end of its second October, when they darkened, showing a brownish rather than greyish cast. Length, about 14 ins. Wing, 9'25 ins. Tarsus, 1'9 ins.

Magpie. *Pica pica* (Linn.).

The Magpie (Plate 9) is resident throughout the British Isles, and though occasionally wandering, exhibits no real migratory movements. In the north of Scotland and west of Ireland it is rare, but in most parts of the latter country it is now abundant, though introduced in the seventeenth century. Ours is the European bird, which has allied forms in Spain, north Africa, Asia and North America.

The strikingly pied plumage and long, graduated tail, as well as the loud, harsh chatter of the Pie, prevent confusion with any other species. In the open country it commands attention as one, two, three or more birds, with rapidly moving, apparently short wings, fly in succession, chattering as they pass. When the bird alights the long tail is at once elevated and

is carefully carried clear of the ground. Like other crows, its usual gait is a walk, but when attracted by food or any special object it hops quickly sideways with wings just open. The fondness of all its family for bright objects is well known ; a Magpie in St. James's Park, which I was assured was a wild bird, hopped along the railings towards me, and tried to wrest from my fingers a shilling which I proffered. In game-preserving areas the bird, owing to incessant persecution, is shy and rare, but in London and the outskirts of the large manufacturing towns it is common ; indeed, where it is not molested it courts rather than avoids the vicinity of man. In winter it becomes gregarious, wandering and feeding in small parties or flocks, and gathering at a common rendezvous to roost at night. Early in the year large numbers collect together for mating. Darwin refers to these "marriage" meetings, and Mr. F. J. Stubbs has described the nuptial display during several of these meetings, at one of which 200 birds were present. The males rapidly raised and depressed their crests, uplifted, opened and closed their tails like fans, and conversed in soft tones quite distinct from their usual chatter. In the display the loose feathers of the flanks were brought over and hid the primaries, and the patch on the shoulders was spread so as to make the white conspicuous, presumably to attract the female eye. Short buoyant flights and chases were part of the courtship.

No animal food comes amiss to the Magpie ; young birds and eggs, small mammals and insects are devoured, but acorns, grain and other vegetable substances are not despised. Lilford tells, on apparently reliable though second-hand evidence, how a number of Magpies attacked and killed a saddle-sore donkey and started to devour the body. The weather was hard at the time, and the wound was on the animal's back, where a dig from the strong beak of the bird might easily injure the spine.

Tall trees are selected by the Magpie for its bulky nest ; it is usually firmly attached to a central fork in the upper branches.

The framework of the sticks is cemented with earth and clay, and a lining of the same material is covered with fine roots ; above is a stout though loosely built dome of prickly branches with one well-concealed entrance. When the leaves fall these huge nests are plainly visible. Where trees are scarce, and even in well-wooded country, nests are at times built in bushes and hedgerows ; I have seen a nest in an old untrimmed hedge with apparently suitable trees within a few yards. The eggs, small for the size of the bird, number from five to eight, and so many as ten are recorded ; they show much variation in ground and marking, but a usual type is blue-green with close specks and spots of brown and grey (Plate 15). They are laid in April, and only one brood is reared unless disaster overtakes the first clutch.

The head, neck and breast of the Pie are glossy black with metallic green and violet sheen ; the belly and scapulars are pure white ; the wings are black glossed with green, and the primaries have white inner webs, conspicuous when the wing is open. The graduated tail is black, shot with bronze-green and other iridescent colours. The legs and bill are black ; the irides brown.

The young resemble the parents, but are at first without much of the gloss on the sooty plumage. The male is slightly larger than the female. Length, about 18 ins. Wing, 7.5 ins. Tail, 8-10 ins. Tarsus, 1.85 ins.

Jay. *Garrulus glandarius* (Linn.).

The Palearctic genus *Garrulus* has one European species, now split into many sub-species, three of which occur in Britain, two as insular races and one as a migrant. The British jay, *Garrulus glandarius rufitergum* Hartert (Plate 9), is resident in England, Wales and Scotland, though very rare in the north ; the Irish Jay, *G. g. hibernicus* Witherby and

Hartert, is confined to Ireland ; neither is found in Man. The typical European Jay, *G. g. glandarius* (Linn.), was first recognised in 1910, though autumn migrants, probably of this race, had been frequently recorded but not critically examined.

More strictly a woodland bird than the Pie, the vinaceous plumaged Jay is less familiar, but in game preserves its mangled corpse decorates or disfigures most keepers' gibbets. Persecution has failed to destroy it, and to-day, in many areas, the Jay is not decreasing. Shy and wary, ever ready to take alarm, it defies the keeper's strenuous efforts. Its dress and behaviour prevent confusion with any other species, whilst its harsh screech, a strident "kraak, kraak," is as distinctive. This note often calls our attention to a flash of white as the bird dodges out of sight ; that is all that catches the eye. When unconscious of our presence it will sit, raising and depressing its black-streaked crest, elevate and lower its fanned-out tail, or swing it from side to side ; it leaps rather heavily from branch to branch, constantly turning its head on the look-out for danger, or furtively seeking some unwary victim. On the ground it hops jauntily, sideways rather than forwards ; on the wing, when alarmed, it flies quickly and speedily takes cover. In the open its flight is undulating and somewhat laboured ; its rounded wings appear short and weak. Woods and coverts are its usual haunt, but I often meet with it hunting in osier beds. After the young have left the nest the family parties scour the woods, following one another with noisy screams, which, though really calls or notes of affection, have an angry, often distressful ring ; the happy birds sound as if in torture. Early in the year many gather together for courtship, and then a crooning jumble of soft and not unmusical notes make up the nuptial song ; in this the imitative Jay has been heard to introduce the voices of other birds or mammals.

As its specific name implies, it is partial to acorns, beech-mast and nuts ; the stomachs of a number killed in winter

were found by Prof. Newstead to be full of shelled acorns. A little oats and wheat is also eaten. In spring the Jay is an egg-thief, victimising small birds and even wild ducks and Pheasants; a trap baited with a Pheasant's egg frequently outwits the cunning Jay. On the other hand the bird destroys pests; Prof. Newstead counted the fragmentary remains of at least 127 click-beetles—"wire-worms" in their larval stage—in the stomach of one bird killed in April, and another, shot on the nest, contained 120 larvæ of the destructive winter moth. In spite of its habitual caution the Jay will raid gardens, especially when peas or fruit are ripe. One habit, shared by the Pie and others of the group, is that of burying nuts, acorns or even inedible objects; this has been described as hoarding, but its treasures are usually buried separately and probably seldom recovered.

A small tree, bush or hedgerow is the usual site for the nest (Plate 8), which is open and less bulky and compact than that of the Pie; it is lined with roots and well concealed. One brood of five to seven is reared in late April or May. A common type of the small-sized egg is light buff finely speckled with pale brown and grey, often with a few irregular lines at the larger end (Plate 15); as Yarrell remarks, not unlike a gigantic egg of the Sedge-Warbler.

The British Jay has an erectile white crest streaked with black; the rest of the head, back and breast are vinaceous-brown; the chin, throat, belly and a large area surrounding the base of the tail are pure white, this last sharply contrasted with the brown-black tail. At the base of the bill is a conspicuous black moustachial streak or patch. The wings are black, white and chestnut, with beautiful black, white and blue barred feathers on the coverts. These, largely used for artificial flies, frequently decorate the hat-brims of gamekeepers. The sexes are alike. Before the moult in autumn the general colour, through abrasion, is browner and less pink-tinged, and the colour of the young is duller. The bill is dark horn; the





D 35.

Nutteracker.



I Pl. II.

Jackdaw.

legs and feet pale brown. In the young the eyes are brown, but turn to pale blue when adult.

The Irish Jay, according to Mr. Witherby, is darker and more rufous, and has the forehead streaks more pronounced, and the Continental bird is greyer and paler on breast and flanks. These distinctions can only be appreciated when skins are compared, and are of no value in the field. Length, about 15 ins. Wing, 7·2 ins. Tarsus, 1·5 ins.

Nutcracker. *Nucifraga caryocatactes* (Linn.).

The Nutcracker (Plate 11) ranges through northern Europe and Asia, and several geographical races are recognised; representatives of two forms, differing in size and shape of bill, have occurred in Britain as rare autumn and winter visitors or vagrant wanderers. The Thick-billed Nutcracker, *N. c. caryocatactes* (Linn.), is the European bird, breeding in Scandinavia, Russia, Germany and as far east as the Balkans. The Thin-billed form, *N. c. macrorhynchus* Brehm, breeds in Siberia, and appears to wander more frequently westward, for most of those taken in Britain when critically examined have proved to be referable to this race.

Pennant first recorded the Nutcracker from Flintshire in 1753, but it is hardly safe to judge the form from his plate. In 1860 one of the Thick-billed birds was killed in Cheshire, and at least five others have been obtained in Sussex and Kent within recent years. Including Pennant's Welsh and three Scottish records, at least forty-five other Nutcrackers have been authenticated for Great Britain, and those that have been examined have been of the Slender-billed form. The majority of these were taken or seen in southern and eastern counties.

Mr. Jourdain states that in the field the bird is not unlike a Rook with a long bill; one which passed through my hands was killed by a gamekeeper who thought that it was some kind

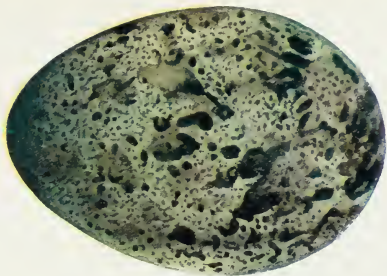
of woodpecker. Its size, form and mottled plumage should be distinctive to any one who meets with this wanderer in the field. Seebohm describes its "peculiar slow undulating Jay-like flight" and its harsh calls. On the Continent it nests in March. It feeds on seeds of the cedar, nuts, and acorns and on insects.

The general colour is chocolate-brown, with large white spots except on the crown and nape; the wings and tail are almost black, the latter tipped with white. The under tail-coverts are conspicuously white. The bill is brownish-black, the legs black, the irides brown.

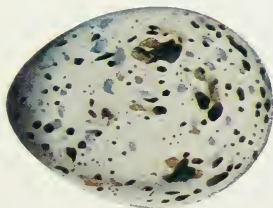
The Siberian bird has a longer, more pointed and slender bill than the European form. Length, about 12.5 ins. Wing, 7.75 ins. Tarsus, 1.85 ins.

Chough. *Pyrrhocorax pyrrhocorax* (Linn.).

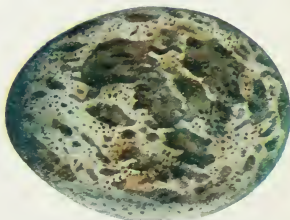
A melancholy interest surrounds the Chough (Plate 13), whose glossy black dress, long curved red bill and red legs distinguish it from all other birds; it is a species that is going under. Egg-collecting has helped to weaken it, but competition with, rather than the antagonism of, the increasing pushful Jackdaw, its frequent companion, has much to do with its decrease; it is a gentle, sedentary, conservative bird, rarely met with far from its breeding haunts. Many old stations are now deserted, though the nests were not accessible to even daring cragsmen; its position in the south-west of England, where it was called the Cornish Chough, is insecure. It lingers in coastwise and a few inland haunts in Wales, the Isle of Man, south-west Scotland, some of the Hebridean islands and Ireland. As a boy I well remember seeing a few feeding with Daws on rough fields close to Llandudno Station. Manx laws protect it, but I have a photograph of one hung as a scarecrow



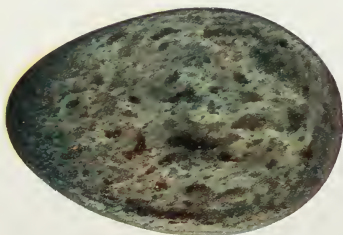
Raven.



Jackdaw.



Rook.



Carrion Crow.

Chough.



on barbed wire by an ignorant farmer. Abroad it breeds in southern Europe and the Mediterranean basin, the Alps, and in mountainous country across central Asia to China.

The Chough has wonderfully buoyant and easy flight. It floats above the beetling cliffs with wide-spread primaries; the tips of these bend upwards as it curves and turns, sweeping round gracefully. With wings almost closed it shoots towards the boiling surf at the foot of the crags, then checking itself, sweeps into some wave-washed cave. Saunders describes its movement on the ground as "a short and very quick run," but it will walk as sedately as a Rook. Its loud, clear notes are variously written, but to my ears "kee-aw" fits its ringing call, clearer and louder than the note of the Daw; "tchuff," from which it gets its name, is another common cry. A very tame bird in Cornwall, gifted with the corvine imitative faculty, could, without losing its characteristic tones, distinctly articulate the name of its mistress, "Emm-ah." Its food consists of insects, molluscs and other invertebrates, and, occasionally, a little corn.

Some crack or fissure in the roof or sides of a tidal cave is a usual site for the nest in the Chough's breeding haunts, and similar hollows in steep crag and cliff faces are utilised. The nest is, as a rule, bulky, composed of roots and stems of heather, furze or other plants, and is lined with wool or hair. One visited by Mr. F. S. Graves was in a fissure in a Manx cliff, and consisted only of a lining; at this nest the hen, drooping her wings like a young bird, was fed by her mate. The eggs, laid late in April or May, and three to six in number, are spotted and speckled, not always densely, with various shades of brown and grey on a creamy or slightly tinted ground (Plate 15).

The plumage of both sexes is glossy blue-black, with green sheen on the wings; the bill and legs are coral red. In the young dull orange takes the place of red until the first autumn. The irides are brown.

The male is larger than the female. Length, about $16\frac{1}{2}$ ins. Wing, 10·9 ins. Tarsus, 2·1 ins.

Family. STURNIDÆ. Starlings.

Starling. *Sturnus vulgaris* Linn.

Although one of our best known birds, the status of that avian humourist the Starling (Plate 14) is complicated ; its range extends over Europe, and migrants winter in north Africa. Some of our birds are resident, with us at all times, but others leave in autumn to return in spring as summer visitors, whilst vast hordes come from the north and east to winter here, and some, travelling further south, are birds of passage. When central European birds are arriving in autumn, they may cross the pathway of departing emigrants.

The beauty of the metallic-hued Starling is little appreciated ; it is often smoke-begrimed or in immature or winter dress, but in early spring, when the buff or white tips that concealed its glories have worn off, it is in a good light a wonderfully beautiful species. The male, with its neck and throat distended, its wings trailing or shivering, perches erect on tree-top or chimney, whistling and chuckling, proud of his charms. His song is a medley of sweet and soft whistles and croons, with cheery laughing bubbles, chatters, chuckles and clicks ; the notes of other birds or animals or merely mechanical sounds are introduced by the imitative bird. It can copy the Black-bird's mellow tones, the Curlew's wild call or the Dunlin's purr ; one bird I knew could tinkle like a particular cycle bell so well as to delude its hearers. Its alarm cry is harsh, a rasping scream, and the anger note, too frequent when the birds should be feeding amicably, is as unpleasant. Immediately the young have left the nest the Starling becomes gregarious ; indeed throughout the nesting season, when breeding birds are

scattered, flocks of young or unmated birds are common. The family parties join forces, and by autumn large flocks are formed which keep together all day. In the evening these flocks congregate at a common roost, some plantation or reed-bed as a rule, where countless thousands rope the branches or bend the tough reeds. The birds usually collect in isolated clumps of trees, where they whistle and chatter in concert; then, as if by word of command, all rise and perform complicated aerial evolutions. The flock fans out or closes up, wheels or turns sharply, forms into a compact mass or trails off into a long waving line or wreath of birds, until as one body it dives, rains down, or drifts into the roosting trees or reeds. The usual flight of the Starling is direct; the triangular wings beat very rapidly, then are held whilst the bird glides, losing but little altitude. The wings are not brought far forward; the bird's form is that of a wide-barbed arrow-head. When, however, high-flying beetles or other insects are on the wing, the Starling hawks after them like a Swallow; it turns and twists, dodges and swoops with considerable agility. On the ground it runs or walks, but seldom hops unless hurried.

In spring insects and other invertebrates are eaten, and the bird destroys large numbers of weevils and other beetles; larvæ, including grass-devouring wire-worms and the grubs of flies, are successfully sought for; it is a farmer's friend. In summer and autumn, however, it raids fruit crops and is particularly harmful when pears are ripe. When the young are in the nest it is always in a hurry; its arrival at the nesting hole is the signal for wheezy and impatient cries from the expectant brood. When these have left the nest they follow their parents until the woods ring with their insistent demands. In the fields the flocks are restless, settling in a body, scouring a particular area, working outwards from the centre; but if one bird takes a short flight, the others immediately follow as if fearing to miss something it has discovered. The flocks feed in gardens,

pastures, ploughed land, marsh or mudflat ; anywhere and everywhere is visited for food ; but long before dusk in winter the whole party rises and wings straight for the roost. The Starling retires early, but not for sound sleep ; long after dark the peevish notes of expostulation may be heard as birds jostle one another on the crowded perches. These roosts often grow so large as to be troublesome ; efforts to move the birds by firing guns or lighting fires beneath the trees usually fail, but one ingenious keeper flew a hawk-shaped kite over the roost at gathering time, and the birds moved elsewhere.

In its choice of a nesting site the Starling is catholic. The nest is almost invariably in a hole, but this may be under the eaves of a house, in a chimney, or the hollow left by a missing brick, in an old barn or ruin, in a haystack, on some wild coast cliff, in a peatstack on a lonely moor, in tree in field or wood, or in the garden rockery or nesting box provided for its use. The nest is an untidy litter of straw with a lining of feathers or other soft material. From five to seven pale blue eggs (Plate 15) are laid in April, and often a second brood is reared ; eggs dropped by the impetuous bird are not uncommon. Nesting out of season is not infrequent for the Starling seems determined to multiply. In parts of Britain, where fifty years ago it was counted rare, it is now more than abundant.

The summer plumage is metallic, purple, green and blue ; these iridescent colours have different sheen when seen from various angles. At the moult in autumn they are replaced by buff and white tipped feathers, which give the whole bird a spotted appearance, and the lemon-yellow of its bill changes to dull brown (Plate 14). The legs and irides are brown. The female is slightly less showy than her mate, and has shorter pointed feathers on the neck. The young, until their first autumn, are light brown with pale margins to the feathers of wings and tail ; they become spotted as they grow older. Length, 8·5 ins. Wing, 5 ins. Tarsus, 1·2 ins.

The Starling resident in the Shetlands has been separated as an insular race, *S. v. zetlandicus* Hart., on account of a slightly longer wing and wider bill.

Rose-coloured Pastor or Starling. *Pastor roseus*
(Linn.).

Certain birds apparently suffer from overcrowding in their usual breeding area, and migrate in hordes westward in a vain effort to extend the range ; the movements of the Rose-coloured Pastor (Plate 14) are, however, even more erratic and uncertain. In its normal range in south-eastern Europe and western Asia it will swarm for a period in one district and suddenly leave it for no apparent reason. From time to time parties come wandering north and west, and not infrequently a few birds appear in Britain ; indeed, throughout our islands, there are few counties without records of vagrants. As a rule the birds are on their first autumnal migration, and may have lost their bearings and come west instead of joining the eastward stream which peoples India in winter. There is another explanation of some westward movements of the Pastor ; it is particularly fond of grasshoppers and locusts, and follows the flights of these erratic insects, serving a useful purpose as a destroyer of destroyers.

The Pastor is even more sociable in its habits than the Starling, for it nests in colonies, occupying holes in rocks or masonry. In food, habits, notes, and to some extent in appearance, it is a Starling, and it is not surprising that when wanderers reach our islands they generally consort with our birds. It is largely a feeder on insects, but is not free from the charge of fruit destruction. The eggs are spotless blue or white, paler than those of our Starling. In spite of its similar flight and behaviour an adult bird can be detected by its crest and colour when flying with Starlings, but with the young it is

not so easy. Saunders points out that though its pink dress is apparently conspicuous, a flock will suddenly vanish when it dives into a clump of oleanders, with the blossoms of which its colour harmonises.

In summer the head, neck, breast, wings and tail are glossy black, the rest of the plumage salmon-pink. After the autumn moult much of the gloss and pink is obscured by brown tips to the feathers, which wear off by abrasion in spring. The male has a long and ample crest, partially erectile; the crest of the female is shorter and her colours duller. The young are brown and gradually acquire the distinctive blacks and pinks. The bill is pink, black at the base, the legs yellowish pink. The irides are brown. Length, 8·5 ins. Wing, 5 ins. Tarsus, 1·3 ins.

Family ORIOLIDÆ. Orioles.

Golden Oriole. *Oriolus oriolus* (Linn.).

The fact that the Golden Oriole (Plate 16) ranks as a rare visitor on migration is not to our credit; it would be a regular summer visitor if we gave it the chance. At the end of April or beginning of May some reach our southern shores every year, and though a number of these are undoubtedly on passage, others are prepared to nest, and, indeed, have nested or attempted to nest in many southern and eastern counties. So conspicuous a bird as the male soon attracts attention, and the man with the gun almost invariably tracks it down. As an irregular visitor or bird of passage it has occurred in most parts of England, less frequently in Scotland and Ireland. In Europe, except in the extreme north, it is well distributed, and nests in north Africa and eastern Asia, migrating for the winter far south in Africa.

The male bird is so strikingly yellow that any one can recog-

nise it, and also has a loud clear call that attracts attention ; this note, which reminded Seebohm of the words, " Who are you ? " is constantly introduced into its short and simple song. The female and young bird are greener, and amidst foliage are difficult to see ; the male also, though conspicuous when passing from tree to tree in the open, is soon lost sight of when he dashes, as is his habit, into thick woods or foliage. The bird is an insect-feeder, but fruit is freely taken in autumn, but never in this country so as to justify persecution, although at times of migration it is sociable, travelling in small flocks.

The nest, a fair-sized cup or saucer, is almost invariably built on a horizontal bough, slung between the branches of a fork ; on either side it is firmly and cleverly bound to its supports. During the war many of our men became acquainted with the nesting Oriole, for on the Continent it is not uncommon and is little persecuted. Capt. C. Cairnie brought me an interesting nest containing broken eggs, which he had found close to where his Field Ambulance was stationed. It was built almost entirely of the litter of a camp, and its supports were of surgical dressing neatly bound round with string ; in the construction bits of paper had been freely introduced, including part of an envelope addressed to his Ambulance. The eggs, usually four or five, are white or creamy with a few brown, black or purple spots, thickest towards the larger end (Plate 34).

The handsome male bird is golden yellow with black lores, wings, and centre of the tail. Yellow and whitish tips and edges show on the closed wing, and the tail feathers are partly yellow, the black forming a graduated wedge. Bright yellow is replaced by greenish yellow on the back and head of the female, and her lighter under parts have dark brown streaks ; her wings and tail are browner. The young resemble the female, but at first are spotted on the back with pale yellow, and later are more olive in colour, whilst the flanks are

distinctly yellow, and the streaks, as shown in the figure, are fainter. The bill, brownish red in the young, become dull red in the adult; the legs are slate-grey, and the irides crimson. Length, 9·5 ins. Wing, 5·9 ins. Tarsus, ·85 in.

Family FRINGILLIDÆ. Finches.

Greenfinch or Green Linnet. *Chloris chloris* (Linn.).

Though resident throughout the British Isles the Greenfinch (Plate 16) is also migratory; its movements are erratic in winter. Many leave us in September and return in March, and in autumn passage migrants and winter visitors reach our northern, eastern and even western shores; the return migration is in March and April, but flocks, possibly north-bound immigrants, appear in February. Certain areas are deserted in winter, but wandering flocks may be met with anywhere; it is not possible to say if these are residents or winter visitors. Our race is distributed throughout north and central Europe, and allied forms are found in south Europe, north Africa and western Asia.

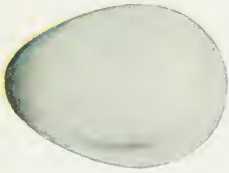
In March the male Greenfinch begins his monotonous long-drawn "dwee," which many describe as his call-note. It is also the main part of his song; he perches repeating it persistently as a love-note or challenge throughout the breeding season, and does not tire until summer is well advanced. In addition he has a pleasant twittering song, often interrupted by the droning "dwee"; he will rise with light uncertain hovering flight to utter this twitter on the wing, returning almost immediately to his perch. Although a common bird, many people fail to realise how smart the Greenfinch is in his summer dress; they are astonished by the brilliant yellow flash of the wing-edges and tail when the bird flies. Distinctly sociable at all times, the Greenfinch will nest in small colonies in a hedge or



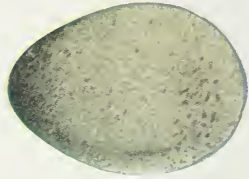
I Pl. 14.
Starling (winter plumage).



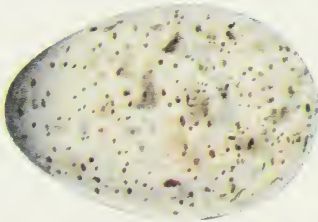
Rose-coloured Pastor.



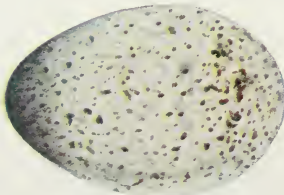
Starling.



Jay.



Chough



Magpie.

plantation, and when the young are on the wing they follow their parents, with much twittering, for a short period and then join forces with others of their kind. By autumn the flocks are often considerable, and at that season and in winter the birds consort with sparrows and buntings in the fields. The Greenfinch is a hanger-on rather than an associate of man; it will nest in large gardens and feeds freely in cultivated land. In the stubbles, from which the flocks rise with a whirr of wings, it picks up a certain amount of wasted grain, but also hunts for the seeds of spurry and other weeds; those of the charlock are much favoured. As is the case with all finches, the young are largely fed on insects, but are also supplied with a quantity of crushed seed. The litter of the stackyard attracts the flocks in winter, especially during frost, but, though some grain is eaten and in spring buds are nipped off, the services of the Greenfinch in keeping down weeds of cultivation should not be forgotten. The flight of the bird is undulating; its wings move rapidly for a second or two and then are closed for a moment, during which time the bird loses a little elevation, but the bounds are not so marked as in the larks and wagtails. During summer the pleasant twitter of the Greenfinch flocks is a familiar sound; it is conversational and interspersed with questioning calls of "pee-wee?"

The nest, loosely constructed of fine twigs, moss, grass and wool, and lined with moss, hair or feathers, is built in untrimmed hedges, evergreens, or on the flat boughs of conifers; four to six eggs (Plate 34), white or creamy in ground with speckles or blotches of brown, red or purple towards their larger end, are laid in April or May, and a second or even third brood is reared.

The male in summer is bright yellowish green with slate-grey on the head, flanks and belly; the wings shade from slate-grey to brownish black and have a bright yellow margin; the base of the tail is also bright yellow. The female is duller

and less yellow. After the autumn moult the whole plumage is partially obscured by brown tips; the spring dress is acquired by abrasion. The young are greyer, with brown streaks on the back and breast. The bill is flesh-coloured, browner at the tip; the legs fleshy brown; the irides hazel. Length, 6 ins. Wing, 3·5 ins. Tarsus, ·7 in.

Hawfinch. *Coccothraustes coccothraustes* (Linn.).

The Hawfinch (Plate 18), though supposed to be local, is now well distributed throughout England and Wales, though rarest in the north and west. In Scotland it is rapidly extending northward, but in the extreme north, as in Ireland, it is as yet only a straggler. The typical form occurs throughout Europe and is replaced by allied races in Africa and Asia. Little is known about its migratory movements, but it has been noted on migration and as a winter visitor. Within recent years the Hawfinch has not only increased but extended its range considerably, and some of the occurrences in unexpected places may be attempts to colonise.

In spite of its peculiar appearance, due to its huge bill and head and short tail, calculated to command attention, the Hawfinch is looked upon as rare in places where it is really common. It is shy and secretive, and avoids man but not his dwellings, less so his gardens when fruit or peas are ripe. Split cherry-stones and empty pods reveal the fact that a raid has been made before any one was about. It occurs not infrequently in thickly populated suburban districts, even nesting in large gardens. When in flight the bird looks stumpy and top-heavy; when perched it is unlike any other bird, sitting well upright and constantly turning its huge head from side to side. The flight is often described as straight and rapid, but this is only when alarmed; the normal flight is undulating, almost bounding, far more so than that of the Greenfinch. The

Golden Oriole.



Greenfinch.





white patch on the wing is conspicuous when flying and when at rest. Its sudden, penetrating whistle is also distinctive ; it is either a call or warning note, but not an alarm, and is usually heard when the bird is seeking safety in flight. It is said to have a simple song.

The massive bill is strengthened internally by horny pads ; the pulp of fruit is rejected and the stones cracked to get at the kernel. A young bird in its first plumage hung tenaciously to my finger, allowing me to lift it without losing its grip. Fruit-stones are turned in the bill so that, when crushed, they will split in half, and the litter of split cherry, holly, yew, hornbeam or haw seeds, all neatly in halves, often reveals the unsuspected presence of the bird. Pea-pods are split along the hinge, crushed until they open, and the empty pods show the marks of the strong bill. I have known a bird in July, but a few days out of the nest, to be killed when devouring peas. Caterpillars are eaten, and a young bird took mealworms from my fingers shortly after its capture. In winter the Hawfinch is somewhat gregarious and occasionally gathers in large flocks ; Mr. M. V. Wenner saw between 60 and 70 feeding in February in old thorns.

The nest is built in a tree or bush, often on a horizontal bough at a fair height above the ground ; it may be in a tall holly or other evergreen in a garden, in a fruit tree in an orchard or a forest tree in a dense wood. It is flat, composed of twigs and roots, lined with finer roots, hair or fibre, and frequently has lichens added to the outer materials. The eggs, four to six in number, are almost bunting-like in their bold irregular streaks and blotches on a buff, white or tinged ground (Plate 34). They are laid in April or May.

In addition to its great lead-blue bill, which forms an almost continuous curve with the forehead, the inner primaries are distinctive ; they are notched and curved, shaped like a bill-hook, and are white on the inner web ; the blue-black outer

primaries have a large white spot. The general colour of the bird is reddish brown, shading to greyish white on the belly and under tail-coverts. The nape is grey, the lores, throat and a line at the base of the bill are black. A conspicuous white shoulder patch contrasts with the blue-black wings, and the short tail is black and white with a rufous tinged centre. The female is paler and less rufous than the male. There is a distinct seasonal change in the colour of the bill; in winter it is described as "pinkish brown" (Seebohm) and "yellowish horn" (Witherby), but my own notes give "fleshy white, pink tinged, tip horn." The legs and feet are light brown. Difference of opinion has been expressed about the colour of the iris, but in old and young I have found it grey-white. The plumage of the young differs from that of the adult birds; the bill is lighter and said to be similar to the winter colour; I have found it distinctly leaden in hue in July. The throat is pale buff, and the breast and flanks are speckled and barred with brown. The head and neck are greenish yellow. Length, about 7 ins. Wing, 4 ins. Tarsus, 9 in.

Goldfinch. *Carduelis carduelis* (Linn.).

Several races of Goldfinch (Plate 18) inhabit the western Palæarctic Region, and our British bird ranks as a sub-species, *C. c. britannica* Hart. It is not certain if the typical European *C. c. carduelis* reaches us on migration.

Due in part to its beauty and engaging habits as a cage-bird, and in part to the reclamation of waste land, the Goldfinch has decreased, but there is satisfactory evidence that it is recovering lost ground in many places. It occurs throughout our land, but is rare or absent in the north of Scotland. The migrations of the Goldfinch are puzzling, for undoubtedly many reach our eastern shores in autumn, whilst others, at the same season, leave the south coast. Some may be passage birds of

the typical form, whilst our sub-species, its numbers increased by immigrants, is nomadic in winter. Return migration takes place in April and May.

The striking red, white and black head, and the broad gold band on the wing, prevent confusion with any other finch. Though lively enough in captivity, its charms are lost when confined; in the open it is a fairy bird, light and buoyant on the wing, active as a titmouse when feeding. Even in the nesting season it is sociable; I have seen and heard a little party singing delightfully whilst young, hard by, were still in the nest. The song, clear, sweet, and loud for so small a bird, is a combination of modulations of its liquid call, "twit." It flies with a "drooping," jerky flight, and a "charm," as a flock is aptly called, twitters conversationally on the wing; amongst its favourite food-plants—knapweeds, thistles, ragworts and other weeds—it is restlessly active, flitting from plant to plant like a butterfly. In nuptial display the male, drooping his wings, turns from side to side to show his golden bar to perfection, and I have seen an excited and anxious bird, when I was examining young in the nest, turn from side to side in the same manner. In April, when our residents are building, I have seen flocks of Goldfinches consorting with Mealy and Lesser Redpolls, Chaffinches and Bramblings, undoubtedly migratory parties. The Goldfinches, a score at a time, frequently sang in wonderful chorus. The young, calling for food, twitter in a feeble imitation of their parents. The song is continued well into summer.

Seeds of weeds, especially those most troublesome on the farm, form the main diet; clean farming is undoubtedly responsible for the diminution of the bird in many areas, for "dirty" fields and untilled wastes are what it loves; it is a most useful check on weed distribution.

Insects are largely eaten in spring; the April flocks visit larches, feeding on the larvæ of coleophora and other insects that attack young shoots.

The neat, Chaffinch-like nest, compactly built of fine roots and bents filled in with moss and lichens and lined with thistle-down and wool, is often in an orchard tree, but sometimes in a hedge, thorn, brier or furze. Farms, orchards and gardens attract it. Four to six eggs are laid in May; they are similar to but rather smaller than those of the Greenfinch (Plate 34). A second brood is often reared.

So popular a bird has many names—Knicker and Red Linnet are common, Sheriff's man and Seven-coloured Linnet more local. Macgillivray called it the Thistlefinch. In captivity it will cross with other finches, and wild hybrids have been reported, but usually by imaginative bird-catchers.

The crimson and black on the face and throat contrast with the bands of white. Except for a small white patch on the neck the upper parts are wood-brown, shading into white. The black wings are crossed by a broad bright yellow band, and the feathers are tipped with white. There are white tips and spots on the black tail feathers. The under tail-coverts and belly are white, the flanks buff. The sexes are practically alike, but the young, which lack the head markings, are greyish brown, with more or less distinct streaks of darker brown. The bill is white tinged with pink; the legs are flesh-coloured, and the irides brown. Length, 5 ins. Wing, 3 ins. Tarsus, '6 in.

Siskin. *Spinus spinus* (Linn.).

Although a resident, nesting occasionally in England and Wales, especially in northern counties, and regularly in certain localities in Scotland and Ireland, the Siskin (Plate 20) is best known as a winter visitor. The migrants arrive in September or October, leaving again in April or May. It breeds in northern Europe and Asia, and in mountainous parts of central Europe, and winters in the Mediterranean Basin.



I Pl. 18.

Hawfinch.



Goldfinch.

E 50.



As a winter visitor the Siskin or Aberdevine, a name largely used by bird-catchers, is sporadic ; in some winters it is common, in others scarce or absent. Tits and Goldcrests are at times its companions, but the Redpoll is its greatest favourite. With Redpolls it frequents birches and alders, returning day after day to the same group of trees, where its greenish plumage and short forked tail, as well as the black head of the male bird, serve to distinguish it from its companions. As acrobatic as a tit, it hangs for choice upside down when picking at the alder cones or birch seeds. In March and April it is found in larches, doubtless attracted by bud-destroying insects. Seeds of knapweed, ragwort and groundsel are eaten, but those of trees are most favoured. All the time that the birds are in the trees and when they fly in straggling parties to fresh feeding-grounds, they keep up a continuous simple twitter ; but the call-note, described by Seebohm as "tsyzing," is distinctive. The song, best known to those who keep the bird in captivity, is sweet but simple.

The summer home of the Siskin is the firwood ; the nest is usually built on a horizontal bough of a fir at a considerable elevation, and dead fir twigs, especially those covered with lichens, are largely used in its construction. To these moss and roots are added, and the lining is generally of hair or feathers. The four to five eggs are a little bluer than the usual type of the egg of the Goldfinch, and are rather more profusely spotted with lilac and brown. The first eggs are laid in April and frequently a second clutch in June.

The general colour of the male in winter is olive-green, darkest on the back and shading to yellow on the rump ; beneath it is paler, yellowish white on the flanks, and white on the belly. The crown, chin and lores are greyish black, and the back and flanks streaked with brown. A distinct yellow stripe above the eye joins the yellow upper breast. Two irregular greenish yellow bars cross the wings, and the primaries

are fringed with the same colour. The tail is yellowish green and brown in the centre.

After the grey tips are lost in spring, the colours are clearer and brighter. In Norway, where I first saw the male in breeding dress, I was much struck by the blackness of the head and chin and the prevailing yellowness of the plumage; caged birds never look so bright. The female has dusky streaks on her crown and lacks the black; her under parts are paler, and she is a much greyer bird. Winter Siskins, when seen from below in their commonly reversed position, so that the light does not fall direct upon them, look very grey indeed. The young are decidedly browner than the females, the whites are replaced by buff, and the streaks more pronounced. The bill is pale brown, the legs dull brown, and the irides brown. Length, 4·5 ins. Wing, 2·8 ins. Tarsus, ·5 in.

Citril Finch. *Spinus citrinella* (Linn.).

The Citril Finch, a native of the mountains of central and south Europe, was included in the British list on the strength of a bird caught at Brighton in October, 1886. Sharpe, however, pronounced this bird to be a Cape Canary, presumably an escape, and it was discarded until in January, 1904, one was captured by a bird-catcher at Yarmouth and recorded by Mr. J. H. Gurney. The Citril lacks the black head and the streaks on the under surface, and is greener beneath than the Siskin. Length, 5 ins. Wing, 3·1 ins. Tarsus, ·6 in.

Serin. *Serinus serinus* (Linn.).

The range of the southern European Serin (Plate 20) extends so far north as Germany and Holland, and as a wanderer the bird has reached our islands on nearly thirty known dates, and occasionally has been noted in flocks. Most of the recorded

occurrences have been in southern and eastern counties, though it has occurred so far west as Devon, and has twice appeared in Ireland and once in Scotland, near Edinburgh; but the most extraordinary occurrence was in 1914 when a female was taken on spring migration at Fair Island and identified by Mr. Eagle Clarke.

The Serin is related to the Canary and is not infrequently caged, but it is impossible to believe that these birds were escapes from captivity, though this is probably the case with all the true Wild Canaries, sedentary birds, which have been reported from time to time.

The Serin is a decidedly yellowish bird, especially on the throat and breast; the upper parts are olive streaked with brown, and the brown wings and tail are margined with pale yellow; the flanks are boldly streaked. The female, as shown in the illustration, has the marks on the throat and breast in more continuous stripes than the male, and she is browner above and paler beneath. Length, 4·5 ins. Wing, 2·8 ins. Tarsus, ·6 in.

House-Sparrow. *Passer domesticus* (Linn.).

Wherever man builds in our islands the House-Sparrow (Plate 23) sooner or later comes to share his abode. Though described as tame and semi-domestic, neither is strictly true; man, in the Sparrow's eye, provides food and home, but though impudently annexing his property, it remains suspicious and resents familiarity. An abundant resident, the bird is not universally common; in many hilly districts it is scarce, and so far has failed to colonise some of the Outer Hebrides. In cities, towns and villages, even round isolated farms, it is the most abundant bird. Our Sparrow occurs in most of Europe and Asia, though replaced by allied forms in some areas; it has also followed man, intentionally or accidentally introduced, to

most of his colonies—a bird of European civilisation. Sparrow-migration has been denied, yet in autumn immigration on the east coast and emigration from the south has been noted. On the south-east coast of Yorkshire, early in October, 1911, I saw immense flocks of passing Sparrows, and a few days later similar movements were observed in Suffolk.

So familiar a bird needs little description, yet it is often confused with the smaller and slimmer Tree-Sparrow, which, however, has a coppery and not grey crown, two distinct wing bars, and a black patch on the cheeks. Gregarious at all seasons—in its nesting colonies, autumnal raids and communal roosts—the bird by its very abundance becomes a nuisance. True, its young are fed on larvæ of insects, often destructive species, but no sooner can they fly than they are led to the cornfields, where an immense amount of ripe grain is devoured and as much wasted, shaken from the ears. In spring our flowers, especially yellow blossoms, are attacked and torn to bits; crocuses, primroses and aconites seem to annoy it most, but strange preference is shown for certain flowers in different gardens. I have known primroses to be nipped off and crocuses spared, whilst in the next garden the attack was reversed. Seeds of weeds are certainly eaten, but seedling peas and other useful plants are pulled up. Were the bird more agile on the wing it would destroy many butterflies and moths, for it never fails to hunt the passing white butterfly and even the big yellow-underwing; unfortunately it is an indifferent flycatcher. I have notes of successful attacks upon aphides, and there is presumptive evidence of destruction of coccids which few birds succeed in finding. On one occasion I watched a number of Sparrows hanging like tits to willow twigs, eagerly devouring the saw-fly larvæ which were defoliating the trees, and when the green tortrix attacks the oak the birds hover awkwardly to snatch at the grubs that swing suspended by silk threads. The simple twittering love-song begins early in the year, a series of chirps

1 Pl. 20.

Siskin.



Serim.

F. 54.





run together; at this season the nuptial fights also begin. Though said to pair for life, every cock Sparrow within hearing hurries to join in the noisy medley, chirping and pecking, which immediately follows a difference of opinion between rivals. A crowd of fighting birds will fall to the ground, but the trouble ends quickly without bloodshed. Once two combatants fell between the panes of an open window, and when I pulled them out still continued the fight in my hand.

The short and incessant chirp needs no description, and its double note "phillip," which originated the now obsolete popular name of Phillip Sparrow, is as familiar. Whilst the young are in their nests, the old birds utter a long parental "churr." The combined voices at dusk in the winter roosts, which, even in London and other cities, are in clumps of trees in parks and gardens, in evergreens or ivy-covered walls, have a curious effect; each individual penetrating chirp seems distinct, and yet the whole is a jumble of shrill notes. The young in autumn form the bulk of the flocks so harmful to corn; I have known a field visited day after day until little was left but cracked or broken straw. Early in August the morning twitter decreases and is hardly noticeable when the young depart. The flight is direct and bustling, but when long flights are undertaken is as undulating as that of most finches; on the ground the Sparrow hops jauntily.

At least three broods are reared in the season; I have known fresh eggs at Christmas, and young in my own house early in February and late in August. The nesting site is varied—under eaves, in holes in masonry or rocks, in ivy or creepers on houses or banks, on the sea-cliffs, or in bushes in bays and inlets. When built in holes or ivy the nest is an untidy litter of straw and rubbish, abundantly filled with feathers, usually looted from the nearest hen-run; but large, well-constructed domed nests are built in orchard and other trees, and in treeless country in hedgerows or bushes. Before the rightful owners

arrive, the old nests of House-Martins are annexed, and occasionally the Sparrow evicts a bird in occupation; the Sand-Martin also suffers. I have seen in a Surrey sandpit almost every burrow stuffed with the straw and building material of the Sparrows, the nests, on account of the small size of the borings, being close to the entrance. Bulky nests of the Rook are used to support those of the Sparrow, and I have found eggs in an old nest of the Magpie. Five to six eggs, profusely dusted, speckled or blotched with black, brown or ash-grey on a blue-tinted or creamy white ground, are usual types of the very variable eggs—variable in size and shape as well as markings (Plate 34). The hen is said to do all the incubating.

The plumage of the male House-Sparrow contrasted with that of the Tree-Sparrow is shown on the plate. The bill in summer is blue-black, the legs and irides brown. When clean, the cock Sparrow is an exceedingly handsome bird. In winter the plumage is dulled by pale edgings, and the bill is yellowish brown. The female has no black on head nor throat, nor a grey crown; her upper parts are streaked with brown. The young are deeper brown, and the white is replaced by buff; the beak is dull yellow. Length, 6·25 ins. Wing, 2·9 ins. Tarsus, 7 in.

Tree-Sparrow. *Passer montanus* (Linn.).

The Tree-Sparrow (Plate 23), a local resident, occurs in most parts of Britain. During the last half-century it has extended its range in Scotland, and is a recent but well-established colonist in Ireland. Abroad it is spread over most of Europe and Siberia, but allied forms occur in other parts of Asia. Large numbers of migrants reach our north-east coasts in autumn and return in spring; as a migrant it has occurred

on many Scottish islands, including Fair Island ; on others it now breeds.

The bird is often confused with the larger and coarser House-Sparrow, but its rich brown, almost coppery head, a black patch on its white cheeks, and a double white wing bar, together with its slighter and more graceful build, are distinctive. The sexes are practically alike, an important specific character. Shy and rural in its choice of habitat, it is smarter in its movements, both on the wing and in trees, than the commoner bird. Its voice is shriller; the call is a shorter "chip," as if the "r" is omitted from the House-Sparrow's note, and is frequently repeated—"chib, tchip," with emphasis on the second syllable. It has the double "phil-lip," and a shrill "churr," and the song, modulated chirps, is not unmusical. Its chirrups, when gathering at the roost, for it is a sociable species, are higher pitched and more distinct than those of its congener, and the note of the young, though insistent, is more subdued. In winter it visits the stackyards, flocking with other sparrows and finches, or frequents, day by day, a roadside heap of manure or rubbish.

Though occasionally nesting in isolated trees (Plate 21), it is a gregarious bird at all seasons, and a grove of old trees with a plentiful supply of hollows, or a disused quarry, are favourite sites for the colony ; what it likes is a hole in which to put its untidy nest, composed of hay, grass, wool or other material and lined with feathers. Some of the nests are not actually in holes in rock, but are built amongst roots of overhanging furze or other bushes. The haunts of man are not always shunned, for old thatch in a barn or cottage will shelter a colony. A domed nest, like that of the House-Sparrow, is sometimes built in the old home of a Magpie or other bird. The four to six eggs, usually five, are smaller and, as a rule, browner than those of the House-Sparrow (Plate 34) ; they vary considerably, and frequently the markings are massed at one end. In most

clutches one egg is lighter and differs in markings from the others.

The crown and nape are rich chestnut, and on the white cheeks and ear-coverts there is a triangular black patch; the chin and throat are black. Two distinct though narrow white bars cross the brown wings. In summer the bill is lead-blue, in winter almost black. The legs are pale brown and the irides hazel. Young, even in the nest, closely resemble their parents; they are said to be duller, but except that the white is suffused with buff, this is misleading. The black on face and bib is pure, but greyer on the lores; the breast and belly are browner. In one bird I examined the irides were distinctly blue. Length, 6 ins. Wing, 2·8 ins. Tarsus, ·7 in.

Snow-Finch. *Montifringilla nivalis* (Linn.).

The Snow-Finch is an alpine bird which, though not a regular migrant, has occasionally wandered in winter to Britain from its home in the Pyrenees or mountains of central Europe. A male, when consorting with Skylarks, was killed in Sussex in 1905, and in the same county three were obtained in 1916. In Kent, in December, 1906, one was shot out of a party of four or five "similar looking birds."

In summer the Snow-Finch is a handsome bird, slate-grey on the head and dark brown on the back. The chin, throat, rump and upper tail-coverts are black. The outer tail feathers and a large patch on the wing are snowy white; below the throat the under parts are white suffused with buff. The bill and legs are black, the irides brown. In winter buff and white tips obscure the purity of the plumage, and the bill is yellower. Length, 7·75 ins. Wing, 4·6 ins. Tarsus, ·95 in.



Nest of Linnæus.



1 Pl. 23.

House-Sparrow.



E 59.

Tree-Sparrow.

Chaffinch. *Fringilla cœlebs* Linn.

The familiar Chaffinch (Plate 25) is evenly distributed throughout the British Isles ; to the few Scottish islands where it is not resident it comes as a migrant. In hilly country it is more plentiful than the House-Sparrow, and though by no means shunning thickly populated districts is equally abundant in woods and open country. It is a European and western Asiatic bird, some winter in northern Africa, but many reach us in autumn and remain as winter visitors. Our own birds flock in winter and become nomadic ; there is also a marked passage migration both inland and along the coasts. Birds arrive on the east coast early in October, but on the west coast the movements are most marked from the middle to the end of the month. Seebohm says that the Chaffinch travels at night, but I have seen large numbers passing by day both inland and along the shores in Lancashire, Cheshire and North Wales. During severe weather in winter there are westward movements towards Ireland. Return migration begins in March and flocks pass throughout April, long after the residents have begun nesting. Linnæus gave the bird the name *cœlebs* because he thought the hens migrated and left the cocks behind, but though flocks in which one sex predominates are not uncommon, the sexes often mingle in winter where food is plentiful. One observer assures me that the males pass along the coast fully a week before the females.

The cheery "pink, pink," of the Chaffinch, from which it gets one local name, "Spink," is uttered at all seasons and by both sexes, but in spring the male has a louder clearer love-call, and also a double note, "tchissik." The rollicking song, often begun in February, is a rattle with an exuberant ending, which, however, varies, not in different localities, but individually. John Burroughs, who was amazed at the number of Chaffinches

he heard in England, says, "I have never heard a song that began so liltingly end with such a quick, abrupt emphasis." He thought the ending sounded like "whittier," but Jefferies called it "ginger-beer"; others hear the words "little de-ar," or "little Joe-ey." Occasionally there is a harsh low, rattling secondary song, between the snatches, a grating "krrr." The flight note is "chip, chip," heard when flocks pass over with undulating flight, or when disturbed from their hunt for beechmast. With Bramblings the birds spend much of the winter in and under beeches, but top-dressed fields, especially when waste hops or grain are used, are favoured haunts; the stack-yard is freely visited, and I have seen hundreds seeking seeds along the tide-line. Insects are largely eaten in spring and summer; in April, when the sycamore aphid swarms upon the saplings, the Chaffinch joins the newly arrived warblers to hunt for the small honey-dew filled insects. As a flycatcher, sallying from and returning to some perch by a river or road where it can see passing insects, it is skilful.

The spring display mainly consists of showing off its white wing patches; the male perches stiffly with elevated crest and turns slowly from side to side. During the pairing season he is pugnacious; one cock in Somerset, for four consecutive springs, fought daily with his own reflection in a window.

The nest is small, compact and neat, constructed of felted moss, lichens, wool and any soft substance, and lined with hair, feathers or down (Plate 24). The hen is the architect, but occasionally the cock brings materials; as a rule, however, he perches near and sings. It is placed in a hedge or the fork of a tree; in the latter situation the lichens often help to conceal it, but it is by no means always inconspicuous. I have known printed and coloured paper woven into the nest and one with the edge neatly bound with white string. The Chaffinch does not often build in abnormal situations, but I have seen one nest firmly constructed in a child's shoe which had been thrown into

a bush in a Birmingham public park. The variable but characteristic eggs, four to six in number (Plate 34), are laid in April or May; often the whole egg is a rich reddish brown with almost black irregular streaks. A second brood is reared.

The head of the male is slate-blue on the crown and nape, pinkish chestnut on the cheeks and round the eye; the back is warm chestnut and the rump greenish. The pink deepens on the breast and becomes lighter on the belly, shading to white. The brown wings are crossed with yellowish white, and there is a conspicuous white patch on the shoulder. In summer the bill is lead-blue, but pinkish horn in winter; the legs and irides are brown. The female is almost without the pink on the breast and is yellowish brown above, greenish on the rump, and paler beneath. In winter the colours are obscured by brown or grey tips. The young are not unlike the female, but lack the greenish tints, and are paler. Length, 6.5 ins. Wing, 3.45 ins. Tarsus, .75 in.

Brambling. *Fringilla montifringilla* Linn.

The Brambling or Bramble-Finch (Plate 25) breeds in the pine and birch forests of northern Europe and Asia, and comes to us as a winter visitor and bird of passage. Migrants arrive in large numbers on our north and east coasts late in September or in October, and return in March or April, though I have seen considerable flocks in May and laggard birds in June.

This northern finch is the constant companion of the Chaffinch in winter, feeding in and beneath the beeches; its distribution at this season depends largely upon the abundance and fertility of the mast. Although this is its favourite diet, the Brambling is largely insectivorous; I am convinced that when I have watched it turning the crisp beech leaves it has searched as diligently for insects as for nuts. Top-dressed fields are frequented, and rough ground, where it feeds on the seeds of

Atriplex and *Polygonum*. In April and May it frequents oaks and larches, ridding them of the larvæ of small moths and the aphids that blight the young foliage. Flocks feeding on the ground rise in a body if disturbed, but the birds return singly and with caution; as they rise with twitters of annoyance, it is easy to pick out the Bramblings from Chaffinches or other companions by their white rumps, and when on the ground by their warm chestnut shoulders. The flocks when on the move fly with erratic, uncertain motion, often after many changes of direction returning whence they rose; the flight is undulating and finchlike, several quick beats and then a shoot forward with a sharp closing of the wings. The flight note is usually softer and longer than that of the Chaffinch, "tscheep, tscheep," but in the trees it is a short "tuk, tuk." The song I have not heard; it is described as "a short low warble," but I have repeatedly heard the loud Greenfinch-like call, "cree," even in autumn. Towards the end of April this note becomes frequent, and a belated bird that I saw at Hebden Bridge, Yorkshire, on June 28, 1907, two days before it was last noticed, called with regularity about every ten seconds, raising its head each time with open beak pointed skywards. This bird, naturally, was in full summer dress, smarter than any I have seen in late summer in Norway. In 1914 a bird remained in Cheshire until June 11, but these are exceptional dates. Reports of nesting in Britain have never been substantiated, but both these late birds were apparently calling for mates.

In Scandinavia the Brambling nests even more in birches than pines, though the latter is supposed to be the favourite tree. The nest is similar to that of the Chaffinch, with lichens, moss and birch bark freely used in its construction. The eggs, usually six, are laid late in May or in June, and are so similar to the lighter types of Chaffinch eggs that it would be unsafe to judge the species by egg alone.

The breeding male has a blue-black bill, a glossy blue-black





head and neck, often with a few of the white bases of the feathers showing as flecks or markings, especially on the nape. The wing has a handsome chestnut-buff patch on the lesser coverts, followed by two white bars, and the black quills are margined with white. The chin, belly and rump are white, the throat and breast ruddy buff. After the moult in autumn the black is obscured by broad brown tips, which give it a barred appearance, and brown tips and edgings dull the back and under parts; the bill is then yellowish with a dark tip. The female, which has none of the decided blacks and chestnuts of the male, is a browner bird, and the young are at first like the female. In any flock, birds of various ages show marked differences. One male examined in March had the bill creamy white with a slightly darker tip; most of the obscuring feather tips had worn off, leaving the crown glossy velvet black, but on the nape were a few buff marks and on the neck small white patches. The buff tips on the back were thick in places, but in others irregular black blotches showed, and the lower back was mottled with white. The wing showed bands of buff and white, and the shoulder patch, chin, throat and breast were raw sienna shading to pale buff and dirty white on the belly. The under wing-coverts were canary yellow. Length, 5·8 ins. Wing, 3·5 ins. Tarsus, ·7 in.

Linnet. *Acanthis cannabina* (Linn.).

The Linnet (Plate 26) is resident and migratory in the British Isles, but local as a breeding species. It occurs throughout Europe, except in the extreme north; many migrants winter in northern Africa. Immigrants reach us in autumn when emigrants are departing; it may be that the whole Linnet population sweeps southward to return in spring. Passage migrants occur in flocks in May long after our breeding birds have settled down; these often roost sociably with other

species in reed-beds or osiers. There is a distinct west coast migration in September and October.

Variouly known as the Grey, Brown or Red Linnet, this bird of the open wastes and commons is confused with others; in many places the Goldfinch is the "Red Linnet" and the Greenfinch the "Linnet"; the variation in its plumage helps this confusion. It is a bird of uncultivated rather than cultivated land, though flocks feed in the fields in winter; furze-grown commons, hill sides sprinkled with scrub, and the coast marshes and sandhills are its haunts. Even in the field it may be distinguished from its near allies the Redpolls and Twite by its larger size, warmer brown back, and the white edges of the tail feathers; in the hand it will be found that all of the tail feathers, except the central pair, have wider white margins on the inner than the outer webs. The bird is sociable, and in spring three or four males will perch on the same bush and sing in chorus; even in winter the twitter often resolves itself into a short song. This pleasant song is not loud, but is sweet, in spite of the fact that some ears detect harsh notes. These so-called blemishes make the song peculiarly distinctive; they suggest to me the twang of a stringed instrument; indeed, the low notes are like the vibration of the strings of a harp. The flight note is "twit, twit," short and sharp, uttered as the flocks pass and repass in curving sweeps, now almost halting in mid-air or rising obliquely, dancing to and fro. The call-note is a double "twe-ee." Seeds of various plants, mostly looked upon as weeds, are eaten, and the young, though partly fed on insects, are supplied with a regurgitated mass of crushed seeds. I have notes of the bird feeding on chenopodium, mugwort, thistle, charlock, knotgrass, saltwort and sea rocket; on the last two, incoming migrants on the Yorkshire coast at once settled.

The favourite site for the nest (Plate 22) is a gorse bush, but a hedge is often selected. The nest is built of a few fine twigs,

grass and wool, and lined with wool, hair, thistle and willow down and sometimes feathers. Four to six eggs are laid in April, and a second brood is usually reared. In colour they are bluish white, with faint underlying greyish markings, and with a few bolder reddish or purple streaks or blotches towards the larger end (Plate 34).

In breeding dress the cock Linnet is an exceedingly handsome bird. His back is warm chestnut brown; his under parts shade from fawn to almost white on the belly; his head is greyish brown with darker mottles or streaks; but his great beauty is the crimson forehead, crown and breast. White edgings to the flight feathers and tail, and upper tail-coverts are also noticeable. The bill at this season is lead-blue, the legs and irides brown. The female is a little smaller and lacks the distinctive crimson; her general colour is duller and greyer and her whites less marked, but the striations on both upper and under surface are most distinct. After the autumn moult, for this handsome plumage is acquired by abrasion in spring, the grey margins and tips of the feathers conceal the crimson of the male, and the stripes on the breast and flanks are more distinct. The bill is horn-coloured, as it is in young birds. The young is not unlike the female, but browner, the pale edgings being more buff and the white on the under parts suffused with buff; the breast is streaked and spotted with brown. Length, 5·75 ins. Wing, 3·15 ins. Tarsus, ·75 in.

Mealy and Lesser Redpolls. *Acanthis linaria* (Linn.).

Many ornithologists separate the migratory Mealy Redpoll, *A. linaria* (Linn.), from our resident Lesser Redpoll (Plate 28), *A. cabaret* (Müll) or *rufescens* (Vieillot), but on account of their intergrading and indeterminate geographical distribution they have been, and still are, subject to much controversy. The six forms which have any claim to inclusion in the British list are

now divided into two species. The true Mealy Redpoll breeds far north in Europe, Asia and North America, and occurs in Britain in variable numbers as a winter visitor. The Greenland Redpoll, *A. l. rostrata* (Coues), breeds in south Greenland and winters in Canada and the States, and has occasionally wandered to the Scottish and Irish islands. Holböll's Redpoll *A. l. holbælli* (Brehm), doubtfully distinct from *A. l. linaria*, is said to occur in the far north of both hemispheres, with a similar range to or at least overlapping that of the typical form. It has been recorded as a vagrant to our islands on several occasions. The Lesser Redpoll *A. l. cabaret* (Müll) is a common though local resident throughout our islands, more particularly in the north. It was long thought to be confined to Britain, but apparently breeds in the Alps, and possibly other mountainous parts of Europe; at any rate it is certain that migrants indistinguishable from our form reach our shores in autumn, and I have repeatedly seen flocks with other migratory birds passing through the country in May, after our residents had settled down.

The Lesser Redpoll is a lively little finch; in spring the male flies to and fro at a considerable height, trilling his simple little love-song, dancing through the air with buoyant, erratic flight. In autumn and winter it is gregarious and sociable, consorting with Siskins, tits and other birds, especially in alders and birches, where it performs gymnastic tricks as it hangs below the swaying twigs to reach the seeds. Suddenly all the birds will rise by common impulse, bounding this way and that above the trees and then as suddenly return to the feast. This is not from fear, for it pays little attention to man; indeed the bird-catchers can pick their victims from the trees by liming the end of a fishing-rod or long wand. When the birds are feeding or in flight they keep up a continuous twitter. The call-note is aptly likened by Seebohm to the French name "Henri," and it also has a querulous "wheep."



I Pl. 26.

Linnet.



Twite.

F. 66.



Seeds of various plants and insects are its food ; it will hover lightly over the grass, dropping on the dandelion "clocks," or perched on a low twig or bramble reach for a flowering grass head and hold it down with one foot whilst it picks out the seeds. In spring it joins other birds in the hunt for aphids, both on sycamores and fruit trees, often hanging whilst it neatly pecks them from the under surface of a leaf ; it also frequents the larches for their pests.

The small deep nest (Plate 27) is built in a bush, hedge, bramble or tree at a variable height from the ground ; its foundation is small sticks, to which is added moss, grass and wool, with hair, wool, vegetable down, and sometimes feathers for a lining. The four to six eggs are rather deep blue-green with speckles or spots of reddish brown (Plate 34), darker and smaller than those of the Linnet. Though the first clutch is seldom laid before the middle of May, a second brood is often reared.

The Lesser Redpoll is a small, dark-brown finch with a crimson forehead and crown ; the mantle and back are streaked with dark brown, but the lower back is greyer than the mantle ; the rump is tinged with pink. The chin is black, distinguishing it at once from the Linnet and Twite. The under parts are buffish white, dark pink on the breast. Two buff bars cross the wings. The bill is horn-coloured, the legs and irides brown. The grey tips of the new feathers after the autumn moult do not entirely obscure the pink on head and breast. The female is without the pink on the breast, but has a crimson forehead ; the young has no pink on the head, breast or rump, and is a brown speckled bird.

The Mealy Redpoll is an uncertain winter visitor, in some years plentiful, in others absent ; it freely flocks with the Lesser. The trill sounds a little deeper and longer, but in notes, habits and appearance the two are very similar. It is as tame as the smaller bird ; I have had a party at my feet turning over

the dead leaves for seeds or insects without exhibiting any alarm at my presence. In the trees it is difficult to distinguish the forms, but the habit of swinging under the twigs exposes the rump and wing bars to view, and these in a really typical Mealy are white, whereas in the Lesser they are buff or tinged with pink. The Mealy is the larger bird and is greyer, but certain individuals are puzzling, especially as the measurements overlap. I have examined birds with grey back and rump, but with buff wing bars, or with dark rump and bars and very white edges to the feathers of the back. These were shot out of migratory flocks. Mealy: Length, 5 ins. Wing, 3 ins. Tarsus, '6 in. Lesser: Length, 4'25 ins. Wing, 2'75 ins. Tarsus, '55 in.

The Greenland Redpoll is a still larger bird with a heavier bill, grey like the Mealy, and Holböll's only differs in the size of the bill.

Hornemann's Redpoll. *Acanthis hornemanni* (Holböll).

Horneman's Redpoll has two forms ; *A. h. hornemanni* (Holb.) breeds in Greenland and winters in North America, and the Hoary Redpoll, *A. h. exilipes* (Coues), nests in high latitudes in Europe, Asia and America and winters further south. The first is the larger bird, and both differ from the Mealy in having white unstriped or unspotted rumps when adult. The distinctions are slight and are only appreciated by experts, and many differ in opinion about all the forms of Redpoll. Hornemann's Redpoll has been noticed on a few occasions in Durham, Yorkshire, the Shetlands and Fair Island, and the Hoary twice in Yorkshire and once on Fair Island ; but some examples of the former have not been critically examined. Hornemann's Redpoll: Length, 5'5 ins. Wing, 3'3 ins. Tarsus, '7 in. Hoary Redpoll: Length, 5 ins. Wing, 3 ins. Tarsus, '55 in.



I Pl. 28.

Mealy Redpoll.



Lesser Redpoll.

F 68.



Twite. *Acanthis flavirostris* (Linn.).

The Twite (Plate 26) is resident on our moors from Staffordshire northwards, and has been found nesting in at least one Devonshire upland ; it is common in Scotland and Ireland. Its range abroad is limited, being confined to northern Scandinavia, Lapland and Finland ; as a winter visitor it is found in most parts of Europe. Numbers reach us on migration in autumn and return in spring.

The Twite is a bird of the heather ; it is often called the Mountain-Linnet, and though frequenting high moorlands is also found on Scottish islands and suitable mosses in the lowlands ; recently it has nested on a heathery waste close to the Lancashire coast. On the grouse-moors it replaces the Linnet, from which, when adult, it may be distinguished by the absence of red on head and breast ; it is a darker bird and its longer tail, giving it a more slender appearance, further prevents confusion with the Redpolls. Its yellow bill, for which the Scots call it the "Yellow-neb Lintie," is a distinctive character. In winter it flocks and descends from the high moors, frequenting lowland fields, marshes and the shore. The flocks fly with Linnet-like indecision, dancing and wheeling over the fields, and continually twittering as they fly. The name Twite is undoubtedly derived from its call note "twa-it," and it has another characteristic call, "deek" or "tweek," Canary-like in sound. The song has some of the vibrating character of that of the Linnet, but is, perhaps, less varied. Weed seeds, for instance, knapweed and thistle, are its chief food, but a little grain is picked up in the stubbles ; actual evidence of it feeding on insects has not been produced, but on the moors it is probable. In nuptial display the male by slightly opening and then closing the wings calls attention to his rosy red rump, his one bit of bright colour.

The nest is built on the ground, in clumps of ling or other

low-growing plants or in a bush (Plate 29); several are at times near together. Grasses, a few twigs, mosses and wool are the usual materials, and the very small cup is lined with wool, hair or down, with the addition of a few feathers. The eggs are smaller and bluer than those of the Linnet, but are of the same general type (Plate 34). Five to six is the number; they are laid late in May or in June, but a second brood is normal.

The general plumage of the male in summer is pale reddish brown, shading to white on the belly and under tail-coverts. Dark brown centres to the feathers are arranged so as to give the bird a striped or streaky appearance. The brown wings are crossed by a white wing bar and some of the feathers have white margins, very noticeable in flight, though less so than in the Linnet. The bill is pale yellow, the legs and irides are brown. After the autumn moult the plumage is dulled by pale edgings to the feathers, but these wear off in spring, leaving the summer dress exposed; the wing bars are buff as on the plate. The bill is at this season less yellow. The female and young lack the rose-red rump, and have the wing bar buff. The young is a duller, greyer bird, but otherwise like the female. Length, 5·5 ins. Wing, 3 ins. Tarsus, ·65 in.

Bullfinch. *Pyrrhula pyrrhula* (Linn.).

The Palearctic Bullfinches are subdivided, our bird *P. p. pileata* Macgillivray, being an insular non-migratory resident. The Northern Bullfinch, *P. p. pyrrhula* (Linn.), distinguished by its greater size and more brilliant colours, has been recorded, usually as *P. major* Brehm, as a not infrequent visitor in autumn and winter. This form, which breeds in northern Europe and Asia and is migratory, is a common cage bird; thus some of the birds may have escaped from captivity, but

this is certainly not so with many that have appeared in Fair Island, Shetland and other places. A western European form, *P. p. europea* Vieil., very like our bird, has not been detected in Britain.

The short, stout bill of the Bullfinch (Plate 31), and the rich colour of the breast of the male, prevent confusion with any other bird, but it is so retiring at most times that it has a false reputation for rarity. In summer it is a woodland species, where the only sign of its presence is often the soft clear call, "whib, whib," or a fleeting vision of the white on its back. In winter it is more of a wanderer, and visits gardens, where its criminal attacks on fruit buds lead to its undoing. Almost certainly it pairs for life, for the male and female are usually together in winter, flitting along the hedgerows or crossing the open with undulating flight. The low, mellow song is accompanied by swagger on the part of the male, for both sexes are said to sing; he moves his big head from side to side, sways and puffs out the red feathers of his breast. During the song I have heard him utter a curious low crooning "eurr, eurr," a secondary note. Destruction of fruit buds is a frequent crime of the Bullfinch, and insects are seldom eaten, although Newman affirmed that the larvæ of winter moths, which do serious damage to fruit trees, are taken. The attacks are deliberate; the bird perches, nips off every bud within reach, then moves to a fresh place; it will eat gooseberry buds as well as those of tree fruit. The main diet consists of weed seeds; its choice is catholic. I have watched it on dock, dandelion, nettle, violet and forget-me-not; heather, self-heal, charlock and blackberries are also favoured.

The nest is a cunningly interwoven flat platform of sticks, almost as frail as that of the Wood-Pigeon; the shallow cup is formed of roots with a little hair in the lining; it is built in tree, hedge or bush, but usually well concealed. Four to six dark greenish blue eggs, speckled and streaked with red and

purple (Plate 34), are laid in April or in May, and probably a second brood is reared.

The male has the head, including the chin, the secondaries and tail, glossy blue-black; the back is blue-grey, and the under parts including the cheeks are brick-red, shading to white on the under tail-coverts; the rump is pure white. The wings have a conspicuous white bar, and there is a noticeable red edge to the innermost secondary. The bill is blackish, the legs and irides brown. The grey on the upper parts of the female is less pure and her under parts are browner; the young has no black on the head. Length, 6·25 ins. Wing, 3·2 ins. Tarsus, ·7 in. The Northern Bullfinch: Length, 6·75 ins. Wing, 3·8 ins. Tarsus, ·8 in.

Scarlet Grosbeak. *Carpodacus erythrinus* (Pallas).

The Scarlet Grosbeak breeds in eastern Germany, Russia and Siberia, and winters in south-eastern Asia, but as a wanderer on migration it has occurred in many parts of Europe, including the British Isles. There are about six records for England and Wales, and at least two for Scotland, but within recent years, owing to systematic watching, it has been met with repeatedly on the Isle of May, Fair Island, St. Kilda and the Shetlands. If our knowledge of the bird's winter range is correct, these westerly and north-westerly autumn travels are puzzling, and yet they occur with frequency if not regularity; wind driftage may explain them.

The male is a small brownish bird with rich carmine on the head, throat, breast and lower back, greyish white beneath; the female has no rosy tints, and is a short-billed brownish finch, less conspicuous than her mate. Length, 5·8 ins. Wing, 3·3 ins. Tarsus, ·75 in.

Pine-Grosbeak. *Pinicola enucleator* (Linn.).

Nesting in Scandinavia, Russia and Siberia, and wintering in southern Europe, the Pine-Grosbeak is a more likely wanderer to Britain than the last species, but considerable doubt has been cast upon the majority of the fifty or so recorded occurrences. During the last few years, however, it has occurred four or five times.

It is a larger bird than the last, rosy pink and slate-grey in the male, the rich colour most pronounced on the head, throat and rump. The wing has a conspicuous white bar, and a second one less noticeable. The female is much yellower, and is without the rosy tints. Length, 9 ins. Wing, 4'35 ins. Tarsus, '9 in.

Crossbill. *Loxia curvirostra* (Linn.).

Dr. Hartert separated our resident Scottish Crossbills (Plate 31) from other Palæarctic races under the name *L. c. scotica*, on account of their larger bill and longer wing, approaching those of the northern European form, which was long considered a distinct species, and called the Parrot-Crossbill, *L. pityopsittacus* Bork.* From time to time hordes of Crossbills leave their homes in the pine forests and spread south and west, many reaching Britain, where they remain to breed. In the Highlands the bird is a permanent resident, and since the great invasion of 1909 it has bred annually in many parts of our islands. It is an irregular or spasmodic colonist rather than a winter visitor.

The most striking and distinctive character of the bird is indicated by its name; the tips of the mandibles cross on one side or the other; in nestlings the tips meet. The red dress of

* Included as British in "A Practical Handbook of British Birds," 1919.

the male, the yellow and orange on young birds and females, together with a stumpy, short-necked appearance, make them easy to recognise when seen, but, though not shy, they are difficult to pick out when working silently in the dark fir branches. A litter of dislocated cones beneath the trees, or a cone dropping from the branches, is often the first sign of their presence, though when moving from tree to tree, when the flight is strong and undulating, the call, "zit, zit," or "zup," is noticeable. In spring the males warble with a twitter like that of the Greenfinch. The last important invasion was in 1909, when they were first noticed late in June, and by early July some had reached Cheshire, where I frequently watched them in the larches. Their attitudes and actions were more parrot than tit like ; they climbed along the branches, often walking sideways, and swung head downwards to wrench at a cone. This was first twisted and nipped off, considerable force being used, then carried in the bill to a firm perch, where it was held, sometimes with one, sometimes with both feet, whilst the bird wrenched back scale after scale, picking out, then eating the seeds with head raised. When enough had been secured, the cone was dropped and the bird hunted for another ; about five minutes was spent on each cone. After a cone was dropped the bird invariably polished its bill, probably to rub off the resin. The scales were generally split, but seldom wrenched off, or the cones stripped like those dropped by squirrels. At times the birds neatly picked something from a twig, probably an aphid, for insects are also eaten, as are the berries of various trees. Mr. C. B. Moffat noticed that after the incursion of 1888 the birds in Ireland fed on the larch, but that the Scots pine was favoured after the last visit ; he argues that the two exoduses may have been from different places. In Cheshire I found both trees attacked, but we did not notice the spruce either here or in Ireland, though Seebohm found it a usual food abroad.

After the last invasion many pairs bred annually in different fir woods for some years, but the numbers have decreased, as has always happened previously. The nest, which is not unlike that of the Bullfinch, is placed on the branch of a conifer; a cup of grass, moss, and lichens, often with a little wool, is built on a platform of interwoven fir twigs. The Crossbill is an early but erratic nester; eggs may be laid in February or March or much later in the season. Four is the usual number, and they are of the Greenfinch type, greyish white spotted with reddish brown (Plate 34).

The plumage of birds in a flock is usually varied; the old males are dark crimson, younger males may be blotched with orange and show yellow on the rump, and the females are mostly greenish yellow, and are more or less striped. The striations are noticeable on the greenish grey young birds. A pale wing bar is inconspicuous when birds are in the trees. The bill, legs and irides are brown. Length, 5·5-6·5 ins. Wing, 3·9 ins. Tarsus, ·65 in. The size is very variable.

Two-barred Crossbill. *Loxia leucoptera bifasciata* (Brehm).

Two forms of the Two-barred Crossbill have been recorded as British, but the claim of the American, *L. leucoptera* Gmelin, is not established. The form which breeds in northern Russia and western Siberia has occasionally spread westward and examples have reached Britain, but the bird has never been known to breed here. It may at once be distinguished from our bird by its double wing bar, conspicuously white, though this is least noticeable in young birds. Its habits and changes of plumage appear to be similar to those of the Common Crossbill. Length, 6 ins. Wing, 3·4 ins. Tarsus, ·6 in.

Corn-Bunting. *Emberiza calandra* Linn.

The Corn-Bunting (Plate 33) is a locally abundant resident in Britain. Abroad it occurs throughout central and southern Europe, northern Africa and western Asia. Many of our birds leave us in autumn and return in spring, and our winter flocks receive accessions from the Continent.

Largest and least showy of its group, the so-called Common Bunting is by no means the most frequently met with, for it is absent from woodlands and is only found in the open and usually cultivated country; where it does occur it is abundant. Apart from its angled bill, a generic character, the bird is inconspicuous in its sombre dress, but noticeable by its habits and song. It delights in singing from a perch; this may be a hedge, tree or bush, but a tall weed in the centre of a field suffices; along the high roads it uses the telegraph wires, and in Wales sings from stone walls. I have seen it crouching on a wall, singing vigorously. The song is repeated every few seconds, a monotonous jingle, which, after two or three preliminary notes, "chi, chi, chi," resembles, as Mr. Aplin happily points out, the sound of a bunch of keys vigorously shaken. When approached it flies with heavy flight for a few yards, its legs dangling loosely, and settles again to sing. It sings early and late in the season; I have notes of birds beginning the spring song in December, and of others still jingling in October. The call-note is a loud "chuk," but difficult to express by any combination of letters. In winter it flocks and roams, and many areas are deserted through migration. I have seen a flock of immigrants arriving early in May, though residents were singing everywhere; they were probably birds of passage. Grain and seeds are eaten in winter, but insects are devoured in spring and summer.

Although the male advertises the existence of a nest in his

L. 75.

Yellow Hammer at nest.



L. 76.



immediate neighbourhood, this is most difficult to find. The centre of a large field is a favourite site, and it may be built on the ground in long herbage or be sheltered by a clod of earth or low bush. Grass, straw and moss, rather untidily put together, form the outer structure ; hair is the usual lining. The four to six eggs are seldom laid before the end of May ; they are of the usual Bunting type, dull white, tinged purple or reddish, and scored with irregular lines with a few blotches of deep red or purple (Plate 41) ; they are subject to great variation in shade and markings.

The summer dress of both sexes is hair-brown streaked with dark brown on the head, back and breast. The eye-stripe, chin and throat are paler, and the coverts have pale edgings, as also have the feathers of wings and tail. A streak or moustachial stripe runs obliquely downwards from the base of the bill. The bill is brown above and yellow below ; the legs are pale brown with a fleshy tinge ; the irides are hazel. The colour is browner above and slightly redder beneath after the autumn moult, and the young have more and deeper spots on the upper parts, and are buffer in tone. Length, 7 ins. Wing, 3'9 ins. Tarsus, 1 in.

Yellow Hammer. *Emberiza citrinella* Linn.

The Yellow Hammer, Yellow Ammer or Yellow Bunting (Plate 33), breeds throughout Europe except in the extreme north and south. With us it is a common and well-distributed resident, and as migrants reach us in autumn and return in spring, a winter visitor. Our own birds, flocking in winter, are irregular local migrants.

Though less restricted in its haunts than the Corn-Bunting, it is a bird of the open country, little attracted by woodlands. It is best known as a hedgerow bird ; the top of a hedge is used more often than a tree for a song platform. From this or some other elevated perch the male utters his popular song—a single

“chit” repeated several times, followed by two notes, the first sharp, the last drawled out—childhood’s “Little—bit—of—bread—and—NO—cheese,” or the Scottish version, “Deil, deil, deil, tak ye.” The call-note is a loud “tchick,” frequently heard from winter flocks, and this is modulated and triplicated by the amorous male in spring. February is the month when Yellow Hammers begin singing, and they seldom stop before late August or September; considering that the bird sings practically all day, he must repeat the performance many thousand times a year. There is individual variation, and at times the two last notes are omitted, but as a rule each bird sticks to the same phrase and all have the same character; few songs exhibit so much sameness. This persistent song is more of a challenge than a serenade, and it is frequently interrupted by the dashing attack of a rival, for the Yellow Hammer is pugnacious. Alike when perched or when flitting along the hedge, the golden and rich rufous, almost orange, adornment of the male attracts attention, and when he flies with tail half open or expands it fully on alighting, long white marks on the outer tail feathers catch the eye; in spring he intentionally opens and moves his tail so as to attract the eye of his mate.

In summer insects are largely eaten, but in winter the haunts vary according to the food supply; the flocks wander about the fields seeking seeds and regularly visit stubbles, but frost drives them to the stackyards with other buntings and finches. The flight is undulating; when a flock is passing over, every bird will, as if by command, suddenly dive down to a tree and settle in the branches, but at most times is a ground rather than arboreal species. If we approach a feeding flock, the birds crouch, with the breast almost touching the ground, preparing for the upward spring if danger threatens.

The nest, built of grass and moss and lined with hair, is either on or near the ground (Plate 30), a hedge bank, especially when rising from a ditch, being a common site. Three to five

Nest of Reed Bunting.





1 Pl. 33.

Corn-Bunting.



F 79.

Yellow Hammer.

eggs is the usual number. They are brownish or purplish white in ground colour, and more or less profusely lined with irregular fine or fairly thick markings (Plate 41); these have given rise to two popular names—"Writing Lark" and "Scribbling Lark." An old Lancashire man assured me a cryptic message was inscribed by the bird which, interpreted, read, "Don't take my eggs." Two or even more broods are reared; the first eggs are laid towards the end of April, but young are often in the nest in September, and I have known fresh eggs in the latter half of October. The male helps in incubation, and parent birds, when the young are hatched, will tumble about on the ground to draw attention from the nest.

The plumage of the males varies greatly in the extent and depth of the yellow, apparently with age, but birds exhibiting but little will mate. In the breeding season the head, throat and under parts are bright lemon or canary-yellow, the back, mantle and rump orange-rufous to chestnut. The head and throat are streaked with dusky brown, and the back and flanks with rich brown. The bill is brown above and bluish horn below; the legs and irides brown. The female is a browner yellow, more striated on the head and under parts, and she has a distinct moustachial stripe. Pale tips and edges obscure and dull the plumage after the autumn moult, but by spring these have worn away. The young are at first like the female, but the males, after the first moult, show yellow on the head, though for a year the streaks are pronounced. Length, 6·7 ins. Wing, 3·25 ins. Tarsus, ·7 in.

Pine-Bunting. *Emberiza leucocephala* Gmelin.

The Pine-Bunting, a Siberian species which has occasionally migrated into Europe in winter, was added to the British list by the capture of an example at Fair Island, during a "rush" of migrants, in October, 1911. The male has the crown, a line

through the cheeks, gorget and belly white, the upper parts and the throat are brown and chestnut, streaked with black. The chestnut is richest on the rump and tail-coverts. In winter the white is more or less obscured by brown, and the chestnut mottled with white. The bill and irides are brown, the legs yellowish brown. The female, greyer above and paler below, has no chestnut on the throat. Length, 6.6 ins. Wing, 3.65 ins. Tarsus, .75 in.

Cirl Bunting. *Emberiza cirius* Linn.

The Cirl Bunting (Plate 35) is a southern European and Mediterranean species ; its northern range extends to the more southerly parts of Britain. It nests locally in the south of England and in Wales so far as the north coast, and has nested in Yorkshire ; records of breeding in Lancashire and Cheshire require verification. Further north and in Scotland and Ireland it only occurs as an occasional wanderer.

The bird may be distinguished from the Yellow Hammer, which it resembles in many ways, by its smaller size and more squat appearance, by the olive-green on the head, and brown rump, and, in the male, by the black chin and throat and stripe through the eye. It is more of a tree-frequenting species ; it often sings from the upper branches of a tall tree, where the leaves conceal it, but it will also perch on a bush or, like the Corn-Bunting, a telegraph wire. The description of the song as resembling the chitter of the Yellow Hammer without the usual ending is misleading ; the notes, though fairly rapidly repeated, are clear, distinct and metallic ; the song is not unlike the rattle of the Lesser Whitethroat. When singing the bird throws up its head and opens wide its mandibles ; it sings late, and may be heard in September. Its drooping flight is that of a true bunting ; when rising with Linnets or other finches it is easily picked out. The food consists of

insects and seeds, and in winter, when it wanders in small nomadic flocks to a distance from its usual haunts, it consorts with other birds in the stubbles.

The site of the nest is usually in a bush or hedge from a few inches to several feet above the ground, but occasionally on a bank, especially amongst the roots of a tree. The materials are practically the same as those used by the Yellow Hammer, but with more moss in most cases. The three to five eggs have bolder scribbles as a rule, and are smaller and paler in ground colour (Plate 41); some are richly blotched and streaked with chocolate, black, or nearly black irregular markings. Two broods are reared; the first eggs are seldom laid before May.

The head of the male in summer is olive-green streaked with brown; the sides of the face are lemon-yellow with a conspicuous black line through the eye, and the throat is black. Pale yellow on the breast is followed by an olive band, and the upper parts are less rufous than in the Yellow Hammer, and are olive on wing coverts and rump. Below the breast is pale yellow, shading to chestnut on the flanks, which are streaked; the white on the outer tail feathers is noticeable. The bill is brown above and paler below; the legs brownish yellow, and the irides hazel. The female, as shown in the plate, is duller, browner and more streaked than the male; she lacks the black on the head and chin. After the autumn moult pale edges obscure most of the black on the male and dull the plumage generally. The young are like the female, but less bright. Length, 6 ins. Wing, 3·15 ins. Tarsus, 7 in.

Black-headed Bunting. *Emberiza melanocephala* Scop.

This southern European bird usually migrates east to India, but has occasionally wandered north and west to Germany and France; it has reached us on at least nine occasions, and has been taken so far north as the Shetlands.

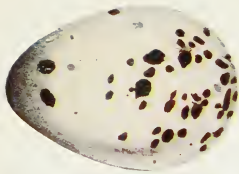
It is apt to be confused with the Reed-Bunting, which is often called the Black-headed Bunting, but beside being a larger bird its plumage is quite distinct. The black head of the male is followed by a yellow and not white collar, and there is no black on the throat and breast. The back is orange-brown and the under parts deep yellow. The female is a lighter yellowish brown with dark streaks on the head and back, and except on her under tail-coverts the yellow of the male is replaced by dull white. In winter the black on the head is almost hidden beneath brown feather tips, and the yellow collar and under parts are indistinct and dull, owing to similar buff edgings and tips. Length, 6·8 ins. Wing, 3·75 ins. Tarsus, ·8 in.

Meadow-Bunting. *Emberiza cia* Linn.

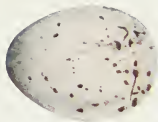
The Meadow-Bunting breeds in southern Europe as far north as the valleys of the Somme and Rhine, and though usually migrating south to Africa has found or lost its way to our southern shores on three occasions, one bird being captured alive. It is a reddish brown bunting with a lead-blue bill, and slate crown, throat and cheeks, white eye-stripe and chin; a black line borders the crown, a second passes through the eye, and a third runs downwards from the angle of the bill and, encircling the cheek, joins the line through the eye. The female has the black replaced by brown on the face, and her slightly mottled throat is slate-grey. Length, 6·3 ins. Wing, 3·25 ins. Tarsus, ·75 in.

East Siberian Meadow-Bunting. *Emberiza cioides castaneiceps* Moore.

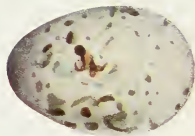
A single example of the East Siberian form of the Meadow-Bunting, which is not known to have reached Europe on any other occasion, was caught alive at Flamborough in 1886.



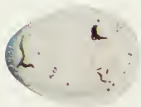
Golden Oriole.



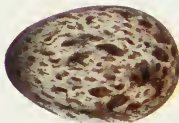
Greenfinch.



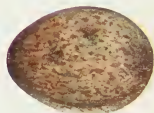
Hawfinch.



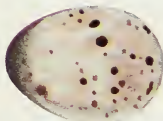
Goldfinch.



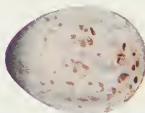
House-Sparrow.



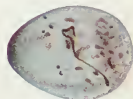
Tree-Sparrow.



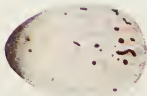
Chaffinch.



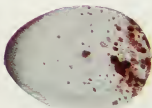
Linnet.



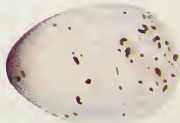
Lesser Redpoll.



Turtle.



Bullfinch.



Crossbill.



I Pl. 35.

Ortolan.



G 83.

Cirl Bunting.

Saunders, who investigated its history, accepted it as a genuine wild wanderer, but it certainly must have been hopelessly lost. In this bird the crown and a band across the breast are warm chestnut streaked with darker brown ; its ear-coverts are also chestnut, and across its white chin and throat there is a black moustachial streak.

Ortolan Bunting. *Emberiza hortulana* Linn.

The Ortolan breeds in Europe, except in the extreme north, and the Mediterranean Basin, and is, though it has only recently been realised, a regular bird of passage through our islands. Careful observation at Fair Island, due to the efforts of Mr. Eagle Clarke, has proved regular spring and autumn passage, and explains the many occurrences of the bird in other places, not only on the east and south coasts, but on the west, where three or four were seen or obtained in 1913. Fat Ortolans are considered a dainty, and many are imported alive into England for the table ; it has been suggested that escapes of these doomed captives explained some at any rate of the British occurrences. Considering that the bird nests in Scandinavia almost as far north as the Arctic circle, and that it migrates to North and West Africa, it would be strange if stragglers were not met with, checked by contrary winds or dropping to rest.

The bird nests on the ground, and has a song described as similar to that of the Yellow Hammer, but with a different ending, but in Britain we are not likely to see enough of these casuals to study habits.

The male bird, as shown on Plate 35, has an olive-green head and breast, and a sulphur-yellow streak running backwards from the angle of the bill, caused by the yellow chin and throat being crossed by a moustachial stripe. The wings are brown and the striated back and rump dark brown ; the

under parts below the band are warm chestnut. The bill is reddish, the legs and irides brown. The female (the upper bird) has the head and breast streaked, and lacks the olive on the breast and yellow on the throat. Her upper parts are yellower and her under more buff. Young males have stripes on the head and rump; and in mature birds the colours are less pure after the autumn moult. Length, 6·5 ins. Wing, 3·5 ins. Tarsus, ·75 in.

Yellow-breasted Bunting. *Emberiza aureola* Pallas.

Northern Russia and Siberia is the home of the Yellow-breasted or Willow-Bunting; on migration it has strayed or been driven westward on several occasions, and has three times been met with on the Norfolk coast. Two of the examples were immature females, and Mr. E. C. Arnold, who shot two out of the three, remarks that the most noticeable feature in the field is its marked eye-stripe, and the white in the tail. The mature male has a brown crown and back and a black face, chin and throat, and is pale yellow beneath, a narrow brown band crossing the breast so as to leave a yellow collar; two white bands cross the wings. In winter the bird has less black on the face and throat. Length, 5·5 ins. Wing, 3·1 ins. Tarsus, ·75 in.

Rustic Bunting. *Emberiza rustica* Pallas.

This bird, which has a northern European and Asiatic range, has been, not infrequently, met with in western Europe; and about a dozen have been recorded from different localities in England and Scotland from the Sussex coast to the Shetlands. The English occurrences have been in autumn, but in Scotland and Fair Island it has been met with in spring. The male in breeding dress is a warm chestnut on the nape and

back, and has a band of the same colour across the breast ; its forehead, crown and the sides of the head are black and a white stripe extends from the eye to the nape. Its under parts are white with chestnut spots on the flanks. The female has brown instead of black on the head, and the white stripe and band on the breast are narrower. In winter buff obscures much of the black on the male, and the under parts are suffused with buff. Young birds have spotted throats. The breast band and spots on the flanks are the best distinctive characters. Length, 5·5 ins. Wing, 3·1 ins. Tarsus, '75 in.

Little Bunting. *Emberiza pusilla* Pallas.

The Little Bunting inhabits Arctic Russia and Siberia, migrating south in Asia and often reaching Europe in autumn. Saunders and Seebohm included it as British on the strength of a single occurrence in Sussex, but as it has frequently appeared in Holland, Belgium and Heligoland it is not surprising that more systematic observation has placed the bird on the list of more or less regular autumn visitors. It has been several times met with in England and once in Ireland, but its passage in Scotland and especially the Shetlands is regular in autumn, and it has been once noted on the return journey. It can no longer be counted as a mere accidental visitor.

In general appearance this bird is a small female Reed-Bunting, but in the male (Plate 36) the crown and cheeks are rufous, the former bordered and emphasised by a black line extending to the whitish collar. The brown back is lighter than the centre of the crown, and is freely spotted in streaks. The under parts are white shading to buff on the striated flanks. A dark streak runs downwards from the bill on either side of the chestnut throat. The bill, legs and irides are brown. The head markings are less pronounced in the female and she is a

paler bird, and in the young the crown is buff, bordered by brown instead of black ; the back is darker and the under parts more striped. The female may be distinguished from the Rustic Bunting by her more chestnut head and paler upper parts. Length, 5 ins. Wing, 2·75 ins. Tarsus, ·75 in.

Reed-Bunting. *Emberiza schœniclus* Linn.

Throughout Europe the Reed-Bunting (Plate 36) is resident and often migratory, and with us it is at once a resident—some remaining all winter, and a summer and winter visitor, for birds from northern Europe arrive in autumn when many of our nesting birds are leaving.

The Reed- or Black-headed Bunting, as it is often called, is a bird of the water-side, but whether flowing or stagnant matters not ; it is happy in the reed fringe of lakes, meres, canals and ditches, in the semi-aquatic vegetation round small ponds, in sewage-farms or osier-beds, on marshy uplands, or indeed anywhere where there is an abundance of insect food. An old popular name is "Water-Sparrow," and in Lancashire and Cheshire, where the ponds are mostly marl-pits, it is called the "Pit-Sparrow."

Clinging to a reed stem, one leg bent, gripping level with the breast, the other straight beneath him, the smart black-headed, white-collared male stutters and stammers his perpetual efforts to produce a song. As music it is an indifferent performance, ending after a few sharp but irregularly uttered notes with a weak, hissing finish, corresponding to the jingle of the Corn-Bunting and the "cheese" of the Yellow Hammer. The song often starts in February and continues until autumn, and yet, after six months or more of effort no perfection is attained. The call is a loud *seep*, often uttered by the bird when courting, and when the young are in the nest both birds have a short, anxious alarm or warning "chit" ; I have heard them repeat

Reed-Bunting.



Little Bunting.





this note over and over again with beaks loaded with insects. The song is usually delivered from a perch, but the bird will at times sing on the ground, where in addition to hopping it walks when seeking food. Insects, especially tipulid flies and larvæ of moths, are the chief food in summer ; the young are probably fed on nothing else, but in winter seeds and a little grain are taken. The flight is jerky rather than undulating—a series of forward and upward shoots ; when the bird alights on some insecure vertical reed or other plant, it generally clings sideways and flutters to secure its balance. From its perch it makes frequent sallies to capture insects in the air.

In winter a few, apparently life-paired birds, remain in their summer haunts, but the majority become gregarious and nomadic, joining with other buntings and finches. In northern England most, at any rate, leave and either wander further south or cross the sea. Early in February some return to the nesting haunts, and the first arrivals roost sociably in reeds or withies. In March oversea birds arrive, often accompanied by Pied Wagtails and Meadow-Pipits. Soon nesting begins, and the male may be seen, squatting on the ground and shuffling round but always keeping an eye on his mate, evidently suggesting building. A tuft of coarse marsh grass, the stocks of cut osiers, and the base of a clump of rushes are favoured sites for the nest (Plate 32), which is made of any handy material—grass, reed blades, flags or moss, and lined with hair and frequently the feathery awns of the reed. Both sexes incubate, and when disturbed will squatter or struggle along the ground, feigning a helpless or wounded condition so as to draw the intruder from the nest ; at times, however, the female slips away quietly and quickly. A second, often a third brood is reared ; eggs are laid in April, but may still be met with in August. Four to six is the usual number in the first clutch, but late nests often contain only three. They are varied in ground and markings, but the one figured (Plate 41) is a usual

type ; the ground varies from purplish white to brown, and the streaks and spots are as a rule bolder but sparser than on the egg of the Yellow Hammer.

The male in breeding dress is a handsome bird with his black head and throat and the white streak from the bill joining his snowy collar. His upper parts are mostly warm brown to chestnut, and the dark centres of the feathers form decided streaks. The outer tail feathers have broad white margins, very conspicuous when he is balancing on a swaying stem, displaying before the hen, or squatting to attract attention from the nest. Beneath he is whitish, streaked with brown on the flanks. His bill, legs and irides are brown. Buff feather tips obscure the black and dull the plumage generally after the autumn moult. The female, a smaller bird, has a reddish head and no black on the breast ; she has a brown streak on either side of her dull white chin ; a buff eye-stripe and streaks on a buff throat further distinguish her from her mate. The young closely resemble her. Length, about 6 ins. Wing, 3 ins. Tarsus, '8 in.

Large-billed Reed-Bunting. *Emberiza palustris* Savi.

Two examples of the southern European Large-billed Reed-Bunting, and one of the form occurring in south-east Europe, *E. p. tschusii*, Reiser and Alm., have been obtained in Kent and Sussex. The bird is greyer on the back but the size of the bill is the main distinction from our bird, and it is larger in the western than the eastern form. The B.O.U. Committee accept the history of these birds, two of which were killed in spring, but their occurrence can only be looked upon as purely accidental. Length, about 7 ins. Wing, 3'25 ins. Tarsus, '8 in.

Lapland Bunting. *Calcarius lapponicus* (Linn.).

Until recently the Lapland Bunting (Plate 38), which breeds in high latitudes in both the Palæarctic and Nearctic regions and winters further south, was looked upon as a vagrant to Britain, even when the occurrences had exceeded fifty. But the regularity of its appearance in autumn on the Shetlands and other Scottish islands, and its frequency on our eastern shores and in Kent, suggest that it is a regular bird of passage, halting to rest or delayed by contrary winds, probably at a high altitude, when on its southern migration. In the north it has also been noted in spring. Occasionally it has been met with in autumn and winter in inland localities and on the Irish coast.

The bird nests above the forest growth; I have seen it in the birch zone in northern Norway, where its black head, face and throat, with the conspicuous white line from above the eye round the cheeks, and the bright chestnut collar attracted my attention. It is a ground feeder, though occasionally flying into trees, and has a long claw on the hind toe, more suggestive of a pipit, but its conical yellow bill is that of a bunting. The birds I saw had a loud, not unmusical call. Below the collar the back of the male is brown, the feathers having dark centres; the outer tail feathers have long white patches. The under parts below the black breast are white, striped on the flanks. The legs and irides are dark brown. The striped head of the female is chestnut, as are her cheeks and collar; her under parts are streaked. Young birds are duller in colour, and adult birds in winter dress have the bright colours partly obscured by pale margins to the feathers, which wear off in spring. Length, 6·2 ins. Wing, 3·75 ins. Tarsus, ·85 in.

Snow-Bunting. *Plectrophenax nivalis* (Linn.).

In England, Wales and Ireland the Snow-Bunting (Plate 39) is known only as a winter visitor or bird of passage, but on the higher Scottish mountains it nests annually, and has been recorded as breeding in the Shetlands. Its range extends far north in both hemispheres, and it winters so far south as northern Africa and the United States, and is a nomadic wanderer at this season.

Along the shore or on the fells in winter there are few more charming sights than a flock of "Snowflakes" as they are aptly called. We need not expect to meet with them in low-lying inland localities; these they seldom visit, clinging either to the coast-line or seeking the higher uplands. Suddenly the birds rise from the tide-wrack, flickering white, wheel and drift down-wind, dancing before us, but soon returning to their hunt. When clouds hang low on the fells the twitter is heard before the fluttering flakes emerge from the mist; they drop on the short sheep-cropped grass, littered with broken scree, and vanish amongst the stones, some sheltering, as if in hiding, behind the rocky débris. Small patches of old snow or freshly falling flakes aid this concealment. Yet the bird is not shy, and on the shore is almost indifferent; the shore-shooter finds them easy to slaughter and, unfortunately, kills them for the pot, for they are plump in winter. In flight the sharply contrasted black and white of the wing renders them conspicuous, and in breeding plumage the white and black dress of the male makes him one of the most noticeable of small birds, though even he may be hidden by the presence of snow amidst dark rocks. In winter dress, tawny above and white beneath, the bird when seen upon the shore may be at first mistaken for a small wader, an error enhanced by its habit of running and seldom hopping. In Britain we do not meet with the bird



Wood-Lark and young.



except in treeless country, but in some parts of its range it perches like other buntings. When a winter gale sweeps the shore the birds crouch as they feed, and if disturbed hardly rise above the sand, along which they are whirled for yards, but soon settle again.

The flight note is a Linnet-like twitter ; in some parts they are known as "Sea-Linnets" ; this twitter is interrupted by a frequent call-note, a loud "tweet." The song, often uttered from the heaped-up rocks in which the nest is hidden, is described as a "low, melodious warble," but to my ears it has much of the indecision of the Reed-Bunting, though fuller and mellower ; it does not sound low. The male will often shoot into the air like a Tree-Pipit, descending in sweeping curves and singing all the time ; if, however, he fears that the nest is endangered he flies round with plaintive alarm cries and settles, piping anxiously, within a few feet of the intruder. Gnats and other flies are the food in summer, but in winter various seeds and grain are eaten, those of grasses and salt-marsh plants, such as *Suaeda* and sea-aster being favoured.

The nest is difficult to find. Its usual site is among disintegrating rocks and boulders, and is deeply hidden in some crack or under a stone too heavy to move. I have had both birds in a state of great perturbation within a few yards of the invisible nest, though I could guess to a foot its situation. In Norway I found the hen sitting at 5500 feet, but Seeböhm took nests in Siberia at sea-level. Any handy material is used, dry grass, moss, roots, with a lining of hair and feathers, those of its constant companion the Ptarmigan being frequently recognised. Seeböhm found seven or eight eggs in Arctic nests, but in Scotland four or five is more usual ; they vary considerably, but the one figured (Plate 41) is an ordinary type.

In breeding dress the male is a handsome white and black bird, the black being on the mantle, secondaries, primaries and tail. His bill and legs are black, and the irides hazel.

These blacks are replaced by brown in the female, and her head and wing-coverts are also brown. In autumn and early winter broad chestnut tips obscure the black (as shown in Plate 40) and chestnut tinges the crown, ear-coverts and breast; the bill is then yellow with a dark tip. These tips and edges wear off, and by January I have seen males showing much black and with the brown tints very faint. The young are much browner, most of the feathers having more or less dark centres, giving the birds a spotted appearance. Length, 6.5-7 ins. Wing, 4.2 ins. Tarsus, .9 in. The female is the smaller bird.

Family ALAUDIDÆ. The Larks.

Skylark. *Alauda arvensis* Linn.

Everybody knows and appreciates the Skylark (Plate 40), but it would be hard to say where any particular bird was bred, for our race occurs in most parts of Europe and is very migratory. Although nesting throughout the British Isles and many remaining all winter, others of our home-bred stock emigrate in autumn and return in spring as summer visitors, the first reaching our shores towards the end of February. The northern and eastern coasts receive huge numbers of immigrants in autumn, some as winter visitors, others birds of passage, coasting south. Ireland receives its share, and severe weather in winter causes westward movement of our winter flocks.

Undoubtedly the Skylark's fluent song and the ease with which it may be watched mounting high on quivering wing until it is merely a vocal speck in the blue, accounts for its popularity. It is not a showy bird, but its short crest, usually elevated when on the ground, and its habit of walking give it character, and, except for the Wood-Lark, it stands alone.

The open country is its home, densely wooded areas are shunned, but so long as it is open it is happy on cultivated land, the seaboard marsh or the heathery moor; indeed it haunts the hilltops except when driven thence by weather. The greatest outburst of song is from February, when birds are pairing, until the young are hatched, but it sings, except when moulting, at any season. On a warm day in winter or during hard frost if the sun is bright some Larks are sure to go up, but as a rule the winter ascents are to a lower altitude than in spring. The bird rises with quivering wings, beginning the song when a few feet up; then its whole body vibrating with energy, it mounts higher and higher, often drifting round in a wide arc before it descends, still singing. When yet at a height, the song ceases and the bird drops abruptly, recovering itself a foot or so above the grass and skimming forward before alighting. The compass of the song is small and some belittle its beauty, but its vehemence and continuity are remarkable.

“ He drops the silver chain of sound,
Of many links without a break,”

says Meredith. Into the song the Skylark weaves snatches gleaned from other birds; on the moors I have heard the Dunlin's *pierr* repeated over and over again. Singing from the ground, a rail, or wall is not uncommon, especially when the birds are pairing, and rival males sing vigorously when fighting. In summer the Lark is up long before daylight and it sings until dusk.

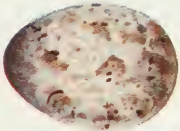
In winter, when the bird is gregarious, moving about the fields in straggling, seldom compact flocks, the usual note is a liquid purring trill; the flight is then strong and direct, a few rapid wing-beats followed by a shoot forward when the bird shuts its wings almost with a snap. It roosts on the ground, and if a field is crossed where birds are roosting the purring call-note as the invisible bird whirrs off in the darkness

sounds every few seconds; evidently they do not crowd together on the ground. When approached, the feeding bird crouches, ready for the spring, but though many may be in sight they rise singly, each with its call. When the bird rises the white outer tail feathers show, and may be recognition marks; they are exhibited in the courtship display before the female. Courtship is accompanied by many rapid chases, the birds turning and twisting when flying at great speed, but at times the male hovers singing, his quivering wings half-raised, a few feet above his mate. Swift chases and aerial skirmishes take place at this season between rival males. Insects, especially small beetles, are largely eaten in summer; I have seen a bird catch and dismember a gold-tail moth, whose sluggish movements and showy whites are supposed to act as a warning, though experiment has proved that the moth is not distasteful. In winter all kinds of seeds are picked up, and fields sown for clover are much frequented. When the young blade appears, of ordinary grass or corn, and the seedling turnips top the earth, the early greens attract it; but on the whole it does little damage, and without doubt eats as many weeds as useful plants.

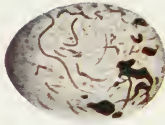
The nest, a simple structure of dry grass lined with finer bents (Plate 37), is placed upon the ground, in the footprint of some beast or a hollow scraped by the bird itself. The hen usually conceals the site by alighting a few feet away and running to the nest by a devious track through the grass. Three to five eggs, densely mottled with brown (Plate 41), are laid in April, and a second brood is usually reared.

The Skylark's food supply is cut off by snow, and before or during a storm vast numbers trail westward, crossing to Ireland if the storm continues. At such times and during migration we realise the immensity of the Lark population. During threatening weather the bird comes in at night, and in fog is often bewildered by the coastwise lights, but it is also a day

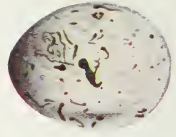




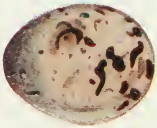
Corn-Bunting.



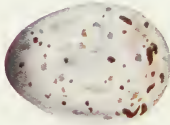
Yellow Hammer.



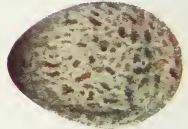
Cirl Bunting.



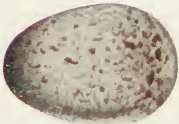
Reed-Bunting.



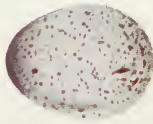
Snow-Bunting.



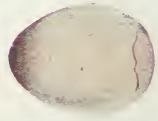
Skylark.



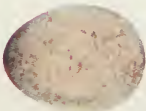
Woodlark.



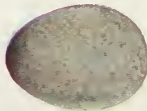
Pied Wagtail.



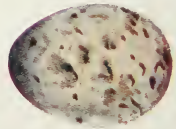
Grey Wagtail.



Yellow Wagtail.



Blue-headed Wagtail.



Tree Pipit.

migrant and little parties stream by all day long in autumn. For the most part these immigrants show little fatigue when landing, and may not even stop to rest upon the nearest fields.

The Skylark of either sex is a brown bird, streaked on head, back and flanks with darker brown; the eye-stripe, noticeable between the dark crown and cheeks, is pale buff. The under parts are buffish white, with streaks and spots on the breast. The bill is black above and brown beneath; the legs reddish brown, and the irides hazel. After the moult pale tips and edges give a more rufous shade, and the young, buff in general colour, have more pronounced streaks and breast spots. The shade, however, is exceedingly variable, as indeed is the size. Length, 7·75 ins. Wing, 4·4 ins. Tarsus, '9 in.

The greyer Eastern Skylark, *A. a. cinerascens* Ehmcke, has been added to the British list, as it has occurred on the Flannen Islands in February and twice in Ireland on autumn migration. It breeds in western Siberia and winters as far west as Algeria.

Wood-Lark. *Lullula arborea* Linn.

As the Tree-Pipit is often called the Wood-Lark, reports of this very local resident must be treated with caution; it is most plentiful in southern and south-eastern England, but is locally abundant in certain Welsh districts. Northward it is scarce, but is known as a rare migrant to some of the Scottish islands. It formerly nested in Ireland, but now is rare. It occurs in most parts of Europe, and doubtless birds seen on the Scottish islands were migrants from Scandinavia.

Considerably smaller, the Wood-Lark (Plate 40) may further be distinguished from the commoner bird, when on the wing or ground, by its short tail. The crest is more pronounced, and the almost white eye-stripe runs back towards the nape, giving the appearance of a broad pale streak below the crest, which

when the bird is feeding is frequently raised. The streaked breast and a dark brown and white mark at the edge of the wing are also characteristic. It is hardly a woodland bird though haunting tree-clad country, for in spite of its habit of singing from a branch and seeking refuge in trees it is distinctly a ground bird in its habits. The outskirts of woods, open spaces in parks or forest land, sandy wastes and rough hill-sides, where birches and small oaks are scattered, are its favoured haunts. On one sunny hill-side I saw it frequently lie basking on the warm rocky outcrops. In winter it is less particular and roams in small flocks to places remote from its home ; it is then not uncommon on the coastal slopes and cliff tops.

The song, richer in tone than that of the Skylark but less varied, mainly the repetition of two or three sweet notes, is uttered when the bird rises in the air like its congener, or from a tree or the ground. The call-note is double or triple, "tweedlie" or "too-lui-ie," and is often uttered in flight, though in winter the bird is more silent. The flight, when the bird is flitting about the open in spring, and which perhaps has nuptial significance, is slow and unique in character. The bird rises and falls in a series of sharply angled curves rather than undulations. It flutters up for a few feet, then glides with wings expanded, but before the ascent ends it closes its wings ; when the momentum fails the wings are extended and it slides earthward to repeat the performance. The height to which it rises varies considerably ; the upward sweeps are irregular. On the ground the Wood-Lark walks and runs, and when the feeding birds are disturbed they crouch like Skylarks and rise one by one. The food consists of seeds and insects.

The nest, similar in materials but more compact than that of the Skylark, is placed upon the ground and is usually well concealed (Plate 38). The eggs, three or four, are smaller and less mottled than those of the last species, and the spots

are usually redder (Plate 41); they are laid in March, April and May, two broods being usual.

The general colour of the adult bird is buffish brown, streaked with dark brown, nearly black upon the crown; the under parts of buffish white are spotted and streaked on the breast; the outer tail feathers are brownish white, and there are white tips to most of the others; the primary coverts are tipped with white. The bill is brown, darkest on the ridge; the legs are pinkish brown, the irides hazel. In autumn the colour is more distinctly buff, and the under parts are tinged with olive. The young are streaked with black and buff on the upper parts, and are yellower beneath and more profusely spotted. The first primary is longer than in the Skylark, and the nostrils have a distinct operculum, though this is hidden by feathers. Length, 5·5 ins. Wing, 3·9 ins. Tarsus, ·8 in.

Crested Lark. *Galerida cristata* (Linn.).

Considering how many unexpected wanderers reach us from Europe and Asia it is curious that the Crested Lark, which is by no means rare just across the Channel, should seldom have been satisfactorily recorded. It has occurred on a few occasions on our southern shores, but many of the quoted records for other localities do not stand investigation, the simple fact that the Skylark has a distinct crest misleading the credulous. Its habits differ little from those of its congeners, but it is less sociable. The song "liquid and flute-like," is simple, uttered from the ground or when making a short aerial excursion. Like the Skylark, it delights in dusting itself in the road; indeed on the Continent it is a frequenter of high roads at all seasons.

In general plumage it resembles the Skylark rather than the Wood-Lark, but though a heavier bird has shorter wings and tail; the tail, too, is without any white, the outer fringes being

buff. The rump is not streaked, and the flanks are warmly tinged with buff. Length, 7 ins. Wing, 4·2 ins. Tarsus, 1 in.

Short-toed Lark. *Calandrella brachydactyla* (Leisler).

The Short-toed Lark is a migratory southern European bird which winters in Africa and India, but has wandered north occasionally. At least a dozen have reached the British Isles, mostly but not always in autumn. The majority of these vagrants are recorded from the south of England, but a few from the Shetlands and Orkneys, and one of these is referable to the Eastern form, *C. b. longipennis* (Eversmann), which inhabits Turkestan, Tibet and other parts of Asia, and has been recognised as a winter visitor in Algeria. It seems likely that most of the southern birds are wanderers from Spain or the south of France, and the northern of the Siberian race.

This squat little Lark can hardly be confused with any British species. The hind claw is short and straight, the yellowish bill short and conical. The colour of the upper parts is buff or sandy brown with darker streaks; the under buffish white, palest on the throat and almost spotless. There is a characteristic dark patch on each side of the upper breast. The eye-stripe is white; the legs brown. Length, 5·5 ins. Wing, 3·6 ins. Tarsus ·75 in.

White-winged Lark. *Melanocorypha sibirica* (Gmelin).

This southern Russian and Siberian ground lark has occasionally wandered westward, and about a dozen examples have been recorded from Kent and Sussex. One seen in November, 1915, was not shot, but there is no doubt about its authenticity. The chestnut crown, lesser coverts and tail, the white wing-bar and under wing-coverts, and tawny back and buff-tinged throat and breast, commanded the attention of the recorder, Miss

Kleinwort, who saw it feeding with Skylarks near Rye. The bird has a white eye-stripe, white tail margins and mainly white under parts. Length, 7·5 ins. Wing, 4·6 ins. Tarsus, 1 in.

Calandra Lark. *Melanocorypha calandra* (Linn.).

The Calandra Lark, formerly reputed British, but rejected on account of the evidence of the two occurrences being suspicious, is now accepted by some ornithologists on the strength of a male and female, said to have been killed out of a party of five, at St. Leonard's in May, 1916. This heavily billed Lark can easily be recognised by the large black patch on each side of the throat. Length, 7·8 ins. Wing, 5·3 ins. Tarsus, 1·2 ins.

Black Lark. *Melanocorypha yeltoniensis* (Forster).

The Black Lark, which cannot possibly be confused with any other species, for it is black in summer and brownish black obscured by very grey tips and edgings in winter, is another westward wanderer from southern Russia and Siberia. The female is sandy brown, with pale buff or white edges to the feathers. Though it has reached western Europe on previous occasions, it was not until January and February, 1907, that a little party were observed on the Kentish and Sussex coast, and four were killed, both males and females being obtained. According to Saunders, birds killed on the Continent appeared in our markets at the same time, so that we can look upon the species as an erratic westward wanderer. Length, 7·5 ins. Wing, 5·3 ins. Tarsus, 1·1 ins.

Shore-Lark. *Otocorys alpestris* (Linn.).

According to Saunders, the Palæartic Shore-Larks had origin in the Nearctic region and have thence spread westward.

Certainly this striking bird (Plate 42) is commoner with us than it used to be, and authorities agree that its breeding range has spread further west in northern Europe, and presumably its winter wanderings also. The older naturalists were quick at noticing its occurrence, but looked upon it as a vagrant, whereas now it is a regular bird of passage rather than a winter visitor on our eastern shores from Kent to the Shetlands. To the west coast of England and Wales it is still a rare wanderer, but its visits are certainly becoming more frequent; it has once been observed in Ireland. The majority of the birds appear in autumn, but some pass on return migration.

As the name implies, the shore is the most likely place to meet with this conspicuous lark, though at times it visits the stubbles. High-water mark provides it with food—insects, small molluscs and crustaceans sheltering under the drifted weed; seeds, picked up on the beach or on the saltings or coastwise fields, form a considerable part of its winter diet. On the sand it runs quickly, carrying the body low, though the legs are not so short as they appear. It does not sing in Britain, but Seebohm describes the song as short but melodious; the bird sings from the ground or when in the air like a Skylark. The usual call of the wintering birds is not unlike that of the Meadow-Pipit.

The male in summer is a handsome bird, pinkish brown on the back, pale yellow on the head and throat, and with a black crown and streak towards the nape which terminates in elongated feathers, forming a double crest; a patch below the eye and a band across the breast are black and the rest of the under parts white with faint brown streaks on the flanks. The bill and legs are black, and the irides dark brown. The female has no tufts on the head and less black, and the streaks on the back are more pronounced. In winter, when the bird is most frequently seen here, the black on the head is largely obscured





by yellow margins. Young birds have no yellow on the forehead. Length, 7 ins. Wing, 4 ins. Tarsus, '9 in.

Family MOTACILLIDÆ. Wagtails and Pipits.

White Wagtail. *Motacilla alba* Linn.-

Difference of opinion exists as to the status of the Pied and White Wagtails ; Lilford, hoping to avoid confusion, called the latter the "Grey-backed Wagtail." Many contend, not without reason, that they are sub-species, and that the White, the bird of Europe generally, is the parent form, the Pied being an insular variety which, in geologically recent times, has extended its range to western France, Belgium and southern Norway. The nuptial dress of the males is sufficiently distinct to warrant specific rank, yet this is of so small importance to the birds themselves that they occasionally interbreed, supporting the sub-specific argument. Because I am adopting the B.O.U. classification, not from conviction, I treat them as species.

In the British Isles the White Wagtail (Plate 43) is mainly a bird of passage, by far the greater number travelling by the west coast route. It is also an occasional summer visitor, for there are many well-authenticated instances of nesting in England, Wales and Fair Island. On the Continent its range is wide, and it nests regularly at high latitudes ; it is common in Iceland and in some parts of Greenland. It winters in tropical Africa.

In spring, when the males are easily recognised, it passes through England, but the majority travel along the coast, and as they arrive from mid-March onwards, long before the short northern summer, the journey is slow. In Anglesey a party of about a score arrived on April 14 and frequented an inlet amongst the rocks where drift-weed had accumulated ; early in May fresh arrivals increased the numbers to about sixty, and

the last departed on June 2. In the same manner parties linger for days or weeks in inland spots—the borders of meres or lakes, or sewage farms, where there is an abundant food-supply, small gnats and their larvæ. Returning birds appear about the middle of August and are passing until the end of October. Both Pied and White Wagtails are insectivorous, the food consisting of insects and other small invertebrates. I have watched an October party of Whites turning over fallen beech leaves in the same manner as Chaffinches and Bramblings, hunting for concealed insects. Both birds catch insects on the wing, rising from the ground and dodging after them with rapid turns and twists.

The White Wagtail often perches in trees and is said to roost in the branches, but the usual roost of the migrants is a reed-bed, where they join with Pies and Yellows.

The song is similar to that of the Pied, simple but sweet, and several males will perform at the same times, often from a tree or, on the Continent, from a house roof; I have heard a combined chorus from rocks on the coast. The call-note is softer than the *tschizzik* of the Pied, more like *tissick*, without the *z* sound, approaching the tone of the Yellow. The nest is placed in similar situations to that of the Pied, and the eggs, four to seven in number, though at times bluer and more boldly marked, are often indistinguishable.

For the sake of comparison the plumages of the two are given together. The males in summer are white from forehead to neck, with crown and nape black, but in the Pied the black extends over the upper parts to the upper tail-coverts, whilst this area is pearl-grey in the White. White covert tips produce a double wing bar and the inner secondaries are margined with white; these bars and margins are more distinct on the Pied. In the Pied the quills are blackish, in the White they are browner; the tail is similar in both, blackish with most of the two outer pair of feathers white. Both have a black throat,

but in the Pied this is usually, though not invariably, sharply angled into the white of the neck, and the breast band joins with the black on the shoulders ; in the White the bib is more rounded and the shoulders grey. Beneath both are white, but the flanks of the Pied are sooty, of the White pale grey. The bill, legs and feet are black ; the irides dark brown. The females have a shorter tail and less black on the head and breast. In the Pied the back is grey, though not so pure as that of a male White, and is indistinctly streaked ; the grey of the White is duller than that of her mate. When flying the female Pied looks darker than the more uniform grey-backed White. An important point, missed by most authorities, is that the black on the crown of female Whites varies greatly in extent, and in many birds, perhaps in the second summer, is absent, even in spring. After the autumn moult Pieds closely resemble Whites by becoming greyer on the back and losing the black chin and throat, leaving only a crescentic band of black on the breast. At all seasons, however, the rump of the Pied is black, or very dark indeed, and of the White grey. The young in both (Plate 43) have the face suffused with yellow and the wings browner ; the grey is less pure than in adults, but in distribution of colour they resemble females. Length, 7·5 ins. Wing, 3·6 ins. Tarsus, ·9 in.

Pied Wagtail. *Motacilla lugubris* Temm.

The Pied or Water Wagtail (Plate 43) is distinctly a British bird, occurring otherwise as a breeding species in those parts of the Continent which are nearest to our islands. Numbers of our birds remain throughout the winter, but the majority migrate in autumn, though considerable flocks go no further than our southern counties. In the Shetlands it is a bird of passage, immigrants arriving from southern Scandinavia and

travelling south, usually along the coast, with the more northern emigrants.

Water Wagtail, and the more vernacular "Dish-washer," are descriptive names, for the bird delights in water and loves to paddle in the shallows; many of the gnats and flies on which it feeds are aquatic. It is constantly to be seen on the bank of a river or stream, the sandy edge of a lake, the muddy margin of a pond, the settling tank in a sewage farm, or in the puddles on the road, running swiftly here and there, leaping into the air or taking a short flight in its hunt for the chironomid gnats or other small diptera which form the bulk of its food. The long tail is carried horizontally, clear of the mud or wet, and is constantly and rapidly though gracefully elevated and depressed; it is not "wagged," if by that a lateral movement is implied. The presence of water is not necessary for the Pied Wagtail; indeed it is less aquatic than the Grey; it darts fearlessly under the legs of the grazing cattle after flies, and is a constant attendant on the heels of the ploughman, when larvæ rather than perfect insects are its quarry. The farmyard, where the warmth of manure and other litter encourages winter flies, is a favourite haunt, and there it runs nimbly along the roof-tree of the shippin, constantly calling, and shooting into the air when it sights a passing fly.

The Pied Wagtail is a pioneer summer visitor, usually returning early in March, but often so soon as the beginning of February. Much though not all of the plumage is moulted in spring in addition to the complete moult in autumn, and apparently this spring moult is accomplished earlier abroad than in England, for the returning birds are noticeably cleaner-looking and smarter than those which have wintered here; it would, however, be unwise to say that an early moulted bird must have been abroad, for these sometimes reach northern counties in the first week of February. On February 8, 1913, I found scores of Pieds wintering on the shingles at Slapton

Ley still in the dull unmoulted dress, but it was some weeks later before "clean" birds reached Cheshire. The spring flocks feed in the fields with Meadow-Pipits and Reed-Buntings, their travelling companions, and at night roost with these birds in reed-beds or other waterside vegetation. On the ploughed land they are conspicuous, as the very black and white males run for a moment along a ridge, then dip out of sight into a furrow, or take short bounding wave-like flights, with frequent calls of *tschizzik*, to overtake the plough. When gathering at the roost a few male birds often join in a short evensong, simple but melodious, a twittering chorus not unlike that of the Swallow.

The bank of a stream, especially where herbage overhangs, is a common site for the nest; but it is often built in a hole in a building or rocks, amongst the roots of a tree, or even under a clod in an open field; as a rule it is sheltered or concealed. In one instance it was built between two railway sleepers, many trains daily passing over the rail which formed the shelter. Occasionally the old nest of some other bird provides the necessary hollow; that of a Magpie in a tree being on record, and I have known it use one deserted by a Dipper. Grass, roots and leaves are firmly matted together, the bulk varied according to the accommodation, and the nest lining is of hair or wool, with often a few feathers. The eggs, generally four to six, are finely speckled with ashy grey on a whitish ground, but are subject to variation (Plate 41), and may be boldly streaked or have a few irregular hair-lines; they are laid in April, and second or third broods are reared.

One point about the plumage, which is described under White Wagtail, is misleading in many text-books; the back of the male is said to be grey in winter. Mr. C. B. Moffat tells me that in Ireland many do not become grey, and I have seen males here which were black, though not so deep a black as in spring. Mr. Witherby puts it more clearly when he points out

that some grey feathers are mixed with the black, and examination of a series of skins confirms this statement. The amount of grey varies individually from greyish black to blackish grey, females, though showing sooty markings, being greyest. The short-tailed nestlings are shown on Plate 47. Length, 7·5 ins. Wing, 3·4 ins. Tarsus, 1 in.

Grey Wagtail. *Motacilla boarula* Scop.

In summer the Grey Wagtail (Plate 45) is found throughout Europe, and in winter it ranges to tropical Africa. In Britain it is resident in suitable places, a summer visitor, for numbers leave in autumn, and a bird of passage.

The Grey is more of a water bird than the Pied, though running water, especially turbulent hill beckes and streams, are most favoured; these it haunts from their first bound over the escarpments on the moors to the wooded gorges and valleys, but seldom frequents the lowlands in spring. Really a little smaller than the Pied it appears bigger on account of its longer tail; it is a slimmer, more graceful bird, with more deliberate caudal gestures, which reach their highest perfection during nuptial display, when fanned, elevated and depressed to show to advantage the contrast between the whites and blacks. Along the stream margin the bird runs nimbly or walks more sedately with head and neck dipping forward at every step; in the stream it flickers from stone to stone, careless if the water flows over its feet, and darts upwards to snatch a fly. Like other wagtails it feeds on insects, but in the shallows catches the crustaceans, *Gammarus* and *Asellus*, or picks from the stones a small *Limnea* or the river-limpet *Ancylus*. It perches freely, and where trees overhang the stream uses the branches as look-out posts from which to sally, flycatching, over the water. When winter approaches it leaves the uplands and is met with by lakes, ponds, slow-flowing rivers or the coast, and

at this season many move southward, and some emigrate. The call is a soft *tzissi*, and in spring it has a low plaintive love-note; but it is not much of a songster, though its short twittering melody occasionally mingles with the music of the stream. The flight is decidedly undulating, and as the bird alights it almost invariably spreads and raises its tail.

The nesting site is usually in some crevice in a rock, wall or bank, sheltered above, and close to running water. Rootlets and a little grass are the outer materials, and hair forms the lining; Seebohm noticed a decided preference for white cow-hair. Four to six eggs, speckled or marbled with grey and brown and often with one or two hair-lines (Plate 41), are laid late in April, and a second brood is reared.

The title Grey Wagtail is apt to mislead, and frequently birds seen in winter are mistaken for Yellows; Slate-backed Yellow Wagtail would be more descriptive, for the distinguishing coloration is a slate-blue head and back, with greenish-yellow rump and tail-coverts and sulphur-yellow under parts. In breeding dress the grey cheeks of the male are set off by white streaks above and below, and the chin and throat are black; this black is assumed during the spring moult, and at first many of the feathers are margined with white. In addition to the white feathers of the tail, pale margins to the inner secondaries are distinct on the brown-black wings. The female has little or no black on the throat, and her head and back are tinged with green. The bill, legs and eyes are brown. The black on the throat is lost after the autumn moult and is replaced by white; the slate is tinged with olive. Young birds resemble the adult in winter, but are browner, and the whites are suffused with buff. Length, 7.5 ins. Wing, 3.25 ins. Tarsus, .85 in.

Yellow Wagtail. *Motacilla raii* (Bonop.).

The various Yellow Wagtails are divided into many geographical races, and difference of opinion exists as to the specific position of our bird and the Continental Blue-headed Wagtail. In any case, whether a sub-species of *M. flava* or a distinct species, the Yellow Wagtail (Plate 44) has a restricted breeding range; it is local in our islands, rare in the west, in Scotland and Ireland, and on the Continent only known with certainty in Holland and north-western France. It passes through the Spanish Peninsula on migration and winters in West Africa. In most parts of Wales and in Cornwall it is a regular bird of passage but does not nest.

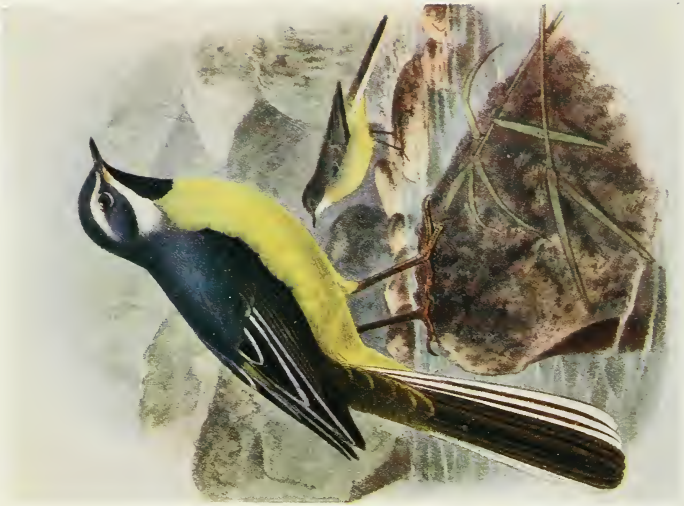
All wagtails are dainty, delicate birds, but the Yellow is the most graceful and fairy-like of them all; in March and April, when the flocks appear in our pastures, the males are wonderfully brilliant. As they run nimbly through the growing herbage their slight bodies are often hidden, but the bright colours, gold as the dandelions, catch the eye. The open country, meadow land or cultivated field, common or marsh, is the haunt of the Yellow Wagtail; it feeds amongst the grazing cattle and follows the ploughman, ever on the look-out for insects and their larvæ or small snails in the grass. For no apparent reason a flock will rise suddenly and fly to the nearest trees, but after perching for a few moments the members drop back one by one into the grass. In courtship the male, with quivering wings and tail fanned, will hover a few feet above the feeding female, and occasionally utter a short but cheery song, though as a rule he is a silent bird. At the roost, which is frequently a reed-bed both in spring and autumn, there is a continuous soft twitter, but as other species are usually present it is not easy to analyse the notes. The call, a sibilant *tissik*, is constantly uttered during the undu-





I Pl. 45.

Blue-headed Wagtail.



II 109.

Grey Wagtail.

lating flight. The activities of the parents are most noticeable when flycatching for the nestlings; the birds fill their beaks with flies, yet always seem able to snatch another without dropping any of their load. They visit manure heaps in the farms and fields, hovering above them, dancing in the air, snapping right and left; they run across the floating weeds on ponds, fluttering their wings when in danger of sinking or taking a flight of a few feet. When on the ground the expressive tail is ever in motion and the head moves rhythmically with the rapid steps; when alighting after a flight the tail is elevated and spread.

The nest, of grass, moss or any convenient material, and lined with hair, fur, rootlets or feathers, is built on the ground in a meadow or cornfield, and is usually partially sheltered by a clod of earth or clump of grass; in some districts potato fields are favoured, the nests being on the slope of the furrow. The eggs are laid in April, a second clutch following the first; four or six is the number, and they are densely speckled with reddish brown or grey, usually with one or more hair-lines near the larger end (Plate 41); they vary, but all types are represented amongst the eggs of the Blue-headed Wagtail, from which they cannot be distinguished.

The male in spring is greenish olive on the upper parts, yellowest on the tail-coverts, with brown-black wings and tail, the former with buffish edges, forming bars, and the latter with the two outer pair of feathers mainly white. Above and below the eye and the whole of the under parts are canary-yellow; the bill and legs are black and the irides hazel. The female is browner, her eye-stripe and wing-bars are buff, and her chin and throat whitish; her under parts are paler. In autumn, when flocks are passing preparatory to departure in September or October, the general colour of the old birds is paler and of the young browner, with buff tinged chins and buff breasts. Few birds, however, are subject to more variation;

males may have wide or narrow eye-stripes, and may be almost without green on the cheeks; the green crown and yellow eye-stripe, however, always distinguishes them from the blue crowned and white streaked Blue-headed Wagtail. The colour of the back varies in shade and intensity, and this is more marked in the females. The streaks and chins of hens are often nearly white, making it practically impossible to separate them from the other species, whose whites are sometimes slightly tinged with buff. I have examined birds which might be of either species. In a flock of Yellows, where there was one white-streaked bird which I could not place, another female had a perfectly grey head and no visible streak above the eye. Length, 6·5 ins. Wing, 3·25 ins. Tarsus, ·9 in.

Blue-headed Wagtail. *Motacilla flava* Linn.

That the Blue-headed Wagtail (Plate 45), the European representative of our insular Yellow Wagtail, not only visits Britain regularly, but also breeds in certain localities is proved, but how many of its various allies and sub-specific races have visited us on migration or as wanderers is still uncertain. The typical *M. f. flava* breeds from Scandinavia and Russia to southern central Europe and winters in Africa, and with us is a regular bird of passage along both coasts.

Any observer who has opportunity or luck and a keen eye for colour may come across the Blue-headed Wagtail travelling with Yellows, and it has nested in various English and Welsh counties even as far north as Durham as well as in Kent and Sussex, its best known haunts. Its nesting and other habits, its voice and flight, and in the main its plumage, closely resemble those of the Yellow, and hard and fast distinctions cannot be safely stated. The eggs (Plate 41) so nearly correspond that their identification is only safe when the male bird has been seen at the nest (Plate 48).

The male in nuptial plumage has the crown, nape and ear-coverts bluish slate; above the eye is a distinct white eye-streak and a less conspicuous whitish streak usually, though not invariably, passes through the ear-coverts, below a dark line through the eye. The back and mantle are olive-green, often with a yellowish tinge, and two yellowish-white bars cross the brown wings. The chin is white, and the under parts bright yellow. The legs and bill are black and the irides brown. The female is slightly bluer on the crown than the normal Yellow, and her chin and eye-stripe are pure white or very faintly tinged with yellow; the under parts are paler than in the male. In autumn both old and young closely resemble Yellows at the same season, and the difficulty is greater owing to the various stages of the moulting birds, but Dr. N. F. Ticehurst points out that the chin of the Yellow is never really white, whereas in the Blue-headed it has at the most but a slight suspicion of yellow and shades into buff on the throat. Young birds have a dark line or mark on the buff throat, and at times a V-shaped brownish mark from the nape to the breast. As the two species constantly travel together, both in spring and autumn, the difficulties of distinguishing young birds and females are enhanced, but when males or typical females are passing together in spring comparisons are simplified. Length, 6 ins. Wing, 3·2 ins. Tarsus, 1 in.

A western Siberian race, Sykes' Wagtail, *M. f. beema* (Sykes), in which the head and eye-stripe are pearl-grey and the face white, has been obtained twice—in Sussex and Fair Island. I cannot say that the grey-headed bird I saw in Cheshire in 1915, mentioned as a probable variety of *M. raii*, was an example of this form, but its plumage suggested it.

The Ashy-headed Wagtail, *M. f. cinereicapilla* Savi, a Spanish and southern European race, has been reported from Cornwall and Norfolk, but the latter, after re-examination, has been referred to the Scandinavian and Siberian Grey-headed

form, *M. f. thunbergi* Billberg (Plate 44), a more or less regular bird of passage, since it has been recorded on several occasions in spring and autumn from Fair Island and our eastern and southern shores. Both have slate-blue head and nape, are without distinct eye-streak, and have white cheeks and throat, but the feathers round the eye and the ear-coverts are almost black in the latter and jet-black in the former.

Black-headed Wagtail. *Motacilla feldeggi* Michah.

The distinctive south-eastern European Black-headed Wagtail has been classed as a sub-species of *M. flava*, but though the under parts are bright yellow in the male, the entire head is black. The normal winter quarters are Arabia and north-eastern Africa, but it has wandered westward so far as Algeria, is not uncommon in Italy in winter, has been recorded from Heligoland, and four or five times has appeared in Sussex and Kent. It must be looked upon as an exceptional wanderer rather than a bird of passage. Length, 6 ins. Wing, 3·2 ins. Tarsus, 1 in.

Tree-Pipit. *Anthus trivialis* (Linn.).

The brown plumaged pipits, closely allied to the wagtails, are so far as the rarer species are concerned, an even more puzzling group, but the three familiar kinds are easily separated by their habits, voices and the length and shape of the claw on the hind toe. The Tree-Pipit (Plate 46) is a regular and well-distributed summer visitor and bird of passage to and from northern Europe. It breeds in northern and central Europe, and winters from the Mediterranean basin to far south in Africa. In Asia it is represented by a closely allied form.

In Great Britain, except in mountainous or treeless areas,

the Tree-Pipit is a common bird, but in Ireland it is only known as a rare visitor on passage. Thick woods do not attract it, but parks, the outskirts of woods or hill-sides where there is plenty of timber are favourite haunts ; on the bare hills and moorlands the Meadow-Pipit replaces it. In Wales I found it nesting up to 1200 feet and slightly overlapping the breeding area of the Meadow-Pipit, but as a rule the two birds divide the land between them. In general appearance the two are much alike, but the Tree is larger, and has a much shorter and more curved hind claw, well suited for its arboreal habits. One of our later migrants, it seldom reaches England before the first week of April, and, travelling slowly, is often unnoticed in the north until the third or last week ; the rush is frequently in the first week of May, when its arrival is heralded by its characteristic flight and song. Both Tree- and Meadow-Pipit have a shuttlecock flight, mounting up rapidly for twenty feet or more, trilling gaily, then, after a few moments of hovering flight, descending, still singing, with wings and tail outspread. But whereas the Meadow-Pipit makes these aerial excursions from the ground and returns to the ground, the Tree-Pipit starts from the topmost branches of a tree and usually descends to the same perch. The song of the Tree is far superior to that of the Meadow and ends with a number of deliberately repeated rather plaintive notes, *see-er, see-er, see-er*, the last of which are often uttered after the bird has settled. The song period usually ends about the middle of July, but I have heard it, though rarely, in August ; by the end of September most of the birds have departed. The alarm note, an anxious *peet*, is uttered continually when the neighbourhood of the nest is invaded. Like other pipits it is insectivorous, though seed is occasionally eaten.

The nest, always on the ground (End paper 4) is often concealed under dead bracken or other vegetation, and is seldom far from a forest tree, from which the male soars singing at

intervals until the young are hatched. It is built of grasses and lined with finer bents, and the eggs are laid, as a rule, early in May, but Mr. S. G. Cummings found young in the nest on April 17. The four to six eggs are subject to great variation, but may be grouped into three or four types, ranging from pale grounds with a few dark mottles to dark brown or red grounds thickly marbled or speckled with reds or purples. The egg on Plate 41 is of the darker but less speckled group. The Tree-Pipit is frequently victimised by the Cuckoo, but though many eggs of this bird correspond closely with the various types of Tree-Pipit, it is seldom that the Cuckoo's egg resembles those in the nest in which it is deposited.

In summer both sexes are light brown, striated with darker brown on the head, back, mantle, breast and flanks, but not on the rump; beneath the brown shades to impure white on the belly. From the brown bill a dark moustachial streak borders the unstriated throat. The legs are pinkish brown and the irides dark brown. After the autumn moult the colours are richer and buffer. Young birds are buffer above and below, and the streaks on the back are more pronounced. Length, 6 ins. Wing, 3'42 ins. Tarsus, '8 in.

Meadow-Pipit. *Anthus pratensis* Linn.

Though a regular migrant and an abundant summer visitor the Meadow-Pipit (Plate 46) is also a resident, for many remain all winter in the British Isles. Large numbers of winter visitors and birds of passage arrive from various parts of Europe and from Iceland in autumn, when our birds are leaving the south coast. The range abroad extends across Europe into western Asia, and the winter quarters are in southern Europe and Africa. Emigrants leave from September until the end of November, and the first returning birds are noted in February, and more birds travel northward along the



1 Pl. 46.

Meadow Pipit.
Tree Pipit.

1 114.



west coast and through western counties than by the eastern route. Passage birds continue noticeable until the middle of April, travelling with various wagtails and Reed Buntings, and roosting with them in reed-beds, though in their moorland haunts they sleep on the ground. As a rule the resident birds leave the high moors in winter and return early in the year. The old idea was that all our breeding birds retired from the high to the low ground but did not leave the country, and a later theory is that they all emigrate, their place being taken by winter visitors. Neither is correct, for some residents return to the moors in early February before the migrants have arrived, and other British-bred birds undoubtedly go abroad, since many ringed examples have been recovered.

The Meadow-Pipit or Titlark is one of the most abundant upland birds, nesting on the highest moors, where on a warm spring day dozens may be seen fluttering up from the heather for their short nuptial flight, and the air is full of their trilling songs, quick repetitions of sharp notes as they ascend and float down with outspread pinions. The songs are less frequent than the alarm notes, *peep, peep, peep*, of the anxious parents when the safety of the nest is threatened; the birds flit before the intruder, settling on the rocks or heather and calling persistently; the flight, jerky rather than undulating, is only for a few yards. In his anxiety the cock betrays the presence of the nest, but the hen is a close sitter and leaves reluctantly. When migrating the flocks are often very large and remain for days in suitable feeding grounds. Many hundreds frequent the sewage farms of large towns, roosting in osiers and feeding by day on the mud of empty tanks. Salt marshes are resorted to, and when these are flooded by spring tides the birds follow the receding water, apparently feeding on marine worms, crustacea or small molluscs. Many winter on the sewage farms, but in reduced numbers; indeed the winter flocks are small.

A favourite winter haunt is the rushy margin of a large sheet of water, where the birds, if disturbed, rise one after the other with the characteristic *peep*. Severe weather drives them to the stack-yards, for at this season the bird is nomadic. Though said to perch but little, feeding birds will take to the trees if alarmed, but often the whole flock flies to and fro aimlessly, each bird apparently striving to jerk itself higher, though the elevation of the party does not alter; after undecided sallies right and left the flock returns whence it rose. In autumn the Titlark often feeds in the root-fields, and many a sportsman has instinctively raised his gun when the little bird rose suddenly. On the ground it runs or walks, but the actions, both of head and tail, are more jerky and less graceful than those of a wagtail.

The nest is built on the ground, well concealed in the roots of heather, a bunch of rushes, beneath an arch of rough grass, or in marram on the sand-hills. It is built of the nearest grasses to be found, and lined with finer bents and hair, the cup being small and neat. The first eggs are laid in April, but second or late clutches may be found in August. The eggs are five or six in number, and a common type is dark reddish brown, closely speckled and with one or two hair-lines (Plate 58). No bird more frequently tends the young Cuckoo; indeed the Welsh name "Gwas-y-Gog" means Cuckoo's servant. On the moors and sand dunes the Cuckoo is usually mobbed by a pair of Titlarks, which follow it with constant cries, and alight near it when it settles. Rooks are often followed in winter in the same way.

After the spring moult the plumage is olive-brown above and almost white below, streaked as in the Tree-Pipit, but the outer tail feathers are a purer white. The bill is dark brown, as are the irides, and the legs are pale brown. The sexes are alike. After the autumn moult the bird is said to be yellowish olive-brown above, and chestnut-buff beneath, but the spring

arrivals are lighter and browner than the wintering birds. The colour in winter appears to be darker and distinctly greener above, and I have seen very yellow birds in the early spring flocks, which, however, may have been buff-suffused young. Macgillivray's greenish brown in winter and greyish brown in summer seems more correct than many descriptions. Length, 5·75 ins. Wing, 3·2 ins. Tarsus, ·85 in.

Red-throated Pipit. *Anthus cervinus* (Pallas).

The Red-throated Pipit is a northern Palæarctic species which winters in Africa and southern Asia. Occasionally it wanders westward and has been noticed in the Shetlands, Orkneys, St. Kilda, Ireland and in Kent and Sussex, but the visits cannot be looked upon as regular. Two specimens from which the bird was first admitted as British have been shown to be brightly coloured Meadow-Pipits, but others are genuine. The most marked distinction is in the centres of the feathers on the rump and upper tail-coverts, which are distinct and black in this species, and often hardly perceptible in the other. The chin and throat are reddish chestnut in summer, distinguishing it further—at most they are but tinged with pink in the Meadow-Pipit—whilst the eye-streak is not only better defined but is rufous-buff. In winter it closely resembles the Meadow-Pipit. Length, 5 ins. Wing, 3·3 ins. Tarsus, ·9 in.

Tawny Pipit. *Anthus campestris* (Linn.).

The Tawny Pipit is a European and north African bird which winters in tropical Africa. As a wanderer on autumn migration it has reached various parts of England, from the Scilly Islands to Yorkshire, and there is some evidence that it has nested in Sussex, not very surprising, since it nests on

the dunes of France and Holland. It is a bird of sandy wastes, and in summer is sandy brown or tawny in general colour, though tinged with grey and streaked on the back, but with few markings on the throat and flanks. The under parts are buffish white. Length, 6·5 ins. Wing, 3·5 ins. Tarsus, 1·1 ins.

Richard's Pipit. *Anthus richardi* Vieillot.

The range of Richard's Pipit is Asiatic, northerly and central in summer, more southerly in winter, but it has frequently travelled westward into Europe and has been met with on our south and east coasts; it has also reached the Shetlands and Scotland, and more rarely Ireland. According to the "Hand-book," the known records exceed eighty. It is a large, long-legged bird, noticeable by its size and height from the ground; the hind claw is exceptionally long. The throat in adult birds is white, and the two outer tail feathers are mostly white. Length, 8 ins. Wing, 3·7 ins. Tarsus, 1·2 ins.

Water-Pipit. *Anthus spinoletta* (Linn.).

Many of the supposed British Water-Pipits were Rock-Pipits of the Scandinavian race, but the bird is, nevertheless, a more or less regular visitor to the south-east of England and has occurred elsewhere, even in Ireland. It is a native of the mountains of southern and central Europe and a partial migrant; it has reached us both in spring and autumn. Seebohm contended that Alpine Pipit was more descriptive and less confusing than its older name. In size and general colour it resembles the Rock-Pipit, but may always be distinguished by the white marks on the outer pair of tail feathers and the tips of the second pair, which in the Rock are indistinct and smoke-grey. It is a greyish and sandy brown bird with a slate-coloured head in summer, with hardly any streaks on the

under parts, and with very dark legs. Length, 6 ins. Wing, 3.55 ins. Tarsus, 1 in.

The American Water-Pipit, *A. s. rubescens* (Tunstall) was taken on St. Kilda in September, 1910, and has been previously recorded on information considered insufficient. This race, which breeds in eastern Siberia as well as in Arctic America and Greenland, is slightly larger, more tawny, and has more white on the tip of the second pair of tail feathers.

Rock-Pipit. *Anthus petrosus* (Mont.).

On the more rocky portions of our entire coast-line the Rock-Pipit (Plate 39) is resident, and as numbers leave us in autumn and return in spring it is also a summer visitor. The form to which our bird is referable is found in France and apparently the coast of Norway, whilst it winters as far south as Spain; the Baltic or Scandinavian Rock-Pipit, *A. p. littoralis* Brehm, visits us regularly in autumn and winter; it breeds in Sweden and Denmark and winters in Germany and France.

In summer this coast-loving species is never far from rocks, but in winter it wanders to mud-flats, sandy shores and estuaries; Macgillivray suggested Shore-Pipit as a better name, but after all its home is amongst rocks. Whether at the foot of storm-beaten precipitous crags or on the tangle-covered rocks exposed at low tide it is equally at home, and on stacks and islets dwells amongst the waders and gulls. Indeed when it is feeding along the tide-line or on rocks over which the surf is rolling it frequently wades, running swiftly back from advancing waves. It flutters along the shore before us, with its short rather metallic call-note, *phist, phist*, corresponding to the *peep* from which the pipits get their name. When we have advanced too far it rises and after beating up into the wind with jerky, erratic flight, slips swiftly down wind and alights again to feed. It often dances above our heads calling

constantly, especially if the nest is not far away. When disturbed on the mud-flats it makes for some stone, wall or embankment, and if these are available chooses them for its resting place at high tide. Its song flight is similar to that of other pipits, a musical ascent and descent with open wings, and in quality the notes are intermediate between those of the Meadow and Tree, lacking the rich fullness of the latter. It feeds on insects, especially the numerous flies which settle on decaying weeds, and picks small molluscs from the rocks or crustaceans and worms from shallow pools. In its habits it more nearly approaches the shore-haunting waders than any "land bird."

The nest is seldom far above the reach of the tide and is often spray-splashed; it is sometimes on a bank, under a clump of thrift or other maritime plant, but more commonly in a hole or crack in the rock. It is neatly built of grass and frequently a little seaweed, and I have known a nest entirely composed of dry weed; the lining is of fine grass or hair. One of two nests on the Welsh coast, both in holes in the cliff and one not ten feet above high-water mark, was lined with hair, and the other with white gull feathers. The bird nests late and eggs are seldom laid until May, but a second brood is often reared; the number is usually four or five, and they are closely speckled with grey or reddish spots, so densely indeed as often to form a zone of colour round the widest part or near the larger end (Plate 58). The female is a close sitter, but the over-anxious male betrays her presence by his continuous calls and fluttering flight.

The Rock-Pipit is the maritime form of the Water- or Alpine Pipit, and the birds are not unlike. It is larger and has a longer bill than the Meadow-Pipit, and the striations and spots on both upper and under parts are less distinct. In summer it is olive-brown, striated, except on the browner rump, on the upper parts, and there is an indistinct whitish-buff eye-streak. The outer tail feathers are marked with smoky grey and not

with white, which distinguishes the bird from the Water-Pipit. The chin is whitish and the rest of the under parts sandy buff, slightly spotted on the breast and faintly streaked on the flanks. The bill and irides are dark brown; the legs reddish-brown. The sexes are alike. The upper parts are greener and the under more suffused with yellow after the autumn moult. The young (on the left on Plate 40) is more streaked and spotted than the adult in winter dress.

The Scandinavian bird, which occurs as a winter visitor, has a warmer, more vinous breast, and the spots on the under parts are often hardly perceptible. Length, 6·5 ins. Wing, 3·5 ins. Tarsus, 1 in.

Family CERTHIIDÆ. The Creepers.

Tree-Creeper. *Certhia familiaris* Linn.

Colour differences, more or less slight, have caused systematists to split off the British Tree-Creeper from the Northern bird under the name *C. f. britannica* Ridgway (corrected to *britannica*). Broadly speaking the Creeper is an Holarctic species divided into numerous sub-species, but Seebohm's sarcastic criticism of this "splitting" is not altogether undeserved. The British form, though nomadic in winter, is not strictly migratory, nor is the typical race, which has been recognised as a wind-blown wanderer to Shetland. Others which have occurred on the Orkneys and Shetlands, were probably Scandinavian birds.

In our islands the Tree-Creeper (Plate 49) occurs everywhere in wooded country, but is nowhere abundant, though doubtless overlooked as it is small and soberly coloured. Many are astonished when they see an apparently avian mouse running up a tree. Its progress up a trunk is in a series of short murine jerks, spasmodic rather than rapid; it frequently ascends

direct, starting near the ground, creeping closer to the trunk than a Nuthatch. Now and then it makes a sideways hop, attracted by some promising crack or a lateral branch; it pushes its scimitar-shaped bill into a narrow crack, delicately picks out its quarry with the needle point, or wrestles with some clinging insect. It will twist and pull, bracing itself against the trunk with feet and stiff tail, and is seldom defeated. The protectively coloured weevil, the crouching spider clinging to its web, the cocoon enshrouded pupa do not elude its keen eye. Reaching a branch it travels outwards beneath it, quite as happy upside down as when ascending; at the end it stops for a moment to utter a few lispings notes, then with a drooping flight descends to the next hole. Sometimes it climbs in a spiral, but this largely depends upon the set of the bark; it seldom, as is asserted, slips round to keep out of view like a squirrel, for it is an indifferent rather than tame bird. Dense woodlands are its home, but in winter when mixed flocks of tits and Goldcrests are wandering through the woods one or two Creepers usually accompany them, gleaning what the others miss. It will visit gardens and more open country. An old gate-stump or a rock-face likely to harbour insects is examined as well as trees and their branches, and at times it will take an insect on the wing. The Creeper seems ever in motion, but I have seen it stop to snooze with its bill resting on the bark, and in this position it roosts at night.

The usual note, uttered when it flies or when it has extracted a stubborn insect, is a shrill *cheep, cheep*, and it has a sharp call, *zit*. The song is a simple *see, see, see, sissy-pee*; the statement that the song period is from June to August is misleading, for the bird sings constantly in winter; I have notes of every month except September and October, and probably it occasionally sings in these. The Creeper is one of the few birds which eat the destructive coccids; the female mussel-scale, too well hidden for most birds, does not escape it. Prof. Newstead

found that it destroyed the turnip-flea beetle when this insect is wintering under bark, but numerous spiders and their egg-balls must be placed on the debit side of the account of a useful bird. Seeds of knapweed, Scots fir and other plants have been found in its stomach. Under ordinary circumstances the flight is undulating and leisurely, but during courtship the male rapidly chases the female round and among the trees with excited cries. At this time, and after the eggs are laid, the male is attentive, constantly bringing food to the hen, who receives it, like a young bird, with fluttering wings.

An ordinary position for the nest is behind loose bark, but it is also built in cracks in trees, behind ivy-trunks on walls, or at the back of a notice board. The size depends upon the available space ; in a large crack a supporting platform of sticks is built ; behind bark the shape is often oval and all available space is filled with grass, bark, moss or wool, with finer strips of bark, wool or feathers for the lining. The eggs, which number from five to even nine, are white spotted with red or reddish purple (Plate 58), at times forming a zone, and are seldom laid until May. A later brood is often reared. Both birds help in construction of the nest and care of the young, which are largely fed upon small caterpillars and flies. The bird sits closely and will hiss and peck at an intruding finger, but finally slips out sideways and will remain, clinging to the trunk a few inches from the nest before taking flight. When approaching the nest the bird flies to the trunk and ascends (Plate 51), apparently feeding, then quickly slips sideways out of sight.

The characters of the Creeper, adapted to its habits, are the curved bill, comparatively large feet, and stiff pointed tail feathers. Above, in both sexes, it is brown, streaked and mottled with rufous and white ; beneath it is silvery white, and as in its often zigzag progress it slips round the trunk, the gleam of the under parts catches the eye. The wings are

barred with pale brown; the bill, legs and eyes are brown. In the young birds the bill is shorter and less curved. Length, 5 ins. Wing, 2·5 ins. Tarsus, ·65 in.

Wall Creeper. *Tichodroma muraria* (Linn.).

There are only five records of the occurrence of the Wall-Creeper in England—it has been noted in Norfolk, Lancashire and Sussex—and it is such a striking bird in its slate-grey plumage, with crimson on the wing-coverts and a crimson band across the wings, and white spots on its black wings and tail, that it cannot frequently have been overlooked. It inhabits alpine areas in central and southern Europe, and has been noted as a wanderer from time to time in other parts, including France and Germany. It climbs walls as well as rocks, and the Lancashire example was noticed flying round a mill chimney, the crimson bands attracting the attention of the mill-hands. Length, 6·2 ins. Wing, 3·9 ins. Tarsus, ·9 in.

Family SITTIDÆ. Nuthatches.

Nuthatch. *Sitta cæsia* Wolf.

Systematists disagree about the name and relationship of the British Nuthatch, which is a sedentary resident. It is nearly related to the central and southern European bird, though slightly darker, and a similar form is met with in south-western Asia. The Scandinavian *S. europea* Linn. is brighter on the back and white underneath. Hartert called our bird *S. europea britannica*. In Britain the bird is common in the south, and but rarely if ever breeds north of Yorkshire and Cheshire, though it has occurred in Scotland as a wanderer.

Old timber, especially in open park land, is the haunt of the Nuthatch (Plate 49), and it climbs the boles with the same

skill as the Creeper, though its methods differ ; it trusts to its large and powerful feet and does not make use of its stumpy tail, and it runs as quickly down as up the trunk. Its actions are jerky, spasmodic, and its route erratic ; it darts from side to side, now up, now down, and uses its strong beak more as a hammer than a probe. Indeed it gives frequent woodpecker-like raps on the bark, perhaps when smashing an insect. Nevertheless it can perch, and on larches searches the young shoots for insects and picks aphids from the opening buds of other trees. Its food consists largely of insects, but, as its name implies, it is fond of nuts and seeds ; these it fixes firmly in cracks in the bark and hammers until it extracts the kernel. Yew-berries are favoured, and in one park I have seen large numbers of the empty seeds, with an occasional acorn, firmly wedged in the bark of trees at some distance from a yew, for the bird has its chosen anvils to which it carries its nuts. It does not hack at them with its head and neck alone, but literally puts its back into the work, striking with the whole body hinged on the legs ; often its position is head downwards during the process. It is stated that the bird roosts head downwards.

The Nuthatch is a noisy bird with a loud boy-like whistle ; the usual note is a clear *tui, tui, tui*, but the winter call is more subdued. In spite of its gay colours, slate and chestnut, it is not very conspicuous on a grey or lichen-covered tree, but its movements catch the eye and its notes the ear. The song is a pleasant trill, not unlike a mild imitation of the Green Woodpecker's laughing call ; the pairing note Miss Turner likens to the words " Be quick, be quick, be quick." In its pairing display it ruffles its flanks and flutters its wings to exhibit the rich chestnut, and spreads its tail to expose the white markings ; at the same time it moves its raised head from side to side. With open wings and expanded tail it will float down towards the hen, and Miss Turner has witnessed a high aerial joint excursion.

The nest, consisting of dead leaves, bits of bark, and grass, is placed in a hole, generally in the trunk or branch of a tree (Plate 52), but occasionally in a wall or other situation, but the particular bird objects to a large entrance and blocks up all but the small hole it needs with mud or clay; this addition is so neatly made that it is not always possible to say which is trunk and which added clay. If the mud cracks and falls away it is speedily repaired. The five to eight, or even more, eggs are white with reddish spots, varying considerably in number, but seldom thickly speckled or blotched (Plate 58); they are laid late in April or in May. Both birds bring material for the nest and feed the young with flies and caterpillars.

The colour of the upper parts is clear slate-grey, and of the lower buff, shading to white on the chin and under tail-coverts and to rich chestnut-red on the flanks. Through the eye, from the base of the lead-coloured bill to the side of the neck, is a conspicuous black streak, and above the eye is a pale stripe. The central tail feathers are slate, but the others are partly black, and the outer ones have also white marks between the black and slate, largest on the outermost pair. The legs are reddish brown and the irides hazel. In nuptial dress the male is a fine bird, distinctly smarter than the paler female. The young have all the colours less distinct, and little or no chestnut on the flanks. Length, 5·6 ins. Wing, 3·3 ins. Tarsus, ·8 in.

Family REGULIDÆ. Goldcrests or Kinglets.

Goldcrest. *Regulus regulus* (Linn.).

Until the severe winter of 1916-17 the Goldcrest (Plate 50) was abundant and widespread, nesting in all the wooded portions of our islands; now it can have little more than an obituary notice, for the nesting stock was practically "wiped out." Other species suffered severely and have since recovered



Blue-headed Wagtail at nest.





I Pl. 49.

Tree-Creeper.



I 127.

Nuthatch.

their position, but so far, even as a winter visitor, the Goldcrest remains rare, and is absent from most of its old nesting haunts. It is, however, now reappearing.

An attempt to separate the British bird from the European race has not received general acceptance, and the birds we meet with in Britain may be residents, autumn and winter visitors from northern Europe, summer visitors, for many of our birds go south in autumn, or birds of passage. The long oversea migration of the smallest European bird has always caused wonder, but there is but slight difference between its size and weight and that of many warblers, and an aerial journey on a suitable air-current requires little extra exertion. At times it meets with difficulties, adverse winds, and comes down exhausted, whilst many perish at sea.

The Goldcrest is, for the two-years' scarcity must be treated as a passing phase, an inhabitant of fir woods in summer, but in winter it wanders, joining with various tits and other birds; I have seen, on a Welsh hillside in January, fifty or more Goldcrests and certainly a score of Wrens feeding in the heather. Immigrants reach the east coast, sometimes in immense numbers, in September and October, and in Yorkshire they are considered as forerunners of the Woodcock, and are known as "Woodcock pilots." At all times the Goldcrest is indifferent to the presence of man, but these newly arrived birds, even when showing no sign of fatigue, slip amongst the marram grass and buckthorn at one's very feet; I have reached my hand to within an inch of two birds without their showing any sign of alarm. When feeding, the Goldcrest calls continuously a shrill, penetrating though not loud, *si, si, si*, and the simple song, the repetition of two notes, is high pitched, but by no means inaudible. One variation of the song of the Coal-Tit is not unlike it, though in a lower key and louder. The song may be heard in winter as well as summer; indeed, August is the only month when I have no note of hearing it.

The actions are those of a warbler rather than a tit, though occasionally it will hang beneath a leaf stalk or branch; as a rule it flits gracefully from twig to twig, craning its neck and carefully examining every bud or leaf, but spending only a moment at each; in winter it feeds in the bare hedgerows and visits gardens. The insects captured are often small. Newstead found it feeding freely on the American "blight" on fruit trees, and other aphids are taken; a passing flock visited a laburnum in my garden picking from their silken cocoons the pupæ of the laburnum leaf-miner. In Devon I have seen it examining the horse droppings in the road. In spite of the fact that so many perished in the severe winter, it is a hardy bird; I have watched it bathing in an exit stream from a frozen lake. The male, when displaying, droops his wings, puffs out his feathers, and expands the feathers bordering the crest so as to expose to the view of the hen the orange-yellow central streak.

The nest is a wonderfully neat hammock of moss, lichens and cobwebs, suspended beneath a branch of a conifer, usually with the moss wound round needles or twigs; Miss Turner has found it supported by twisted cobwebs. It may be but a foot or two above the ground, or high in the branches of a tall fir; occasionally it is built in other situations, such as ivy or a furze bush. Feathers are largely used for the lining, and in these the tiny eggs, looking like children's comfits, are almost buried; these are often seven or eight, but ten or more are found at times. They are laid in April or May, and a second brood is not unusual. In colour they are buffish white with minute reddish spots, which may form a zone towards the larger end (Plate 58).

The Goldcrest is olive-green above and creamy buff beneath. The forehead, chin and throat are buff, and a black line from the forehead passes on either side of the chrome-yellow crest, the posterior portion of which, in the male, is deep chrome or



1 Pl. 50.

Goldcrest.



Firecrest.

1 128.



orange. The wing has two white bars and a dark band. The legs and irides are brown, and the eyes almost black. The young are duller in colour and have no yellow in the crest. Length, 3·5 ins. Wing, 2·1 ins. Tarsus, ·7 in.

Fire-crest. *Regulus ignicapillus* (Temm.).

The Fire-crest (Plate 50) nests in Europe as far north as the Baltic and occurs in eastern and southern England with some degree of regularity; it is a winter visitor, arriving with the immigrant Goldcrests and often joining them in their nomadic rambles. North of Yorkshire it is only an occasional straggler, and many of the so-called records of its occurrence are erroneous. No doubt, owing to its similarity to the commoner bird, it is often overlooked, but, on the other hand, many are misled by the difference in the crest of the male and female Goldcrest, and imagine that the orange on the former is the "fire." Its call, according to Miss Turner—one of the few who has watched and not slain this interesting mite in England—is a fainter *zit, zit*, than that of the Goldcrest. The black line which bounds the crest meets on the forehead of the Fire-crest, where in the other bird there is a brown mark behind the buff. In the male the orange covers a greater extent than in the Goldcrest, but in the female the whole streak is lemon-yellow, and in the juvenile all the yellow is absent. It is, however, on the face of birds of either sex and of the young that the most characteristic markings can be seen. Above the eye is a broad almost white stripe, and below a narrower one, whilst through the eye, dividing the white face, is a conspicuous black line. The ear-coverts are slate-grey, and there is a slight moustachial streak. On the side of the neck is a yellowish patch, and the upper parts are greener and the lower whiter than in the Goldcrest. Length, 3·5 ins. Wing, 2·1 ins. Tarsus, ·7 in.

Family PANURIDÆ. Reedlings.

Bearded Titmouse. *Panurus biarmicus* (Linn.).

The British range of the sedentary Bearded Tit, Reedling, or Reed-Pheasant (Plate 53), as it is often called, is now restricted to the Norfolk Broads and to one locality in Devon, though it formerly extended over fenny land in many southern counties. On the Continent it is found in Holland, and parts of Germany, France and Spain, but it seldom wanders far from its summer haunts, and the few that have been taken from time to time in localities in England in which it does not breed are but casual wanderers, and certainly some of the statements that it has occurred are due to errors in identification or to fraud.

It is hardly possible to confuse the Bearded Tit with any other British bird; its tawny back, long graduated tail and the beard of the male are distinctive. Not many years ago, owing to restriction of its haunts through drainage, and, in Norfolk, the rapacity of collectors who paid the reed-men high prices for birds and eggs, it was nearly numbered amongst "Lost British Birds"; Mr. J. H. Gurney reckoned that in 1898 only thirty-three pairs remained. Thanks to energetic protection it has not only recovered lost ground but on certain broads is actually common. The colour of the bird harmonises with the old reeds which still remain throughout the breeding season, rather than with the young green blades. When punting through the narrow channels, tall reeds on either hand, the visitor is greeted by sharp metallic notes, *ching, ching*, like the twang of a banjo—the calls of the Reedlings. Other cries of alarm or anxiety are described, but I have only heard the scolding *p'whut*, as Miss Turner spells it, and there is no true song. Then a bird runs up a reed, holds with one leg bent, the other straight, examines the intruder and drops back, or with

rapidly whirring wings shoots across the waterway into the opposite bed. When I was approaching one nest three males appeared, called together by some known signal, turned and twisted, circled the stems and hung to the swaying flower-heads, dropping out of sight only to reappear near the top of other reeds. This performance continued so long as we were near the nest, where I had the opportunity of seeing the so-called "recognition marks" on the palate of the newly hatched nestlings—two rows of white spots or pegs on black, surrounded by vivid red. As the birds clung to the reeds their expanded tails caught the wind so that they were swung round like weathercocks. The males did not pluck any of the seeds, which, my guide told me, was their habit when the nest contains eggs. Miss E. L. Turner, to whom I am indebted for much information, and who has lived amongst these birds for years, says that so long as the eggs are unhatched the male constantly adds these scraps of reed-flower to the lining.

The food consists almost entirely of insects and freshwater molluscs, though in winter it is stated that seeds are eaten; Miss Turner is of opinion that the flowers are pulled to bits not for the seeds, but to discover the tiny larvæ which "gall" the flowers and winter in the heads. Caddis flies, Mayflies and other four- and two-winged insects which frequent the aquatic plants, as well as caterpillars, are given to the young. The male and female roost side by side, snuggling together on the same stem, and often the cock shelters the hen with one wing, as shown on Plate 53. In courtship the cock raises the feathers of the crown, puffs out his beard and elevating his tail exposes to view the black under tail-coverts; the value of salient characters is often obscure except during nuptial display. In response to the display the hen performs a quaint dance, and sometimes the two rise together for a high aerial courtship flight. In winter the birds become gregarious, wandering in little parties to broads and waterways where they do not nest.

The nest is not amongst the reeds, but in beds of reed mace or sedge (Plate 55); it is built upon a platform of dead and decaying stems at a height of several inches above the water, and is constructed of blades of sedge or reed, lined with flowers of reed. To these, in one nest that I examined, were added a few feathers of Black-headed Gull and Heron. The cock helps in building, incubation and care of the young. The creamy white egg (Plate 58) is thinly speckled with pale brown or liver spots or marked with fine wavy lines. Five to seven, occasionally more, are laid in April, and two or even more broods are reared, even so late as September.

The head of the male is blue-grey, the rest of the upper parts orange-tawny; from the lores, and partly encircling the eye, is a black patch which runs down the neck as a conspicuous moustachial streak ending in pointed feathers. The scapulars are buffish white, and the secondaries streaked buff, black and tawny; the primaries and outer tail feathers are margined with white. The flanks are tawny, the chin, throat and breast greyish white, with a pink suffusion on the last; the under tail-coverts are deep black. The bill is orange-yellow, the legs black and the irides yellow. The female has no black on head or tail-coverts; her head is brown and her back faintly streaked. The head and back of the young are streaked with dark chocolate, a broad band on the back being very conspicuous; the tail is short. The legs of a young bird examined were dark slate in front and pale horn behind; the irides were dark brown. Length, 6 ins. Wing, 2'35 ins. Tarsus, '75 in.

Family PARIDÆ. Titmice.

Great Titmouse. *Parus major* Linn.

The resident and non-migratory British Great Titmouse, *P. m. newtoni* Praz. (Plate 57), is generally distributed in





K 133.

Bearded Titmouse.



I Pl. 53.

Long-tailed Titmouse.

Britain, though rare in the extreme north of Scotland ; the European and western Asiatic form is an irregular though often abundant immigrant in autumn, and a winter visitor. Our bird is distinguished by its much stouter bill, but not by any constant colour differences.

The tits as a group are perhaps our most popular birds, for they readily respond to encouragement, coming to feed on bones, suet or nuts hung up for their benefit in our gardens ; the Great and Blue are the most abundant visitors. Many people however, find difficulty in distinguishing the various species though each has its characters ; in the Great the large size, and the long black bib or waistcoat from chin to vent. Early in January, not infrequently in December, the Great Tit begins his strange song, from which he gets his names—"Sawfinch" and "Saw-sharpener," a rasping, often squeaky, up and down reiteration of two notes—*pee-ker, pee-ker*, or, as Miss Turner has it, *teacher, teacher*. Some consider this a love-call and not a song, but it has all the characters of nuptial music though unmusical, and in April and May the male merely varies it by the addition of an extra note or two or by changing it into three or four sweeter sounds. The calls are varied, a sharp *zi, zi*, and a metallic *tink*, as well as a harsh churr. For a short time in summer the bird is silent, but autumnal saw-sharpening is frequent, and in winter the constant calls are varied by occasional outbursts. In winter the sociable Great Tit joins with other species in nomadic wanderings, roaming from tree to tree with undulating flight, hurriedly examining branches, boles and buds ; one moment a bird is on the ground, throwing over the dead leaves or tearing up the moss in its search for prey, the next hammering at some slumbering insect below a twig, from which it swings head downwards. From these flocks a bird will at times detach itself and flit from twig to twig just above one's head, scolding vigorously. The menu of the Great Tit is varied ; spiders and insects of all kinds are eaten, and acorns,

beechnut, birch seeds and various nuts are carried to a convenient perch, where, holding them with one foot, the bird hacks out the contents. Mr. Kearton states that it can even smash the shells of hazel nuts when these are germinating. A favourite food is the larva of *Cynips* in the marble gall; galls with holes pecked to the central chamber lie littered under the oaks. The spangle galls are pecked from the oak leaves in order to reach the larvæ within, and I have seen a Great Tit chase a windblown, spangled leaf and catch it in mid-air. Fungi infested with beetles and dipterous larvæ are pulled to bits, and in the garden, where occasionally fruit trees are raided, sunflower seeds are much appreciated. Bud-destruction is a "crime" of the Great Tit, but the leaf scales are torn off to reach "the worm in the bud." It is even accused of murdering other small birds, driving its bill into their skulls to feed upon the brain; most of the evidence is, however, founded on cases that have occurred in aviaries, when, perhaps, the occupants were not supplied with sufficient variety of food. Bees are not immune from attack, and occasionally bee-keepers suffer; the half-stupefied humble-bees sipping the lime-honey frequently fall victims.

Any hole will suit the Great Tit for its nest; the size matters little. A large cavity is filled with grass, leaves and moss, and in the woods is lined with hair, rabbit fur and Pheasant feathers; a small hole contains nothing more than a felted mass of moss and hair. Holes in trees, walls, rocks and stumps are usual situations, but a letter-box, pump, or inverted flower-pot will serve. In one iron pump birds, though not always the same pair, have nested for very many years, although the pump is regularly used and the piston passes right through the nest. The bird sits closely, and if handled will hiss and bite, and sometimes has to be lifted before it will leave the eggs or young, which when the brood is large it cannot cover completely. Six or seven is the ordinary clutch, but I have found fifteen in

one nest, and ten in another, though two of the latter were so small that it looked as if a Blue Tit had helped to swell the number. Indeed it seems likely that two hens are responsible for these large broods. The eggs, white with few or many reddish spots (Plate 58), differ from those of other tits in size only; second broods are rare, and the clutch is seldom complete until early in May. Newstead found that the young were largely fed on caterpillars; in one instance mainly those of the defoliating winter moth and mottled umber. From the number of visits paid in one day he estimated that whilst the young were in the nest between 7000 and 8000 grubs were destroyed, and, as Miss Turner points out, this is a low estimate, for they are fed long after they leave the nest.

The head, neck and a streak of varying width from the chin to the centre of the otherwise white under tail-coverts is glossy blue-black; the cheeks and ear-coverts are white; a pale, often white, nape spot shades into yellow and then into olive-green on the back and mantle; the rump, tail and most of the wing are blue-grey. On the wing is a very conspicuous white bar, and the outer tail feathers are white-edged. The under parts, except for the black streak, are sulphur-yellow. The bill is black, the legs and feet lead-blue, and the irides dark brown. There is only one moult, in autumn; the bright plumage of spring is acquired by abrasion. The sexes are alike, and the young are duller, with the black replaced by dark brown and the white suffused with yellow. Length, 5·7 ins. Wing, 2·9 ins. Tarsus, ·8 in.

Coal-Titmouse. *Parus ater* Linn.

The typical Coal-Tit breeds in Europe and northern Asia and on migration has been recognised a few times in England and Scotland, though it has probably reached us more frequently and been overlooked. The British form, *P. a. britannicus*

Sharpe and Dresser (Plate 54), has long been considered a good species ; its back, which in *P. ater* is bluish grey, is olive-brown. Insular variation is further shown in Irish birds, in most of which the whites on face and nape are replaced by pale yellow ; it has been named *P. a. hibernicus* Ogilvie-Grant. The British form occurs in north-east Ireland and throughout Great Britain, though absent from many of the Scottish islands.

A large white nape spot on the black head is the hall-mark of the Coal-Tit ; by this we may know it when it visits the garden and pick it out when trooping through the winter woods with other tits. Sometimes these flocks consist of Coals alone. In acrobatic skill and restless activity it resembles other tits, though it more frequently pitches on a trunk, and in little hops imitates the Creeper. Its food is similar to that of others ; it is keen on beech-mast, picks out the seeds from larch and fir cones, and joins Redpolls and Siskins in birches and alders. During these food hunts it keeps up an incessant short flight or flock call ; the song, if song it can be called, is a strident *if-he, if-he, if-he*, heard most frequently from January to June, but also in autumn. One variant of this song or call ends with a sharp *tchi*.

A favourite nesting site is a hole in a rotting tree-stump, often low down, and the nest is deep within the hole ; holes in the ground, burrows of mouse or rabbit, chinks between the stones in walls, old nests of Magpies or other large birds, and squirrel dreys are also occupied. The materials, moss, hair and grass, are closely felted together, and rabbit fur or feathers added for lining ; seven to eleven red spotted white eggs (Plate 58) of the usual tit type are laid, as a rule, in May, but second broods are rare.

The head, throat and neck are glossy blue-black, setting off the white on the nape and sides of the face ; the back and wings are olive-brown shading to brownish fawn on the rump ; the

white tips of the coverts show as a double bar on the wing. The under parts are white shading through buff to rufous on the flanks. The bill is black ; the legs lead-coloured and irides dark brown. The young bird is duller, the black head having no sheen, and the whites on nape and cheeks are tinged with yellow. Length, 4·25 ins, Wing, 2·4 ins. Tarsus, ·6 in.

British Marsh-Titmouse. *Parus palustris dresseri*
Stejn.

The black-headed tits might be taken as one Holarctic species with numerous geographical forms distinguished by slight colour or structural variation, and, in Britain, represented by members of two groups, the Marsh-Tit, *P. palustris*, and the Willow-Tit, *P. borealis*. The Continental race of *palustris* which breeds in Germany, Holland, Belgium and western France is greyer than the British form and has slightly longer wings and tail ; it is not known to have reached Britain nor has our bird been recognised abroad. From the Willow-Tit our Marsh-Tit can be told by its blue-black head and squarer tail. The study of slight racial differentiation may seem trivial, but is of value when tracing the origin of species ; when extremes are compared the value of intergrading forms is appreciated. The British Marsh-Tit (Plate 54) is probably absent from Scotland and Ireland, except where it has been recently introduced, and is rare in parts of Cornwall and Wales ; elsewhere it is well distributed but less common than the Great, Coal and Blue.

Marsh-Tit is a misleading rather than incorrect name, for though the bird is found in damp and marshy places it is as common in dry woods and hedgerows and even occurs in gardens. The absence of the nape spot distinguishes it at once from the Coal-Tit, the glossy blue-black from the duller

headed Willow-Tit. In mixed winter flocks seldom more than one or two Marsh-Tits are present, and parties of this species alone are infrequent. Its performances in the bushes and branches are just as neat and agile as those of other tits; it often hangs upside down by one leg. Like the others it has a large range of vocal utterances; it has a quick *sip, sip, sip*, metallic and shrill, a loud *tay, tay, tay*, described as the alarm note, and a subdued *sis, sis, sis, see*, called the song. To my mind the up and down loud, rather harsh double note, repeated four or five times and corresponding to the saw-sharpening of the Great—*cheevi, cheevi, cheevi*—deserves the title song; this may be heard in autumn as well as in the earlier months. The food is animal or vegetable; destructive weevils and other beetles, coccids and gall-insect larvæ are eaten, and seeds of various kinds, including those of the thistle. When maize is provided for the Pheasants the Marsh-Tit comes for a share; it carries a grain to a branch, holds it firmly and picks out the “eye,” drops the rest and flies down for another.

The nest is occasionally in a rat- or other hole in the ground, but the bird is more of a tree species than some of its relatives. It selects a hole in a rotten willow or other trunk or stump for choice, and though it is uncertain if it ever starts a hole, it undoubtedly enlarges the hollow, carrying the chips to a distance before dropping them. The hole may be within a foot or two of the ground or high up in a tall tree. Wool, hair, fur and moss are felted together, and occasionally willow-down is added, but the quantity of material used is variable. Five to nine eggs of the usual tit type (Plate 58) are laid late in April or in May, and second broods are recorded. The bird sits closely; I have, after receiving savage pecks, lifted one off the nest; when released it at once called loudly, no doubt expostulating.

The head and neck are glossy blue-black, though hardly so steel-blue as in the Coal-Tit; the chin and upper throat are black, the feathers of the latter edged with white. The cheeks

are white, the back is sandy brown with an olive tinge, and the rump browner. The wings and tail are greyish, and there is no clear bar on the former, a further distinction from the Coal-Tit. The under parts are greyish white, shading into buff on the flanks. As a rule the upper and under surfaces are more sharply defined than in the Willow-Tit. The bill is black, the legs lead-coloured, and the irides very dark brown. The sexes are alike and seasonal changes are not striking; the young are duller. Length, 4·5 ins. Wing, 2·45 ins. Tarsus, ·55 in.

Willow-Titmouse. *Parus borealis* Selys-Longchamps.

The recognition within recent years of the Willow-Tit as a British bird has not only led to a more careful study of the habits of the Marsh-Tit, but has caused us to revise our ideas of its distribution; this is further complicated by the fact that the British Willow-Tit, *P. b. kleinschmidti* Hellmayr, differs from the typical *borealis* of Scandinavia and northern Russia. Systematists at first associated the bird with the American *atricapillus*, but it is now considered an insular subspecies of *borealis*. The Scandinavian bird was obtained in Gloucestershire in 1907, and some were seen in 1908; probably it has been overlooked on other occasions. In my note-book for 1893 I have a short description of a bird I saw in Cheshire, distinctly slate-grey on the back, which at the time I thought approached *P. borealis*, though I had then no knowledge of the Willow-Tit, nor had I seen the bird in Norway. Since then I found both *P. borealis* and the Scandinavian *P. palustris* between the Sogne Fjord and Molde, and experienced no difficulty in recognising them in the field. The Northern Willow-Tit is not only a much greyer bird than the British Willow-Tit, but the white edges to the secondaries often form a distinctive patch.

The British Willow-Tit is found throughout England, but

according to our present knowledge is local and thinly distributed ; in Scotland it apparently replaces the Marsh-Tit ; it has been noted in Wales. Macgillivray's "Marsh-Tit," described from Scottish birds, is an excellent description of the true Willow-Tit ; he says "it is readily distinguishable by the dull or brownish black colour of the head." The notes of the bird evidently vary considerably ; a clear *tsip, tsip, tsip*, may have been the ones that reminded one observer of the preliminary part of the Wood-Wren's song. The most ordinary call is a slightly harsh *zee, zee, zee*, with more *z* sound and longer drawn out than the corresponding notes of the Marsh. Occasionally a double note, *ipsee, ipsee*, is repeated four or five times. The clear *tsip* I took for the song ; when the hen was sitting the cock would perch and repeat this note within a few feet of the nesting hole. Another note was a simple *tee, tee, tee*, reminiscent of a Blue-Tit, and twice I heard a louder call like the twang of a stringed instrument.

Whatever the Marsh-Tit may do, the Willow-Tit certainly at times excavates its own nesting hole, even piercing hard bark ; this is usually in a rotten stump or in a tree, more or less decayed. Two nests that I have had under observation were in white willows, the first high in a dead branch, the second in a big crack in the trunk. The bird in some cases carries the chips to a distance before dropping them, but in others leaves some, at any rate, littered at the foot of the tree ; the birds I watched excavating took the chips for several yards, not dropping them until they had crossed a "ride" in the wood. Most of the nests examined have been slight cups of felted material, mostly fur, hair and wood chips, but in one or two cases feathers were present ; moss, except in some Continental nests, was not used for the foundation. The number of eggs varies from six to nine, and the reddish spots are small, or large enough to be called blotches. The food probably differs little from that of other tits ; I have seen both birds feeding on the

Coal-Titmouse.



Marsh-Titmouse.





seeds of angelica. When the parents were constantly taking insects up to the young, the male would occasionally give his captures to the female, and another observer noticed the same habit. She received the gifts with fluttering wings, and so far as I could judge accepting them for her own benefit and did not carry them to the nest.

The Willow-Tit is distinguished from the Marsh-Tit by a sooty-brown instead of a glossy blue-black cap; the general colour is otherwise similar, though the under parts are more buff and the flanks distinctly more rufous; the pale buff edgings to the secondaries form a light patch on the closed wing. The feathers of the crown are longer, but this is not an easily noticed character, but the more graduated tail—not square—shows distinctly when spread. Length, 4·5 ins. Wing, 2·45 ins. Tarsus, ·55 in.

Blue Titmouse. *Parus caeruleus* Linn.

The British form of the Blue Tit, *P. c. obscurus* Praz. (Plate 57), is slightly smaller and rather darker and greener than the European bird. The majority of our resident Blue Tits do not migrate, however far they may roam in winter within our islands; large numbers of immigrants reach our shores in some autumns, but only a single authenticated Continental bird has been recorded. The differences are either so slight that they cannot be appreciated and therefore are of little value, or the so-called British form is also found on the Continent.

There are commoner but few more popular birds than the Blue Tit or Tom-Tit, and this is due to its perky acrobatic performances rather than to its neat but by no means gaudy dress. There may be no bird visible in the garden when we hang up the chicken-bone or cocoanut, but before we have returned to the house a Blue Tit is picking bits from the denuded sternum or its tail alone protruding from the hole in

the nut. It swings beneath the suet bag, calling up its friends with its sharp *tee, tee, tee*, and scolding them with an angry churr, its cobalt crest erected, when they come for their share. It is an irascible little bird. The song period lasts almost all the year round, but it is only from January until June that its rippling tinkle, simple but very cheerful, is heard frequently, but we may hear it anywhere; the Tom-Tit lives near or actually in our houses, if there is a convenient hole in the wall, but it is as common along the lanes or in the thick wood. It is at once plucky and cautious. Man it fears but little; I have trapped it, put a ring on its leg and released it, and caught it again within a few minutes and several times later; it merely raised its crest, churred and bit each time I took it out. A pair annually occupy a hole in an old oak, and one year a couple of acquisitive Sparrows began to remove the nesting material—until the Tits arrived. During the hostilities an interlocked Sparrow and Tit fell to the ground pecking furiously, but the robbers retired quickly without any spoils; when, however, a couple of Great Tits cast an envious eye on the hole the Blues remained at a safe distance, merely expostulating. Blues and Greats are constant and apparently amicable companions in the winter flocks, and the former are perhaps the better gymnasts in the slender twigs. A Blue will often ascend a trunk in short jerky hops, imitating a Creeper.

The Blue Tit is a valuable destroyer of pests, though it has not an entirely clean sheet as a beneficial species. It is fond of young buds of various trees, and though it may pull them to bits in the hope of finding insects, the damaged and undamaged buds examined after a raid show little sign of having been previously infected. No species, however, destroys more coccids and aphids, the worst foes of many plants; examples killed when attacking ripe pears, which it can seldom resist, had in their stomachs a number of fruit-tree pests, including American blight, mixed up with the fruit pulp. When in

August the tiny leaf-miner grubs hang from the laburnum the Blue Tit skilfully hovers and nips them from their life-lines, and when the green tortrix swarms round the defoliated oaks no bird is smarter in catching these little moths ; I have seen a pair return again and again to fill their beaks with moths to give to their young in a hole hard by. Seeds are eaten ; Prof. Newstead watched them picking them out of poppy-heads, and I have seen Blues feeding with Chaffinches and other birds on spurry seeds. Bees are enjoyed, though Mr. A. Newstead, when watching carefully, found that they did not kill any of his bees, but contented themselves with the dead ones on the ground ; these they held with one foot and picked to bits, apparently first extracting the sting. As a rule the bird roosts in ivy or evergreens, but in hard weather will shelter in a hole ; in the winter of 1916-17, when many perished, the Rev. W. Stratton provided various shelters, and found birds sleeping in a flower-pot hung against the wall, an empty cocoanut, a broken bed bottle, and an ordinary glass wine bottle.

The nest is in a hole in a tree, wall, stump, gate-post or pump, and few birds more readily accept the shelter of a nesting box ; the same hole is returned to year after year, and when one pair dies another takes possession. The bird is a close sitter, hissing and biting at an intruding finger ; boys name it "Billy-biter." When protecting its eggs it raises its crest, but this is a sign of excitement rather than anger, for it is elevated during nuptial display. The nesting material is usually moss, wool, hair and feathers, and the eggs (Plate 58) are laid in April or May. The number in the clutch is often very large, from twelve to over twenty are sometimes recorded ; probably seven or eight are normal, and the big clutches are laid by two or even more hens.

The azure blue crown and dark blue line passing through the eye and encircling the white cheeks to the chin, give the Blue Tit a very distinctive appearance. The forehead,

eyestreak, and a bar on the wing are also white. The nape, wings and tail are blue; the back is yellowish green; the under parts mostly sulphur-yellow with a dark line down the abdomen. The bill is black, the legs bluish grey, and the irides dark brown. The young are much yellower than the old birds. Length, 4·3 ins. Wing, 2·4 ins. Tarsus, ·75 in.

Crested Titmouse. *Parus cristatus* Linn.

Prazak, who recognised so many distinct races of tits, found the Scottish Crested Tit, *P. c. scoticus* Praz., more olive on the upper parts and browner on the flanks, as well as slightly shorter in the wing, than the two sub-species of northern and central Europe. Our resident form (Plate 64) is restricted to the pine woods of the Spey Valley, and seldom strays far from its haunts. A few vagrant Crested Tits have been met with in England, but only two have been critically examined; one, taken at Whitby in 1872, corresponds with the Northern *P. c. cristatus* Linn., and Mr. Witherby considers that another, taken in the Isle of Wight, is referable to the Central European *P. c. mitratus* Brehm, in which the crest and cheeks are tinged with buff.

Outside its Scottish nesting area, some thirty miles in length and two or three miles wide, the Crested Tit will not be met with in our islands, unless as a very exceptional wanderer from the Continent, for the bird is hardly migratory, but whether in Scotland or on the Continent, where it is widespread, it is an easy tit to recognise, for besides its erectile crest, the tip of which is often recurved, its gorget and collar are distinctive. It is, like other tits, talkative, and one of its notes sounded to my ears like the sharp call of the Robin. The birds keep up a constant *zee, zee, zee*, similar to that of the Coal-Tit, but an occasional churring sound was, when I heard it, more interrupted than the similar call of most tits. Its actions are typical





1 Pl. 57.

Great Titmouse.
Blue Titmouse.

L 145.

of the family, and it frequently climbs on the trunks like a Creeper. The food is animal or vegetable, and it often searches the young shoots for the small pests which infest conifers in spring and summer.

The nest is in a hole in a trunk or stump, and seldom far above the ground, and the nesting materials are of the usual felted type, but in Scotland often include the hair of red deer, the fur of variable hare and the feathers of Grouse or Ptarmigan. The eggs, four to eight as a rule, are laid in May; they vary considerably, but are often more boldly and densely blotched than those of many tits, and these blotches are frequently very dark red (Plate 58).

The upper parts are buffish brown, darker on the wings and tail; the under shade from dull white to light brown. The head is crowned by the crest in which the black feathers have white margins, giving it a speckled appearance in front but streaked towards the nape, where the feathers are elongated and pointed. From the eye to the nape a black line runs to join another which curves round the white cheeks; below this, but separated from it by a white band, is a black collar, forming in front a gorget and extending to the chin. The bill is black, the legs lead-blue, and the irides brown. Length, 4.5 ins. Wing, 2.5 ins. Tarsus, .75 in.

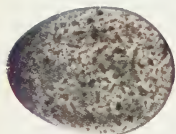
Long-tailed Titmouse. *Ægithalus caudatus* (Linn.).

In the Long-tailed Tits racial differences are so marked that many who object to trinomials have segregated species, and Blyth in 1836 called our bird *Mecistura rosea*. Of the many Palearctic forms, most readily distinguished when adult, two are on the British list, the resident *Æ. c. rosea* (Blyth) (Plate 53 on right), and the White-headed *Æ. c. caudatus* (Linn.) (Plate 53 on left) of northern Europe and Asia. The west central European bird closely resembles ours, and where ranges

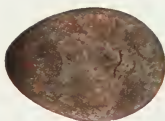
overlap the northern and western forms interbreed. The former has a pure white head, ours invariably has a wide black streak above the eye, and the western bird is intermediate. The White-headed Tit has occurred three or four times, and was first recognised as an accidental wanderer in 1852 in Northumberland ; it has visited Kent and Essex and probably the Shetlands. The British bird is rare in the north of Scotland, but well distributed elsewhere, and is not known to migrate.

This tiny but long-tailed bird is more noticeable in winter than summer ; after the breeding season it sometimes joins nomadic flocks of other tits, but usually roams in family parties, advertising itself by constant thin calls, *zi, zi, zi*, but so long as the leaves are on tree and hedge it is easily hidden. It is not shy, and in winter flits with constant activity and acrobatic grace along the hedge or through the branches ; now and then it utters a louder note, a double *zee-up*, difficult to imitate. The long tail assists its gymnastics, helping to balance, and as the bird shoots on whirring wings from tree to tree it functions as a rocket stick. The short wings and long tail give the bird a top-heavy appearance, but it seldom takes long flights. Seeds are occasionally eaten, but its food is mainly insects ; amongst these coccids or scale insects.

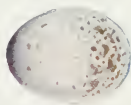
The construction of the beautiful oval nest (Plate 56) is a lengthy business which employs both birds for about a fortnight ; the site may be a hedge, bush or, more rarely, high in a tree. Felting is carried to its greatest perfection in this nest, in which shredded wool, green moss, spider-silk and lichens are artfully interwoven until a thick wall and dome surround the five-inch oval of the "Bottle-Tit." The outside is usually decorated with lichen, giving it a black and white appearance ; in a hedge it is partly concealed by the lights between the branches and leaves or on a lichen-covered trunk is inconspicuous ; often, however, so large a nest is easy to see, and



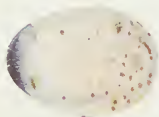
Rock-Pipit.



Meadow-Pipit.



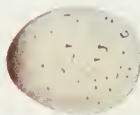
Creeper.



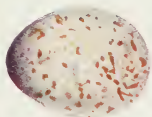
Nuthatch.



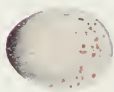
Goldcrest.



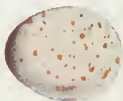
Bearded Titmouse.



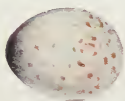
Great Titmouse.



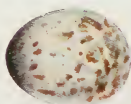
Long-tailed Titmouse.



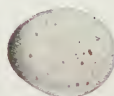
Coal Titmouse.



Marsh Titmouse.



Blue Titmouse.



Crested Titmouse.



1 Pl. 59.

Great Grey Shrike.



l. 147.

Red-backed Shrike.

the birds, when feeding the young, make no attempt at secrecy. The entrance is above the centre, and the cup within crowded with feathers ; considerably over 2000 have been counted from one nest. The white, finely red-speckled eggs (Plate 58), laid in April, number from eight to twelve and sometimes more. How this mass of feathers, at times of birds so large as a domestic Fowl, Pheasant or Wood-Pigeon, is compressed into so small a space by the " Feather-poke " is difficult to understand, but add to this a dozen growing infants and a long-tailed parent and the marvel becomes greater. The tail of the sitting bird is held above her back ; her head and the tail tip cork the entrance hole, and when she investigates eggs or young, the tail often protrudes. But Mr. Kearton found that the male makes the congestion worse by roosting in the nest, for in spite of its fluffy plumage it is susceptible to cold ; in winter balls of Longtails, cuddled together, have been found in holes ; in the winter of 1916-17 many perished. Yet the birds are not always satisfied by a single brood.

The head of the British Long-tailed Tit is dull white crossed on either side above the eye by a black band which extends to the black nape and upper back ; the scapulars and rump are rosy pink. The secondaries on the brown-black wings have white edges, and the three outer tail feathers have white margins and tips ; the feathers are graduated in length. The under parts are white, with a few dusky streaks on the breast, shading to dull rose on the belly and flanks. The eyelids are red, the bill black, the legs dark brown, and the irides hazel. The female has a broader stripe on the head ; the young are duller, and have no rose on the back ; at first their tails are very short. Young White-headed Tits which I saw in Norway showed a dusky streak and dull markings on the face, in marked contrast to their pure-headed parents. Length, 5·5 ins. Wing, 2·45 ins. Tarsus, '6 in.

Family LANIIDÆ. The Shrikes.

Great Grey Shrike. *Lanius excubitor* Linn.

The Great Grey Shrike (Plate 59) is a bird of northern Europe and Asia which occurs in our islands as a winter visitor and a regular autumn and occasional spring bird of passage. It seldom reaches Ireland. The long dispute as to whether there are two distinct Great Grey Shrikes, according to the possession of one or two white bars on the wing, has at last been settled; birds of the two varieties interbreed, and nestlings with one and two bars have been reared in the same brood.

Any one who sees this bird perched in its characteristic upright attitude on the topmost branch of a tree, or, as I have seen on the treeless Yorkshire coast, on a telegraph pole, will understand Linnæus's name *excubitor*; nothing which moves is missed by the keen eye of the watchful "sentinel." It turns its head sharply to follow the flight of a bee, then swoops, hawk-like, and snaps it on the wing, returning with its quarry and, holding it down with one foot, tears it to bits; it looks down sideways, attracted by the chirrup of the grasshopper, and drops lightly to the grass and the insect is no more. Though it uses its feet to hold beetles or flies, it has other methods with larger game—lizards, mice, shrews and birds; these when captured are impaled upon some sharp point—the thorn of whitethorn, the stout spines of buckthorn on the east coast, and, not infrequently, the barbs of wire railings. Thus secured they can be ripped with the strong hooked bill, but its feet are not suited for tearing. When, after a sally, it returns to its observation post, it bends forward, regaining its balance with expanded and uplifted tail; it is then that the graduated black and white pattern shows to advantage. Its flight is undulating but rather heavy, but its dash is straight and determined.

Woodchat.



Waxwing.



When disturbed its alarm note is a harsh Jay-like *skake, skake*, and its call is described as *truii*. The pleasant warbling song has been heard in England so early as December, for the bird, which usually arrives in October and November, sometimes remains to winter with us ; it has been met with in all months from August until April. The assertion that it has remained to breed, or that it was once a regular nesting species, has never been substantiated. As a rule the bird is solitary, and when several reach our shores at the same time they speedily spread, each mapping out its hunting ground and reducing the numbers of the immigrants with which it has travelled.

The general colour of the upper parts is pearl-grey ; a stripe above the eye and the cheeks and chin are white, and a deep black streak extends from the forehead, through the eye, to the ear-coverts. The scapulars are white and the wings black and white, with one or two white bars. The under parts are white, slightly tinged with grey. The bill is nearly black, pale at the base of the under mandible ; the legs are blackish, the irides dark brown. In the female the under parts are greyer, and are faintly barred with greyish brown. Young birds are greyish brown, with more or less distinct bars on the upper, and conspicuous ones on the under parts. Length, 9·5 ins. Wing, 4·3 ins. Tarsus, 1 in.

Southern Great Grey Shrike. *Lanius meridionalis* Temm.

The Southern Great Grey Shrike, by some considered a subspecies of *excubitor*, occurs in the Iberian Peninsula and southern France ; it is included as British on the strength of a single example taken in Sussex in 1911. It is darker on the back and pinker on the breast than the typical *excubitor*, and has a broader white line above the eye. Length, 9·8 ins. Wing, 4·1 ins. Tarsus, 1·15 ins.

Lesser Grey Shrike. *Lanius minor* Gmel.

The Lesser Grey Shrike is a native of south and central Europe and western Asia, and winters in tropical Africa. It has, not infrequently, wandered into northern Europe, even so far as Sweden and Finland, and has been met with in several widely separated localities in Great Britain, from the Scilly Islands to the Shetlands. Most occurrences have been in autumn, but it has been noted in spring. Its food and habits correspond with those of other shrikes, though it is said but seldom to impale its victims. The male has a wide black band on the forehead, and its scapulars as well as back and other upper parts are grey, darker than in the Great Grey, and the under parts are suffused with rose-pink on the breast and flanks. The bill and legs are blackish. The female has a narrower bar on the forehead; the young bird has none, and its back is brown and barred, its under parts yellowish. Length, 8·5 ins. Wing, 4·6 ins. Tarsus, 1 in.

Red-backed Shrike. *Lanius collurio* Linn.

The Red-backed Shrike (Plate 59) is a summer visitor to most of Europe and parts of western Asia, and winters in Arabia and Africa. It comes as a rather late migrant to England and Wales, but does not regularly nest north of Cheshire and Yorkshire, where, and in neighbouring counties, it is local. As a bird of passage in spring and autumn it visits the east coast and even the Orkneys and Shetlands, but is very casual in Ireland.

Even in the south of England the Butcher Bird seldom arrives before early May, and its stay is short, most leaving before September; during its residence it does not court concealment. The handsome cock, with distinctive red back and grey head, selects a good look-out post near the site selected for the nest,

and from this makes predatory sallies. The top of a hedge, tree, post or telegraph wire is his favourite perch ; he does not always stand erect, but rests with flexed legs, the breast feathers hiding his feet ; his head moves from side to side, or, without shifting his position, he turns his neck, looking upward, his chin toward his tail, which is constantly in motion, raised and deflected to maintain his balance, or, under excitement, swung rapidly from side to side. He launches into the air and dodges after a passing insect, but often his flight is rapid and direct, with head held forward with determination ; the prey when captured is carried to the perch, held with the foot and dismembered. Now and then an insect is lifted, parrot-like, to the bill, or a beetle will be held and hammered on the ground ; bees, wasps and other insects with lethal weapons are smartly smashed into impotence. Mice and small birds are suddenly dashed upon and struck down, for in fair competition of speed either can evade him ; he will beat along the hedgerow like a hawk, poising with vibrating wings above a likely bush, then glide on. Mice, lizards, small birds and large insects are, for convenience, impaled upon a thorn or barbed wire before butchery ; the spike is generally driven through the neck. Where there is a convenient array of hooks the shambles become the "larder," but it is doubtful if the bird often revisits the remains when the choice bits are extracted ; the game-keeper shoots the Shrike, for young Pheasants are not infrequently hanging in the larder. Nestlings of various species are slain, and the domineering bird will make passes at Thrushes or other birds which he really dare not tackle, but often he is mobbed and driven off by the pluck of small birds ; I have seen a male Shrike retire discomfited before a couple of Whitethroats. The flight is jerky and uneven, and the harsh *tchack*, from which the name is derived, is frequently uttered. The male has also a sharp chirp, and in summer, during courtship, he has a short, pleasant warbling song ; Mr. Kearton has described the

nuptial display, when with wings drooped and shaken or with sailing flight he shows his charms to the hen. Frequent gifts are brought to the female at this time which she receives with quivering wings and low crooning notes.

The nest is large and not over neat ; grass, roots, moss and wool, lined with hair, rootlets and wool are the usual materials ; it is placed, well concealed, in a thick hedge, bush or mass of brambles (Plate 61), but the guardian male betrays its situation. The four to six eggs vary considerably, but conform to certain types ; the ground is white, grey, buff or salmon-pink, the spots or blotches, often in a zone, are mostly towards the thicker end, and are red or grey. One not infrequent type (Plate 65) has a zone of reddish lines on a pink ground. They are seldom laid until late in May or early June, and a second brood is rare.

The male has the crown, nape and rump slate-grey, the back and scapulars warm chestnut-red, and the black wings are margined with chestnut. A black frontlet extends through the eye to the ear-coverts, and over the eye is a white streak ; the sides of the neck and chin are white. The tail is brownish black, with no white on the central feathers, but the others have white bases increasing in size until the outermost are mainly white. Most of the under parts are rosy buff. The legs and bill are black ; the irides dark brown. The female is without black on the head and is russet-brown above with darker crescentic bars ; her under parts are buff with semilunar grey markings ; her superciliary streak is buff. The young has hardly any eye-stripe, is browner and duller with more distinct barring ; the legs are greyer. Length, 7 ins. Wing, 3·7 ins. Tarsus, ·95 in.

Woodchat. *Lanius senator* Linn.

The Woodchat, a conspicuous black and white shrike with a chestnut-red crown (Plate 60), is found in summer from

Germany southward to the Mediterranean basin and in winter in tropical Africa. It is an occasional rare wanderer to Britain, most of its visits being to south-eastern counties, but it has reached Scotland on at least three occasions, two of these being in the Orkneys and Shetlands, and certainly it has once been taken in Ireland. As it nests so near our shores as Normandy its visits on migration are not surprising. Its note is a harsh *kra, kra* (Seebohm), and the male has a short warble in which, as in other shrikes, notes of various birds are introduced. Its food and habits are similar to those of the family.

The male has the crown and nape ferruginous; the lores are white, and the forehead, ear-coverts, sides of neck and back black, the scapulars conspicuously white. There is a white bar on the black wings. The rump is grey, shading to white on the upper tail-coverts, and the under parts are white tinged with buff on breast and flanks. The bill is black, the legs and irides brown. The female is duller and her upper parts are more rufous; the young bird is reddish, streaked and mottled on the upper parts and barred on the under; the bill is yellowish brown and the legs pale brown. Length, 7·1 ins. Wing, 3·8 ins. Tarsus, ·95 in.

The inclusion of the sub-specific Corsican Woodchat, *L. s. badius* Hartlaub, on the strength of a single example said to have been obtained by a shepherd in Kent in 1909, is curious when many birds just as likely to wander are rejected on the supposition that they may have been artificially introduced.

Masked Shrike. *Lanius nubicus* Licht.

The occurrence of the Masked Shrike, a bird which breeds in Persia, Asia Minor and Syria and winters in Arabia and north-eastern Africa, in Kent in 1905 is extraordinary. On the strength of this single example it is included in the British

list, wisely or unwisely according to varied judgment. It is a small shrike with a white forehead and line over the eye. Length, 6·9 ins. Wing, 3·5 ins. Tarsus, ·85 in.

Family AMPELIDÆ. Waxwings.

Waxwing. *Ampelis garrulus* (Linn.).

The breeding range of the Waxwing (Plate 60) is circumpolar. The nest was not discovered until 1856, but since then it has been found in far northern pine woods in both hemispheres. In winter the bird migrates south, but its movements are erratic and irregular; at intervals it has reached the British Islands in such large numbers that the visits are termed "invasions." The last invasion was in the winter of 1913-14, when birds were met with in small parties in all parts, and when not molested remained for some time in places where food was plentiful. So striking a bird, with its long erectile crest, seldom escapes notice; and, too frequently, the advent of a migratory horde is followed by a long obituary list, with more or less incorrect newspaper paragraphs. These invaders have mostly been met with between October and April, but on one or two occasions birds have lingered well into spring and even until July.

The old name "Bohemian Chatterer" is very misleading, for the bird is a silent species. In its breeding haunts Dresser only heard a plaintiff whistle, and Seebohm, who kept some in an aviary, records a low ripple, like that of the Blue Tit, and a Redpoll-like trill. The similarity to the call of the Redpoll struck Miss Turner when, in 1914, she photographed the feeding birds at Cambridge (Plate 62), and she also heard "a long-drawn wheezing note like that of the Greenfinch." The flight is not unlike that of the Starling, so similar in fact that Seebohm at first took birds that he saw near Sheffield for Starlings.

Miss Turner remarks upon their attitudes when feeding resembling those of the Crossbill; when the birds swung upside down the chestnut on the under tail-coverts and the broad yellow tip of the fanned-out tail were very noticeable. In summer insects are eaten, but here the food is various berries; "hips" of the wild rose are great favourites, but berries of hawthorn, mistletoe, ivy, elder, juniper and cotton-easter are recorded.

The sexes are alike; for long it was thought that the number of the "wax" tips to the secondaries indicated sex. These are curious oblong projections at the tips of the shafts of the secondaries, and very occasionally smaller ones on the tail feathers; they number usually from four to eight on each side, and resemble lumps of red sealing-wax. It is hardly safe to judge colour from skins, which are apt to be soiled and faded, but the various descriptions of the plumage of the Waxwing vary so much that it is probable that they are taken from birds of different ages and when the feathers were fresh or much worn. The general colour of both upper and under parts is vinaceous brown; a line from the forehead, above and behind the eye is black, the chin and upper throat are black, and there is a short white streak at the bases of the lower mandible. On the forehead the long erectile crest is distinctly chestnut, as are the cheeks and under tail-coverts. The upper tail-coverts and rump are dove-coloured; the centre of the abdomen is grey. A conspicuous white bar crosses the blackish wings, and the inner edge of the primaries is white, whilst the outer is yellow, as is a broad band at the tip of the tail. The bill and legs are black, and the irides hazel. The young bird is browner and is without black on the throat. Length, 7·5 ins. Wing, 4·5 ins. Tarsus, ·8 in.

Family SYLVIIDÆ. The Warblers.

Whitethroat. *Sylvia communis* Latham.

The Greater or Common Whitethroat (Plate 63) is a summer visitor, nesting throughout the British Isles except in the extreme north. In Europe it is well distributed, and it winters in southern Africa; in autumn birds from northern Europe travel southward along our coasts.

The two Whitethroats are slender, active, brownish-grey birds, distinguished from other warblers by their very white throats and chins, but not easy to tell from one another in the field. The larger bird has the back and wings distinctly more rufous, and there is little noticeable difference between the grey on the head and cheeks of the male, whereas in the Lesser Whitethroat the ear-coverts are decidedly darker than the crown.

About the middle of April, as a rule, we hear the persistent song of the Common Whitethroat and see the bird slipping in and out of the hedgerows. Untrimmed hedges and bramble tangles along the lanesides are its haunts; ever on the move, it appears one moment on the top, swelling its white throat in song, then slides into the shelter of the leaves, reappearing at the side some yards before us with conversational *whit, whit, whit*. Its movements are rapid, but it often halts to reach up for an insect above it, or will suddenly shoot into the air, just for long enough to utter its short song, and descend with open wings, dancing up again, then falling into the bush or hedge. From its skill in traversing dense herbage, it is known as the "Nettle-creeper," but in many parts it is called the "Cut-straw." The short but rapid song is uttered, as Burroughs puts it, with "emphasis and assurance"; it has a character purely its own, not by any means always sweet, though its quality varies. In some birds the opening notes are round





1 Pl. 63.

Common Whitethroat.
Lesser Whitethroat.

L 157.

and full, mellow as those of the Garden-Warbler, but the song tails off into a rather harsh warble, generally with an abrupt finish. When in July the moult begins, the song is hushed, but not infrequently it is resumed in August, and early in September most of the birds depart. Until late in October migrants are passing along the coasts.

Even before the nest is built the birds greet an intruder with a peculiar scolding note, a harsh churr, but when the nest is threatened they flutter round with sharp ticking cries. If young are in the nest a bird will shuffle near the ground, feigning lameness, but when eggs are still unhatched the sitting bird slips silently away, threading her course through the dense herbage. The food during spring and summer chiefly consists of insects, large numbers of dipterous flies being captured, but in late summer and autumn small berries and soft fruit are added; elder-berries are favoured, and in gardens raspberries and currants are attacked, the slender robber passing through small-meshed nets with ease.

The nest (Plate 69) is built in a hedgerow, bramble clump, low-growing herbage, a thick bush or the stocks of cut osiers, and is seldom many inches above the ground. Grass and roots are the usual nesting material, and the deep cup is lined with hair, but some nests are made entirely of rootlets and fibre. Four to six eggs are laid late in May, and though only one brood is usual, late nests may be found in July. Greenish white is the usual ground colour of the grey-speckled egg (Plate 65), but white or brown grounds and red spots and blotches are not uncommon.

The general colour of the male in spring is greyish brown, greyest on the head and tail-coverts; the wings are a warm brown. The outer feathers of the sepia tail are margined with white. The chin and throat are conspicuously white, but the remainder of the under parts are white tinged with brown and with vinaceous on the breast. The bill is dark brown, the legs

pale, almost fleshy brown, and the irides light hazel. The female is brown on the head and tail-coverts as well as on the back, and there is no vinous tinge on her under parts, which are whiter than those of the male. After the autumn moult the male resembles the female. The young are dark brown—almost bistre—on the back, and russet on the wing-coverts and secondaries, the throat is a duller white, and there is often a pale brown collar on the breast. Length, 5·5 ins. Wing, 2·8 ins. Tarsus, ·5 in.

Lesser Whitethroat. *Sylvia curruca* (Linn.).

The Continental range of the Lesser Whitethroat (Plate 63) roughly corresponds with that of the Common Whitethroat, but it winters further north in Africa. In England and Wales it is a common summer resident in most of the midland and southern counties, but is rare in the Lake District, Northumberland and Durham and the extreme west of Wales and south-western England. In Scotland, where it has been reputed to nest, it is only known as a passage migrant in spring and autumn; it has occasionally visited Ireland.

Though the song is the best distinction between the two Whitethroats, the Lesser is a greyer brown; it looks a grey and white bird, and its brown tinged grey ear-coverts are much darker than its crown. It arrives late in April, often not until May, and frequents thick hedgerows, bramble thickets and trees; it is far more arboreal than its relative, and though by no means shy the foliage lends concealment. That portion of the song usually heard and described is a loud and rapid metallic rattle, sometimes resembling the song of the Chaffinch, but more closely that of the Cirl Bunting. A preliminary short prelude, a Swallow-like twitter, is often audible, but the true song, a subdued, melodious warble, an improved echo of the emphatic Common Whitethroat, can only be heard at close

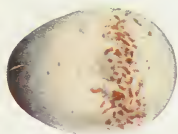
1 Pl. of.

Garden Warbler.

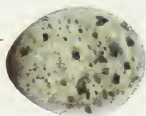


Crested Titmouse.

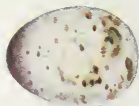
1 158.



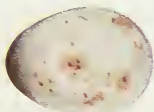
Red-backed Shrike.



Whitethroat.



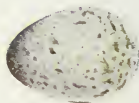
Lesser Whitethroat.



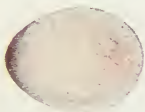
Garden Warbler.



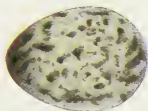
Blackcap.



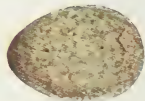
Dartford Warbler.



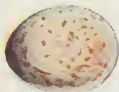
Grasshopper Warbler.



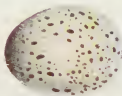
Reed Warbler.



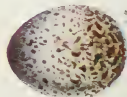
Sedge Warbler.



Willow Wren.



Chiffchaff.



Wood Warbler.

quarters. This crooning warble usually ends in the clanging rattle, which some have considered its call-note. The song may be uttered on the wing ; I have seen a bird start across a road, warbling softly, hover midway and rattle, then continue its journey ; a few moments later it returned and repeated the performance. Until well into July, even when the weather is sultry, and with special vehemence if thunder threatens, the song is continued, and after the moult it may be heard late in August. At the end of September most birds leave, though it has been noted in November. The note of alarm is a rapid *tic, tic*, frequently heard if the nest is near. The Lesser White-throat captures insects on the wing, but its usual methods are careful hunts amongst the foliage ; it has also a hovering nuptial flight in May. Insects are its main food, but soft fruit is eaten, especially red currants ; a pair visited my garden regularly in May, examining the raspberry canes and apple blossom, but though they were still about in autumn I never saw them at the fruit.

The nest is frail and shallow, built of grass and rootlets and usually lined with fibres, though hair is recorded. It is placed in a tall hedge, a tangled bramble patch or a bushy tree, and is usually higher above the ground than that of its relative. At times it is not supported beneath, but hangs suspended like that of the Reed- or Marsh-Warbler. The eggs, four to six, are usually creamy white in ground with brownish spots or blotches and underlying violet-grey markings (Plate 65) ; buff grounds are not uncommon, also markings in a regular zone. Eggs are sometimes laid very soon after the birds arrive in May, but young may still be in the nest in early August, possibly when first nests have been destroyed, for the species is supposed to be single brooded.

The male in spring is slate-grey, with a brownish tinge on the back, and brown wings and tail. The cheeks are dark and tinged with brown. The edges of the secondaries are grey, not

rufous ; the outer tail feathers are bordered with white. The chin and throat are white, as are the belly and under tail-coverts ; the breast and flanks are pale brown. The axillaries and under wing-coverts, noticeable in flight, are white, though smoky in the Common Whitethroat. The bill and legs are bluish grey, the irides yellowish white, but browner in young birds. The breast and flanks are browner after the autumn moult. The female is very similar to the male, and the young bird is even browner than the adult in autumn, and its legs and bill are paler. Length, 5·25 ins. Wing, 2·6 ins. Tarsus, ·75 in.

Garden-Warbler. *Sylvia simplex* Latham.

Except in the extreme north the Garden-Warbler is found in summer in Europe, north-west Africa, and parts of western Asia ; it winters in tropical and southern Africa. In the British Isles it is a common summer resident in England, local in Wales, Scotland and Ireland, and only known in northern Scotland and the Scottish islands as a bird of passage. There is a noticeable autumn passage, especially in the east, probably of European immigrants, and in the Shetlands it is recorded in spring.

There is really nothing very distinctive about the Garden-Warbler (Plate 64) ; it is an olive-brown bird with a buff throat, distinguished by its throat and size from the White-throats, and by the absence of a black or brown crown from the Blackcap. "Garden" is a misleading title, for it is a woodland bird, frequenting thick coverts and woods where there is an abundance of undergrowth ; in fruit raids it sometimes visits gardens. The song is wonderfully beautiful, a continuous mellow warble, more sustained than that of the Blackcap, but with much of the same quality, though the contralto notes, similar to the Blackbird and Blackcap, are not

so loud. In Suffolk I have heard a good-voiced Garden-Warbler singing alongside a mediocre Nightingale, and the former produced superior music. Singing from the upper branches of a tree is not uncommon, but often the bird is invisible in an evergreen. The idea that the Garden-Warbler and Blackcap do not frequent the same wood seems to be true of certain areas, but certainly is not universal; I constantly see and hear the two together. The length of the warble varies, and when the snatches are short, it is difficult to say which of the two allied species is responsible until we see the singer. The alarm note, *teck*, Blyth likened to the sound of pebbles struck together, and like the Whitethroat the bird has a scolding *chrrr*. Insects are its food; flies are often captured on the wing, but the bird joins with other species in the search for aphids, especially on the sycamores. To obtain soft fruits and berries, to which it is also partial, it will leave the woods and venture nearer human habitations.

A low bush, evergreen shrub, rose or bramble patch, usually near an open space or the outskirts of a wood, is a common site for the frail, loosely constructed but roomy nest (Plate 66), built of twisted grasses lined with finer bents and hair. I have seen one lined entirely with black goat's hair; a goat was tethered close to the nest. It is seldom many feet above the ground. Before the architects are satisfied two or three nests may be started and abandoned; both birds build and incubate.

The eggs are laid late in May; they often number five, and are mottled and marbled with reddish brown or greenish grey on a whitish ground (Plate 65). They vary less than the eggs of the Blackcap, and closely resemble the less red types of this species. The sitting bird slips quietly away when her nest is examined, but soon reappears from another quarter, ticking anxiously.

The Garden-Warbler is one of our later migrants, and it is often well into May before the species is generally distributed;

the song is continued until the early part of July, and is only occasionally heard after the moult in August. Towards the end of September the emigrants slip quietly away.

In both sexes the summer dress is olive-brown above and white, shading into buff, beneath. The throat, breast and flanks are distinctly buff. Above the eye is a pale streak, and the sides of the face are ashy grey. The bill is dark brown, paler at the base of both mandibles; the legs are leaden, and the irides hazel. After the moult the upper parts are darker, the under more buff, and the young, difficult to distinguish, are still further suffused with buff on the throat and breast. Length, 5·5 ins. Wing, 3·15 ins. Tarsus, ·8 in.

Blackcap. *Sylvia atricapilla* (Linn.).

The Blackcap (Plate 67) has a similar summer range to that of the Garden-Warbler, but it winters further north in Africa, and not only do many remain in southern Europe, but some occasionally in England. Throughout our islands it is a regular summer resident, and in most parts is common; it is also a bird of passage, noticeable on the east coast in autumn.

Though frequenting thick woods the Blackcap is rather more a bird of the open than the Garden-Warbler, from which it can be told at once by the black or brown cap; indeed this character puts it apart from all common warblers. In some parts the Reed-Bunting is known as the "Blackcap." In the south the immigrants often arrive in March, but are seldom widely distributed before the middle of April. Owing to its fine song it is known as the "Northern Nightingale," for its notes are rich, clear and mellow, but the song is shorter than that of the Garden-Warbler and has no resemblance to that of the Nightingale. Occasionally there is a low prelude with harsh notes suggesting the Sedge-Warbler, but full notes of Blackbird quality follow. The alarm, *tack tack*, is loud, and it scolds like

Nest of Garden-Warbler.





1 Pl. 67.

Dartford Warbler.
Blackcap.

M 163.

a Whitethroat. The bird sings from high trees as frequently as from undergrowth, and at intervals breaks off its song to fight with a rival. The song may be heard until late in July, but seldom in August ; it has been heard from wintering birds. Although it feeds largely on insects, sometimes on useful ichneumons as well as harmful two-winged flies, it is also partial to berries and fruit ; indeed its diet is more vegetarian than that of most warblers. In April, immediately on arriving, I have known it visit a garden to strip the remaining ivy berries, and have seen it pulling off and eating the flowers of the sycamore. In July I watched one in gooseberry bushes, but it contented itself with the overripe fallen berries, picking out the seeds.

The nest is said to be further from the ground than that of the Garden-Warbler, but this is not always the case ; it is built in similar situations in brambles, thick bushes and evergreens, and is roughly but firmly woven ; the materials used are grasses and sedges, the lining, finer bents and a little hair. The eggs (Plate 65) are laid late in May as a rule, are four or five in number, and vary considerably ; they are mottled, marbled and clouded with yellowish or reddish brown on a yellowish white or ruddy ground. The male helps to build, incubate and feed the young. In September many leave, but birds on passage have been noted throughout October, and the Blackcap is one of the few warblers which from time to time winters with us, usually in Cornwall or Devon. In January, 1912, I received a male which had been killed in Somerset by a cat, and in February, 1913, I watched a pair feeding on ivy berries in the Rock Garden at Torquay. The assertion that the male has a brown head in winter was disproved by these two males, though the first, being not fully adult, had a slight rusty tinge, for the heads of young birds are brown.

The upper parts of the male are bluish grey in spring ; the back is tinged olive-brown, and the darker quills and tail have

pale grey edges. The crown and nape are black. The under parts are a paler grey, whitest on the chin and belly, brownest on the flanks. The bill is dark brown, the legs lead-coloured, and the irides hazel. The black on the head is replaced by rusty brown in the female ; she is more olive-brown above and buff below. After the autumn moult the upper parts are olive-buff, the chin is less white, and the belly distinctly suffused with yellow. The young resemble the female. Length, 5.75 ins. Wing, 2.75 ins. Tarsus, .85 in.

Sardinian Warbler. *Sylvia melanocephala* (Gmelin).

In April, 1860, W. D'Urban watched a small warbler with a jet black head and pure white under parts, probably this species, in his garden at Exmouth, and in June, 1907, a Sardinian Warbler was killed at Hastings and added to the British list. The summer range of this distinctive bird extends along the Mediterranean to the south of France, Spain and Portugal, and the bird may have wandered on migration on other occasions and have been mistaken for a Blackcap. Length, 4.7 ins. Wing, 2.15 ins. Tarsus, .82 in.

Rüppell's Warbler. *Sylvia rüppelli* Temm.

The occasional wandering to Britain of migratory birds that breed in northern or western Europe is not surprising, but the appearance of a species like Rüppell's Warbler, whose summer haunts are around Greece and Asia Minor and which winters in north-east Africa, makes one wonder if accidental or intentional human agency is responsible. Two birds, both males, were obtained in May, 1914, near Hastings, and submitted in the flesh to competent ornithologists, and on the strength of this single occurrence the bird is included as British. The male is a handsome grey bird with a black crown and throat, bordered by a

conspicuous white moustachial streak. The female has a brown crown and white chin. Length, 5·2 ins. Wing, 2·75 ins. Tarsus, ·8 in.

Orphean Warbler. *Sylvia orphea* Temm.

The Orphean Warbler is not unlike a large Blackcap, with the cheeks and nape the same colour as the crown—deep brownish black in males, lighter brown in females—with a white chin, and white outer tail feathers. It nests in south-western Europe, so far north as Luxemburg and Lorraine, and in north-west Africa. On three occasions it has been met with in southern counties, but the first record, in 1848, was from Yorkshire. The latest, a young bird found in 1905, had been killed against a telegraph wire. Length, 6 ins. Wing, 3·1 ins. Tarsus, ·9 in.

Barred Warbler. *Sylvia nisoria* (Bech.).

Recent experience has raised the status of the Barred Warbler (Plate 69) from that of a rare visitor on migration to a regular bird of passage, most frequently observed in autumn. Its summer range extends from southern Sweden to the Urals and Bulgaria, and it winters in north-east Africa. On a very few occasions it has reached the western coast, St. Kilda, and Ireland; but in the Orkneys, Shetlands, and on the east coast it is noticed annually, usually in September, though it has been met with in August, October and November. In Kent it was observed in April.

Seebohm describes its shy and skulking habits and song as similar to those of the Whitethroat, but the only examples I have seen—young birds—looked like large Garden-Warblers. They were sneaking amongst the elders and buckthorn on the

east coast, and were seldom long in sight ; one came into my possession and I was able to examine its plumage.

In spring the male is ashy grey on the upper parts, greyest on the head, rump and tail, and with the wings brownish grey. The wing-coverts are indistinctly barred and the inner secondaries have white tips ; the lower back is faintly barred with brown and white. The greyish-white under parts, brownish on the flanks and under tail-coverts, are distinctly barred with brownish grey. The bill is blackish brown, the legs blue-grey, the irides light yellow. The female is a slightly browner bird, and the bars are less distinct. After the moult the upper parts are browner and the barring more distinct. In the young bird which I examined there was hardly any noticeable barring on the buff-grey head and hair-brown back, but the grey upper tail-coverts had grey edges which showed distinctly in certain lights. The whole of the under parts except the belly was buff, and the under tail-coverts were clearly barred with grey. When in the bushes no suggestion of bars was apparent. Length, 6·6 ins. Wing, 3·5 ins. Tarsus, 1 in.

Subalpine Warbler. *Sylvia subalpina* Temm.

When the Subalpine Warbler was first seen by Mr. Steele Elliott on St. Kilda in 1894, its grey upper parts and warm chestnut flanks suggested to him a small Dartford Warbler, but it is a paler, smaller bird, and has a white moustachial streak from the base of the bill, pale edges to the secondaries, and a shorter tail. It breeds in the south-east of France, Italy, Corsica and Sardinia, and has twice, as a wanderer in spring, been added to the list of accidental British birds—one at St. Kilda and one, in 1908, on Fair Island. Length, 4·7 ins. Wing, 2·3 ins. Tarsus, ·75 in.

Whitethroat at nest.





11 167.

Grasshopper Warbler.



1 17. 69.

Barred Warbler.

Dartford Warbler. *Melizophilus undatus dartfordiensis*
(Lath.).

The Dartford Warbler (Plate 67) is a local and non-migratory resident in a few of our southern counties ; it has nested in many places where it is now unknown. On the Continent the subspecies, to which our British form is referable, occurs in north-western France, and the typical race in south-western Europe ; it is doubtful if it ever reaches us as a migrant.

This small dark warbler is unlike any of its relatives in habits as well as appearance, for they seldom brave our winters, whereas the Dartford Warbler, though it suffers severely in hard weather, does not emigrate. The male looks very dark, and his constantly erected crest and long fan-shaped tail render him far too conspicuous when, in the breeding season, he shows himself on the tops of the furze bushes. As a rule, however, the bird is skulking and secretive, remaining unseen in the gorse thickets on the open commons which it frequents. The male has a subdued liquid warble, which Mr. Kearton heard when its bill was crammed with insects for the young. The note is often described as *pit-it-chou*, but under excitement it is a rapid *tirr, tirr*, often a scolding Whitethroat churr. When the young are in the nest both birds will flutter round, jerking their tails, calling *tic, tic*. The tail, as a rule, is carried well clear of the foliage, but during nuptial display the male droops and spreads it and at the same time drags his half-open wings. The flight from bush to bush is undulating, the short rounded wings whirring rapidly, and the bird suddenly drops into cover. Insects—moths are specially noticed—are its food in summer, but wild fruits and small berries are eaten in the colder months. Though severe winters and fires in its haunts have no doubt helped to reduce its numbers, the rapacity of collectors is largely to blame ; the high prices given for eggs encourages professional looting.

The nest is a neat and not "flimsy" structure well hidden in gorse or heather (Plate 71); Mr. H. Bentham, who has studied the species, finds more in heather than furze. It is composed of young furze shoots, galium stems, ling, moss, grass, wool and feathers, lined with finer bents, feathers and hair. The four to five eggs (Plate 65) are usually yellowish or greenish white speckled with underlying grey and more decided brownish markings, often taking the form of a zone. There are two broods, the first eggs are laid in April and the second batch, as a rule, in June or July.

In summer the male has dark brown upper parts, shading to slate-grey on the head, and the brown wings are shown up by paler edgings on the secondaries; the two outer tail feathers have white margins and tips, conspicuous when the tail is fanned out. The under parts are rufous-chestnut. The bill is pale brown, lightest at the base; the legs are light brown; the irides, and a ring round the eye, reddish orange. In autumn the under parts, especially on the throat, are streaked with white. The female is browner above, and paler beneath, and lacks the ruddy tints. The young are much whiter on the under parts, and their irides are pale reddish brown. Length, 5·1 ins. Wing, 2·2 ins. Tarsus, ·75 in.

Rufous Warbler. *Agrobates galactodes* (Temm.).

The Rufous Warbler, a very rare wanderer to England and Ireland on autumn migration, breeds in southern Spain and Portugal and northern Africa. It is a large chestnut-brown warbler with pale under parts, a white stripe above the eye and a buff bar on the wing. Its best character is its long rounded tail, rich chestnut in colour, and with all but the central feathers with a subterminal black band and tipped with white, the amount of white increasing from the inner to the outer feathers. The form, known as the Grey-backed Warbler,

A. g. familiaris (Méné.), which occurs in south-eastern Europe and western Asia and winters further south in Asia and in Africa, has been recorded—from Kent and Sussex—on four occasions, all in spring or early summer. Length 6·5 ins. Wing, 3·5 ins. Tarsus 1 in.

Grasshopper-Warbler. *Locustella naevia* (Bodd.).

Except in the north of Scotland the Grasshopper-Warbler (Plate 69) is a summer resident in all parts of the British Isles ; it is a western European species, wintering in Africa.

Its retiring and skulking habits, without doubt, cause the Grasshopper-Warbler or "Reeler" to be overlooked ; it frequents marshes in the lowlands and is found high on the moors, though nowhere abundant and always local. It is not an early migrant, though it quickly spreads over the country, often reaching the north by the middle of April or early May. Its time of arrival and numbers are irregular ; there are good and bad years for the species.

There is nothing to strike the eye in its sombre plumage, but the rounded tail, which is drooped and depressed when the bird is disturbed from the nest, is noticeable ; indeed, we often hear but do not see the singer. The long monotonous "reeling" song has little musical value, but it is an interesting performance, in which, with vibrating throat and wide-open bill, the bird trills one note with hardly perceptible pauses for from a few seconds to two or three minutes. So insistent is the sound that where a long trill ends suddenly the silence for a moment seems oppressive. It is a high-pitched rippling chirp, inaudible to some ears, which rises and falls, now a faint hum, now like the rattle of a distant mowing machine, now like an angler's reel, but never resembling the chirrup of the insect from which the bird gets its name. It is perhaps best heard in the early morning, but the bird sings

after dusk and also in the glare of the sun at noon ; in fact from the time of arrival until late in July it sings constantly in its favourite haunts. Miss Turner gives the alarm note as *twhit, twhit* ; others describe it less exactly as a ticking note ; but except when the young are hatched the birds make little fuss, flitting just above the herbage when put off the nest and dropping in a few yards to cover. Very silently it creeps back, threading its way with skill and rapidity through the stems, creeping mouse-like though without murine jerks and pauses. So far as is known the bird is insectivorous, using the word in a general sense, for spiders, wood lice and other small animals are eaten ; green caterpillars are largely given to the young. In nuptial display the male spreads wide his wings and tail and gently fans them, though he has no striking marks or colours to exhibit.

The nest (Plate 73) is in a tussock of grass, in marshes, osier beds, or the thick vegetation near water, but it is also built in dry situations, in tangled hedgerows, gorse bushes or amongst heather on the moors. It varies in size and construction, and is made of grass or sedge, mingled with a little moss, and often lined with finer bents ; it is seldom more than a few inches above the ground, and is artfully concealed. The four to six eggs (Plate 65) are laid late in May, sometimes even in July ; perhaps there are second broods, or the first have been destroyed. They are closely speckled with small red spots, more rarely blotched and zoned. Immigration takes place from August onwards ; birds have been noted in October.

The general colour of the upper parts is greenish brown or russet, with streaks formed by dark centres of the feathers ; the tail is faintly barred. The chin and belly are whitish, and the rest of the under parts pale brown, with a few spots on the throat. The under tail-coverts are streaked. The bill is brown, the legs pale yellowish brown, and the irides hazel. The young are buff on the under parts. Some authorities say that the



I Pl. 70.

Savi's Warbler.



Yellow-browed Warbler.

II 170.



redder birds are males, those more olive females ; others that this is individual variation. Length, 5·4 ins. Wing, 2·4 ins. Tarsus ·8 in.

Lanceolated or Temminck's Grasshopper-Warbler.

Locustella lanceolata (Temm.).

This small Grasshopper-Warbler, distinguished by its more decided streaks and by the spots on its under parts being on a nearly white ground, is a Siberian bird which winters in China, Borneo and India. In the autumn of 1909 one was obtained on the Lincolnshire coast, and it was subsequently discovered that a bird taken on Fair Island in the previous autumn was of the same species ; in 1910 it was recognised in Orkney. Mr. Caton Haigh, describing his Lincolnshire bird, says that the bill was horn-coloured, yellow at the base of the lower mandible, and that the legs and feet were "white, with a very faint tinge of flesh colour." Length, 4·75 ins. Wing, 2·2 ins. Tarsus ·7 in.

Pallas' Grasshopper-Warbler. *Locustella certhiola* (Pallas).

The range of Pallas' Warbler roughly corresponds with that of the last species. It is a larger bird than our Grasshopper-Warbler, with white under parts, tinged with buff, and with the tail feathers tipped with greyish white. An immature bird struck the Rockabill light, Dublin, in September, 1901. It has once been recorded from Heligoland. Length, 5·25 ins. Wing, 2·8 ins. Tarsus, ·9 in.

Savi's Grasshopper-Warbler. *Locustella luscinioides* (Savi).

Were it not for the occurrence at Fair Island in the spring of 1908 of an example of Savi's Warbler (Plate 70) the bird

would merely have historical interest, for it has vanished from the fenland haunts in which it formerly bred, a summer resident. It still nests in many parts of Europe and northern Africa, in the former so near Britain as Spain, France and Holland, though it is said to be decreasing in numbers. The last known British nest was found in 1856. Drainage of the fens in Cambridge and Huntingdon certainly destroyed its old haunts, but dense reed beds still exist in Norfolk, and as the Bittern and Ruff have returned, and the Bearded Tit is again locally plentiful, it may some day, reinstate itself. It used to reach us in April and nest in May, and the reed-men of the past were well acquainted with its reeling song, distinguishing it without difficulty from the Grasshopper-Warbler. Its trill is said to be pitched higher, more melodious but less powerful than the song of its well-known congener, but Mr. Jourdain, who has heard the bird in Holland, says that "it is louder than that of the Grasshopper-Warbler and possesses a more metallic click." So far as is known the bird is purely insectivorous, and in most of its habits resembles the common species, but is less shy and skulking and climbs reeds to sing, showing itself openly.

The nest is a deep cup, built in reed beds, sedges or other aquatic vegetation, and is placed upon a platform of reed blades; it resembles the nest of a crane rather than a warbler. The four to six eggs are white or buff, well speckled with brown and grey.

The uniform reddish brown of the upper parts prevents confusion with the streaked Grasshopper-Warbler, and its twelve-feathered fan-shaped tail distinguishes it from some of its rarer relatives; on the tail are indistinct bars like those on our bird. Its whitish under parts are tinged with buff on the breast, flanks and under tail-coverts. The bill is dark brown, the legs pale brown, and the irides hazel. Young birds have paler under parts. Length, 5·7 ins. Wing, 2·6 ins. Tarsus, ·9 in.

Cetti's Warbler. *Cettia cetti* (Marm.).

Cetti's Warbler is found in southern Europe, including the south of France, and has twice been recorded from Sussex, in 1904 and 1906. It is a small brown-backed, rufous-tailed warbler, white beneath with a conspicuous whitish superciliary stripe. It has only ten feathers in its tail, which prevents confusion with Savi's Warbler, which, except for its eye-stripe, it somewhat resembles. Length, 5'25 ins. Wing, 2'3 ins. Tarsus, '9 in.

Reed-Warbler. *Acrocephalus streperus* (Vieillot).

Towards the end of April, sometimes not until May, the Reed-Warbler (Plate 72) arrives in England and invades the reed beds of the southern and midland counties, spreading as far as Cheshire and Yorkshire, a few venturing into Lancashire, and even further north. It breeds in northern Africa and throughout Europe to southern Sweden and the Baltic provinces; in Scotland and Ireland it is only known as a passage visitor, and is rare in Wales and the west of England.

There is nothing striking in the plain brown dress of the Reed-Warbler; it is in harmony with the grey-brown of the old reeds which remain long after its arrival. It cannot be confused with the Sedge-Warbler, for it has hardly any noticeable eye-stripe and lacks the distinctive head streaks and dark spotted back of this bird. It is, however, almost impossible to distinguish it in the field from the Marsh-Warbler, though it is slightly darker and has more rufous on the rump. Were it not for its continuous chattering the Reed-Warbler would frequently be overlooked, for, though it is not shy, the reeds give concealment. As it hops from stem to stem, now with one bent leg grasping a reed, now balancing sideways with both legs flexed,

its light body stirs the tops so that, though silent and invisible, its progress may be traced. It has a curious way of sidling up a reed to the top and there singing in full view. The song is a mixture of sweet and harsh notes, monotonous and deliberate, as if uttered with an effort ; it is neither so varied nor loud as that of the Sedge. In summer the song is heard after dark, and is frequent until the end of July and often heard in August and September. In courtship, when the male raises his crest, and depresses his fanned-out tail, he will rise and sing on the wing. The males are said to arrive first and stake out the nesting claim, but this is difficult to prove, for according to some observers the females occasionally sing ; another statement that the bird is a solitary migrant lacks confirmation ; at any rate, it often arrives in large numbers in its more northerly haunts. The male is a jealous guardian of the nest, and will drive off avian and violently scold human intruders ; his alarm note is a rasping churr. The bird is a mimic, though less so than the Marsh or Sedge.

The normal nest is a work of art, suspended or rather built round three or more reed stems, usually those growing out of water. If the young reeds are sufficiently advanced it is attached to these, and as they grow fast it rises rapidly with its supports ; it may be built soon after the bird arrives in May or not until June, and early nests are often on the old reeds. In the same year I have found eggs in nests in old reeds in the middle of May, and others at the end of June on the young reeds. The nest is a deep straight-sided, firmly woven structure, usually with a sound foundation of grasses, strips of reed or sedge, and with wool or reed flowers so intermingled as to render it solid and compact ; in the neat cylinder of the hollow, lined with reed flowers, fine grasses and hair, eggs and young are safe when wind sways the stems, and the head of the sitting bird is often almost invisible. There is, however, great variation in the architecture, many nests being as shallow



1 Pl. 72.

Reed-Warbler.



1/ 174.

Marsh-Warbler.



as those of the Sedge, and I have seen one containing eggs so frail that the light showed through. Neither are they by any means always built in reeds nor over water ; in one day I found four nests, all containing eggs, many yards back from the water ; they were in a wild rose bush, an elder, a thorn and a willow. Small colonies have been found in waterside willows, even so high above the ground as twenty feet. Late nests are built with great rapidity ; two or three days is enough to construct fairly good nests. The four or five eggs are greenish white as a rule, marbled and blotched with olive and grey (Plate 65), the amount of colour varies, but is usually profuse. The Cuckoo victimises the Reed-Warbler ; a pair may often be seen toiling to satisfy their foster child with the small aquatic insects and caterpillars which form the normal food of their own nestlings ; the growing bird bursts and flattens out the elegant nest. Young Reed-Warblers, even when disturbed for the first time, are skilful in threading their way among the stems, and seldom fall into the water. As autumn approaches the old birds become silent, but their presence may be detected if a clod or stone be thrown into the reeds ; the splash is followed by a short burst of expostulatory song. Towards the end of September the majority leave, but a few remain until October.

The upper parts are olive-brown, tinged rufous on the rump ; there are pale edges to the secondaries. The throat and belly are white, the breast is buff, and the flanks rufous. The bill is dark brown, paler at the base of the lower mandible ; the legs are slate-brown, the irides dark brown. There is little difference between the sexes, and the young are more rufous on the under parts. Length, 5·25 ins. Wing, 2·5 ins. Tarsus, '9 in.

Blyth's Reed-Warbler. *Acrocephalus dumatorum* Blyth.

The coloration of this Asiatic Reed-Warbler so closely resembles that of the Reed- and Marsh-Warbler which nest in Britain that it cannot be distinguished in the field ; it has, however, a structural character, a shorter second primary. It breeds in a wide area in central Asia and in part of Russia, and winters in India. It was first noticed in 1910 on Fair Island, and in the autumn of 1912 it is probable that a number wandered westward, as birds were obtained at Fair Island, in Northumberland and Yorkshire. Length, 5·5 ins. Wing, 2·4 ins. Tarsus, ·9 in.

Marsh-Warbler. *Acrocephalus palustris* (Bech.).

The Marsh-Warbler (Plate 72) breeds in most parts of Europe south of Denmark, and winters in Africa, even at the Cape. As a wanderer on migration it has reached the Shetlands and St. Kilda, but as a summer resident it is very local and only nests regularly in a few southern counties, especially Somerset, Gloucester and Oxford. It has once nested so far north as Cheshire.

So closely does the Marsh- resemble the Reed-Warbler that a keen eye for colour is necessary before we can separate dried skins of the two species, and when the bird is moving in the herbage the angle at which the light strikes its plumage may easily deceive the observer. It is slightly paler and more olive than the Reed, yellower beneath, and its rump is less rufous. Saunders says that its legs are "pale brownish flesh colour." It haunts marshes, osier beds, and wet ditches, and is a late migrant, seldom appearing before early June ; it is thought to leave in August. Undoubtedly its best character is its song, which Mr. Farren describes as like that of the

Warbler with the execution of the Blackcap. In its sweet and varied song it is an excellent mimic, introducing a large range of notes borrowed from other birds, even, it is said, the liquid bubble of the Nightingale and the *chack* of the Daw. Like its congeners it sings at night, but the duration of the song is short, usually it ends early in July. The food consists of insects, particularly those which haunt marshy ground, and, it is said, a few berries.

The nest, which is not always in marshes and has been found in cornfields, differs from most but by no means all nests of the Reed-Warbler, in that it is very shallow. It is suspended from marsh plants, especially meadow-sweet, willow-herb, cow-parsnip and nettles, and the stalks do not pass through the edge of the nest, but are encircled by a loop of nesting material which Mr. Warde Fowler called a "basket handle" (Plate 74). It has seldom more than a few rootlets and hair as a lining to its loosely woven grass structure. Four to five eggs are laid towards the end of June, and only one brood is reared. These are almost invariably whiter than the eggs of the Reed-Warbler, and, boldly blotched and streaked towards the larger end with purple, violet or olive, resemble the larger eggs of the Great Reed-Warbler (Plate 122).

The plumage is that of the Reed-Warbler, with the differences already stated, and Saunders states that the length of the wing is slightly greater, which appears to be the case according to the measurement of skins in the "Dresser" collection. Length, 5.25 ins. Wing, 2.7 ins. Tarsus, .9 in.

Saunders is in error when he suggests that Lilford's plate was drawn from a Reed-Warbler; I have examined the original bird from which the artist coloured his figure, and it is a Marsh-Warbler.

Great Reed-Warbler. *Acrocephalus arundinaceus* (Linn.).

There is no reliable evidence that the Great Reed-Warbler has ever remained to nest in Britain, but, on both spring and autumn migration, it has been recorded about a dozen times. It breeds in Europe—in some numbers in France, Belgium and Holland—and north Africa, and migrates so far south as Natal. Its song is loud and harsh, it has a noticeable alarm note, and is from its size alone unlikely to be confused with any other warbler. The upper parts are dark olive-brown, throwing up the whitish superciliary stripe and the pale margins of the secondaries; beneath it is buff, whitest on throat and belly. The bill is brown, the legs pale horn-brown, and the iris dark brown. The young show streaks upon the neck and throat; the eye-stripe is buff and the under parts fawn. Length 7·8 ins. Wing, 3·75 ins. Tarsus, 1·2 ins.

Sedge-Warbler. *Acrocephalus schænobænis* (Linn.).

Of all the marsh-haunting warblers the Sedge-Warbler (Plate 75) is most abundant and evenly distributed. It is found in most parts of Europe, and winters in Asia Minor and in Africa even so far south as the Transvaal. In the British Isles it is a summer resident, arriving late in April, and a passage migrant.

Except in a few localities which are unsuitable for a water-loving species, the garrulous Sedge-Warbler advertises its presence by chattering and varied song, though, owing to the dense herbage it haunts, is often invisible. The presence of water, in lake, small pond, river, ditch or marsh, is all it requires, for it feeds upon gnats, midges and other dipterous flies whose early life is aquatic. Small molluscs and larvæ of moths and beetles are eaten, and, it is said, berries, though

confirmation of this habit by British observers appears to be lacking. In some districts, where ponds are known as "pits," the bird is called the "Pit-Sparrow," to distinguish it from the "Reed-Sparrow," a name which has clung to the Reed-Warbler since the days of Ray and Willughby. The song is varied, irresponsible and erratic; it is difficult to describe. Like many other birds, the Sedge-Warbler, intentionally or unintentionally, copies other sounds, whether melodious, sweet, harsh or grating, high or low, does not matter. Some of the snatches are fine productions, clear-toned, round and full, others grating chatters. I once heard and watched a bird singing on the opposite side of a lane from a Grasshopper-Warbler, and repeatedly the Sedge imitated the continuous trill of the other bird. It sings from the depth of cover or from an elevated perch in full view; it has often a favourite perch for song; in one osier bed there are two or three trees, alders or birches, which stand above the withies, and these are usually occupied by singing Sedge-Warblers. In spring, at any rate, the bird is neither shy nor sulking, but merely indifferent. When stirred by nuptial fervour it sings on the wing, flying with tail spread and wings outstretched and quivering, making short circular or semicircular flights. It sings frequently at night, and its richer notes lead to its being mistaken for the Nightingale. Its explosive note, *ptree*, scolding *pit, pit*, and harsh churr are so intermingled with its song that the psychological meaning of its varied utterance is obscure; a bird will scold, churr and sing loudly if startled by a thrown stone or clod, and I have seen one vigorously singing at a cat which it was mobbing. The song period seldom ends before the beginning of August, and at the end of this month and in September the bird sings a little. During August and September many depart, but passage migrants are met with in October.

The nest is usually near water, but often in tangled overgrown

ditches, quite dry in summer; it is seldom more than two or three feet above the ground, in low herbage, brambles, osiers, bushes or small trees. "Never" is a dangerous word to use about birds; the oft-repeated statement that it is *never* suspended but always supported is incorrect, though the latter is the rule. It is a fairly neat, rather shallow nest of grass and moss, lined with horsehair or willow-down or other soft vegetable tissues. Whether constructed by one or both birds, or if there are one or two broods, are disputed points of no great moment. It is often the middle of May before the five or six eggs (Plate 65) are laid; they are buff or yellowish green, clouded, suffused or finely speckled with darker brown, and usually with a few black hair lines. In one case which came under my notice a bird sat long on eight eggs, but when these were finally deserted they were found to be infertile.

In summer the general colour is reddish brown with dark centres to the feathers, forming streaks on the back, but not on the tawny rump. A conspicuous yellowish white superciliary stripe is bounded above by an almost black streak, and the centre of the crown is streaked with light and dark brown; the ear-coverts are brown. Light edges show on the wing feathers. The under parts are buff, whitish on the throat, and warmest on the flanks. The bill is dark brown, the legs pale brown, and the irides hazel. After the autumn moult the eye-stripe and under parts are buffer. The young bird is redder, and has faint spots on the throat and breast. Length, 4.75 ins. Wing, 2.5 ins. Tarsus, .8 in.

Aquatic Warbler. *Acrocephalus aquaticus* (Gmel.).

The Aquatic Warbler (Plate 75), a rare visitor to Britain, has possibly the right to be classed as an occasional summer resident, since it is reported to have nested with us. It is a European bird, inhabiting western countries south of Denmark, and it winters in Africa.





1 Pl. 75.

Sedge-Warbler.



2

Aquatic Warbler.

Pl. 181.

Most of the recorded visits of this bird have been in September or August, and until more evidence of nesting is forthcoming it must be looked upon as an occasional autumnal bird of passage, which may be distinguished from the Sedge-Warbler by the central buff streak on its crown, its buffer eye-stripe, pale cheeks, striated rump and stronger striations on its back. Length, 4·9 ins. Wing, 2·4 ins. Tarsus, ·8 in.

Radde's Bush-Warbler. *Lusciniola schwarzi* (Radde).

A single example of this eastern Siberian bird was shot by Mr. Caton Haigh in Lincolnshire in 1898; as its winter quarters are in southern China and Burmah, it can only be looked upon as a lost wanderer. It is a small olive-backed warbler, with a buff eye-stripe which bends round the cheeks to the nape. Length, 5 ins. Wing, 2·45 ins. Tarsus, ·9 in.

Moustached Warbler. *Lusciniola melanopogon*
(Temm.).

The Moustached Warbler is a south European and north African bird which was added to the British list in 1915, on the strength of an example which had wandered to Sussex. Mr. Witherby states that it can be distinguished from the Sedge-Warbler, which it superficially resembles, by a blacker crown, more chestnut upper parts, whiter eye-stripe, more rufous under parts, larger first primary, rounder wing and more graduated tail. Length, 5·25 ins. Wing, 2·2 ins. Tarsus, ·7 in.

Icterine Warbler. *Hypolais icterina* (Vieillot.).

The Icterine Warbler (Plate 76) is now looked upon as a rare but more or less regular bird of passage, occurring both in spring and autumn in various parts of the British Isles, though

with the exception of two for Ireland, all records are from the south or east coast or the Shetlands. The European range of this bird is extensive, but in western France and Spain it is replaced by the Melodious Warbler, from which it is difficult to distinguish in the field. The second primary is longer than the fifth, whereas in the Melodious it is shorter. Both birds are olive-yellow above, and lemon-yellow on the under parts, and have yellow lores and eye-stripes, brown wings and tail, and buff margins to the secondaries. The bill and irides are brown, and the legs slate-brown. The female is paler, and the young are browner with more pronounced buff margins. The Icterine is the larger and brighter bird. Length, 5·2 ins. Wing, 3·1 ins. Tarsus, ·8 in.

Melodious Warbler. *Hypolais polyglotta* (Vieil.).

The Melodious Warbler is a smaller bird than the Icterine, but its general appearance, habits and song are so similar that it is difficult to distinguish in the field. It is known to have occurred about half a dozen times in places so far apart as Sussex, Cornwall, the Isle of May and Cork, and songs apparently of this or the Icterine have been reported from other localities. It visits Britain, but how frequently we do not know. It nests in south-west Europe and north-west Africa, and winters in western Africa, and occurs in France as far north as Normandy. Both species have fine songs, though Seebohm considered that of the Icterine "deficient in melody." The alarm, "an angry *tek, tek, tek,*" is said to be generically distinctive. The eggs of both species are salmon-pink in colour. The Melodious Warbler is reported to have bred in Sussex and Surrey; an egg submitted to Saunders was, he considered, referable to this species.

The colours are duller and darker than those of the last species, but the wing is considerably shorter, the first primary

proportionally longer, and the second is shorter than the fifth. Length, 4.9 ins. Wing, 2.5 ins. Tarsus, .85 in.

Olivaceous Warbler. *Hypolais pallida*
(Hempr. and Ehr.).

A single male Olivaceous Warbler was shot in Sussex in May, 1915. It breeds in south-east Europe, western Asia and north-east Africa, and winters further south in eastern Africa. It is unlikely that a bird with this range should frequently stray so far as Britain. It is pale olive-brown above, and white, faintly tinged with buff, below, and has an indistinct eye-stripe. Length, 5 ins. Wing, 2.63 ins. Tarsus, .83 in.

Willow-Warbler. *Phylloscopus trochilus* (Linn.).

The Willow-Warbler, Willow-Wren, or, in some districts, "Peggy-Whitethroat" (Plate 78), is the most abundant of all our summer residents ; it is common throughout the British Isles, and great numbers, as birds of passage, travel along our coasts in spring and autumn. It is found in summer throughout Europe except in the north-east and south-east ; some winter in the south of Europe, but most in Africa, even so far south as Cape Colony. In north-east Russia and Siberia a greyer form, the Northern Willow-Wren, *P. t. evermanni* (Bonap.), summers, and, as first shown by Dr. C. B. Ticehurst, some of this race pass along our south and east coasts regularly in spring and autumn.

Three leaf-warblers, as the birds are called on account of their habits, are summer residents in Britain, and all are greenish yellow birds. The Willow-Wren is smaller and less yellow than the Wood-Wren, but is so similar to the Chiffchaff that it is difficult to see the greener back and paler legs in a poor light or when the active bird is amongst the foliage ;

the songs, however, are quite characteristic. The Willow-Wren often reaches the south coast at the end of March, and by the second week in April has spread far north; the arrival is frequently noted in a succession of waves, when thousands will stream in for days together; these waves and "rushes" do not lose all their force even in North Wales, Lancashire and Cheshire. For a few days there may be only odd birds about, then one morning the song is heard everywhere. The statement that the males arrive some days before the females and are at first silent may be true of the south coast, but if the weather is suitable the birds sing on arrival, and courtship begins at once in more northern counties. The immigrants quickly spread over woods, lanesides, and gardens in the lowlands, and to the spinneys and even bushes high on the hills.

The song, though simple, is wonderfully sweet; Burroughs described it as a "tender, delicious warble" with "a dying fall." "It mounts up round and full, then runs down the scale, and expires upon the air in a gentle murmur." By the middle of April in a normal year it is the dominant song in the woods; its persistence and vehemence rather than its volume swamps the loud rattle of the Chaffinch and the strong notes of the Song-Thrush. Like all songs it varies; some birds between the snatches give a low Sparrow-like chatter, and in August, after the moult, for the bird often sings in autumn, I have heard it whispered by a bird only a few feet away. The alarm note is a plaintive *hweet*, and the note of anxiety a double *loo-ee*.

The food-call of the young is insistent and often harsh. Small insects are skilfully captured on the wing, but most of the food is daintily picked from the leaves and twigs. Aphids are largely eaten, and beetles, including weevils, whilst the young are often fed on the caterpillars of small moths. Possibly, as is often stated, soft fruit is eaten, but the bird does little

damage in this way. In April and May the male chases the female through the trees, flying very swiftly, the lighter under parts flashing as they turn and dodge. In display he will droop his wings and puff out his feathers, or clinging to a twig or stem, gently fan his open wings, frequently one wing at a time; during this performance he usually sings, and then with tail raised and expanded and with quivering wings slightly uplifted floats obliquely towards his mate. I have known a pair begin to build three days after this show, and I agree with Miss Turner that the male certainly at times helps in construction.

The nest is partly domed (Plate 77) and usually built on the ground, distinguishing it from the normal nest of the Chiffchaff, which is above the ground; but in both species there is individual variation, and a Willow-Wren's nest at a height above ground is not uncommon. Grass is the usual material, but moss and dead bracken are sometimes added; a nest so constructed is hidden in the winter litter before the "croziers" have unfolded, and when the fronds unfold it is almost impossible to find unless our footfall scares the sitting bird. When thus disturbed the bird usually flies straight off, but occasionally feigns injury, but I have known one fly up into a tree and at once begin to sing. As a rule, long before the nest is reached, one or both birds begin plaintive notes of anxiety. The six to eight eggs (Plate 65) are laid in May, and it is thought that second broods are rare, late nests being the result of an accident to the first clutch; they are white blotched with red, rather like the eggs of tits, and with paler markings than those of the Chiffchaff. Emigration begins in August, but the majority of the birds leave during September. The Willow-Wren has been recorded as wintering in England, but some of these winterers may have been Chiffchaffs.

The upper parts in spring are yellowish olive, yellowest on the eye-stripe and rump; the wings are browner, the feathers margined with greenish yellow. The under parts are yellowish

white, the colour deepest on the flanks, and the axillaries are distinctly yellow. The bill, legs and irides are brown ; the legs much paler than those of the Chiffchaff. The sexes are alike, and after the autumn moult the birds are yellower, whilst the young are still more decidedly yellow. In the Willow-Warbler the first to fifth primaries are emarginate ; in the Chiffchaff the sixth is included. Length, 4·5 ins. Wing, 2·5 ins. Tarsus, ·7 in.

The Northern Willow-Wren is a much greyer and whiter bird. It passes north after our birds have begun to nest, but it must be remembered that plumage varies as also do times of arrival.

Arctic Willow-Warbler. *Phylloscopus borealis* (Blas.).

The Arctic or Eversmann's Warbler, which breeds in northern Norway, Russia and eastern Siberia, and is only known to winter in southern Asia, has been obtained once in the Orkneys and once in the Shetlands. It is a greenish brown bird, with a broad yellow eye-stripe ; white, slightly tinged with yellow beneath, and with two yellowish white bars across the wing. Length, 4·7 ins. Wing, 2·7 ins. Tarsus, ·8 in.

Wood-Warbler. *Phylloscopus sibilatrix* (Bech.).

As a summer resident the Wood-Warbler or Wood-Wren (Plate 76) comes late and departs early, reaching the south about the middle of April, but is seldom generally distributed before May. It occurs in suitable woodlands throughout Great Britain, but is local in Ireland and absent from many of the Scottish islands, though it has occurred on passage in the Shetlands. The typical race or its southern form is found throughout Europe except in the far north ; it winters in Africa.

Of the three leaf-warblers this is the most arboreal and, from the nature of its haunts, the most local ; it delights in the more

open woodlands and parks, where oaks and beeches predominate, and in hilly districts occurs far up the wooded valleys, even where beeches are absent and oaks and birches stunted. It is larger, more slender and graceful than the dainty Willow-Wren and Chiffchaff; its longer, more pointed wings make flight and actions deliberate but easy. Added to this the clearness of its yellow tints, especially on the broad eye-stripe, prevent confusion with its congeners. The young foliage is well advanced when the Wood-Wren reaches its haunts, and the greenish-yellow dress blends with the leaves; it is seldom detected until it begins its distinctive shivering song. Hudson describes this as a "long passionate trill—the woodland sound which is like no other"; there are a few preliminary notes which glide into a rapid descending silvery shiver, certainly like no other in tone unless it be the more deliberate song of the Blue Tit, but, from the way its whole body, wings and tail vibrate as it sings, suggestive of the vehemence of the energetic Wren. Every few moments the song is repeated as the bird flits from branch to branch and, as it crosses to a fresh tree, the opening notes may be sounded on the wing, but the trill when it has regained a perch. Between the snatches it is not idle; now it sails out and intercepts a passing fly, now poises in the air with rapidly whirring wings as it neatly picks an insect from the underside of a leaf, now pauses to utter its clear mellow call, *deeur, deeur*. The alarm is a plaintive *pee-oo*.

It is almost safe to say that the nest is always on the ground unless it is in the ground, for a hollow or depression is often utilised; a favourite spot is the slope of a bracken-covered bank, where it is wonderfully hidden by the spreading fronds. Domed like that of its relatives, it is built of dry grass, withered leaves and moss, and lined with finer bents and hair, but seldom if ever with feathers. The male, who at times helps to build, indulges in graceful nuptial flights, sailing with wide expanded wings and tail, the former quivering as he descends in a slight

spiral. The five or six eggs are not often laid before the middle of May; they are larger than those of the Willow-Wren and are thickly speckled, often forming a zone, with darker, more purplish red and violet (Plate 65). Early in July the song ceases, and, though the presence of the bird is difficult to detect when it is silent amongst the full summer leafage, the majority appear to leave before the beginning of September.

The plumage above is yellowish green, beneath white with a marked sulphur-yellow suffusion on the throat and breast, thighs and axillaries; the broad sulphur-yellow eye-stripe, reaching to the nape, and the edgings to the feathers of the wings are very noticeable. The bill, legs and irides are brown. The sexes are alike, and the young is yellower than the adult. Structurally the bird differs from the other two in that the emargination of the primaries only extends to the fourth. Length, 5·2 ins. Wing, 3·1 ins. Tarsus, ·7 in.

Chiffchaff. *Phylloscopus collybita* (Vieil.).

Two races of the Chiffchaff are recognised as British, the typical form of west, central and southern Europe and the northern and eastern bird, known as the Scandinavian Chiffchaff, *P. c. abietinus* (Nilsson), slightly larger and paler. Until recently the Chiffchaff (Plate 78) was called a summer resident and bird of passage, but it seems probable that most if not all the passage birds belong to the Scandinavian form. The nesting bird winters in southern Europe and north Africa; the winter range of the other still needs elucidation. The Scandinavian race has been identified in places so far apart as the Isle of Wight and the Shetlands.

The Chiffchaff closely resembles the Willow-Wren except in its song; it is rather browner and its legs are noticeably darker, but in a good light the bird is very yellow. About the middle of March, not long after the Wheatear and about the



1 Pl. 76.

Wood-Warbler.



N^o 188.

Icterine Warbler.



same time as the Sand-Martin, the Chiffchaff reaches the south coast, one of the pioneer summer birds ; in mild springs it arrives as far north as Cheshire before the end of the month, some days, often over a week, before the Willow-Wren. It sings more from the tree-tops than this bird, but is less arboreal than the Wood-Wren ; when the weather is cold, however, it is first heard from the undergrowth. The song is simple, a deliberate, throbbing repetition of two or, some say, three notes, from which it gets its name ; a better name than the older one, " Huck-Muck " or Least Whitethroat, a poor imitation of its notes. It is a steady pulsating song, neither particularly sweet nor harsh, rather suggestive of the throb of a stationary engine. Certainly some of the very early reports of its song are due to confusion with the Great Tit, but the notes of this bird are more varied in tone and usually rapidly repeated. Rarely there is a secondary song, an interlude between snatches of normal song ; twice I have heard a low, deep *chif, chif, chif*, quite distinct in tone, followed each time by the ordinary notes. On another occasion, an amorous male when courting uttered a sweet little warble, suggestive of a feeble Willow-Wren ; Kirkman refers to this variation. The plaintive call, *hoo-it* or *loo-ee*, is like that of the Willow-Wren, and when excited this is shortened to *hwit*. Saunders thought that the song ended in May ; it is drowned by other notes, no doubt, but it continues, with a short pause in individuals during moult, until the birds leave in October. The majority, no doubt, go south before this month, but I have several times heard the song from passing birds late in September and in October. These autumn birds slowly travel south, feeding as they go, visiting spots far remote from their woodland haunts ; in my own garden I see one or two most autumns, passing steadily along the hedge, travelling south-east.

The insect food largely consists of aphids, small larvæ and spiders, picked from the leaves and twigs, and flies are cleverly

caught on the wing. It is said that soft fruit is eaten, but I have not seen this myself. In mild winters numbers remain in the south-west of England and in Ireland, and occasionally further north; in the winter of 1912-13, when many were reported, I watched a bird feeding in an old Devon orchard, and in February two or three were reported in song in the north of England. When the nesting site is selected the male Chiffchaff jealously guards it, driving away other birds larger and more powerful than itself: I have seen it attack and defeat a Hedge-Sparrow.

Normally the domed nest is above the ground, but the height varies from a few inches to many feet; it is built in herbage, bushes, heaps of hedge cuttings, the litter which collects on the branches of conifers, in evergreens or trees. Dead leaves, moss and grass are used, and the lining is of rootlets, grass and a profusion of feathers; in one nest, so far as I could see, all were white. The five to seven eggs, laid early in May, are smaller than those of the Willow-Wren, and are white thinly spotted with purple or dark brown (Plate 65). Second broods are recorded, but one appears to be normal. The cock is said neither to build nor incubate, but he is assiduous in feeding the sitting hen.

The olive-green upper parts, yellowish on the rump, and white under parts tinged grey on the breast and suffused with yellow, closely resemble the plumage of the Willow-Wren. The superciliary stripe is whitish and short; the axillaries are yellow. There are two moults, that in spring being often incomplete, but the autumn dress varies little from that of spring. The bill and irides are brown, the legs so dark as to look black in the field. In the young the upper parts are browner, the under more yellow, and the breast is duller. In the hand the birds can be distinguished by the wing formula, apart from the emargination of the sixth primary; the second primary is longer than the sixth; in the Willow-Wren it is

equal to or shorter than the sixth. Length, 4'5 ins. Wing, 2'35 ins. Tarsus, '8 in.

Siberian Chiffchaff. *Phylloscopus tristis* Blyth.

The Siberian Chiffchaff is now known to be a regular autumn visitor to the Shetlands and Orkneys, where it has wintered ; it has also been found on the Isle of May. Its recognition as a British species is due to the investigations of Mr. Eagle Clarke. It breeds in eastern Europe and Siberia, and is known to winter in India. Dresser describes it as smaller, browner and whiter (on the under parts) than *P. collybita* ; Mr. Witherby says that it is "easily distinguished by its very brown upperside, grey underside, brownish flanks and bright golden axillaries." The skins I have examined support Mr. Witherby ; they are distinctly greyer beneath than those of our Chiffchaff, and the axillaries lighter. Mr. H. G. Alexander, Miss Turner and others watched a Chiffchaff on several days in November and December, 1913, in Kent, which they believe was referable to this species. They particularly noticed a distinctive plaintive call, as well as the characters described above. Length, 4 ins. Wing, 2'3 ins. Tarsus, '8 in.

Greenish Warbler. *Phylloscopus viridanus* Blyth.

The Greenish Warbler breeds in central Russia and western Siberia, and its usual winter quarters are in India, but it has on two or three occasions been met with on Heligoland, and once, in September, 1896, in Lincolnshire. It is greener than the Willow-Wren, and less yellow on the under parts, and there is a yellowish white wing-bar. Length, 4'25 ins. Wing, 2'25 ins. Tarsus, '75 in.

Yellow-browed Warbler. *Phylloscopus superciliosus*
(Gmel.).

Systematic study of migrants at the Scottish lighthouses and on northern islands proves that the Yellow-browed Warbler (Plate 70) is a regular autumn visitor and bird of passage. It has also occurred not infrequently on the east coast of England, and occasionally in Kent, Gloucester and the Scilly Islands, as well as in Ireland, and it has twice been noticed in spring. Its home is Siberia, where several ornithologists have referred to its song. Miss Haviland says that on the Yenesei, "its little monotonous song tinkled on without ceasing from every bush." Its normal winter quarters are India, Burmah and south-eastern Asia, but its migratory travels appear to drift westward also, for it has been met with in various parts of Europe.

Its size, simple song and double lemon-yellow wing-bars rather suggest a Goldcrest, but it is a typical leaf-warbler, olive-green and yellowish white; its salient character is the long yellowish eye-stripe, extending from the base of the bill to the nape, with a darker line through the eye. There is a faint lighter streak down the centre of the olive crown. The bill, legs and irides are brown. Length, 3·8 ins. Wing, 2·15 ins. Tarsus, ·7 in.

Pallas' Warbler. *Phylloscopus proregulus* (Pallas).

This small Siberian Warbler, like the last species rather suggesting the Goldcrest, winters in southern China, but has, on rare occasions, strayed westward; it has been shot on Heligoland, and once, in 1896, in Norfolk. It is yellower than the Yellow-browed Warbler and its superciliary stripe is lighter; there is a central yellow streak on its crown. The most



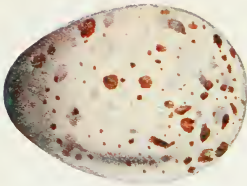
T. Pl. 78.

Chiffchaff.

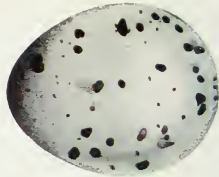


Willow-wren.

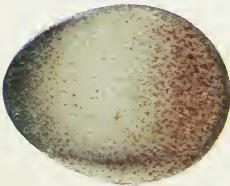
N. 102.



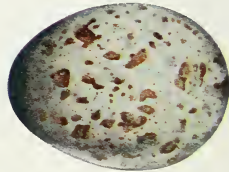
Mistle-Thrush.



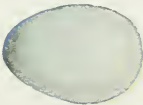
Song-Thrush.



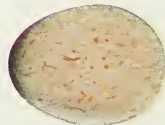
Blackbird.



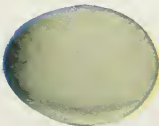
Ring Ousel.



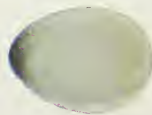
Redstart.



Redbreast.



Nightingale.



Stonechat.

noticeable character, however, is a broad band of lemon-yellow across the rump. Length, 3·7 ins. Wing, 2·1 ins. Tarsus, ·6 in.

Dusky Warbler. *Phylloscopus fuscatus* (Blyth).

A female Dusky Warbler, an eastern Siberian bird which winters in south-eastern Asia, was taken in the Orkneys in October, 1913. It is unlikely that it often wanders so far from its usual haunts. The upper parts are brown, the eye-stripe buffish white, the ear-coverts and neck buff mottled with brown, and the under parts white tinged with buff, darkest on the flanks. The bill and irides are dark brown and the legs flesh-colour. Length, 4 ins. Wing, 2·45 ins. Tarsus, ·9 in.

Family TURDIDÆ. Thrushes.

Mistle-Thrush. *Turdus viscivorus* Linn.

The Mistle-Thrush (Plate 80) is a common resident in the British Isles, and throughout most of Europe and western Siberia. It is partially migratory; many of our birds leave in late August or September, and Continental visitors arrive from September onwards. Some of these remain as winter visitors, and others are birds of passage to winter quarters in southern Europe and northern Africa. The return northwards is noticeable in Britain in February, and continues until April.

The name, derived from its habit of feeding on mistletoe berries, where these abound, is less descriptive than Stormcock, which has several variants, for early in the year, when the weather is broken, the bird perches high on a tall tree and in exultant and ringing song defies the elements; I have heard it singing during a driving snowstorm. In gardens, open fields, woodlands and bleak hillsides this large, conspicuous greyish thrush is equally at home. It stands with head well raised,

alert and wide awake ; it hops for a foot or two, then stops with head bent sideways, keenly examining the ground, dives forwards and drags out a struggling worm. It flies with strong direct flight, spreading its tail, when the spotted tips show clearly ; it is larger, greyer and more distinctly spotted than the Song-Thrush, and when in flight the underside of the wing and axillaries are white, at once distinguishing it from all other thrushes except the Fieldfare, from which it may be told by its yellowish-brown, not blue-grey rump. The song, which may be heard in any month, though infrequently from July to September when it is moulting, is not so mellow as that of the Blackbird, and is more continuous and less varied than the music of the Song-Thrush, but it has force and character and carries well. At times the bird sings as it flies, but the usual flight call is a grating scream or churr ; this harsh note is modified and intensified when excited by alarm or anger. When defending its nest the bird is fearlessly aggressive ; at other times it is a bully—Crockett's "butcher-boy of the woods." I have seen it attack and drive away the Jackdaw, Rook and Kestrel. It will defeat the Sparrow-Hawk and attack man ; I have known one strike the neck of a man who was examining its nest, flying at him with angry screams. The open situation of the nest helps its foes, and Magpies steal the eggs and young ; Mr. C. Oldham witnessed a fierce fight between two Mistle-Thrushes and a Pie which had secured a nestling ; all four birds fell to the ground in a struggling ball. I have heard one when mobbing a cat punctuate its angry screeches with hoarse croaks, and during the breeding season it has a sharp repeated challenge, *chit, chit, chit*, each note of which is accompanied by a jerk of the closed wing and expanded tail.

The food is varied ; even when insects, worms or molluscs are abundant it cannot resist ripe berries, be they of ivy, yew, hawthorn or mistletoe ; in autumn it raids the hills for rowans and junipers. Like the Song-Thrush, it smashes snails on a

stone anvil. The family parties keep together after the breeding season, and later form into flocks, which feed in the open fields with other thrushes; these flocks are often scattered over the hill pastures, and strip the mountain-ashes in the cloughs.

The fork of a tall forest tree is a common site for the large conspicuous nest, which is at times built of noticeable material, even strips of paper. It is at varying height from the ground, often in quite a low tree or bush; in treeless districts it may be on the ground, in a stone wall, or in a quarry (Plate 82), on the coast in a crack in the cliff face, or on rocks only a few feet above high-water mark. The usual materials are grass, moss, roots and wool, with a lining of caked mud, and a soft inner lining of grass; one nest on the cliffs was entirely built of seaweed and lichens, so closely harmonising with its surroundings that it was the sitting bird and not the nest which caught my eye. The bird nests early, and eggs are sometimes laid in February, but the first nests are often destroyed by storms. Mr. S. G. Cummings found a bird sitting in a reconstructed nest twelve days after the first had been blown out of the tree. In the late spring of 1917 a pair began to build on March 18—in this case both birds certainly took a share—but before the lining had been added the nest was filled with snow. When this had melted and drained away the birds continued the work, but a second time were delayed by snow; by April 8, however, the persevering birds had not only finished but were sitting, though snow was piled high on the edge of the nest, entirely hiding the sitter. A second brood is often reared. The eggs (Plate 79) are greenish or brownish white, blotched and speckled with purple-brown and violet-grey.

The upper parts are ashy brown, the under buffish white with conspicuous oval dark brown spots. The bill is brown, horn at the base; the legs pale brown and the irides dark brown. There is little difference between the sexes or in the colour after the autumn moult; there is no real moult in spring. The young

are yellower above (Plate 80, upper bird), and the head, back and wings, especially the upper wing-coverts, are spotted with buffish white. In this speckled dress it has been mistaken for White's Thrush. Length, 11 ins. Wing, 6·2 ins. Tarsus, 1·3 ins.

Song-Thrush. *Turdus musicus* Linn.

The British Song-Thrush (Plate 80) has been separated from the Continental bird under the name *T. m. clarkii* Hart., it being darker than the typical *T. m. musicus*—more rufous and not so olive. These colour distinctions are fine, and there is considerable variation in our birds. I have examined ranges of the two sub-species, but should hesitate to identify a bird in the field. A still darker race, *T. m. hebridensis* Clarke, inhabits the Outer Hebrides; the breast spots in this form are very black. Our bird is a common resident in most parts of the British Isles. As large numbers emigrate in autumn and return early in spring, it is also a summer resident. The Song-Thrush is found throughout Europe, except in the south, and its range extends into Siberia; great numbers of Continental immigrants arrive in September and October, some as winter visitors, others as birds of passage towards winter quarters in southern Europe and north Africa, and many of these have been recognised as the Continental form, though it is reported that our bird nests in Holland. Along our western shores and further inland there is in spring and autumn a migratory movement of dark and apparently small Song-Thrushes, but their destination is unknown. I see these birds annually in Cheshire in small flocks; in spring they pass about the middle of March, in autumn, in September and October. Mr. Gladstone reports them in autumn in Dumfriesshire, and Mr. Aplin, at the end of January, found dark and richly coloured birds wintering in the Lleyn fields. The suggestion that these are the Hebridean form seems hardly



1 Pl. So.

Song-Thrush.



Mistle-Thrush.

O 196.



likely, for the wing measurements of that race are a little above the average.

The Song-Thrush or Thristle is one of our best-known birds ; it frequents and nests in our gardens, and though found in woods and unfrequented areas shows decided preference for inhabited and cultivated districts ; it is not common on the hills. The song varies individually in quality, but a good-voiced Thrush has much in common with the Nightingale, not only in the variety and tone of its phrases, but also in that it occasionally sings at night. In suitable weather the bird sings in autumn and winter, and August is perhaps its only really quiet month. The Song-Thrush possesses the imitative faculty, but the notes it catches best are those which lend themselves to short-phrase repetition ; I have heard it copy the Lapwing, Ringed Plover, Redshank, Green Woodpecker, and certain notes of the Nightingale ; indeed in Norfolk it has for a moment misled me. A common call of the Thrush is *tchuck*, which, modulated or rapidly repeated, expresses various emotions ; it may be shortened to *tchik* or *tic*, especially at roosting time ; it can be subdued into a love-note, or hurriedly repeated in the rattling cry of alarm. It has a soft *seep* not unlike that of the Redwing, and the cock, when bringing food to the sitting hen, greets her with a hurried and anxious-sounding twitter. Early in the year the males fight frequently and will sing during the bouts.

The Thrush flies quickly and direct, its wings moving rapidly ; on the ground it runs or hops, but seldom walks. When seeking food it holds its head on one side, as if listening, but this is due to the lateral position of the eyes ; an alert and listening bird holds the head raised and the body erect. Nuptial antics, except pugilistic encounters, are apparently uncommon, but I have seen a bird approach two others, creeping on its belly, with wings dragging and tail drooped, and with its mandibles open as if with fear. Unfortunately my presence stopped the

performance. Worms, some kinds of slugs, snails and insects are its chief food ; berries are eaten, but are not so eagerly sought for as by many of its congeners. Snail-stones, on which it smashes the shells of its victims, are surrounded by fragments of its feasts ; on the coast a rock is often used, and in Yorkshire the hard stems of the sea-buckthorn ; I have seen these with the bark worn off. The young are largely fed on earth-worms pecked into sections, and long after they leave the nest they call for food with a querulous *tcheep*.

The nest may be in almost any situation—in a tree (Plate 81), bush, evergreen, hedge, shed, hole in a wall, on a ledge, bank or the ground. The materials used are also varied—grass, leaves, moss, wool, even paper, but the lining is always a plaster of mud, generally mixed with wood-chips, horse-dung or vegetable tissues ; when dry this forms a solid saucer which often remains long after the outer materials have vanished. Mr. Kirkman reports the entire nest, with the lining added, built by the hen bird alone in twelve hours, and I have known an egg to be laid four days after building began. Eggs are usually laid from March onwards, but nests in February or even January are not uncommon. Two or three broods are reared. The sitting birds do not always behave in the same manner ; they usually sit closely, remaining when looked at, with the bill pointed upward and the streaks on either side of the throat showing plainly ; suddenly, however, the bird leaps up and flies off with a loud rattling scream. Others slip quietly from the nest, though they usually remain near, repeating an anxious *tchuck*. The very blue, black-spotted eggs (Plate 79) are four to five in number. Whether the majority of the birds emigrate in autumn is not certain, but round the larger towns Song-Thrushes remain all winter, though country districts are practically deserted.

The general colour is olive-brown, with buff tips to the coverts forming an obscure wing-bar ; the under parts are

whitish tinged on the breast and flanks with fulvous to rufous, and spotted with blackish brown on the breast. The axillaries, noticeable in flight, are bright golden buff. The bill is dark brown, the legs pale brown, and the irides hazel. During winter the tips of the feathers are abraded and the spring plumage is greyer and the spots smaller than after the moult in autumn. The sexes are alike. The young are mottled with buff on the upper parts. Length, 8·5 ins. Wing, 4·5 ins. Tarsus, 1·2 ins.

Redwing. *Turdus iliacus* Linn.

The Redwing (Plate 83) breeds in the northern Palæarctic regions and winters in southern Europe, India and Persia. To our islands it is a regular winter visitor, and many travel through towards southern Europe or north Africa; it reaches Britain in September and October, sometimes in very large numbers, and returns northward in March and April, a few at times lingering until May.

During its stay in Britain the Redwing is distinctly gregarious, frequenting open country, feeding in the fields with Fieldfares and other birds. In these mixed flocks there are often a few Song-Thrushes, from which it can be distinguished by its long pale eye-stripe and reddish flanks; when it flies the rich chestnut on the axillaries shows, much deeper than the golden-buff of the Song-Thrush. The food of the Redwing is mainly worms, insects, molluscs and other small animals, and when the supply of these is cut off by hard frost or a heavy fall of snow the bird suffers; it will then take to berries, eating those of the white-thorn, yew, ivy and holly, but if these have been already stripped by the Blackbirds and Mistle-Thrushes it is forced to leave or perishes. Although westward movements towards Ireland are frequent before and during heavy snowfalls, large numbers linger until they are too weak to travel, and a hard winter is

usually followed by one or two years when Redwings are noticeably scarce. During frost I have seen a bird by the roadside tearing up the grass in a frenzy of hunger, but its efforts to find food failed, and next morning it was dead. On another occasion a flock with Fieldfares were dragging from the ground the frozen root-tops left in the field, and were so tame that I could almost touch them. Although the Redwing is said not to eat berries until forced by hunger, I have seen birds which had just reached the Yorkshire coast attacking the berries of the sea-buckthorn.

The Redwing is a nocturnal migrant, its arrival is usually first noticed by its soft flight call—*see-ip*, even heard when it passes over busy towns. On the Yorkshire coast I have seen the birds rise in a flock at dusk, mount to a great height, and then when almost invisible make off in a southerly direction. Numbers of Redwings are killed by raptorial birds which accompany the flocks; Mr. J. A. Dockray, when punting on the Dee, saw a Redwing escape from a stooping Peregrine by alighting on the water, and after the Falcon had sheered off it came to rest on the punt gun. When a feeding flock is disturbed, the birds fly off one by one, and at night they roost in evergreens and plantations, but the normal habits are those of ground birds. The strong flight is fairly rapid, a series of quick wing beats with short intervals when the wings are closed; the flocks move in loose formation. When feeding the call is a soft *chup*, and at the roost combined twittering warbles are usual, but the song is seldom heard at its best in Britain. Shortly before departure a few begin to sing—a “musical babble, very gently warbled,” as a friend aptly describes it; it is quieter and more sustained than that of the Song-Thrush, and is interrupted by a *churr*, like the cry of the Mistle-Thrush toned down and subdued; the notes have a guttural ring. A deep *puck* corresponds with the *tchuk* of the Song-Thrush.

The Redwing has been frequently reported as nesting with

us, but confirmation is lacking ; even Dr. Saxby's account of the nest he found in North Wales is discredited.

In winter the upper parts are olive-brown, the under whitish ; there is a pale superciliary streak, the ear-coverts are brown and the lores black. The spots on the breast and chestnut flanks form striations. The bill and irides are dark brown, the legs pale brown. The young are spotted rather than streaked on both upper and under parts and the feathers of the back have buff central streaks. Length, 8·5 ins. Wing, 4·5 ins. Tarsus, 1·2 ins.

Fieldfare. *Turdus pilaris* Linn.

The distribution of the Fieldfare is very similar to that of the Redwing, but in Scandinavia the bird nests further south. In our Islands it is a winter visitor and bird of passage, arriving about the middle of September onwards, even well into winter. Passage birds return in March, but many emigrants do not leave until April, whilst laggards are noted in June.

The Fieldfare (Plate 83) is a large, distinctive bird ; its slate-grey head and rump, the latter very noticeable in flight, contrast with the warm brown of its back, but even when we cannot see its colours the harsh flight call, *tsak, tsak*, is unlike the note of any other thrush. The gregarious "Felt" or "Blueback" frequents open country and is nomadic, its movements regulated by food supply ; so long as the weather is mild and insect food abundant a flock will remain day after day in the same fields, but during frost it wanders so soon as the berries are devoured in one district. It is found in the lowlands and on the hill-sides to a fair altitude, and in frost takes refuge on the shores and marshes. The bird flies direct, at no great speed, with strong wing beats alternating with short intervals with closed wings ; when moving ground the flock straggles in loose formation, and when a long flight is contemplated rises to a

considerable height. In the fields the birds work steadily up wind, halting constantly to stand well erect with head uplifted, alert rather than suspicious. They fly to trees when alarmed, and perch with heads facing the wind, but if approached they rise and, turning, fly rapidly down wind with cries of alarm. In addition to the animal and berry food common to all thrushes, the Fieldfare will, when other things fail, attack turnips or other roots, and on the coast eat marine molluscs; but if there is an abundance of fruit on the hawthorns other food, even worms and insects, is neglected so long as the supply lasts.

Frequently the birds chatter sociably in a tree and in spring it is not unusual to hear low warbled refrains, the first efforts at song; Seebohm describes the nuptial song as a "wild desultory warble," but the song I heard repeatedly in Norway was not much superior to the occasional April warble. Reports of British nesting are unsubstantiated; the bird is sociable in its nesting habits and when a colony is approached the intruder is greeted with loud clamour. I have been mobbed by nesting birds which repeatedly brushed past within a few inches of my face with harsh and angry cries, quite different from the notes heard in England. The nest is usually in a tree (Plate 88) and not unlike that of the Blackbird.

In winter the slate-grey head is streaked with black, and the grey rump tinged with buff; the wings and tail are dark brown, the back and mantle warm chestnut. The rich brown throat and breast are streaked with black, and with dark brown on the flanks; the centre of the belly is white, as are the under wing-coverts and axillaries, noticeable in flight. The bill is dark brown, yellow on the under mandible, the legs and irides dark brown. The margins, which somewhat obscure the breast markings and the grey of the upper parts, wear off during winter, and by spring the rump is a clear, uniform grey. The whole bill is now yellow. The young are at first spotted above

and below, but after their autumn moult they are not unlike the adult bird, but the head and rump are grey-brown (Plate 83 second bird), and the under parts are more spotted. Length, 10 ins. Wing, 5·75 ins. Tarsus, 1·4 ins.

Dusky Thrush. *Turdus fuscatus* Pallas.

The Dusky Thrush, though it breeds in Siberia and winters in China, has not infrequently wandered into Europe, and it is rather remarkable that it is only known to have once reached Britain. It is hardly like the Fieldfare, though the example shot in Nottinghamshire in 1905 was at first thought to be a variety of this species. Its rump and secondaries are chestnut, the throat white speckled with black, and the buff superciliary stripe is conspicuous; the most noticeable character is the black on the breast, the feathers being margined with white. The under wing-coverts and axillaries are rufous, further distinguishing it from the Fieldfare. Length, 9 ins. Wing, 5·15 ins. Tarsus, 1·35 ins.

Black-throated Thrush. *Turdus atrigularis* Temm.

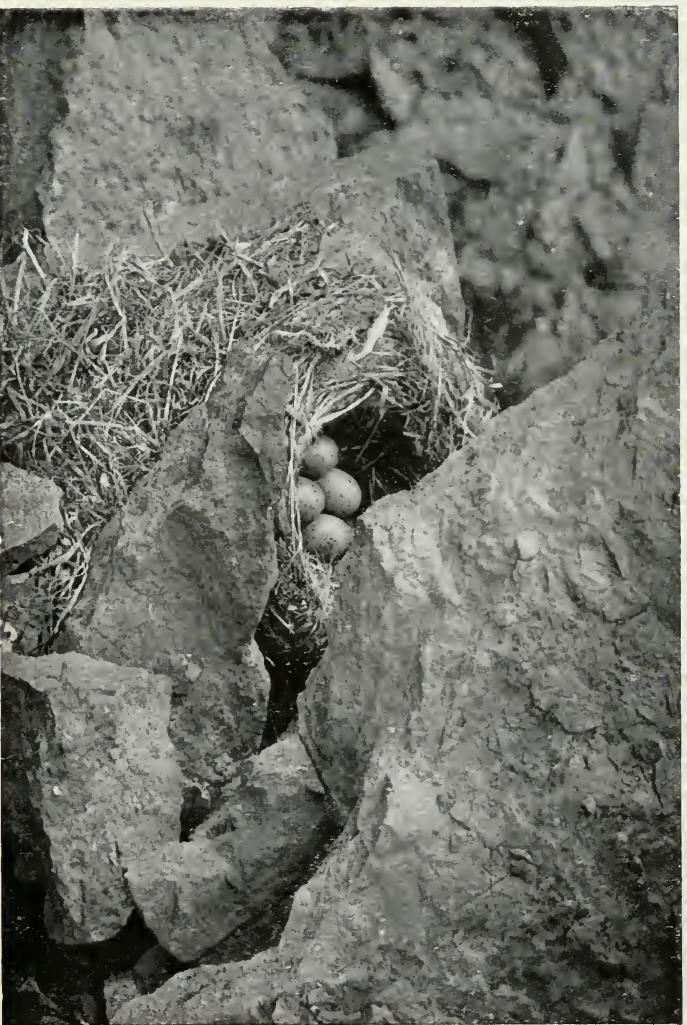
The male of this western Siberian thrush, with its black chin, throat and upper breast and otherwise white under parts, cannot be confused with any British species, but the female and young bird are a little like a very grey Song-Thrush, having greyish brown upper parts and white under parts streaked and spotted with black. In both sexes, however, the crown is streaked, and in the female the throat and chin, almost without marks in the Song-Thrush, are distinctly speckled with black. Its usual winter quarters are in southern Asia, but wanderers have occasionally reached England and Scotland; it has been recorded from Perthshire, Sussex and Kent from December to March. Length, 9·5 ins. Wing, 5·45 ins. Tarsus, 1·3 ins.

Blackbird. *Turdus merula* Linn.

The Blackbird (Plate 85) is found in most parts of Europe and is partially migratory, wintering in the more southerly parts of its range. In the British Isles it is at once a resident, a summer and a winter visitor and a bird of passage, for many of our nesting birds leave in autumn and large numbers come to us for winter or pass through the country.

Such a conspicuous and regular frequenter of the garden is naturally well known, yet the elementary fact that the hen is not black is often overlooked; she is dark brown and her rufous breast is striated and she is sometimes taken for a dark Song-Thrush, causing reports of interbreeding. Though the depth of colour of her under parts varies considerably she is never so light as a Thrush. Confusion with the Ring-Ousel is occasionally excusable, for no bird is more prone to variation; white or partially white Blackbirds are common. When the white takes the form of a band or gorget on the breast there is little difference between the two species, and reports of winter Ring-Ousels or of these birds in the lowlands are usually due to such "sports." Common as it is round houses the Blackbird is just as plentiful in the woods and hedgerows, feeding in winter in the fields with other thrushes, though usually at no great distance from a hedge or spinney into which it retreats with screams if alarmed. Nowhere is the bird more abundant than on the rough hillsides and wooded *crwns* of Wales. On the hills its range overlaps that of the Ring-Ousel; there is a zone where both species nest. In winter, though it is seldom seen in large flocks, it is more gregarious, and on migration is sociable. The Blackbird is cautious and suspicious but hardly shy, it is apparently proud of its black dress and especially of its tail, which, whenever it alights, is jauntily switched upwards. During quarrels and courtship it is carried outspread almost at right angles to its back.

Nest of Mistle-Thrush in a quarry.





The song period of the Blackbird is much more restricted than that of the Song-Thrush ; in most years it does not sing until February, and in July the birds cease one by one and seldom sing again after the moult. On exceptionally mild days in December and January a few snatches may be heard, but autumn songs are rare. The mellow, flute-like song, though not covering a wide range, has great variety ; the bird rings the changes on a series of notes. The song is loud, clear and very beautiful, but has a weak ending, almost a hissing collapse. When not in song the bird is seldom silent ; its loud, startled, and often startling, rattling scream of alarm, a jumble of notes run together, is heard at all seasons. When it suddenly appears on the lawn it scares all other birds with this note uttered as a chuckle, but imagined danger sends it off with a wilder scream. When flushed from the nest or merely disturbed during its investigation of the autumn litter the clarion alarm is sounded ; I have seen a bird displaying and frequently rattling for no apparent cause. The attitudes assumed under nuptial excitement suggest conceit and pugnacity ; the wings are drooped, the tail uplifted and the bird flirts from side to side. Half a dozen cocks will chase and fight for a hen. Few birds fight more persistently, though, so far as cocks are concerned, without serious results. Not only will the cock attack a rival with beak and claw but it will waste time on its own image ; for two springs a bird spent hours every morning tilting at its own reflection in one of my windows, and Mr. C. B. Moffat and others have had similar experiences. In one case these window attacks were in October and November, when pairing and display begin. Female birds also fight, probably over territorial rights ; in one instance a couple of hens were disturbed when struggling together on the road, and one of them dropped a beakful of feathers, almost the whole scalp of its adversary. In my garden one hen chased another into a trap and before I could release them had killed the

fugitive. I have seen a hen again and again drive a Starling from food in winter, striking at it with both feet like a Gamecock. Two familiar notes, expressive of various emotions, are a metallic *chink* or *mink*, and a rather deep *tschuck*, whilst at roosting time it is a monotonous and exasperating *tac, tac, tac*. The birds hop, flit and run, jerking their tails and wings, and repeating this note as if they were mobbing a cat or other foe from dusk until dark. The hunger cry of the young after they have left the nest is a piping note repeated usually two or three times in succession, not unlike early efforts at a song. The food is similar to that of other thrushes, but in summer the bird is too fond of fruit; I have seen ten in one pear-tree, and half a pear may be eaten at a meal. Even unripe apples are spoilt and in raspberries the bird is very troublesome. Blackberries, junipers, rowans, haws and other wild fruits are greedily eaten, the last sometimes swallowed whole.

The nest is in bushes or hedgerows, in trees or on the ground; it is large and similar to that of the Song-Thrush though with an additional lining of grass above the mud. I have found it in a hollow tree, on the top of the old nest of a Song-Thrush and in a hole in a wall. Over one nest, resting on small branches against the side of a trunk, a frail but distinct dome of small twigs had been built, though insufficient to give shelter or protection. Four to six greenish-white eggs (Plate 79) profusely speckled or blotched with reddish brown are as a rule laid in March; two or more broods are usual. A case came under my notice of a Blackbird building in a pear trained against a wall, and a little above it a Pied Wagtail had a nest between a branch and the wall. The hen Blackbird constantly drove the Wagtails away from their young, but not only fed both these nestlings and her own young, but was on one instance seen brooding the Wagtails. As a rule the cock does little to help building or incubation, but he has been seen on the nest, and assists in feeding the young; cases

are recorded in which the young of a first brood have helped to feed a later brood.

The male is glossy black with orange bill and eye-rims, blackish legs and dark-brown irides. The female is dark brown with a pale throat and breast streaked with black, and with spots on the lower breast ; her bill and legs are dark brown. The young show pale shaft streaks on their brown plumage, and the bills of young males, which often show black backs before their heads change colour, remain very dark until the second year. Length, 10 ins. Wing, 5 ins. Tarsus, 1·4 ins.

Ring-Ousel. *Turdus torquatus* Linn.

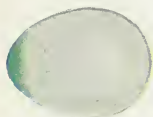
The typical Ring-Ousel (Plate 85) is a summer resident in Scandinavia and the British Isles and winters in southern Europe and north Africa ; with us it is also a bird of passage in spring and autumn. It has been reported as wintering occasionally, but statements that it has remained in the lowlands are open to question since pied Blackbirds have been confused with this species. The Alpine Ring-Ousel, *T. t. alpestris* (Brehm), whiter on the flanks, breast and secondaries, which occurs in the mountains of central and southern Europe, has been identified as a bird of passage.

The true home of the Ring-Ousel is moorland, amongst the rocks and heather of our wilder hills. It has been recorded as nesting in lowlands but such cases are exceptional and some of the records doubtful. Nowhere in England is it more abundant than on the Pennines and Peak of Derbyshire, where it is known as the Torr-Ousel ; it is common in Lakeland and on many of the Welsh mountains, and in Scotland is widely distributed ; it is found in suitable localities in Ireland and on Dartmoor and other high grounds in the south-west of England. Roughly above the 1000 feet contour the Ring-Ousel replaces the Blackbird, though often their ranges overlap and the

former occurs on wild heather-clad hills even below 500 feet. It may always be distinguished by its white gorget.

The Ring-Ousel is one of our earliest spring migrants. Our resident birds appear to come straight to their moorland haunts without resting on the shores or on the way ; the bird is seen in its breeding haunts, before it is noticed as an incoming migrant on the south coast, from the middle of March onwards. Birds which arrive later and are met with slowly working their way northward are probably on passage towards Scandinavia. The return journey begins in September, but many linger through October and occasionally a bird will remain all winter. The song is loud and clear, suggestive of that of the Mistle-Thrush rather than the Blackbird ; it is a wild song, in keeping with the lonely uplands. The bird sings from a rock or heather clump, and often from the rough grit walls. The quality varies considerably ; in Wales I heard a bird which had nothing more than a single note, very loud and strong, which it repeated constantly, day after day, from a rock near its nest. The song may be heard after dark. The loud rattle of alarm resembles that of the Blackbird, but its angry *tac, tac, tac*, is, if anything, harsher. The call is a clear pipe. It defends its young with the boldness of the Mistle-Thrush, threatening even a human intruder with ferocious noisy dashes, but at other times it is wary. The flight is strong and rapid ; when flushed the bird dashes down the cloughs and gullies, skimming the rocks and dodging out of sight whenever possible. On the ground its attitudes and movements are those of the Blackbird ; it elevates and spreads its tail when alighting, and droops its wings when posturing before its mate. The food, too, is similar. Whinberry, cranberry, juniper and other moorland fruits are eaten and in August it descends, often in small flocks, into the cloughs to raid the mountain-ashes.

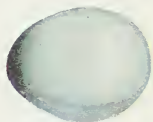
The nest (Plate End paper 3) is at times difficult to find, well hidden in deep heather or its position screened by an overgrowing



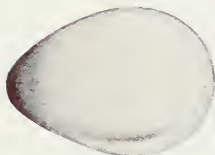
Winchat.



Wheatear.



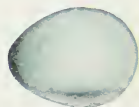
Hedge-Sparrow.



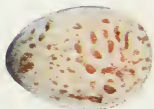
Dipper.



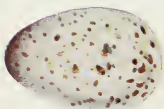
Wren.



Pied Flycatcher.



Spotted Flycatcher.



Swallow.



Sand-Martin.



House-Martin.



clump when it is placed on the edge of a moorland beck ; the birds, however, by their anxiety reveal its presence. At other times it is absurdly visible, on a bank, ledge or in a hollow in a stone wall. It has the same mud cup and grass lining as the Blackbird's, and the outer materials are bracken, moss, wool and stems of heather, but the majority of those on the Pennines and Peak are built of stiff, wiry moorland grass. When this is the case it almost invariably differs from the nest of the Blackbird, for the ends of the grasses are left sticking out at an angle, as shown in the photograph (Plate 86) and are not twisted in. The eggs (Plate 79) are usually laid late in April or in May ; four is the ordinary number, though five or six may be found. They are similar to one type of the Blackbird, boldly blotched with reddish brown on a blue-green ground. The male has been seen to help in building, but his chief duties are those of sentinel and guard.

In summer the male is sooty black with pale edgings to the secondaries and with a broad white gorget ; his bill and eyerims are yellow, the former darker at the tip. The legs and irides are dark brown. The female is browner and her narrower breast band is tinged with brown. After the autumn moult the feathers of the breast are fringed with grey and the bill is brownish yellow ; these tips and edgings wear off during winter. At first the young are more or less mottled ; they have pale margins and central streaks to the feathers of the back, and the under parts are barred with black, brown and white. After the first moult most of these mottlings are lost but the bird retains a much greyer appearance. Length, 10 ins. Wing, 5·4 ins. Tarsus, 1·3 ins.

White's Thrush. *Turdus aureus* Holandre.

This large and strikingly marked bird is a summer visitor to eastern Siberia and Japan and winters in China. It has

Series I.

P

frequently wandered in winter into Europe and has been met with on several occasions in the British Isles, including Ireland. The general colour of White's Thrush is yellowish above and white beneath, but as most of the feathers have black margins it is speckled both above and below with black crescents. Young Mistle-Thrushes have been confused with this species, but the number of the tail feathers differs—12 in the Mistle, 14 in White's Thrush. Length, 12 ins. Wing, 6·4 ins. Tarsus, 1·3 ins.

Rock-Thrush. *Monticola saxatilis* (Linn.).

The Rock-Thrush breeds in the mountains of south and central Europe, northern Africa and Asia, and winters in tropical Africa and southern Asia. Although it summers in parts of Germany and Switzerland it has only been noticed in England three or four times and once in the Orkneys, usually in spring, probably wind-drifted westward when on migration. It is a medium-sized short-tailed bird, both in appearance and habits more suggestive of a Wheatear than a Thrush. The adult male, with his slate-blue head, throat and upper back, and white band across the lower back, contrasting with rich chestnut under parts and tail, is not likely to be confused with any other species, but the female is a browner bird barred with black and grey, and her lower back is mottled with buff. Her throat is white and the under parts buff with brown markings. Young birds are mottled with brown and slate, and have bars on the under parts. Length, 8 ins. Wing, 4·7 ins. Tarsus, 1 in.

Redstart. *Phoenicurus phoenicurus* (Linn.).

In most parts of Britain the Redstart (Plate 87) is a summer resident, but in Ireland it is exceedingly local; it is also a bird of passage between the northern part of its European range and its winter quarters in north Africa





Early in April the male Redstarts arrive on the south coast a few days in advance of the females, but towards the end of the month both sexes arrive simultaneously in more northern shires. The bird is often described as a frequenter of ruins, rocks and quarries, accurately enough where these occur, but in many parts the ruins it favours are those of ancient forest trees ; it is a bird of the woodlands and open park land, especially where the timber is old enough to supply cracks and crannies suitable for its nest. In many of its habits and actions the Redstart shows affinity to the Redbreast ; it has the same general carriage, the same spasmodic bobs or duckings of its body, the jerky inquisitive behaviour in our presence. The rich chestnut tail is ever in motion, flirited suddenly upward, and, as Kirkman describes it, vibrated. The tail, from which it gets its name, has been the subject of controversy ; some authorities declare that it is only moved vertically, others horizontally, generalising on what each has observed. The truth is that it can be and is moved in any direction ; in the trees it is flicked up and down, in the presence of the hen swung from side to side. The rich colour of the tail and rump attracts the eye as the bird rises to a tree or flits with jerky flight from branch to branch ; no other bird except the Black Redstart, a winter visitor, has a similar tail. The white forehead of the male is also a good label, and he is more frequently noticed than his mate as he sings his short happy song, very like some of the snatches of the Robin, but never being more than a prelude ; it has an unfinished, feeble ending. Now and then the bird sings on the wing, but most of his aerial journeys are sallies after passing insects, for the Redstart is an excellent flycatcher and most of its food consists of winged insects. The widespread chestnut tail shows to advantage when the bird flits and hovers, dodging from side to side, over the long grass where flies and plant-bugs are always plentiful. The song may be heard after dark. The call is a chat-like *whee-tic tic*, and the alarm a

plaintive single note, *wheet*, not unlike that of the Willow-Wren.

In its choice of a nesting site the bird is almost as catholic as the Redbreast. Holes in trees, cracks in rotten stumps, crannies in rocks or quarries or in ancient masonry are most usual, but the nest may be built in an occupied dwelling, even over the doorway, or may be tucked into a hole on the ground, but it is always well screened and hidden. It is loosely built of grass, moss, fibre, rootlets, often with a little wool added, and the cup is lined with hair and a few feathers. The five to six or even eight light blue eggs (Plate 79) are usually laid during May, and a second brood is rare. The female sits closely, and if frequently looked at gains confidence and will refuse to move unless handled. The same hole is often used year after year.

The male in summer is a smart bird with slate-grey head and upper parts except the rump and tail, which, like the flanks, under wing-coverts and axillaries are rich orange-chestnut. The forehead and a line over the eye are white; the sides of the face and throat deep black. The wings and the two central tail feathers are brown. The orange on the flanks shades to buff and to almost white on the belly. The bill and legs are black, the irides dark brown. The hen is a browner bird with paler under parts; she lacks the black and slate, and her throat is whitish. The young are mottled on both upper and under parts, but both the hen and the young have the distinctive tail. In autumn broad margins obscure the colours of the male, but these wear off leaving the showy spring plumage. Length, 5·4 ins. Wing, 3 ins. Tarsus, 1·8 in.

Black Redstart. *Phoenicurus titys* (Bechstein).

The Black Redstart (Plate 87) occurs throughout Europe so far north as the Baltic, and winters in southern Europe and





1 Pl. 89.

Redbreast.



P 213.

Wren.

Africa. With us it is a bird of passage and winter visitor in small numbers. On passage it is most frequent on the east coast south of Yorkshire and the south coast; in Scotland it is an irregular passage visitor, and in Ireland is not infrequently met with in the south-east, where, as in Cornwall and Devon, a few spend the winter. Saunders states that "in Wales, it occurs irregularly in Pembrokeshire but rarely elsewhere," and this notion of its rarity in the west has been freely copied. My own and the observations of others in Anglesey and Carnarvon, and especially those of Mr. R. W. Jones at Llandudno, prove that it is a frequent and apparently regular visitor from October until March, certainly occasionally wintering, in North Wales. Seebohm suggested that the birds which he thought only reached our south coast, came from Holland and took the shortest sea crossings, but apparently numbers pass from Holland, if that is their starting point, westward or north-west, and crossing England reach the west coast. Occurrences, by no means so infrequent as has been supposed, in the Lake District, Lancashire and Cheshire, and in Scotland, point to regular movements which may be elucidated by accumulated records.

Frequent reports of early Common Redstarts probably refer to this species. The "fire" of the tail labels the bird as Redstart, but it may be distinguished by its sootier appearance, even when in immature males the distinctive white wing patch is not apparent. The male has no chestnut on the flanks nor white on the forehead. The female is greyer than the hen Common Redstart, and at any age the grey axillaries and under wing-coverts are distinctive; in the Common Redstart these are buff or chestnut.

The Black Redstart arrives in October or November and may pass on or remain to winter, returning eastward in March or April. It breeds in western Germany and Holland, but has not been proved to nest in England. Its winter haunts differ

from those of the Common Redstart. It frequents cliffs and rocky ground, but I have seen it in Holyhead, flitting like a Hedge-Sparrow amongst the cabbages in a back garden, perching on walls, clothes-stumps and the edge of a bucket. In Devon I have watched it along the cliffs, clinging to the rocks, and launching out to catch passing insects or occasionally descending to the shore to hunt in the tide-wrack for flies or small crustaceans. Its quick ducks of head and body, accompanied by a flick of the wings, were Robin-like, and its tail was ever jerking upwards and quivering. The only note I heard was an occasional *tic*, but when alarmed it will tick like a Robin. Mr. R. W. Jones heard one bird, perched on the back of a seat on the promenade at Llandudno, sing a simple song, "a variety of harsh unmusical notes, ending with six or seven very sweet ones."

The adult male in spring has the forehead, lores, cheeks and breast black, the crown, nape and back dark slate-grey. The dark-brown wings have a conspicuous white patch on the secondaries. The lower breast is black with grey bars and the belly grey. The bill and legs are black, the irides brown. After the autumn moult grey margins obscure the black, but these rapidly wear off and good plumage is often acquired by December. In young males the full plumage is not attained until after the second autumn moult—the white patch is inconspicuous and the under parts are smoky grey; indeed I have seen males in which no white was visible on the secondaries. The female is brown, though much greyer than the hen Common Redstart; the grey underwing is, however, a safe distinction. Length, 5·75 ins. Wing, 3·4 ins. Tarsus, ·9 in.

Redbreast. *Erithacus rubecula* (Linn.).

Throughout its European and western Asiatic range the Redbreast varies in colour, and several forms have been

differentiated ; two of these occur in Britain. The Continental or typical bird migrates from its northern haunts, wintering so far south as the Sahara, and many pass along our shores, especially down the east coast. The British Redbreast, *E. r. melophilus* Hartert, is resident in all parts of our Islands, a few northern islands excepted, and is also a summer visitor, since numbers leave us in autumn. The Continental bird is paler, has a yellower breast and less brown on the flanks.

The Redbreast or Robin (Plate 89) has psychological traits which are entirely its own ; it has, at most seasons, absolute trust in man. It is the bird of the homestead, ever ready to attend the garden worker, perch upon the handle of his spade the moment he leaves it, or pick a worm from beneath his feet and swallow it with a low warble of satisfaction. In winter it will readily respond to encouragement and enter the house for food. Abundant though it is amongst houses, it is also plentiful in thick wood and coppice, in lane and hedgerow. Even in the quiet wood the clicking call of the inquisitive bird announces its arrival, and usually this is followed by a snatch of song. Mr. Kirkman describes his investigation of the spheres of influence of Robins within a restricted area, a farm and its immediate surroundings, affirming that each bird retains territory after the breeding season, driving away any intruder from a neighbouring area. This may be true to some extent, but is hardly universal. When trapping and ringing birds in January I caught and ringed six Robins within a few days, and later both ringed and unringed birds visited the garden. Presumably a number of birds went a round in search of food, especially gratuities. The actions of the Redbreast are spasmodic but engaging ; it hops, bobs its head and body, flicks its wings, and appears anxious to call our attention.

The song has great variety, and is a fine performance ; it may be heard in summer and winter ; presumably all Robins do not moult at the same time, so that even in July and August

some sing. In autumn, when most other birds are silent, it is naturally appreciated. In range and some of the better notes it approaches the song of the Nightingale. The autumn song is often described as tender and sad, but it is full of exultant phrases. The Robin, as is well known, is pugnacious, fighting with his own kind and attacking other species ; yet in his most furious bouts, with feathers ruffled and wings drooped like a Gamecock, he will sing his challenges. As a silent Redbreast is unusual, it is probable that the female sings, at any rate in winter ; young birds will warble a few notes, even during their first autumn moult. The explosive cry of anger, a cat-like spit, the call *tic, tic*, which when rapidly repeated becomes a skirl, and a long-drawn *seeep*, are familiar, but exactly what they mean varies with the cause of excitement. The rapidly repeated *tics*, used when mobbing a cat or other foe, are sounded at roosting time. The bird is not an early rooster ; I have on a winter evening on a lonely road been accompanied for a long distance by a couple of Robins, whose shadowy forms flitted before me ; the calls revealed their presence when they were invisible in the dusk.

The food is animal or vegetable, for though worms, insect larvæ, flies—often caught on the wing—and spiders are its main diet, it will eat soft fruit, berries and seeds. In winter it will accept most of our gifts, even bread-crumbs. I have seen it picking flies from the surface of a pool. The peculiar attitudes adopted during courtship have been described, but they are less frequently observed than one would imagine. I watched a pair in a tree ; the female, with fluffed-out feathers, always keeping a little above the male. His head and neck were held stiffly upward, the bill pointing towards the hen, all his feathers depressed, but in both birds the tails were elevated so that their tips actually pointed forward. The male feeds the female, who receives his gifts with quivering wings, even before nest building has begun.

The Robin is not only catholic in its choice of a nesting site but is often eccentric. It prefers a hole in a bank, wall, tree, shed, old kettle, shoe or hat, but it will build under a shelter of grass or on a shelf in an outbuilding. A bird which built in a wooden pulpit was neither disturbed by the parson nor the organ and choir. The nest is bulky, built of dead leaves, grass and moss, and lined with hair and a few feathers. Five or six is the usual clutch, and two or three broods are reared. The eggs (Plate 79) are white with specks or mottles of light red; they vary from a few specks to bold blotches. They are usually laid in March, but winter nesting is not uncommon.

The sexes are alike; the plumage of the adult bird needs no description, except that the narrow blue-grey margin between the olive-brown of the upper parts and orange-red of the breast is often overlooked. The legs are brown, the bill and irides black; the bright black eye is one of its peculiar charms. The young are spotted and streaked (upper fig., Plate 89) with buff on a brown ground, and are mottled on the breast. After their first autumn moult the breast is paler and the red covers a smaller area. Length, 5.75 ins. Wing, 3 ins. Tarsus, 1 in.

Nightingale. *Luscinia megarhyncha* Brehm.

The Nightingale's summer range extends from England eastward to the Balkans and Asia Minor, and southward to north-west Africa. It reaches England as a spring migrant about the middle of April, and towards the end of August and during September leaves for winter quarters. In England and Wales its range is restricted—south and east of southern Yorkshire, Cheshire, the border counties of Wales, Somerset and Devon. On the outskirts of this range it is local and irregular; it is doubtful if it has occurred in the north and west of Yorkshire or in Lancashire; the statements that it has nested in the latter county are unreliable. It has once been noted from

Northumberland, and there is a single record for Scotland—a bird killed on the Isle of May in 1911.

The Nightingale (Plate 90) is a large, handsome brown Robin. A proud taxidermist, under the impression that he had modelled a warbler, showed me two artificially drawn out attenuated birds, faded to dirty grey, which for a moment puzzled me ; they had once been Nightingales. It is only necessary to watch the sturdy, well-built, bright-eyed Nightingale, as it sits with head on one side examining the ground beneath, to realise its relationship. It drops to the ground, flicks its wings and dives at its quarry, warbles a few subdued notes, elevates its tail, with darker central feathers like those of the Redstart, throws over the dead leaves with spasmodic action and dives into the undergrowth. Its home is the thicket, tangled hedgerow and woodland undergrowth ; it occasionally sings from a tree, but usually from hedge, bush or ground. No bird has had more rubbishy sentiment lavished upon it than the Nightingale ; the very “fire and fervour” of its wonderful song, an “impassioned recitative,” is belittled by talk of melancholy and “melodious sorrows.” Though purely its own, there are characters in it suggestive of the varied phrases of the Song-Thrush, the deep contralto of the Blackbird, the ripples of the Garden-Warbler, the low call and shiver of the Wood-Wren, and the sprightly outbursts of the Redbreast ; but it has what Mr. Warde Fowler calls “that marvellous *crescendo* on a single note which no other birds attempt.” This, *pew, pew*, begins softly, but rising rapidly in volume and pitch, reaches a height which, to the sympathetic listener, produces a thrill, an expectant catch of the breath. Then, in the midst of surpassing music, comes a harsh croak—*kur, kur*, equally distinctive but hardly musical. This croak is also the alarm note ; the call is a soft *wheet*.

The popularity of the song is due to the bird singing at night, when most other songsters are silent, though many species,

during the breeding season, sing after dark. The Nightingale is just as vocal during the day, but is then unnoticed. In Norfolk I sat on a bank by the roadside listening to and watching a Nightingale on the opposite hedge; passers-by looked in surprise at me, but paid no attention to the bird. It was a bird and nothing more, even if they heard it. Bright sunshine is as welcome to the Nightingale as soft moonlight; stirred by nuptial ardour it must sing. I have heard four or five at once in one small coppice, and seen two, with outstretched necks and bills "on guard," and tails cocked forward like pugilistic Robins, sparring on the road and singing vigorously at each other. During song the tail quivers; indeed the whole bird shivers with energy; it sings with its body, like the Wood-Wren. The song period is short, ceasing when the young are hatched in June. There is little need to approach the "skulking" bird with caution; a stone thrown into the bushes will startle it into song. In late summer the young warble a few notes. The male displays with outspread drooping wings, with erected feathers on his back and tail expanded. Miss Turner caught the attitude in one of her photographs when the male was perched just above the sitting hen. Worms, insects and berries are eaten; damp and marshy spots, where insects are always plentiful, are frequented.

The nest (Plate 91) is either on or a little above the ground, under or in thick cover, even at the foot of a hedge. Dead leaves, chiefly oak, with a little grass are its constituents, and the lining is fine grass with some hair. Four to six olive-brown eggs (Plate 79) are laid early in May, and there is only one brood. At times, apparently, the male helps to build, but it is undecided as to his share in incubation; without doubt he helps to feed the young.

Birds of both sexes are russet brown above and dull white, tinged with brown, below; the bill and legs are brown, the irides dark brown. The young are more rufous, and have pale

shaft-streaks and spots on the upper parts, and bars and mottles on the under parts. Length, 6·5 ins. Wing, 3·35 ins. Tarsus, 1 in.

Eastern Nightingale or Sprosser. *Luscinia luscinia*
(Linn.).

This bird, formerly known as the Thrush-Nightingale, has a more northern and eastern range in Europe and Siberia than our Nightingale. It occurs in Denmark and Sweden, where it was the bird Linnæus described. There is one reliable record of its occurrence, for an example was killed on Fair Island in May, 1911; it had arrived with other migrants. A Kentish specimen, said to have been obtained in October, 1904, has not been accepted on account of the late date, and another said to have been killed in Norfolk has insufficient history. It is a rather larger and browner bird than ours, and has more or less conspicuous grey-brown mottling on its breast and throat. Length, 7 ins. Wing, 3·6 ins. Tarsus, 1·2 ins.

Red-spotted Bluethroat. *Cyanosylvia suecica* (Linn.).

The Red-spotted Bluethroat (Plate 90) has an arctic range in Europe and Asia; it winters in north-east Africa and southern Asia. On the east coast of Britain it is a frequent bird of passage in autumn, sometimes travelling along our shores in considerable numbers. Less frequently it has been observed in spring, and in the Orkneys and Shetlands it has recently been noticed on both migrations. August to October is the usual time for its irregular visits.

In appearance, action and many of its habits it is a Redbreast; Gaetke found it ready to trust him, the slayer of scores of its fellows, when working in his Heligoland garden, hopping near him "with quivering outspread tail raised above





the wings." It has a fine song—"as if a golden pea leaped and vibrated in the pipe behind his gaudy bib," says Miss Haviland, but no one records the song during its spring visits to Britain, too often cut short by the collector's gun. The nest is shown on Plate 93.

The upper parts of the male in spring are brown, with a white or buff superciliary stripe, and the proximal half of the tail, except the two central feathers, rich chestnut. The throat and breast are blue with a broad band-like spot of chestnut, and below the blue are bands of black, white and chestnut, above its whitish under parts. The bill is black, the legs brown, the irides dark brown. The female has tawny white under parts except for a dark band across the breast. The young are at first spotted and streaked, as shown in the upper figure, but after the moult resemble the female. Length, 5.7 ins. Wing, 2.9 ins. Tarsus, 1.1 ins.

The White-spotted Bluethroat, *C. s. cyanecula* (Wolf) is the more southern form which breeds in Europe, France and Holland to the Baltic Provinces, and winters in north-western Africa. In this bird the breast spot is white and not chestnut. It has occurred some eight or more times, mostly on spring migration, in Kent, Sussex, Yorkshire and the Shetlands.

Stonechat. *Saxicola rubicola* (Linn.).

The Stonechat (Plate 92) nests from Sweden southward to north Africa, where it also winters. In the British Isles it is a partial migrant; some birds leave the south coast in autumn, others wander from their summer haunts but do not leave the country, and a few remain all winter in their nesting area. As a bird of passage it is noticed in spring.

The Stonechat is a local bird, though well distributed throughout; it frequents commons, rough waste land where furze and bramble grow freely amidst the rocky outcrops, is partial to the

coast and the foot-hills and lower moors, just above the zone of cultivation. The male is a conspicuous bird with black head, white collar and shoulder patch contrasting with a rich chestnut breast. He perches in full view on the top of the gorse bushes, the look-out from which he guards the nest. Where a telegraph wire crosses his haunts this gives a better post of vantage. If approached he flits from bush to bush, jerking his tail, and with cries of *tsak, tsak*, or *wee-tac, tac*, strives to draw us from the danger zone. The alarm note has a curious ring, like the sound of pebbles struck together, and from this the bird gets its name. When perched his tail is ever in motion, and his plump and sturdy body is jerked and bobbed constantly. In autumn many usual haunts are deserted, and single birds appear in unexpected places, but the extent of the autumnal and winter wanderings is irregular. On the west coast numbers remain near the shore or travel westward, for in Ireland the Stonechat population is greater in winter than in summer. I have seen a winter visitor perch on a tall tree, though trees are infrequent in its usual haunts. Most of these wanderers are solitary males, but birds which winter on or near the sand-dunes of the west coast are evidently paired. During the hard winter of 1916-17 many remained on the Lancashire coast and survived. The birds return to their breeding haunts in February and March, and, at any rate, in northern counties, males and females often arrive together. The male is conservative in his choice of observation post, and both male and female have particular perches when bringing food to their young, a habit noticeable in many species. The hen has also a route through the herbage by which she travels, unseen, to and from the nest.

The song is short and irregular but characteristic, a series of sweet notes rapidly repeated ; it may be sung on the wing, but usually from the top of a bush or other elevated perch ; it is continued from March until late in June. Flies and moths are





Bluethroat.



captured on the wing, the robust little bird dodging swiftly after them with more agility than its build suggests. Seeds are occasionally eaten, but most of the food consists of insects and their larvæ, small worms and spiders, and Miss Turner saw one pair bring several young lizards to the nestlings. The argument that the Stonechat is a valuable destroyer of insect pests is rather contradicted by its partiality for spiders and lizards—themselves the foes of insects.

The nest is cleverly hidden at the foot of a gorse or other bush, in heather or a clump of grass, on or very near the ground ; it is built of moss, grass and roots, with a little wool or fur added at times, and lined with fine bents, hair and a few feathers. The five to six pale blue-green eggs (Plate 79) are often zoned with fine reddish speckles, or are clouded with red ; they are laid as a rule in April, and a second brood is reared.

One point has often struck me—the great variation in the size of the white shoulder patch and collar of male birds ; I have noticed this both in spring and autumn. Probably it is due to age, but cocks with greyish heads and small collars and wing patches apparently mate freely ; sexual selection has but little influence. In spring the male has the head, throat and back black, with brown edges to some of the feathers and with rufous margins to those on the white rump ; the wings and tail are brown. The sides of the neck and throat and a patch on the secondaries are white. The under parts are rich chestnut shading to buff. The bill and legs are black, the irides dark brown. The female is a browner bird with well-marked striations, and the white parts in the male are suffused with rufous. Her throat is mottled with black and her rump is reddish brown. In autumn (as shown in the plate) the male has most of the feathers edged with buff, obscuring the black and restricting the white areas ; these edgings are abraded during winter, leaving the spring dress clear and smart. The young are spotted and streaked

above and below, and have broad buff margins to the quills and tail feathers ; after the first autumn moult they resemble the females and are some time in gaining full white patches and collars. At all ages the Stonechat is a stouter, more erect bird than the Whinchat, but the immature plumages are confusing. Length, 5 ins. Wing, 2·5 ins. Tarsus, ·85 in.

Indian Stonechat. *Saxicola indica* Blyth.

This blacker Stonechat, with an unspotted white rump, gets its name from its winter quarters, but its breeding haunts are in Siberia and northern Asia. It has been recorded from Norfolk and the Isle of May. Length, 5 ins. Wing, 2·65 ins. Tarsus, ·8 in.

Whinchat. *Saxicola rubetra* (Linn.).

The Whinchat (Plate 92) breeds throughout northern and central Europe, and winters from southern Europe to tropical Africa. In the British Isles it is a summer visitor, usually arriving rather late in April, and has a wide though local distribution, rather thin in Ireland. It has been reported as wintering, but in some cases may have been confused with the Stonechat.

Open meadows in the lowlands, commons and gorse-clad wastes, marshes and rough pastures up to over 1000 feet, are the haunts of the Whinchat, a stout, short-tailed bird, less erect in carriage and robust in build than the Stonechat. The eye-stripe, white and conspicuous in the male, yellower in the female, and white patches on the wing, especially that on the primaries of the male, are points by which it may be known, but its more horizontal pose when perched and the white base of the tail—not to be confused with the white rump of the other bird, are specific characters. In many tricks and habits the

two birds are alike ; the constantly fanned tail as it perches on a furze bush, selecting the topmost spray, or clings to a swaying grass-stem, and its repeated *wee-tic, tic*, remind one of the other bird, though the note is less insistent and harsh than that of the Stonechat. Furzechat, Grasschat and Utick are names descriptive of haunt and call. It will perch in a tree, and in one favourite haunt, the floral slopes of a railway-cutting, the telegraph wires make excellent look-outs. With expanded tail it balances on a wire, singing a short, rather metallic and vibrating melody, not unlike that of the Redstart. It will leave its perch for a short aerial journey, singing as it flies, or cleverly catch a dodging fly ; a green caterpillar looping up a grass blade, or a beetle moving below catches its keen eye and it drops to the bank. Beetles, phytophagous and coprophagous, form a large portion of its insect diet, and the diptera over the hay-grass are diligently hunted. At dusk it chases crepuscular moths, feeding until dark. Near the nest it has a soft anxious *peep*, and this is uttered in addition to the ticking calls when both birds flit with jerking flight uneasily from plant to plant in their endeavour to draw us from their home. When thus excited the male will sing fitfully, but towards the end of June, when still feeding young, he becomes silent. As a migrant the Whinchat travels in little parties, those in autumn apparently consisting of the family, but in spring, when spreading over the country, it will consort with other insectivorous birds. I have seen it arrive with wagtails and wheatears.

The nest, built of grass and moss with a lining of finer bents and hair, may be at the foot of a bush or in thick cover, or simply in a hollow in the open field, well hidden by surrounding grasses ; it is usually on the ground and cleverly concealed. Five to six, rarely more, greenish-blue eggs, often faintly speckled with rusty dots towards the larger end (Plate 84), are laid late in May, and a single brood is the rule. The cock at times collects nesting material, though what further share he takes

until the young are hatched is uncertain. Towards the end of August the family parties become less noticeable, and though a few individuals remain until early October, most depart in September.

The male in spring is yellowish brown with dark, almost black, striations, black cheeks and ear-coverts, and a noticeable white superciliary stripe and line from the chin to the neck. On the brown wing are two white patches, the smaller, on the primary coverts, absent in immature birds and females. The basal half of the tail is white, though when the tail is closed the upper tail-coverts partially conceal the central portion. Rich rufous under parts shade to dull white on the belly. Buff edges, which are abraded later, dull the whole of the plumage after the autumn moult and give the bird a yellowish appearance. The bill and legs are black, the irides brown. The female is paler, and her upper parts are browner. The young bird (on the left, Plate 92) is blotched and streaked, and its breast spotted with brown. The young look lighter and redder than the adult birds. Length, 5 ins. Wing, 2.9 ins. Tarsus, .9 in.

Wheatear. *Ænanthe ænanthe* (Linn.).

Two distinct races of Wheatear occur regularly in the British Isles. The typical form (Plate 94) is a summer resident and passage migrant; its range is practically northern Palæarctic in summer; it winters in tropical Africa. The larger and more brightly coloured Greenland Wheatear, *Æ. æ. leucorrhœa* (Gmel.) breeds in Greenland and north-east America, and possibly Iceland, and winters further south in America, or in Africa, travelling through western Europe on migration.

The Wheatear can be recognised by its white rump, tail-coverts and tail, contrasting with the central feathers and black terminal band of the last. The name is derived from this

white rump and has nothing to do with wheat. The superior size of the Greenland bird, with wing measurements of about 4 inches or more against an average of $3\frac{3}{4}$ in our bird, coupled with a brighter reddish-buff breast, prevents confusion to the practised eye, but the time of arrival is helpful. Our bird is the first real summer visitor to reach us; early in March a "wave" of males arrives on the south coast, and by the middle of the month many are in summer quarters in the north of England. As a rule birds reach North Wales in the second or third week, but Mr. R. W. Jones met with a male on March 1, and by the 16th birds have been seen on the Pennine moors. Successive waves spread during April, and at the end of that month and in May the large race comes in. Though Wheatears have reached Greenland in May, these birds often travel slowly northward, lingering for days or even weeks in lowland fields. Our Wheatear is distributed throughout, but only where conditions suit it. It frequents open downs, hillsides, moorlands—nesting at over 3000 feet, rough and rocky land and coastal dunes. It is constantly on the move, flitting from stone to stone, clump to clump, repeating *chack, chack*, from which it is often called the "Stonechat." Its bows, tail flirts and remarks are directed at the observer as it moves ahead, flying close to the ground and halting on each little eminence for a fresh bow. It is said that the Greenland Wheatear may be known by its habit of perching on a bush or hedge, but our bird also uses these halting-places when handy, and on hills frequently mounts the rough stone walls. Its progress is interrupted by leaps into the air and aerial turns and twists after passing flies, and it frequently sings on the wing, though seldom rising to any height. The song is pleasing, and has a greater range than that of the other chats. Saxby gives a long list of notes of other birds which he has detected in the song, but Miss Turner's idea of the song of "the Skylark in its beginnings" seems most apt. Even in the north the majority of the

pioneers are males, but in April both sexes arrive together. The song period ends in June.

The food consists of small worms, insects and molluscs, especially the small helices which frequent the short sheep-cropped grass on downs and cliff-tops. Caterpillars are taken to the young, and Miss Turner has seen them fed with the warningly coloured and supposed distasteful cinnabar moth. A hen I had under observation fed her young with numbers of fern chafers, and once with a small heath butterfly; the cock, singing constantly from a grassy knoll, never attempted to hunt, though I have seen another assiduous in his attentions, and he is also said to help to build the somewhat untidy nest. Nuptial competition leads to strange displays and furious fights. On Holy Island I watched two rival males combine in an attack on a cock Greenlander, whilst the hen apparently paid no attention to any one of the three. The birds dashed amongst the dunes with wonderful speed, fought in couples or all three at once, until, in the whirl of struggling wing, beak and claws, it was impossible to distinguish individuals; all the time one or more kept up florid song. At times one bird would dance and whirl by itself in a frenzy of excitement, throwing itself about in ecstatic mazes, or with drooped wings and widely fanned-out tail, would exhibit its charms. The Wheatear not only nests in holes, but bolts into them for shelter from weather or an enemy; when there was a trade in "ortolans" Wheatears were captured in large numbers by the shepherds on the South Downs, who prepared shelter burrows for them in which a wire springe was fixed.

Rabbit-burrows are the usual nesting holes on the sand-dunes and downs, but on the hills stone walls, clefts in rocks and peat-stacks are used; in these a loosely built nest of grass and roots, with rabbit fur, wool, hair or feathers serves for the five to six pale blue eggs (Plate 84), which are usually laid late in April or early in May. Two broods are recorded, but one



1 Pl. 94.

Hedge-Sparrow.



Wheatear.

Q 228.



is more general. The young birds group themselves at the mouth of the hole when waiting for food, but scuttle back on absurdly long legs if danger threatens. Return migration, both of our birds and the larger form, lasts for many weeks, beginning in August. The Greenland birds are noticed as a rule in October, and most of both forms depart during that month. On the Lancashire coast and in North Wales both Common and Greenland Wheatears have been seen late in November. Indeed there is some evidence that a few may remain to winter; Hudson saw some in December in Cornwall.

The male in spring is pearl-grey above, with a white forehead, superciliary stripe, rump, upper tail-coverts and basal part of the tail. The white on the central tail feathers is hidden, only the black portion showing; the other feathers are mainly white with a broad terminal band of black. The lores, cheeks and ear-coverts are black. The under parts are sandy buff on the breast and flanks, and creamy white or slightly tinged elsewhere. The bill and legs are black, the irides dark brown. After the autumn moult broad fringes tinge the upper parts with brown and the under with fawn; in this dress the male is very like the female; she is sandy brown above and more buff below, but has the distinctive tail and rump. The young at first are mottled with dusky streaks and sandy-buff bars, and the pale chocolate head is faintly streaked, whilst the quills have broad rufous edgings. The bill is brown. Common Wheatear: Length, 5.75 ins. Wing, 3.75 ins. Tarsus, 1 in. Greenland Wheatear: Length, 6.5 ins. Wing, 4.2 ins. Tarsus, 1.1 ins.

Isabelline Wheatear. *Ænanthe isabellina* Cretz.

The Isabelline Wheatear is a southern Russian and central Asiatic bird, wintering in Africa and India. In November, 1887, a bird of this species was shot in Cumberland, and it was

not until the spring of 1911 and 1912 that others were recorded; these were obtained in Sussex. The bird is so like a female Common Wheatear that it could easily be overlooked, but it is rather larger and more tawny, and has more black on its tail; the axillaries and under wing-covers are white, whereas in our bird they are mottled with grey. Length, 6·5 ins. Wing, 3·9 ins. Tarsus, 1·2 ins.

Black-eared Wheatear. *Ænanthe stapazina* (Linn.).

Two forms of the Black-eared Wheatear, differing but little, are found in western and eastern Mediterranean countries, the latter, the Eastern, *Æ. s. amphileuca* Hemp. and Ehren., passing through Egypt to its winter quarters in the Sudan. The Western bird has been recorded at least three times from Sussex in spring, and the Eastern once, in September.

The male in summer is a black and white bird; the head, neck, back, rump and most of the tail, and under parts white, tinged with sandy brown on the back, and with deeper brown on the breast. The black streak from the bill to beyond the ear-coverts explains the name; the wings, bill and legs are also black. After the autumn moult the plumage is more rufous, "washed with rufescent isabelline." The female has the black much browner, and the head and back tinged with brown. Length, 5·6 ins. Wing, 3·5 ins. Tarsus, 1 in.

Black-throated Wheatear. *Ænanthe occidentalis* Salv.

This Wheatear breeds in Spain and south-western Europe and north-western Africa, and winters in west Africa. It was first recorded as British from an example taken in May, 1875, in Lancashire. More recently it has been met with in spring in Kent, and in autumn in Yorkshire, and, strangely enough, so far north as Fair Island and St. Kilda. Southern birds

which take refuge on these isolated northern isles must be hopelessly lost, drifted far from their normal routes. In spring the male is a white and black bird, slightly washed on the breast and back with sandy buff, but with a black face and throat below the superciliary stripe. The under wing-coverts are black. The female is browner above, except for the characteristic rump and tail, and her throat is greyish. After the autumn moult the male is browner, the crown, breast and back rich buff, and the secondaries are broadly margined with buff. Length, 5·6 ins. Wing, 3·5 ins. Tarsus, 1 in.

Desert Wheatear. *Ænanthe deserti* (Temm.).

Western and Eastern forms of the Desert Wheatear have been several times met with in England and Scotland, but all examples have not been critically examined; indeed, though the males in summer of all these species and sub-species of wheatear are more or less distinct, the autumn, female and immature plumages are puzzling. There is also difference of opinion amongst systematists about nomenclature, and in some cases specific rank. The Western Desert Wheatear is a bird of the Sahara and north Arabia, yet it has wandered to Yorkshire and Norfolk, and probably to Scotland; the Eastern *Æ. d. albifrons* (Brandt), is found in the deserts of central Asia and in winter in India and north-east Africa. It has been taken in the Orkneys and Kent in spring, though the other form has only reached us in autumn.

The upper parts of the male in summer are buff; the under parts white with a buff tinge on the breast. The under wing-coverts show white, owing to their white tips. The black on the face and throat extends to the shoulders, and there is a distinct white superciliary stripe. The best character, constant in both sexes at all ages, is that the entire tail is black to the level of the upper tail-coverts. The female is greyer above and

buffer below and has no black on the throat, and in the winter plumage the black on the throat of the male is obscured by white tips. Length, 5'6 ins. Wing, 3'6 ins. Tarsus, 1 in.

Pied Wheatear. *Ænanthe leucomela* (Pallas).

A single example, a female, of this central Asiatic Wheatear, which occurs from the extreme south-east of Europe to China, and has been found wintering in India and north-eastern Africa, was obtained on the Isle of May in October, 1909.

In summer the male is a white and black bird; his white crown tinged with grey contrasting with his black face and throat. The female is browner, and the head is washed with sandy buff. Miss Baxter and Miss Rintoul, who obtained the bird, noticed that it was darker than a Common Wheatear, looked smaller and showed less white on the rump. Length, 5'7 ins. Wing, 3'6 ins. Tarsus, '9 in.

Black Wheatear. *Ænanthe leucura* (Gmelin).

Both the Spanish typical form and the North African Black Wheatear, *O. l. syenitica* (Heugl.), which is separated on account of the brownish shade of black and the wider and more continuous tail fringe, have been recorded for Britain, the first obtained in Sussex and Fair Island, in autumn, the other in Sussex in spring. The male is a black bird, with the typical wheatear upper tail-coverts and tail, white with partly black central feathers and a black terminal fringe; the female is browner. Length, 6'5 ins. Wing, 3'6 ins. Tarsus, 1 in.

Family ACCENTORIDÆ. Accentors.

Hedge-Sparrow. *Accentor modularis* (Linn.).

The Hedge-Accentor, far better known as the Hedge-Sparrow (Plate 94), is a resident and partial migrant in most parts of

Europe, including the British Isles. The Committee of the B.O.U. do not recognise the British bird as distinct, though it has been given sub-specific rank. Some of our breeding birds leave in autumn and numbers arrive on the east coast or pass through Britain, but the differences in the wing formula between the supposed British and Continental races are not constant.

The Hedge-Sparrow or Dunnock, a widely used name, is said to be peaceful, inoffensive, shy, inconspicuous and quiet, but the use of the name "sparrow" proves that it has long been familiar. In build, thin bill and habits, as well as structure, it has nothing in common with the Sparrow, though in the garden in winter it joins these and other mendicants. It is a bird of cultivation rather than the wilds, common in the hedgerows, roadside spinneys, farm-yards and gardens; indeed it may be met with anywhere. Doubtless its sombre browns, its well-streaked back and slate-grey head give it a measure of protection as it rootles amongst the autumnal litter at the foot of the hedge. Very largely a ground feeder, it disappears under the cabbage leaves or other protective shelter, not to hide itself from sight, but because beneath their shade it hopes to find food. To call it quiet and peaceful is even further from the mark. An accentor, the dictionary says, is one who takes the chief part in singing, and if this does not imply a powerful voice, the bird is rightly the Accentor. The short, musical, high-pitched song, constantly repeated, is not commanding but insistent. Though most vigorous in spring it may be heard at almost all seasons, and at night as well as by day. Excitement provokes the vocal energies; it will sing vigorously at a rival, and if its slumbers are disturbed wakes with a snatch of melody. I have heard a bird sing when startled by the talk of passers-by and the light of a passing cycle-lamp, and one in my garden sang at all hours of the night if there was a sudden gust of wind or scud of rain. The call, a monotonous shrill piping

peep, betrays the presence of the "shy, quiet" bird everywhere and at all seasons. In winter it jerks, with fussy little flicks of its wings, through the hedge-bottoms, now in the lower twigs, now peering under the fallen leaves on the ground, piping perpetual remarks. In December, when courtship begins, the note gains vehemence as it fights furiously with a rival, or flits with flicking wing, and tail sawed up and down, after the hen. The flirts become a shiver—from which the bird gets its name of "Shuffle-wing"—as it leaps or flits from twig to twig, often rising to the top of a hedge or tree, but on the ground, when feeding, it hops. The hop differs from that of many other birds; the Dunnock makes short jerky jumps forward, but the breast is held low and the legs are bent, one foot in advance of the other.

Insects, spiders and other small invertebrates are sought for in the fallen leaves, lurking in moss or clinging to the twigs, but the Dunnock is not good at aerial fly-catching. When the laburnum-moth larvæ or the caterpillars of the oak-tortrix hang by threads from the trees, Blue Tits, Willow-Wrens and Robins hover and snatch them in the air, but the Dunnock shuffles along the ground in search of those that have dropped. Weevils and other destructive beetles, hiding under dead plants, are discovered, and in winter many seeds, chiefly of weeds, are eaten.

A hedge, evergreen, bush, faggot-stack, or bank is a usual situation for the nest, but many other sites are selected. I have seen one on the top of a rail, another in the old nest of a Song-Thrush, and on the moors found it on the ground, sheltered by bilberry scrub; the bird is not uncommon on the open moorland up to a fair altitude. The nest on Plate 95 was built in a cauliflower. On a slight foundation of twigs a neat nest of grass and moss is constructed, lined with hair or wool. Four or five clear blue eggs (Plate 84), blue as a summer sky, are laid in March or April, and two or more broods are reared. A local

name "Blue Dunnock" may refer to the eggs or the colour of the bird's head. The Cuckoo is said to prefer the Hedge-Sparrow for a foster-parent for its young, but in the north of England the Tree or Meadow-Pipit, Wagtail or Robin are more favoured. Lilford found that the eggs were frequently devoured by rats and mice, and it has been suggested that their bright colour is conspicuous, but even blue eggs are not easily visible in a thick hedge, and the rodents would as a rule have to climb to find them.

The colour of the male and female, for the sexes are alike, is rufous brown with dark brown streaks; the head, throat and breast are slate-grey, the bill, legs and irides are brown. The young are browner and more spotted, and they have no slate on the head. Length, 5·8 ins. Wing, 2·8 ins. Tarsus, ·8 in.

Alpine Accentor. *Accentor collaris* (Scop.).

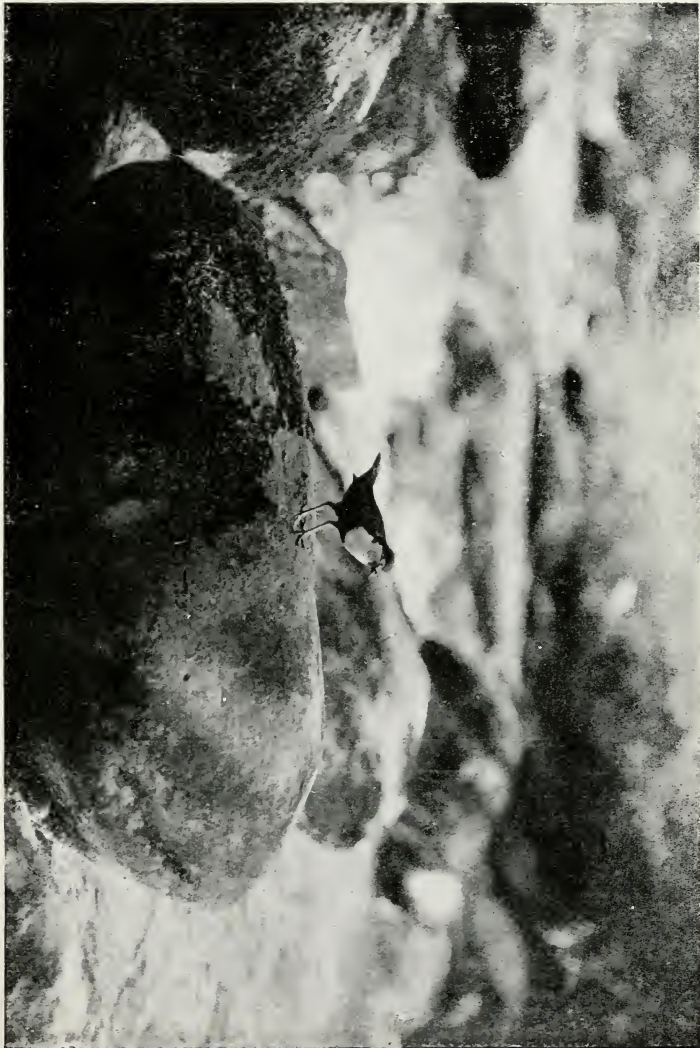
The Alpine Accentor (Plate 97) is a bird of the high mountains of central and southern Europe, and closely allied forms occur in Asia. It is not looked upon as a regular migrant, but winter forces it from the high altitudes, often of over 4000 feet, and it wanders, appearing in various parts of Europe. Since 1817, when it was first obtained it has occurred at least a score of times in Britain, from Cornwall to Fair Island. Saunders watched one on Snowdon in 1870. Its actions rather than its habits are similar to those of the Hedge-Sparrow; it has the same "creeping" hop, and the song and call-note have a distinct family relationship. It may be distinguished from the Dunnock by its speckled throat, two white wing-bars and rich chestnut flanks, as well as by its greater size. The bill is yellowish, darker above, and the legs have a pinkish tinge; the irides are brown. Length, 7 ins. Wing, 4·1 ins. Tarsus, 1 in.

Family CINCLIDÆ. The Dippers.

Dipper. *Cinclus cinclus* (Linn.).

From colour differences, especially of the pectoral band, the Dippers are divided into several sub-species, three of which rank as British. The Black-bellied Dipper, *C. c. cinclus*, which has no chestnut on the lower breast, breeds in northern Europe and occasionally wanders in winter ; it has on several occasions been recorded from the eastern counties and from Shetland. The British Dipper, *C. c. britannicus* Tschusi, frequents suitable rapid streams, mostly in the hills, in England, Wales and Scotland, and Dr. Hartert considers the Irish bird, *C. c. hibernicus*, more uniform black above and with a narrower band of chestnut, distinct.

The Dipper or Water Ousel (Plate 97) is a rotund, short-tailed bird, dark above and white-breasted, closely associated with swiftly running rivers and streams or the lakes into which these fall. On the rocks round which the water swirls and tumbles the Dipper perches with its short tail uplifted, its breast turned towards us, bobbing spasmodic curtsies (Plate 96). From these sudden dips it acquired its name, not from its diving habit, though it dives as well as walks into the water. It will fly rapidly and straight, its short wings whirring swiftly and without pauses or glides, calling a shrill *zit, zit, zit*; then either drop on the water and dive or plunge in with a little splash. From its perch it will walk into the water and deliberately submerge, but there is no truth in the assertion, often repeated and blindly copied, that without effort it can defy the laws of specific gravity and walk along the bottom. Undoubtedly when entering the water it grips with its strong feet, but the method of progression beneath the surface is by swimming, using the wings—flying under water. With its head well



Dipper.



down, its body oblique, it holds itself down by muscular exertion, its course beneath the surface often revealed by a line of rising bubbles. In this way it secures its food, the larvæ of aquatic insects, including the encased caddis worms, beetles, *Limnea*, *Ancylus* and other fresh-water molluscs. A favourite food is the small crustacean *Gammarus*—the “water-flea”—one of the worst foes of trout-ova; there is no direct evidence that the bird eats ova, though it has been known to occasionally catch fry, and it may therefore be classed as useful rather than harmful on a trout-stream. On the banks and rocks it walks and runs, seeking terrestrial insects. More rarely it swims, floating lightly.

The winter habits of the Water-Crow, Colley or Bobby, as it is called in different districts, vary considerably and apparently individually. When the swift hill-becks are frozen it is forced to descend to the lowlands and even visit the coasts, but some will remain if there is any open water. Yet in mild winters I have found upland haunts almost deserted, and at this season numbers appear on the lower stretches of the rivers. The sweet, hurried, Wren-like lyric of the Dipper, mingling with the sound of tumbling waters, may be heard at any season, but mostly from December until May. During courtship the cock sings whilst he runs and postures before the hen, exhibiting his snowy breast, and when displaying he will take long and high flights, like those of the Kingfisher, accompanied by sharp metallic calls—*clink, clink*, differing from the normal *zit*.

The nest is by the water, often under it—on the rocks beneath a fall; it is large, globular or oval, like a massive Wren's nest, built into some crack or hollow in the rock, in the masonry, or on the supports of a bridge, or, more rarely, in an overhanging branch. It is composed of green moss when the water splashes or actually flows over it, but on dry grey rocks often of dead grass and leaves. This ball, however, is merely the shelter or envelope; below the median line, usually hidden beneath

a lip, is the entrance to the real nest within, a cup of grass or sedge, nearly as large as the nest of a Blackbird, lined with leaves of oak, beech or other trees. Four to six white eggs (Plate 84) are laid in March or April, and two or three broods are reared, often in the same nest. I have found fully fledged young at the end of March. When disturbed the young, when hardly feathered, will at once drop into the water and dive; I have seen them swim under water, washed down stream, and crawl out yards below, at once seeking shelter under stones.

The head of the adult Dipper is umber brown, the back slate-grey mottled with black, looking quite black from a distance, and the wings and tail are brown. The throat and upper breast are white, followed by a band of warm chestnut which merges into black on the belly and flanks. The bill is almost black, the legs and irides brown. The young are greyish brown and have no chestnut band. Length, 7 ins. Wing, 3·75 ins. Tarsus, 1·1 ins.

Family TROGLODYTIDÆ. Wrens.

Wren. *Troglodytes troglodytes* (Linn.).

The Wren, found throughout Europe, is only migratory in the northern part of its range. Its sober barred dress is subject to considerable variation, and where, in ages gone by, colonies have been isolated, the variation has become constant in one form or another. Thus in the British Isles, in addition to the typical bird (Plate 89), there are two distinct insular forms; one, *T. t. hirtensis* Seebohm, is confined to the island of St. Kilda, and another, *T. t. zetlandicus* Hart., to most, at any rate, of the Shetlands. In these two forms colour variation is of less importance than the greater size and strength of the beak and feet. Numbers of northern Continental Wrens reach us in autumn; some may be winter visitors, but many certainly are birds of passage.

There is little need to describe the small, stump-tailed Wren ; it is almost as familiar as the Robin ; on the Pennines it is happily called " Stumpy." Yet it is so small and mouse-like, so easily lost sight of when it is hunting for food, that many count it rare. It is everywhere, from the tops of the highest moors to the sea-coast. Its movements as it creeps or climbs are incessant rather than rapid ; its short flights swift but not sustained ; its tiny round wings whirr with misty vibration as they carry it from bush to bush. It is a bird of the breezy uplands, even in winter ; it will slip amongst the wiry stems of the heather when snow lies thick above, vanishing into gloomy caves, a troglodyte indeed. It frequents the gardens, hopping about the flower-beds or disappearing suddenly behind the ivy on the walls ; in the farm and stack-yard it examines every nook and cranny for hidden insects ; but it is quite as abundant in the thick woods, alike amongst the tree roots and tangled undergrowth. The rushes round the meres harbour a few in winter ; these marshy spots provide food when other places fail.

Poets and sentimentalists talk of the shy and retiring Wren ; really it is indifferent to our presence. Incessant activity and zeal in search for those creatures whose existence depends upon concealment takes it into the depths of ivy, hedge or undergrowth, but from no desire to hide itself ; indeed it will hunt readily in full view, creeping with sharp *tit-it-it* over the rockery or bank. When annoyed or excited its call runs into an emphatic churr—not unlike the reel of clockwork running down. Its song is a gushing burst of sweet music, loud and emphatic as the rattle of the Chaffinch ; it has an " enormous " voice for its size. In volume as well as quality of song individuals vary, but the efforts of a full-voiced Wren are surprising ; the song often begins with a few preliminary notes, then runs into a trill, sometimes slightly ascending, and ends in full clear notes or in a second trill. At all and any season the song may be heard,

though most noticeable during spring or at the end of winter, when with its stump erected and often with the tip pointed forward, and its whole body a-quiver with energy, it pours forth its song of love or challenge. Only once can I recollect seeing a bird in song with tail depressed. When fighting, this light-weight pugilist sings at its opponent, and on more than one occasion when interlocked antagonists have allowed themselves to be taken in the hand, fight and song were resumed immediately on release. At night, usually in winter, it often roosts, true to its name, in dark retreats, snug holes and even old nests. Seebohm emphatically denies the statement that it ever does so in parties—either consisting of the family or of many individuals gathered together for warmth; but the evidence is too strong; indeed in my own experience I have come across several instances of gregarious roosting. For the most part only small insects and spiders are its food, but in winter large pupæ are swallowed, and some seeds are added.

The Wren has a passion for nest-building, constructing more than it uses—an unexplained waste of energy. "Cock-nests" these are called, but though the male builds it is not certain that he is the only wasteful worker; some are never lined, some but half finished. The normal round nest is tucked into a hole in a wall, tree trunk, crack in a rock or corner of a building, but it is often built in bushes, overhanging boughs and the litter which accumulates in branches washed by floods. It is true that the materials used often aid concealment—grass in a haystack, moss on a rock, lichens on a tree, leaves amongst litter—but this is probably unintentional, due to the accessibility of these substances; many nests are suicidally conspicuous (Plate 98). Dead leaves are largely used in the outer envelope, but the lining of moss, hair or feathers varies in quantity as well as material. On two occasions I have found nests containing eggs incompletely domed; they were mere cups in holes with the entrance reduced by a slight arch of grass. On the moors the



1 Pl. 98.

Wren at nest.

© 240.



R 241.

Pied Flycatcher.



I 17. 99.

Spotted Flycatcher.

Wren builds in heather, on the cliffs in gorse, in the garden it may select a cabbage top or Brussels sprout. One nest in a shed had had three owners ; the foundation was the mud saucer of a Swallow ; on this a Spotted Flycatcher built ; later a Wren added its domed home. Perhaps the most extraordinary site is preserved in the Chester Museum, a nest tucked between the limp wing and dry carcase of a Sparrow-Hawk hanging on a keeper's gibbet. Five to eight—more are recorded—white or slightly speckled eggs (Plate 84) are laid in April, and second broods are reared. The eggs of the St. Kilda Wren are larger and often more boldly spotted ; six is the usual number.

The Wren is rufous brown above, greyer beneath, barred with darker brown and grey, even on wings and tail. The bill is dark brown, the legs pale brown, the irides hazel. Young are less distinctly barred. The St. Kilda bird is greyer above, whiter beneath, and with more abundant bars on the back ; the Shetland Wren is darker. Common Wren : Length, 3·5 ins. Wing, 1·9 ins. Tarsus, ·75 in. St. Kilda Wren : Wing, 2·2 ins. Shetland Wren : Wing, 2·1 ins.

Family MUSCICAPIDÆ. Flycatchers.

Spotted Flycatcher. *Muscicapa grisola* Linn.

The Spotted Flycatcher (Plate 99) is one of the last of the summer visitor to arrive in Britain, it is often absent until early May. Except in the extreme north it breeds throughout Europe and in north-west Africa ; its known winter quarters extend so far south as Natal. In the British Isles it is well distributed, nowhere abundant, but, except in some of the northern islands, nowhere uncommon. In the Orkneys and Shetlands it is a bird of passage.

Many birds capture flying insects, but none so adroitly as the Spotted Flycatcher. Its grey-brown plumage is inconspicuous

and it is not really spotted ; it is, too, a silent bird, yet its neat upright figure, perched on post, railing or dead branch is noticeable. One of its names is "Post-Bird," another "Old Man," probably from this upright pose. Its short aerial sallies attract the eye ; sometimes it swoops obliquely with unerring aim upon some insect flying below, but usually, after many smart twists and turns, it cuts short the career of a dodger. Then, as a rule, it returns to its observation post, though often it will have two look-outs to which it flies in turns. On the wing it is a spry little bird, but when perched has an air of studied indifference ; it is not the watchful sentinel like the Shrike. Yet little escapes its bright eye ; its flights are timed with such precision that it seldom misses its quarry. Naturally the look-out is best where the space in front is open ; thus the Flycatcher frequents the border of a lawn, the outskirts of a wood or edge of a clearing, or the branches of willow or alder overhanging a stream. The call *zit* or *zit-chic* is not loud, but is more frequently noticed than the slight low song in May and June, a few repeated soft notes. It is often stated, on the strength of habits observed abroad, that berries are sometimes eaten, but in England all its time is occupied flycatching. Butterflies, moths, beetles and aphids are taken, but most of its captures are two-winged dipterous flies. Mr. J. H. Owen saw young fed with wasps.

For a nesting site the Spotted Flycatcher shows preference for buildings—dwelling houses and outhouses, and it has been known to return again and again to a favourite site in spite of repeated discouragement. The ledge or moulding of a window, the end of a projecting beam—from which it is known as the "Beam-bird"—a hole in a wall, trellis-work or creepers are all favoured, but in the woods it will nest in ivy or a cleft in a tree. Old nests of other species are frequently made use of, sometimes immediately the late occupants have flown ; as a rule a slight lining of hair, grass or feathers is added. The size does not matter, for I have known the nest of the Blackbird and that of

the Goldfinch made use of, and the remains of a Swallow's on a beam is not infrequently transformed. Odd sites, such as an old cap or, like the Wren, the body of a former enemy suspended on a gibbet, are recorded. The nest itself is slight and usually loosely put together ; it is composed of grass and moss and at times decorated with cobwebs and lichens. Four to five eggs, dull white with reddish spots and blotches (Plate 84), are seldom laid before the beginning of June, and though second broods are said to be rare, I have known two reared in one nest, and have seen a hen sitting in August. By the end of September most of the birds have gone.

The upper parts of the adult bird are hair-brown with darker brown stripes on the crown ; the under parts are greyish white, but the flanks and breast are sandy brown, and on the latter there are noticeable striations. The bill is brown, the legs black, and the irides dark brown. The young are more deserving of the title spotted, for their backs are mottled with buff. Length, 5·8 ins. Wing, 3·4 ins. Tarsus, 1·5 in.

Brown Flycatcher. *Muscicapa latirostris* Raffles.

In May, 1909, a Brown Flycatcher was obtained in Kent, and as it is an unlikely species to have escaped from captivity it has been admitted to the British list. It is an eastern Asiatic species, and winters in India and Ceylon. In plumage it roughly resembles an unstreaked Spotted Flycatcher, or an immature Pied without white in the wing. Length, 5·5 ins. Wing, 2·8 ins. Tarsus, 1·5 in.

Pied Flycatcher. *Muscicapa atricapilla* Linn.

Throughout most of Europe the Pied Flycatcher (Plate 99) is either a summer visitor or a bird of passage to and from winter quarters in Africa. In Britain its breeding area is

restricted; except for a few pairs in Devon, confined to some western and northern counties of England, Wales and the southern part of Scotland. It is most plentiful in the dales of Lakeland, north-western Yorkshire and north Lancashire, and amongst the hills of north and central Wales. It has long been known as a bird of passage in spring and autumn in the Orkneys and a few isolated spots on the east coast, and keener observation has added to these localities; it is now known in the Shetlands and on the west coast of England. In Ireland it occurs on migration, and is noticed at the coastwise lights. Doubtless the quiet inconspicuous bird has been much overlooked on migration, especially in autumn, except at those places which are regularly watched.

The male Pied Flycatcher arrives some days before the female, usually late in April or early in May, and being conspicuously black and white, is often noticed in places remote from its breeding haunts. Judging, however, from the date of first appearance in the south compared with its passage and arrival further north, the journey is rapidly performed; it may stop to feed for a few hours, but soon passes on. It is a smaller, stouter-built bird than the Spotted Flycatcher, and its attitude when perched is less erect; its movements are quicker and more tit-like, and its tail is constantly in motion, at times jerked upwards, but often more deliberately swayed up and down. It has a sharp, rather metallic call and a lively little song, frequently uttered. Saunders renders this as *tzit, tzit, tzit, trui, trui, trui*, but a friend put it into words as "Tree, tree, tree, once more I come to thee." The song is seldom heard after June. The predatory efforts on the wing fall short of those of the commoner bird, and it frequently drops from its perch to pick insects from the herbage; indeed it depends less upon flying game than on caterpillars and beetles. Though less silent than the Spotted Flycatcher, it is not demonstrative; I have watched it dropping again and again and returning to the





I 17. 101.

Red-breasted Flycatchers.



R 245.

Swallows.

tree, though seldom to the same perch, without uttering a note. The alarm is not unlike that of its relative, but the female is said to have a Chaffinch-like *whit*. The males go straight to the old haunts, often to the old nesting hole, but there is competition and fighting for possession; it will defend its nesting site boldly, attacking even larger species, though away from the nesting site I have seen it defeated by a Spotted Flycatcher.

The nest has been found in masonry, but a hole in a decaying tree or stump is the usual site; the entrance is small except when the old hole of a Woodpecker is used. A common site is near running water, according to most accounts, but it could not easily be far away in the Lakeland valleys; I have found it in a gnarled stump overhanging Ulleswater and in a thorn many yards away from any stream. The nesting material—grass, moss, leaves and a little hair or wool—is loosely interwoven, cohesion being unnecessary in a hollow. Five to eight pale blue eggs (Plate 84) are laid in the latter half of May or early in June. By the end of August some of the birds are moving south; early in September I have seen numbers together on the east coast. An October Pied Flycatcher is uncommon.

There are two moults, that in early spring being partial, but altering the bird's appearance considerably. The male in summer is black on the upper parts, with the forehead, border of the tail, a large but variable patch on the wing and the whole of the under parts white. The bill and legs are black, the irides dark brown. The parts black in the male are olive-brown in the female, she has no white on the forehead, and the patch on the wing is smaller; her under parts are less pure and are tinged with buff on the breast and flanks and slightly spotted with brown. After the autumn moult the sexes are similar, dark brown replacing the black of the male; his white spots are partly obscured and the under parts are suffused with buff. Mr. Witherby has pointed out the sexual distinctions at this

season, but they are mostly in the bases of the feathers, thus are invisible in the field. The young have the upper parts mottled with buff. Length, 4·7 ins. Wing, 3·1 ins. Tarsus, ·6 in.

White-collared Flycatcher. *Muscicapa collaris* Bech.

Gould figured the White-collared Flycatcher on the strength of a specimen that he saw in a taxidermist's shop, but the evidence of its British origin was considered unsatisfactory; in May, 1911, two males were shot in Sussex, and these are accepted by the B.O.U. Committee. The male is easily distinguished from the Pied Flycatcher by its white collar which divides the black on the crown from that on the back, and in young birds and females there is usually some indication of a collar. The bird breeds in central and southern Europe and winters in Africa; it is rather surprising that it has not been noticed before as a wanderer. Length, 5 ins. Wing, 3·15 ins. Tarsus, ·65 in.

Red-breasted Flycatcher. *Muscicapa parva* Bech.

The Red-breasted Flycatcher breeds in central Europe from Denmark eastward into western Siberia, and is known to winter in India. As, however, it is an irregular autumn visitor on passage to our islands, it seems likely, as has been suggested, that we are at present unaware of the extent of its winter range, which probably extends into Africa.

This neat little Flycatcher, with, in the male, ruddy breast and brown back suggesting a small Robin with white in its tail, has been observed most frequently on the Norfolk coast, though a few have been obtained in other parts of the east and south coasts from the Forth to the Scilly Islands; it has also reached the Shetlands, Outer Hebrides and the lights on the Irish coast, so that it may be concluded that there is a west as well as east

coast passage. There is a single report for June from Cheshire, but the bird was only seen and the description of its plumage, especially of an almost black head, does not sound convincing, although the B.O.U. Committee apparently accept it. The alarm note of the Red-breasted Flycatcher is *pink, pink*, suggesting the call of the Chaffinch to Seebohm.

The adult male is ashy brown on the crown and back, bluish grey on the face and neck, warm orange on the chin and throat, and the rest of the under parts shading from buff to white. The eye-rims are white, and the irides dark brown; the bill is brown and the legs black. The female (upper bird, Plate 101) has no slate or orange, and her under parts are whiter, tinged with buff. Length, 4·5 ins. Wing, 2·65 ins. Tarsus, ·68 in.

Family HIRUNDINIDÆ. The Swallows.

Swallow. *Hirundo rustica* Linn.

Throughout the Holarctic regions some form of Swallow, nearly related to our well-known bird, occurs as a summer visitor; our Swallow, sometimes distinguished as the Barn- or Chimney-Swallow (Plate 101), breeds in Europe, north-west Africa and western Asia, and is known to winter in tropical and southern Africa and in India. In Britain the migrations of the Swallow are complicated by extensive passage movements to and from northern and central Europe, noticeable in the west as well as on the eastern seaboard. An emphatic assertion that those birds which nest farthest north winter farthest south needs confirmation; England is not the most northern limit of the range, yet birds ringed here have been recovered in Natal and the Cape.

The incoming Swallow attracts as much notice as the loud-voiced Cuckoo as a "harbinger of spring"; the newspaper report of the first Swallow is, as a rule, more correct than that

of the March Cuckoo. Yet many fail to realise that we have three swallows and that this species is seldom the first to arrive. The true Swallow can be identified by its continuous blue back, chestnut and blue breast bands and long tail-streamers; the House-Martin has a white rump and under parts and shorter tail; the Sand-Martin, a smaller bird, is brown above and white below, except for a band of brown across the breast. About the middle of March the first Swallows arrive; but it is often well into April before they reach northern shires, and May when they are seen in Scotland. Continuous waves of Swallows come in until early June, but the later arrivals are mostly passage birds. Normally the Swallow is a day migrant, consequently its movements can be observed, but the passage birds feed as they travel, and the ultimate direction of flight is not always plain. Thus a steady stream of birds may be travelling north, but individuals sweep back again and again to work a good feeding ground; yet the birds hawking to and fro in one spot may be miles away in a few minutes and others have taken their place. On southward migration—at its height in late September—the flight is often steadier; large parties of mature and immature birds pass over, frequently at a height, swerving but little though beating up into the wind and tacking, yet always bearing south. Here again diurnal flight and the need of rest leads to confusion, for flocks will gather from all directions at a favourite roosting place. When this is reached the flocks will pass and repass before settling down. The height at which these autumnal migrants travel depends upon wind and weather; at times it is beyond our vision. Some interesting observations have been made from aeroplanes; one man, flying at 9500 feet, saw “Swallows” far above him, and though distance may have prevented specific identification, there is no doubt about the family. Against a strong wind the birds travel low; when crossing seas often merely skimming the waves.

So noticeable a bird is naturally recorded early and late ; many have seen November, and even December stragglers. There is some support for the statement that, exceptionally, a bird unable to risk the sea-passage, has survived our winter, but none for the suggestion, founded on ancient myth, that birds seen early in the year had hibernated. That paired Swallows return at once to the nesting site is not true in most years. For days, even weeks, according to weather conditions, the first comers frequent the larger waters, marshes and sewage farms, where insect life is plentiful even in a late spring. All day they hawk for flies, and at night roost gregariously in reeds and osiers. When insect life becomes plentiful elsewhere, the birds speedily distribute themselves, though a late frost will drive them back to these haunts ; a bad frost in May, cutting off supplies, spells disaster. The same roosts are occupied by returning birds in autumn ; the evening flight of the twittering multitudes before they rain into the reeds or willow bed is a most interesting sight. These gatherings begin early in August, even in July, when the first brood is on the wing.

The twittering song of the Swallow is heard continuously during its stay ; the bird sings on the wing and when perched. It is a cheery, simple song, hard to describe ; Yarrell's *feetafeet, feetafeetit* gives perhaps the best impression. The call is a loud *twhit*, repeated two or three times. The clamour of the young when the parent brings food is an emphatic variant of this twitter, and the alarm, uttered when birds are mobbing a hawk or Cuckoo, sounds like an angry very rapid repetition of the *twhit*. The Swallow has very short legs but can perch, though on the ground it is less at ease than the House-Martin. It will however, alight to gather mud, and exceptionally to feed. Dipterous flies and other winged insects are its food, but it will sweep an insect off grass or the surface of water, and even pick one, when hovering, from a wall. Numbers of small beetles, especially *Aphodius* and its allies, are devoured, but these are

taken on the wing when indulging in nuptial flight ; Bewick's well-known cut is evidence of close observation Butterflies, and even large moths, such as the yellow-underwings, are hunted and captured ; the last when disturbed by mowing machines or the feet of cattle. The height of the Swallow's flight varies from just above the ground or water to an altitude at which the wheeling birds appear mere specks ; it is indirectly connected with weather, for insects vary their altitude according to atmospheric and seasonal conditions ; the Swallow follows the food. Bundles of insects are collected for the young, and the " packets " delivered to the offspring in turn.

Originally the Swallow nested in caves or under the shelter of rocks, and a few still use such situations, but the inside of a building is its usual home. On a beam or joist in a barn, shed or stable it constructs a saucer of mud and lines it with grass and feathers. More rarely it places the nest against a wall or beam ; then it is a half saucer, approaching in shape the nest of the House-Martin beneath the eaves, but lacking buttresses. These unsupported nests often fall, though I have known broods safely reared. Exceptionally nests are built in trees. One bird saved labour by using a shrimp-pot on a shelf, merely adding lining, and I have seen a nest built in an old hat which had been left in a shed. As frequently proved by the capture of marked birds, Swallows often return year after year to the same nest, and patch up the old cracked mud. The mud has at times to be brought from a distance, the nearest pond or river, but in wet weather road puddles are useful ; a little hair and straw is usually mixed with it. Both birds build, and before and during incubation the male feeds the female, either in the air or on the nest. The first clutch of four to six white eggs, speckled with reddish brown and grey (Plate 84), is laid in May and two or three more may follow ; indeed young may still be in the nest in October, but when migratory overcomes parental instinct they are left to perish. It is stated that the

young have to be taught to fly, but I have disturbed many fledged birds which have never left the nest before, and seen them dash out, and after blundering for a second or two, fly well after their anxiously twittering parents. For some time they need rest at intervals; their parents feed them as they perch on branches or buildings, and often in the air. They roost in the nest until it is needed for another brood. As autumn approaches these young birds, distinguished by their shorter tails, gather on trees, rope the telegraph wires and line the roof-trees of buildings in large numbers. Thence they take short flights, as if testing their wing-power, and gradually flock after flock moves off southward.

The adult Swallow is steel-blue above with greenish gloss on wings and tail; most of the tail feathers have an oval white spot. The forehead and throat are rich chestnut, and below the latter is a band of blue; the rest of the under parts are buff. The bill and legs are black, the irides brown. The sexes are practically alike, though the tail of the female is usually a little shorter. The colours of the young (Plate 101, back fig.) are duller, the bands narrower and the tail noticeably short. Length, 7·3 ins. Wing, 5 ins. Tarsus, ·5 in.

Red-rumped Swallow. *Hirundo rufula* Temm.

The Red-rumped Swallow, distinguished from our bird by its chestnut rump and entirely buff, slightly streaked, under parts, also by a narrow chestnut streak above the eyes which widens into a collar on the nape, is a western Asiatic species. It also breeds in Greece, possibly in Italy, and in parts of northern Africa. * As a visitor it has been met with in Italy and southern France, and once in Heligoland. In June, 1906, three at least wandered to Fair Island, where one was shot, and it has since then been recorded for Kent. Length, 7·5 ins. Wing, 4·55 ins. Tarsus, ·55 in.

House-Martin. *Delichon urbica* (Linn.).

The European range of the House-Martin (Plate 102) roughly corresponds with that of the Swallow, and it winters in tropical Africa. In the British Isles it is a bird of passage and a summer visitor, common in most parts, but more local than the Swallow in northern Scotland and in Ireland.

The white rump of the House-Martin, very noticeable in flight, should prevent confusion with either the Swallow or Sand-Martin, but we frequently hear people talk of the "Swallows" that build under the eaves of their houses. A few days, even ten or more, after the Swallows reach us we see the first Martins, but it is often late in April before distribution is general. They travel with the later waves of incoming Swallows, and like them seldom go straight to the nesting sites, but hunt for food over large waters and roost in reeds and withies. Nevertheless the bird is just as constant in returning to its old haunts, repairing the nest it built the year before, or making a new one close to the one in which it was reared. Though it travels, both in spring and autumn, with the Swallow, its haunts differ slightly; it is more a bird of the dwelling house than the outbuilding. It is a cheerful bird; during the whole of its stay it constantly utters its chirrupy little song, a sibilant twitter with a sound of "z" in it; its call is a lively *tchirup*. Its food, and many of its habits, except those connected with nesting, are similar to those of the Swallow; it alights more frequently, and, often aiding progression with uplifted wings, will walk a few steps when collecting mud or feeding.

Undoubtedly the House-Martin, before it found man providing shelter in the shape of overhanging eaves, was a cliff and cave dweller. Many large colonies of cliff-nesting Martins still exist—for instance in Yorkshire, Derbyshire, and on the sea cliffs of Anglesey, where also a few nest in caves. Standing on



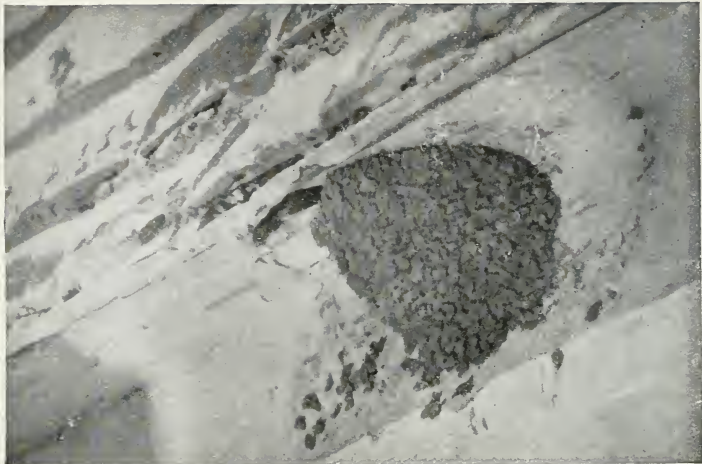
I Pl. 102.

House-Martin.



R 252.

Sand-Martin.



Nest of House Martin.



the cliff-top I have dropped bits of cotton-wool and watched the twittering Martins shoot out from the nests and catch the floating scraps to add to the nest-lining. Even on the bare cliff face the bird usually builds below some overhanging rock, and on houses the nests are close under the eaves so that they may be strengthened by attachment above (Plate 103). The entrance is so small that the interfering Sparrow cannot invade the sanctuary when once the nest is complete. The mud, added in successive layers, is collected from ponds, streams or puddles. In dry weather on the chalk hills I have seen a dozen eager Martins gathered round a puddle left by a passing watering cart. Both birds work at construction, but before this begins there is much play at building. A bird will fly up and dab a pellet of mud on the wall, then cling with head turned, twittering invitation to its mate, who will settle alongside and both will twitter conversationally. Then spreading their wings they drop, perform a graceful arc and float off for aerial courtship, returning shortly to the selected spot but doing no real building. During construction there are frequent quarrels with trespassing Sparrows, but I doubt if they often come to grips; if the Sparrow remains in possession the Martins build elsewhere. The oft-repeated story of the owner of the nest calling other Martins to its aid and walling up the hen Sparrow requires confirmation; it is in most books that children read, but lacks the authority of a single ornithologist.

At all times the Martin is sociable, and many nests are built actually in contact; probably the Yorkshire instance of forty-six in a wall length of nine yards represents the greatest number that could be crowded together. Eccentric nesting sites are not common; I have a photograph of one built upon a telephone bell which was frequently used. Four or five white eggs (Plate 84) are laid as a rule in early June; second and third broods are common, and late nestlings are often left to starve. For weeks after leaving the nest the young congregate

in ever-increasing flocks, which, as the season advances, may be seen gathering in trees or on house-tops and roping the wires with Swallows. A few days before the exodus they will wheel and dart in swarms round church towers or tall buildings; sometimes twittering hundreds collect in a tree, the centre of their aerial exercise. Towards the end of October these gatherings cease, though belated birds in November and December are not uncommon. A friend of mine saw a solitary bird hawking for flies in a gorge on the Cornish coast early in February, but it is impossible to say if it had wintered or was an abnormally early pioneer.

The adult House-Martin is steel-blue above with a white rump, and white under parts; even its short legs and toes have white downy feathering. Its bill is black, its irides brown. The young bird is sooty black, and some of the coverts and quills have white tips and edgings. Length, 5'3 ins. Wing, 4'25 ins. Tarsus, '45 in.

Sand-Martin. *Riparia riparia* (Linn.).

The Sand-Martin (Plate 102) has a wide range in summer, embracing practically the whole of Europe and the Mediterranean countries, part of northern Asia and North America, and eastern and southern Africa, southern Asia and South America in winter. In the British Isles it is an abundant, though rather local summer visitor and bird of passage.

Towards the end of March, just in advance of the Swallow, the Sand-Martin appears, first of its family, flitting over the larger sheets of water in search of early flies. Its brown back and small size and quicker, more jerky flight separate it at once from the two blue-backed swallows. Later parties accompany Swallows, but for a time, varying according to weather, the bird remains at these large waters and does not visit its nesting haunts. All day it flies from end to end of its selected pool,

beating steadily up wind, dipping constantly to the water to pick up drifting insects, then turns and shoots down wind to repeat the process. In a strong breeze it practically remains over one small area, swerving to right or left, but neither gaining nor losing headway. When the wind is light the birds indulge in play, twittering in low tones, chasing and dodging and at times even struggling in the air. The whole party will leave the surface, rise and wheel at a considerable altitude, as if testing the wind, then drop in a body to resume the food chase. As evening approaches the flights become longer and higher until all descend to roost in the old brown reeds or other waterside vegetation. Long after the local birds have retired to nest in river bank, sand or gravel pit, often at a distance from water, fresh incursions of passage birds visit the pool, depart for the north, and are replaced by new comers. The reeds, marshes, osiers and sewage farms are seldom entirely deserted, for a few non-breeding birds occupy them in June and July until the first batch of young come to swell the nightly gathering. The twittering song is continuous when the birds are on the wing, and becomes a conversational undertone after they have settled in the roost. The harsh alarm is heard when a passing Kestrel, Crow or other suspected enemy calls for combined action to drive it away. The food consists of small insects, mostly gnats and other flies whose early stages are aquatic.

The Sand-Martin is sociable in its nesting habits; from a dozen to many hundred pairs will nest close together, according to available space. The nests are at the end of tunnels of from a few inches to three or four feet in length, bored in sand or gravel; if the bank allow, well out of reach. I have seen nests burrowed just below the turf at the top of steep marl-cliffs, and others in cracks between stones in a sandy lane only three feet above the roadway. Even the softer layers of new red sandstone are pecked into by the short and feeble-looking bill;

many of these tunnels are visible in the steep cuttings of the Manchester Ship Canal. Perhaps the birds do not habitually roost in the tunnels during construction, but I have taken them at night from incompleted burrows. In the fatally late spring of 1886, when a hopeful advent was followed by a severe snow-storm in May, large numbers took refuge in the burrows and perished; Mr. Oldham took fifteen bodies from one hole. Both birds excavate, boring with the beak and scratching out the loose sand with their small feet. The actual nest is a litter of straw and feathers in a chamber at the end of the burrow; it is soon a hotbed of parasites. On the coast I have found nests entirely composed of seaweed and gulls' feathers. Four or five white eggs (Plate 84) are laid about the middle of May, and a second brood is usual. The colony (Plate 105) is a busy place; the young, showing their white chins, peep out of the mouth of the hole and clamorously demand food. At intervals the birds go through a strange performance, common to other colonial nesters such as gulls and terns. The air will be full of bustling, twittering birds when suddenly there is a strange hush, and all, as if by word of command, rise high into the air and leave the place deserted. After a short interval they return a few at a time and activities are resumed. This may be aerial play, but the silence and sudden departure give the impression of alarm, though no cause is apparent; it almost suggests emergency practice, like boat- or fire-drill. The Sand-Martin is victimised by the House-Sparrow which sometimes occupies holes in the midst of a colony, and I have seen one steep bank where every burrow was stuffed with the Sparrow's untidy litter and all the rightful owners evicted.

The Sand-Martin departs early, at any rate from its more northerly haunts. In August the gatherings at the nightly roost increase enormously, though the advent and departure of passage birds causes great irregularity in numbers. It is then that the crepuscular flights become most interesting. From



I Pl. 104.

Great Spotted Woodpecker.



Lesser Spotted Woodpecker.

R 256.



all directions flocks of a score or two to hundreds of birds arrive and begin aerial evolutions, wheeling in ordered companies, twittering continually. The host breaks up, the birds cross and recross one another's paths, and then reform into long lines which undulate across the sky like blown smoke. Often the whole body soars and after a few turns and circles begins a curious spiral descent, the leading party wheeling repeatedly, guiding the twists of a descending screw. When still some height above the reeds the birds half close their wings and shoot down diagonally, jerking from side to side, till with opened wings they check descent. Then in the waning light they skim to and fro with rapid flight, just above the reeds, into which they suddenly and imperceptibly vanish. Party follows party, but the later comers go through shorter performances and drop at once to the roost. In the south birds are noticed in October, but north of the midlands most leave early in September. I have a report of a number seen late in December in Devonshire, but this is very unusual.

The Sand-Martin is hair-brown above, white below with a narrow brown band on the breast; the bill is black, the legs and irides brown. The young have rufous tips to the coverts and margins to the secondaries. Length, 4.8 ins. Wing, 4 ins. Tarsus, .45 in.

Order PICIFORMES.

Sub-order PICI.

The order Piciformes includes the Woodpeckers and Wry-neck, birds with zygodactyle or "yoked" feet, two toes pointing forward, two backward. These feet, though adapted for clinging to a vertical surface, can be used for grasping or perching. The long tongue, which can be darted forward to capture insects, is a character of the group, though it is not confined to this order.

Family PICIDÆ. Woodpeckers.

Great Spotted Woodpecker. *Dryobates major* (Linn.).

As a species the Great Spotted or Pied Woodpecker (Plate 104) is distributed throughout Europe and northern Asia, but it is split into a number of geographical races, two of which occur in Britain. The Northern Great Spotted Woodpecker is a winter visitor, occasionally appearing in considerable numbers; the resident British form, *D. m. anglicus* (Hart.), is a smaller bird, with a less powerful bill and shorter wings. It nests in England and Wales, though nowhere in large numbers, and sparingly in southern Scotland, where it is extending its range. It is uncertain if it occurs in Ireland; probably the few which have been recorded are referable to the Northern form.

The Pied Woodpecker is an inhabitant of the woodlands and parks, depending for food and nesting sites upon old timber. It is a retiring, inconspicuous bird, in spite of the plumage, but when seen in flight has a "cobby" appearance, owing to the shortness of its stiff-feathered tail; whether in flight or when at rest the large white shoulder patch is a feature that catches the eye. From the smaller Barred Woodpecker it may always be distinguished by the crimson on the abdomen, and even when colours are not visible its inferior size separates it from the Green Woodpecker. When hidden by the foliage its presence is often advertised by the mechanical "call," a loud vibrating rattle, produced by the rapidly repeated blows of its strong bill upon a trunk or branch. This is not merely a nuptial call or challenge, but a "watchword" or signal of either sex; it may be stimulated by a mere desire to communicate or by excitement; doubtless it represents the Woodpecker's song. It is audible from a great distance, depending, however, upon the wind and the condition of the wood, a hollow bough naturally producing a louder note than living wood. Probably

the bird knows the location of the best sounding boards. The call-note is a sharp *quet, quet*, and another quickly repeated note is described, the alarm, *chk*, is heard when the bird is disturbed, especially near the nest.

In summer the food mainly consists of those insects which bore into or otherwise damage the timber of forest trees—the larvæ of wood-boring moths and beetles, bark beetles and their larvæ. The accusation that Woodpeckers damage timber is unfounded, since its borings are always in infected trees ; large numbers of the destructive *Rhagium* beetles are devoured by the Pied Woodpecker. The grub of *Cynips* is hacked out of the marble-gall, and there is some evidence that these galls are occasionally stored for winter consumption. I have seen the bird hanging beneath a branch to pick the aphides from sycamore leaves. It usually alights on the trunk, working upwards, often from side to side, but sometimes will perch in passerine fashion, when it sits well upright. During the ascent it smartly taps the bark, breaking off fragments, but often extracts its food from crevices with the tip of its sticky tongue. Its actions are jerky, and it hops rather than climbs, even when beneath a branch, leaping forward with one foot just in advance of the other. It will work round to the further side of a bole, often, apparently, to avoid observation. Though less frequently seen on the ground than the Green Woodpecker, it at times attacks the nests of ants. In winter, when the bird wanders from its breeding haunts, it will visit wood-piles and continue its hunt for wood-infesting insects, but in autumn it occasionally takes toll of fruit in garden and orchard. Beech-mast, acorns, nuts and berries are eaten when insect food is scarce. When an open space is crossed the flight is easy and undulating.

The nesting hole, neat and round, is bored in soft or decaying wood, horizontally for a few inches, then perpendicularly downwards ; at the bottom of a shaft, usually from six to twelve inches in depth, a small chamber is excavated, where on wood

chips the creamy white eggs (Plate 116), five to seven in number, are laid in the second half of May. The hole is rarely used again, but not infrequently other holes are bored in the same tree; I have seen eighteen in one dead trunk; they are seldom at less than twelve feet above the ground. Almost any tree, if sufficiently rotten, is used. The young, when the parents are feeding them, cluster at the mouth of the hole and keep up a continuous chatter, but when alarmed slip back into the nest. The increase of the Starling has had its effect upon the numbers of the Pied Woodpecker, for this determined bird will evict the rightful owner and occupy the ready-made hole.

The upper parts of the male are glossy black, with buff on the forehead, a crimson spot on the nape and white on the sides of the face and neck; on the shoulder is a large white patch, and the flight feathers are barred with black and white. The three outer tail feathers are barred; these show when the short stiff tail is outspread, acting as a support in climbing. The under parts are buffish white, the abdomen and under tail-coverts crimson. The bill is slate-black, the legs greenish grey, and the irides crimson. The female, a slightly smaller bird, has no crimson on the nape, and in the young this nape spot is absent, but the crown is crimson. Length, 9·5 ins. Wing, 5·5 ins. Tarsus, '9 in.

Lesser Spotted Woodpecker. *Dryobates minor* (Linn.).

The range of the Lesser Spotted or Barred Woodpecker is Palearctic, but several sub-species are recognised. The British form (Plate 104), which also occurs in portions of western Europe, is resident in England and Wales, though rare in the north and extreme west. Many, at any rate, of the records for Scotland and Ireland must be accepted with caution.

From its small size and its habit of spending most of its time in the tops of tall trees in woods and parks, this little Wood-





1 Pl. 107.

Green Woodpecker.
Wryneck.

S 261.



pecker is often overlooked, but if sighted on a trunk it may at once be identified by the broad barring on the wings and narrower bars across the lower back. Its habits are very similar to those of the Pied Woodpecker, and it has the same stumpy appearance, almost triangular, when bounding from tree to tree. Its note is a repeated *keek*, loud for so small a bird, and its vibrating rattle cannot with certainty be distinguished from that of the larger species. This substitute for a song may be heard at all times, but most frequently when, early in the year, courtship begins. The Barred Woodpecker is not known to feed frequently on fruits, nuts or other vegetable substances, but its insect food is similar to that of the Pied; it is just as useful in attacking the larvæ of *Rhagium* and the bark-boring *Scolytidæ*, as well as the larvæ of wood-leopards and clearwing moths. It will also hack out the grub of *Cynips kollari* from the marble-gall. When hunting for wood-boring larvæ it chips away the rotten wood, and the litter at the foot of a tree is often the first indication that upper branches are attacked by insects. At night it roosts in old holes, a habit certainly at times shared by the Pied Woodpecker, though recent writers state that it may sleep clinging to a bole.

A litter of chips is also a guide to a nesting hole, for the bird does not always carry these away when excavating. The hole is usually at a considerable height above the ground and may be so high as 30 or 40 feet; it is a smaller burrow than that of the Pied, measuring from $1\frac{1}{4}$ to 2 inches in diameter. The shaft varies, the nesting cavity being often a foot or more below the entrance. Five to eight highly polished white eggs (Plate 116) are laid upon wood dust and chips in the latter half of May, and a single brood is the rule. Both birds help to incubate, but it is not certain that the male assists in preparing the hole. Occasionally an old or natural hollow is used or enlarged.

The male has a crimson crown, a brown forehead, a black superciliary stripe, and another from the base of the bill to the

neck. The nape and upper back are black, but the lower back is barred with black and white. On the wings are broader and more conspicuous bars, and the outer tail feathers are also barred. The under parts are white with streaks on the flanks. The bill and legs are slate-grey, the irides crimson. In the female the crown is white, but the young birds of both sexes have more or less crimson on the head. There are no marked seasonal changes. Length, 5·6 ins. Wing, 3·7 ins. Tarsus, ·55 in.

Green Woodpecker. *Picus viridis* Linn.

The Green Woodpecker (Plate 107) occurs in most parts of Europe, and in Asia Minor and elsewhere in western Asia. In suitable woodlands in England and Wales it is not uncommon, but in northern counties it becomes rarer and only a few have been noted in Scotland. To Ireland it is a rare wanderer; there are only about three recorded instances of its occurrence.

The Green Woodpecker is certainly the best known though not always the commonest of the three species; its large size, conspicuous dress, loud call and habits render it more noticeable. Though a very green bird, colour is not always distinct in the field, much depending upon the light. When sunlight falls direct upon it the bird is conspicuously green with a crimson crown, but if it is between us and the sun it looks almost black, and undoubtedly many of the reputed Black Woodpeckers have been Greens seen in this position. If the under parts alone are seen as the bird passes over it looks almost yellow, and when flying away from the observer the yellow rump attracts attention. The usual haunts are more open than those of the other species; it frequents old timbered parks, and indeed any open country where there are ancient trees, rather than dense woodlands. Though a large and heavy bird it has an easy, bounding flight. It alights on a trunk or

bough and works upwards with diagonal or spiral course in quick jerky jumps or runs, halting occasionally with head drawn back and bill held at right angles to its body with an alert though meditative expression ; as it proceeds it taps the bark smartly, probably sounding it for hollows made by its prey. Rarely, a bird will descend for a short distance, tail foremost. Insects are captured by a rapid outward flick of the long tongue, gummed to its tip by sticky saliva. From early in the year until summer the loud ringing *plue, plue, plue*, often described as a laugh, and from which the bird gets one of its names—"Yaffle"—is a typical woodland call. Folk-lore has associated this "song" with a threat of rain, and another name is "Rain-bird," but weather has little to do with the bird's garrulity. Though it has been heard to "drum" upon wood, it certainly does not use this call so frequently as the Pied and Barred Woodpeckers. I have, however, heard two birds tapping deliberately, and their expectant pose, as they apparently tapped in turns, were expressive of listening for the answering signal. The alarm note is the laugh emphasised and harshened ; I have heard this angry call when a bird was chasing a passing Kestrel.

The food is similar to that of the other species, except that this bird has a passion for ants. It will attack the large nests in the woods, throwing aside the piled fir-needles with its bill and nipping up the amazed insects with its tongue. I have known it work the slope of a grass terrace from end to end, and seen it at the hillocks which ants throw up on cliff-tops. When seeking ants it will wander to a distance from trees ; I have watched it on the low coastal marl-cliffs, and a friend saw one working up a limestone face on the Little Orme. Berries, nuts and acorns are stated to form part of its winter diet.

The nesting hole is larger but similar to those of the other Woodpeckers ; it may be but a few feet above the ground or at the top of a tall tree (Plate 106). Five to seven glossy white

eggs (Plate 116) are laid upon wood chips late in April or early in May. Though there is only one brood late nesting is not uncommon, for the Starling finds the larger holes made by the Green Woodpecker convenient nurseries and ousts the rightful tenant.

The plumage of the sexes is much alike, dark green above and yellowish green below and with crown and nape crimson, but in the male the centre of the moustachial black stripe is crimson ; the lores and around the eye is black in both male and female. The rump is chrome yellow, the outer webs of the primaries barred black and white. The bill and feet are slate-grey, the irides bluish white. The crimson at the base of the bill is present in the young of both sexes, and their upper parts are barred, their under barred, streaked and spotted (Plate 107, lower bird). Length, 12·5 ins. Wing, 6·4 ins. Tarsus, 1·1 ins.

Wryneck. *Iynx torquilla* Linn.

The Wryneck (Plate 107) is found in summer throughout the greater part of Europe and much of northern Asia ; it winters in tropical Africa and in India. It is a summer visitor to southern and south-eastern England, but north of the midlands only nests occasionally, whilst in northern and western England and Wales, Scotland and Ireland it is an irregular and rare passage migrant.

Even in its regular haunts the Wryneck is an inconspicuous and retiring bird, but the loud voice of the "Cuckoo's Mate," heard in the latter half of March or early in April, is familiarly looked upon as an announcement that the Cuckoo will soon follow. It haunts woods and open park-land like the woodpeckers, but is also found in lanes, hedgerows, orchards and even gardens. Its flight is undulating and seldom long sustained, but I have seen it crossing a river valley at a fair

height, its clear *qui, qui, qui*, first attracting my attention. Its "Partridge-colouring" is more suggestive of the soft marbling of the Nightjar, but its habits are those of the Woodpeckers, except that when on a trunk the soft feathers of its tail give it no support. Its alarm note is an angry *kit, kit, kit*, and according to Seebohm it will rattle or drum on a bough like a woodpecker. Though its feet are adapted for climbing it usually perches across a bough (Plate 109), and feeds in the upper branches, whipping insects off the leaves with its vermiform and sticky tongue like a chameleon. It is as fond of ants as the Green Woodpecker, and thrusts its tongue into the burrows in the nests to draw out the white pupæ, or settling on a trunk or bough intercepts the insects on their arboreal journeys. One bird, when on passage, was attracted by the insects imprisoned in a street lamp in a busy Cheshire town and, though managing to find an entrance, was itself unable to escape. Its captor, describing the bird to me, said that it raised its "top knot" and twisted its neck slowly round to such an extent that he feared it was injured. This snake-like writhing of the neck, from which it gets its ordinary name and also the name "Snake-bird," is one of its peculiarities; when clinging to a trunk it twists and turns its head without moving its body. When in the nest it hisses if disturbed, and this, coupled with its habits of darting out its tongue at an intruder, are snake-like habits sufficient to alarm other than human foes. Since the days when Sir Thomas Browne quaintly commented upon its apparent "vertigo" and "fitts," its habit of feigning death when handled has been freely commented upon, but the lamp-trapped captive did not employ these wiles.

The nest is in a hole in a tree, steep bank or even masonry, but is seldom, if ever, excavated by the bird itself; artificial nesting boxes are appreciated. A pair, after turning out a pair of Great Tits from one nesting box, reared their brood in another, and then hammered through the side of their own

home. The bird is attached to one hole or locality, returning year after year ; in one small Norfolk park a particular tree is always occupied by a pair, though there are many suitable timbers surrounding it. Seven to ten, even more, glossy white eggs are placed within the hole upon any dust or litter which has accumulated but without the introduction of nesting material ; they are usually laid late in April or in May (Plate 116).

The upper parts of both sexes are mottled or variegated with grey, buff and brown ; the back is streaked with dark brown. The outer webs of the primaries are barred with buff and brown, and the grey tail has distinct bars of brown and buffish white. The rich buff throat is finely barred, the flanks and breast spotted and streaked with dark brown. The bill, legs and irides are brown. The markings on the under parts of the young are more distinct and pronounced, but there is little age or seasonal alteration in the plumage. Length, 6·5 ins. Wing, 3·4 ins. Tarsus, ·7 in.

Order COCCYGES.

Sub-order CUCULI.

The Cuckoos have a common character, the zygodactyle foot, but in appearance and habits they show great variation.

Family CUCULIDÆ. Cuckoos.

Cuckoo. *Cuculus canorus* Linn.

The Cuckoo (Plate 108) is a summer visitor to the Palæarctic regions, and winters in tropical and southern Africa and as far south in Asia as New Guinea. It is an abundant summer visitor and bird of passage in the British Isles, arriving in

early April and occurring everywhere from the coastal sandhills to the tops of the moors.

The almost human tone of the Cuckoo's voice compels attention ; the bird is popular, and the "first Cuckoo" is annually announced *before* its arrival. Myth and error surround its story, but its true history is strange enough to need no embellishment. False reports of its arrival are so frequent that March Cuckoos are always looked upon with suspicion, but occasionally it reaches the south coast at the end of this month, though it is usually the second or third week of April before it is generally distributed. The voice of the bird is more familiar than its appearance. It is a long-tailed, sharp-winged slate-grey bird, barred on the under surface, often, not without reason, confused with the Sparrow-Hawk ; the ignorant keeper shoots it, fearing that it will turn into a hawk in winter. Even the small birds appear to share this doubt, and chase and mob it persistently. Its flight may be direct and strong, but at times curiously wavering and uncertain ; it is ungainly in its movements, and will alight on a bush with outstretched wings, using them as hands to maintain its balance. The males arrive first and at all times predominate ; indeed the species is polyandrous—females actually courting two or more males. Greed and vanity appear to have destroyed the finer sexual instincts of the male ; for the first two months he calls persistently, at night as well as by day, to out-shout his rivals rather than to serenade the female. The hen does not always compel attention, for two or three males will posture and call before her, but as a rule she seeks her mate.

There is still much uncertainty about the various notes of the Cuckoo. Certainly the male does most of the calling, but either the female at times says *cuc-koo*, or the clear, bubbling cry, stated to be hers alone, is shared by the male, for one bird will make both remarks. There is, too, a harsh laughing alarm note which is apparently common to both, and the deep *kow*,

wow, wow, may not be solely feminine. Bowing forward, with swelled throat, head lowered, wings drooped and fanned tail elevated, the male Cuckoo shouts from his perch, but almost as frequently he calls as he flies. The so-called change of tune, when the note is triplicated, is not heard in June alone ; during courtship it is common.

The greedy Cuckoo is a useful bird ; it devours many larvæ which other species reject. The irritating hairs of the larvæ of ermine, tiger, drinker or gold-tail moths, which protect these caterpillars from many birds, have no terrors for the Cuckoo ; the hairs stick to the lining of its stomach or are ejected in small pellets or balls, sometimes mixed with vegetable fibre, which Prof. Newstead suggests may be eaten purposely to scour the stomach. The protectively coloured larva of the magpie moth, and that of the gooseberry sawfly, *Nematus ribesii*, are much sought for ; as many as eight Cuckoos have been seen in one small group of bushes when the sawfly larvæ have been defoliating the plants. The stomachs of two birds killed during a plague of these grubs were distended with the larvæ. Beetles and other insects, worms and a few seeds are also eaten. The statement that the Cuckoo sucks or eats the eggs of other birds is partly due to misconception, but not without some foundation ; Cuckoos have been shot when carrying their own eggs in their bills, but the frequent reduction of a clutch of the rightful owner when the Cuckoo adds an egg, points to intentional substitution ; and in the stomach of one Cuckoo out of fifteen examined, Prof. Newstead found fragments of the shell of a Pipit's egg.

The number of eggs laid is uncertain, but it seems probable that each bird lays one or two clutches of five or six, with an interval of several days between each egg. Two and even three Cuckoo's eggs have been found in one nest, but these were doubtless placed there by different birds ; each egg is deposited in a separate nest. As a rule they are laid on the



I Pl. 108

Cuckoo.



Hoopoe.

S 268.



ground, picked up in the bill of the Cuckoo and carried to the selected nest. The species victimised vary greatly; on the moors the Meadow-Pipit is the favourite (Plate 112), elsewhere the Tree-Pipit, Pied Wagtail, Hedge-Sparrow, Redbreast and Reed-Warbler are frequently selected. The Welsh name of the Meadow-Pipit is "Gwas-y-Gog," the Cuckoo's servant. A long list of other species might be added, including the Wheatear, in whose nest, more than two feet below ground, a young Cuckoo was found. Erratic Cuckoos have placed their eggs in the nests of Jay, Magpie, Kestrel, Little Grebe, Pheasant and Red Grouse. The eggs vary in colour but usually follow certain types which bear striking resemblance to those of favoured hosts, but only one of these is shown on Plate 118. Others closely resemble the Pied Wagtail, Reed-Warbler, Pipit, Skylark and even the blue Hedge-Sparrow. In spite of this simulation no effort seems to be made by the Cuckoo to choose a nest which will match its egg; occasionally they conform, but it is the exception rather than the rule. Though small birds instinctively mob the Cuckoo, when an egg is once in the nest and after the abnormal fledgling is hatched no attempt is made to dislodge it; indeed a bird will brood the foster-chick whilst her own lie slowly dying outside the nest.

When hatched the young Cuckoo, during the first few days of its naked, blind and apparently helpless existence, throws out the unhatched eggs or fellow nestlings. Long after Lottinger and Jenner at the end of the eighteenth century described this wonderful instinct, it was treated as myth, but now the whole process has been carefully watched and described by careful ornithologists, and the camera has recorded the performance. Perhaps the best and most philosophical account is that by Mr. W. H. Hudson, who suggests and I believe proves that the strange hollow in the back of the young Cuckoo is peculiarly sensitive; the bird fidgets when it feels pressure

against its side, sinks to the bottom of the nest and, when egg or young roll on to its sensitive back, it at once appears to be attacked by epileptic power, stiffens its legs, stretches out its featherless wings, and using them as hands climbs backwards up the rim of the nest. With a final hitch it throws the unwelcome load over and sinks exhausted and inert back into the nest. After a time the murderous instinct passes and any nestlings which are too heavy to have been thrown out are accepted as bed-mates, but as a rule the young Cuckoo gets the nest to itself. With constant wheezy call—*chiz, chiz, chiz*—it clamours for food (Plate III); when larger than its hard-worked foster-parents, they will stand on its back to administer food, and continue their attentions long after it has left the nest. Apparently the voice of the young Cuckoo has commanding, almost hypnotic power, for other birds than those which have cherished it as a nestling will feed it; an instance came under my notice of a Cuckoo on a lawn being fed by two Pied Wagtails and a Spotted Flycatcher. The alarm cries of the foster-parents have no effect in silencing its continuous demands. The half-grown young bird, either in or out of the nest, resents interference, and will raise and lower itself on its legs, swell out its feathers until those of the crown rise like a white-rimmed frill above its head, spread its white-tipped but stumpy tail and hiss defiance. It will peck furiously at the human hand, and often at the bird which has just presented it with food.

In August many of the old Cuckoos depart, but young birds are about until late in September; occasionally these begin to call before leaving. I have notes of one in August and another, heard for over an hour, on September 17. Young in October and November are recorded, and a friend shot one on December 26, but doubtless this bird had been unable to migrate.

The adult is slate-grey above, with white bars on the inner

webs of some of the brown quills, white bars and tips to the outer tail feathers, and white spots on the shafts of the central pair. The upper breast is pale slate, the rest of the under parts are white with dark bars. The bill is slate-black, yellow at the gape, the mouth orange within; the legs, orbits and irides yellow. The young have the upper parts barred with dark brown and rufous; many of the feathers are white tipped and there is a conspicuous white patch on the nape; the white-tipped tail is also barred; the under parts are buffish white, barred throughout with black; the irides are brown. Birds in their second year (Plate 108, upper fig.), more rufous and lacking the white tips, are occasionally recorded; Seebohm suggests that in this plumage they seldom migrate far north, and that the adult dress is not attained until the bird is two years old. In early August, however, I saw two young birds together, one typically rufous and the other, except for the nape spot and white margins, as grey as an old bird. Length, 13 ins. Wing, 8·5 ins. Tarsus, ·95 in.

Great Spotted Cuckoo. *Clamator glandarius* (Linn.).

This large, crested and long-tailed Cuckoo breeds in Africa, southern Europe, and part of western Asia; it has been recorded twice from Ireland, from Northumberland and Norfolk. Its parasitic and other habits resemble those of our bird, and its call is a loud *kee-ou*, its alarm a harsh *kark*. It has a long grey crest, ash-brown, white-spotted upper parts, white-tipped tail and white under parts. Length, 15·5 ins. Wing, 8 ins. Tarsus, 1·3 ins.

Yellow-billed Cuckoo. *Coccyzus americanus* (Linn.).

There is no reason for doubting that this American bird is an occasional wanderer on migration to Britain; the belief

that a bird may, unaided, cross the Atlantic is gradually gaining ground as facts accumulate. This species nests in North America and winters in South America, passing the West Indies on migration. It has occurred at least a dozen times in the southern and south western counties of England and Wales, in Ireland and Scotland. It constructs a nest and incubates its eggs. The call is described as a monotonous *koo, koo, koo*. The upper parts are greyish brown, rufous on the wings, the under parts white. The upper mandible is black on the culmen, the rest of the bill is bright yellow; the legs are lead-grey. Length, 11 ins. Wing, 5'9 ins. Tarsus, 1 in.

Black-billed Cuckoo. *Coccyzus erythrophthalmus*
(Wilson).

A single example of this North American Cuckoo was killed in Antrim in 1871; it has also occurred in Italy. It has a metallic greenish-grey back, slate crown, and the under parts are buffish white. The skin surrounding the eye is vermilion. Length, 11 ins. Wing, 5'6 ins. Tarsus, '95 in.

Order CORACIIFORMES. Picarian Birds.

Sub-order CYPSELI. Swifts.

The Swifts, superficially like the Swallows, have certain characters similar to those of Passerine birds, but in most points are closely allied to the Humming Birds and other Picarian groups. The four toes are directed forward, unsuited for perching but adapted for clinging to rough surfaces.

Family CYPSELIDAE. Swifts.

Swift. *Micropus apus* (Linn.).

Our Swift (Plate 110) breeds in Europe and north-west Africa and winters in southern Africa; allied races occur in Asia. It is a late spring visitor to most parts of the British Isles, rare in the north of Scotland and the Scottish isles, where it is a passage migrant.

April is well advanced before the first Swifts announce their arrival by loud screams as they wheel high overhead or rush at marvellous speed through the air. The bird seen at Lowestoft by Prof. Newton on March 26 was exceptionally early. The black bird, with long, narrow, scimitar-shaped wings, needs no description, yet it is necessary to emphasise that it is not a Swallow, though through sharing aerial habits it has acquired similar form and appearance. It is a master of the art of flight, our most aerial species, and never seems to tire. The ordinary flight is an alternation of rapid wing-beats and long glides with outspread motionless wings, during which it loses no elevation. It races through the air.

“ Like a rushing comet sable
Swings the wide-winged screaming swift.”

It is eminently sociable; little parties delight to career, screaming, between the houses in our streets, or to wheel and soar high in the upper air. Except when it ascends for play, for play it certainly does, the altitude of flight is regulated by the height at which insects are flying, and in this way has relation to weather. As some insects fly in rain the Swift feeds during storms, and the “ Devil-bird ” has a reputation for bringing bad weather. On late May and June evenings the Swifts, or at any rate those which are not engaged in incubation, indulge in combined crepuscular flights. At dusk they mount high in the air,

soaring with continuous screams, until they are mere crescentic specks in the sky. There they float, their voices faintly audible even when they are invisible. Whether they sleep on the wing or return to some roost after dark is still unknown. The short legs, feathered to the toes, are useless for walking, but the bird has no difficulty in rising from a level surface. I have more than once placed a captured Swift on the ground; the bird raised the wings high above its back and with one sharp downward stroke lifted itself and flew off; it did not flutter along the ground.

The food of the Swift consists of small flying insects, mostly diptera and stayphylinid beetles; I have taken fair-sized crane-flies from the stomach of one which had met with an accident; its mouth was full of small two-winged flies. Both Prof. Newstead and Mr. G. A. Dunlop have watched Swifts coursing to and fro through the columns of plumed gnats, *Chironomus*, when these were engaged in their nuptial flight. One Swift, which had accidentally entangled itself in a window, when held in my hand, closed its eyes and gaped as if expiring, but it soon recovered and flew strongly. It did not appear to me to be "shamming," but seemed as if in a temporary faint through fright. Dipterous and other parasites give the Swift much trouble, and during flight it will perform an evolution similar to the "tumbling" of a Pigeon, but without loss of elevation, when, doubtless, it is striving to get rid of the pests, scratching itself in the air.

The incoming Swifts lose no time in getting to the nesting holes, and eggs are generally laid before the end of May. The nest is under cover, frequently on rafters in a dwelling house, but on the coast in some crevice in the cliffs; it has been found in a hollow tree. The bird is common on the Pennine grouse-moors, where I am told it will nest in the turf "butts" used for Grouse driving. The nesting material consists of straw or other litter, mixed with a few feathers, glued together with viscous salivary secretion which speedily hardens. Two or occasionally



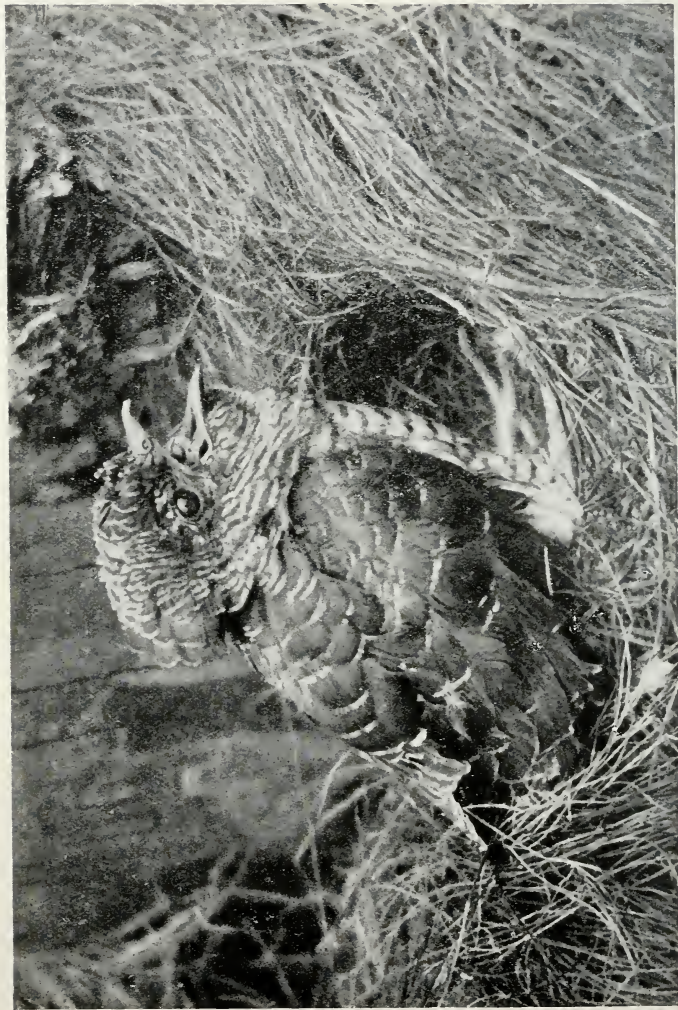
1 Pl. 110.

Swift.



Alpine Swift.

T 274.



three long white eggs are laid (Plate 118), and there is only a single brood. Fierce fights with Starlings and Sparrows for nesting sites are recorded; the result is not always the same, the bird first in possession generally wins.

Towards the end of July some Swifts have started southward, and in most years all have left the midlands and north before the end of August. In late years, however, birds pass through until early November; I have seen one in Cheshire on November 10, and a friend saw one five days later in Lancashire. There is at least one December record.

The Swift is blackish brown, with a small and variable white patch on the chin. In young birds this patch is purer. The bill is black, the feet very dark brown, the irides brown. Length, 7 ins. Wing, 6·8 ins. Tarsus, ·55 in.

Alpine Swift. *Micropus melba* (Linn.).

The Alpine Swift (Plate 110) breeds in the mountains of central and southern Europe, northern Africa and parts of central and southern Asia; it winters further south in Africa, and is well known as a winter visitor in Ceylon.

It has frequently occurred in both spring and autumn as a passage migrant or "occasional visitor" in England, Wales and Ireland, but has not been noticed in Scotland.

It is a rock-haunting species, but also nests in buildings, making a similar nest of glued fragments to that of our bird. Its habits are also similar, except that its flight is stronger and its voice louder. It is easily recognised by its browner colour on the upper parts and breast, and by its white chin, throat and belly. It is much larger, for whereas the outstretched wings of our Swift are just under 12 inches from tip to tip, this bird measures nearly two feet. The bill and feet are black, the irides brown. Length, 8 ins. Wing, 8·45 ins. Tarsus, ·6 in.

Needle-tailed Swift. *Chætura caudacuta* (Latham).

On two occasions this eastern Siberian Swift has wandered to England; one was obtained in Essex in 1846, and two were seen and one shot in Hampshire in 1879; both occurred in July. It winters in Australia, and the birds must have been hopelessly lost during return migration; it has not been noted elsewhere in Europe.

The Needle-tailed Swift gets its name from the spiny projecting shafts of the tail feathers; it differs from the other two Swifts in having one toe turned backwards. It is a brown-backed bird with metallic green gloss on its dark head, wings and tail. It has a dull white forehead, and the throat and breast are white, the belly brown. Length, 8 ins. Wing, 8·1 ins. Tarsus, ·7 in.

Sub-order CAPRIMULGI.

Family CAPRIMULGIDÆ. Nightjars.

Anatomically the Nightjars are very similar to the Swifts, but in the soft plumage, crepuscular or nocturnal habits, they approach the Owls. They have a pectinated or combed middle claw, and the wide gape is provided with strong bristles.

Nightjar or Goatsucker. *Caprimulgus europæus* Linn.

The Nightjar (Plate 113), one of our later migrants, seldom appears before the end of April or beginning of May. It occurs throughout northern and central Europe, and winters in Africa, even so far south as the Cape. In southern Europe, Africa and Asia it is replaced by allied forms. In the British Isles it occurs in all suitable localities, but in the Shetlands and

some other northern islands is only known as an occasional passage migrant.

Open heathy wastes, bracken-covered slopes and woods, cloughs and corries on the hills where bracken mingles with the ling, are the haunts of the crepuscular Nightjar. The strange purring trill, its song, from which it derives some of its numerous names, is the surest means of identification. It flies at dusk, often at sundown, a long-tailed, shadowy form with easy, silent moth-like flight; its strong and deliberate wing-beats alternate with graceful sweeps and wheels with motionless wings. The beautifully variegated plumage shows relationship or similarity to the Wryneck, its wide gape and long wings to the Swift, its soft downy plumage and habits to the Owls, but in many characteristics it stands alone—a Nightjar. There is nothing grating or harsh, no “jar” in its soft trill, which rises and falls as it vibrates on the variable evening breeze, or as the bird turns its head from side to side. The lower mandible vibrates, the throat is distended until the feathers stand out. When it churrs the bird lies or crouches along a bough or rail, but it will sing from a post, and occasionally perch across a branch.

“Lone on the fir-branch, his rattle-notes unvaried,
Brooding o'er the gloom, spins the brown eve-jar.”

The similarity to the whirr of the old-fashioned spinning-wheel doubtless originated the name “Jenny-spinner.” The duration of the trill may be for a fraction of a minute or for several minutes without a pause; rarely I have heard it in the day-time, and I have listened to it during the first glimmer of morning light. It is continued at intervals during summer, and occasionally may be heard in August and September, just before the bird departs.

During the day the Nightjar lies silent upon the ground, often on a heap of stones, wonderfully concealed by its

plumage ; it is most difficult to detect, looking like a bit of lichen-covered twig or fragment of bark. With eyes almost closed it watches through tiny slits, rising suddenly, sometimes with a croak of alarm, but usually silently, when we almost tread upon it. Its rounded head and short beak, together with its mottled dress, give it a peculiar reptilian appearance ; little wonder that one of its names is " Flying-toad." " Night-hawk" and " Fern-owl" are names derived from its habits, " Dor-hawk" and " Moth-owl" from its food. Its weird nocturnal note and silent ghostly flight have earned from the superstitious the name " Lich (corpse) Fowl" and " Puckeridge," and " Goatsucker" is due to wholly erroneous notions of its intentions when flying amongst animals. When on the wing it has a soft call *co-ic*, and a sharper and repeated alarm, *quik, quik, quik* ; but during courtship, and occasionally at other times, it uses a mechanical signal, a sharp cracking sound. Though almost universally stated to be caused by clapping the wings together over the back, I cannot believe that the soft feathers of either this bird or the Short-eared Owl, which produces a similar note, can make a clapping sound. The wings are raised vertically and brought smartly down ; the crack, I am sure, is similar to that of a whip-lash. The male may be told from the female by the white spots on his wings and tail, and as he gracefully floats above her, with wings upraised at a sharp angle, he spreads wide his tail to show the white spots. I have heard him whistle softly to the female, who replied with a similar note. On the ground both birds will swing the tail from side to side when excited. The Nightjar does not hunt with open mouth, as often depicted, but the huge gape opens wide for large insects, such as noctuid moths and dor-beetles, which are snapped up with avidity. Crepuscular insects are its food.

No nest is made ; the two elongated and elliptical eggs, creamy white mottled with brown, purple and liver (Plate 118),





1 Pl. 113.

Roller.
Nightjar.

T 279.

are placed upon the bare ground amongst bracken or stones ; the brooding bird, sitting closely, is their best protection. They are seldom laid before the end of May, but I have once known young hatched by the 15th of this month. The male occasionally broods. The female will "squatter" away to attract attention if disturbed, rolling and fluttering in a perfect frenzy. When the down-clad young are hatched her excitement becomes intense ; I have seen her sit on a bough with outspread tail, sawing the air with her wings. The newly hatched young are covered with vermiculated grey and brown down, livid blue skin showing on the naked nape and back ; the combed or pectinated claw of the adult, the use of which is unknown, is represented by a horny unserrated plate. The note is a querulous *cheep*. Quickly they become active (Plate 115), and the parents soon remove them if the nest has been visited. At times a second brood is reared. Emigration begins in August, and by the middle of September most birds have left.

The plumage of the adult Nightjar is lichen-grey, barred and streaked with buff, chestnut and black ; the under parts are barred. White spots on primaries and white tips to the outer tail feathers are characters of the male ; in the young male these are buff. The bill is black, the legs reddish brown, the irides almost black. Length, 10·5 ins. Wing, 7·6 ins. Tarsus, 75 in.

Red-necked Nightjar. *Caprimulgus ruficollis* Temm.

The Red-necked Nightjar, which occurs in Spain, Portugal and Morocco, was obtained near Newcastle in 1856. It is a larger bird than ours, is more rufous on the wings and under parts, has a noticeable buff or tawny collar, and white marks on the throat. Length 12 ins. Wing, 7·8 ins. Tarsus, 95 in.

Egyptian Nightjar. *Caprimulgus ægyptius* Licht.

The British status of the Egyptian Nightjar, whose normal range is south-western Asia and north-east Africa, also hangs on a single example, thought at first to be a pale variety of the British bird, which was shot in 1883 in Nottinghamshire. It has occurred elsewhere in Europe. It is a sandy grey and black bird, without the rich buffs and browns of the Common Nightjar, and the tail is without the characteristic white spots in the male as well as the female. Length, 10·5 ins. Wing, 8·1 ins. Tarsus, ·9 in.

Sub-order MEROPES.

Family MEROPIDÆ. Bee-eaters.

The Bee-eaters, which have a wide range, are all brightly coloured birds with long curved bills, and often elongated central tail feathers. The feet have the toes united, two of the front toes joined for fully half their length.

Bee-eater. *Merops apiaster* Linn.

The Bee-eater (Plate 114) breeds in southern Europe, western Asia and northern Africa, and migrates to southern Asia and Africa. It is a gregarious species, much addicted to wandering, and many individuals or small parties have reached the British Isles both in spring and autumn. Though its visits are irregular, they are so frequent that it must be looked upon as an occasional visitor, though not a regular bird of passage.

The gorgeously coloured bird, distinctly tropical in appearance, at once attracts attention when it appears, especially as it is neither shy nor secretive, and it seldom remains long in England except as a specimen. As, however, it is reported to

have nested in South Germany, it is not impossible that some of the spring wanderers, which have apparently overshot their normal breeding area, might remain to nest with us if they were unmolested. Bee-eaters nest in colonies in holes in sand-pits, river banks, and indeed similar places to those occupied by Sand-Martins. Like other hole-nesters, they lay white eggs. The flight is easy and graceful; the note described as *quilt*. Though it feeds on various insects it has, as its name suggests, an unlucky fondness for bees, and great numbers are trapped and destroyed on account of its ravages. When, in 1905, three visited Bentham, in Yorkshire, the late G. W. Murdoch told how the birds perched at the mouth of a hive, pecking at the bees as they entered or emerged.

This bird is so distinct in its shape and the brilliance of its plumage that it cannot be confused with any other species except those of its own family, none other of which is included as British. It is true that the Blue-tailed Bee-eater, *M. philippinus* Linn., was recorded for Durham in 1862, and as shown by Nelson a Bee-eater was certainly shot on the Yorkshire side of the Tees, but it seems likely that there was some accidental substitution of specimens. The majority of ornithologists reject the possibility of this eastern Asiatic species having reached Britain unaided.

A glance at the plate is better than any description of this many-coloured bird, but the points which catch the eye of the observer are the long curved bill, orange-yellow throat, blue wings and under parts contrasting with the rich chestnut back, and the projecting central feathers of the green tail. These in the young are at first no longer than the rest. Length, 11·25 ins. Wing, 6 ins. Tarsus, ·4 in.

Sub-order UPUPÆ.

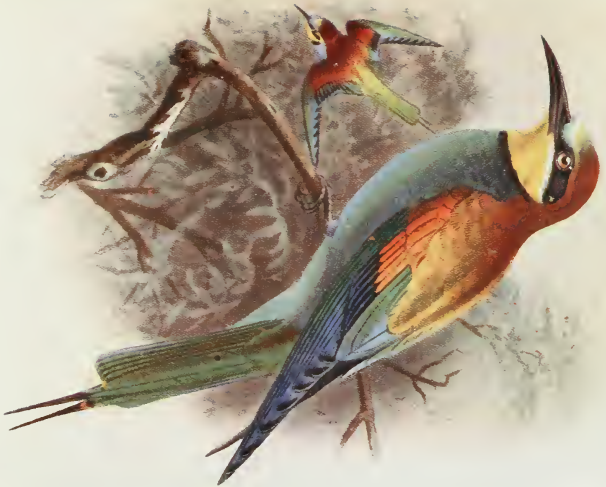
Family UPUPIDÆ. Hoopoes.

The Hoopoes have an erectile crest, long slender curved bills and a well-developed hind toe.

Hoopoe. *Upupa epops* Linn.

The history of the Hoopoe (Plate 108) as a British bird is a long, disgraceful obituary. It is a striking and conspicuous species which breeds throughout the greater part of Europe, south of southern Sweden, in western Asia and north-western Africa, and winters in southern Africa. Allied races are recognised elsewhere in Asia and Africa. Not only is it a passage migrant in spring and autumn, but it would be a regular summer visitor to England if stupid and greedy collectors and gunners would leave it alone. It has frequently nested in southern counties, and without doubt would do so again if permitted. To our knowledge it has been striving to establish itself for two and a half centuries, and still in spite of opposition continues its efforts. As a would-be settler, wanderer or passage bird it has occurred in all parts of the British Isles, and though most frequent in the south and east, is by no means unusual in the west; indeed the list of "specimens" in any western county is shockingly lengthy.

The large, black-tipped erectile crest, when elevated like the head-gear of an American Indian, and the conspicuous barring of the back and wings, together with its almost stupid tameness, render the Hoopoe not only too easy to see, but far too easy to shoot. Its flight is slow and undulating; its gait similar to that of the Starling, with whom it freely consorts, its head bobbing to and fro as it walks. The food consists of insects of various kinds, worms, centipedes and woodlice, and



I Pl. 114.

Bee-eater.



Kingfisher.



174. 115.

Young Nightjar,

T 283.

it is especially partial to coprophagous beetles and their larvæ ; for these it frequents manure heaps and animal droppings, digging for its prey with its long bill. Large beetles and worms are hammered to bits, beaten on the ground, but frequently it adopts a habit of the Hornbill, with which it has some affinity, of throwing its food into the air and catching it neatly before swallowing it. It has various notes. The *hoop*, *hoop*, from which it gets its name, is uttered when perched with crest depressed, throat expanded and head lowered. Swinhoe stated that the air was forced out by striking the bill on the ground, but the Rev. F. C. R. Jourdain was not able to confirm this. The hoop is guttural and carries for a great distance. Col. Cunningham speaks of a soft *uk*, *uk*, *uk* note when the bird is walking with depressed crest, and Saunders of a love-note, *bu*, *bu*, when with erected crown the bird struts before its mate. Mr. Jourdain mentions a chatter of alarm, a warning to the nesting female, and a cat-like call.

Although showing little alarm at the presence of human beings, the Hoopoe is suspicious of a passing hawk, crow or other possible enemy, and at once assumes a protective attitude which, in the open, is said to make the bird look like a bundle of rags. A wounded young bird which was brought to me accidentally fell off a table and at once threw itself into this defensive position ; it spread its wings, expanded and slightly raised its tail, drew back its head until it rested on its back, and pointed the bill straight upward. The result, though the black and white pattern was sharp enough on a carpet, was distinctly unavian. Whilst I was striving to feed this bird the crest was depressed, but when it was dying in my hand the feathers were slowly raised and it died with fully expanded crown. On several occasions Hoopoes have wintered in England ; one bird which for some time frequented a large garden, used to hunt for insects amongst the wind-fall branches under a group of trees.

The nest is usually in a hollow tree or hole in masonry ; during incubation the male regularly feeds the female. At times no nesting material is used, but generally an untidy collection of straws, litter and rags, mixed with evil-smelling filth, is the bed for the eggs and young. Mr. Jourdain thinks that five is the minimum number of the unspotted white, grey or greenish, and often stained, eggs (Plate 118); the clutch may number ten or more. The insanitary and disgusting condition of the nest does not trouble these beautiful birds.

The head, neck, upper back and most of the under parts are vinaceous cinnamon, darkest on the crest and pinkest on the breast. The crest is tipped with black ; the lower back, wings and tail are barred black and white ; the rump is white. The bill is black, fleshy at the base, the legs and irides brown. The bills of the young are shorter and less curved. Length, 12 ins. Wing, 5·7 ins. Tarsus, ·8 in.

Sub-order HALCYONES.

The Kingfishers have long heavy bills, short, thick-set bodies, and for the most part brilliant plumage. The foot has the three front toes united. All of the family *Alcedinidæ* are fish-eaters.

Family ALCEDINIDÆ. Kingfishers.

Kingfisher. *Alcedo ispida* Linn.

The Kingfisher (Plate 114) is a well-distributed resident in the British Isles. Abroad it occurs throughout central and southern Europe, and is replaced in Africa and Asia by allied forms. Possibly a few birds reach us as winter visitors, but though addicted to short internal movements, it cannot be called a regular migrant or bird of passage.

The brilliance of its plumage and the selfishness of anglers, who cannot brook competitors at their sport, explain why the Kingfisher is often slain, yet in spite of constant persecution it is abundant in some districts, and even visits polluted streams near towns. It is better known from its stuffed effigy under a glass-shade than as a living bird, for it is shy and rapid in its movements ; a streak of blue as the bird vanishes round a bend is all that is often visible. When perched, facing the observer, its ruddy breast alone is seen, but if it turns or flies the prismatic colour of the upper parts is either blue or green according to the angle of incidence of the rays of light. The haunts of the bird are the waterside, since it feeds entirely upon aquatic animals, but it is as frequent beside lake, pond, canal or fenland dyke, as by the rapid trout-stream. In winter, especially when inland waters are ice-bound, it frequents tidal marshes and the shore, taking its stand on the mussel or limpet covered rocks and diving into the shallow gutters and pools. Fish it certainly captures, but aquatic insects and crustaceans, the latter either fresh-water or marine, are freely eaten. Though taking toll of small trout, it is useful on a trout-stream, for it eats numerous fresh-water shrimps (*Gammarus*) which are destructive to ova.

The flight of the Kingfisher is exceedingly rapid, the short rounded wings whirring until they appear a mere blurr ; it usually flies near the water, but during courtship the male chases the female through and over the trees with loud shrill whistles. From February onwards the male has a sweet trilling song, a modulated repetition of many whistles. He also signals with a whistle to the female when he is feeding her, his share of nesting duties ; this whistle is produced when his bill is loaded with food, yet is clear and distinct. The female will reply and emerge from the nesting hole ; I have seen her fly to meet him, take the fish from him in the air, and return at once to the nest. The bird has regular perches or stands from

which it fishes ; these may be a few inches or many feet above the water. It sits upright, its tail pointed downwards, its head turned contemplatively as it watches the water beneath ; suddenly it drops with a splash and usually returns at once with a struggling captive. If a large and lively fish it is beaten into impotence on a bough or rail ; a favourite execution block often glistens with many fish scales. Small fish and insects are promptly swallowed. A fish is usually lifted and carried by the middle, but its position is changed, sometimes by tossing it into the air, before it is swallowed head downwards. It may be carried to the sitting hen held crossways or by the head, and I have once seen a loach carried by the tail. At times the Kingfisher hovers over the water, but not like the Kestrel ; the body is held almost vertical, the tail and head bent slightly forward, the bill inclined downwards ; the bird holds itself in this position by rapidly whirring wings. It will poise thus over the shallows, dropping on passing gammarids, and yet checking its descent so as not to injure itself on the stones. When perched and conscious that it is observed the bird jerks its head and tail constantly, the latter forward, not upwards, but as a rule it is a quiet patient fisherman.

The nest is tunnelled in a sandy bank, usually though not always over water ; both birds excavate, except when an old hole of Sand-Martin or water-vole is appropriated. Most that I have examined have inclined upward for about three feet before the nesting chamber is reached. There is no nest, but the six to seven or even more round white eggs (Plate 118) are placed on a litter of fish bones and disgorged pellets ; these eggs are pink until blown. Accounts differ about the condition of the nesting chamber, but I am inclined to agree with Mr. W. Rowan, who found it clean, except for the fishy matter, though the tunnel is a running sewer of greenish liquid and decomposed fish and smells abominably. The first clutch is usually laid in April, but second broods are often in the nest



Short-eared Owl.



Green Woodpecker.



Great Spotted Woodpecker.



Wryneck.



Lesser Spotted Woodpecker.



at the end of July, and an exceptional case of young in early October is recorded. The young come to the mouth of the hole to be fed when old enough, but Mr. Rowan found the newly hatched young uttering a vibrating purr when expecting food. They are at first without down and clothed with numerous small blue pens; their bills are then steel-blue, their oversized feet flesh-coloured, their irides very dark blue. When they leave the nest they differ little from their parents, except that the colours are duller, the spot on the neck is buff, and the grey margins to the breast feathers give a mottled appearance; their call is then an insistent, continuous trill.

The general colour of the upper parts of the adult bird is bright metallic blue, cobalt on the back, and showing greenish reflections on the head and wings; the ear-coverts and under parts are warm chestnut, the chin and sides of neck white. The bill is black, reddish orange at the base; the legs are bright red, the irides brown. In the young the bill is black. Length, 7·5 ins. Wing, 2·95 ins. Tarsus, ·3 in.

Sub-order CORACIÆ.

Family CORACIIDÆ. Rollers.

The Rollers are brightly coloured birds, allied to the Kingfishers and Bee-eaters, but have superficial similarity to Crows.

Roller. *Coracias garrulus* Linn.

The Roller (Plate 113) occurs in summer throughout most of Europe, western Siberia and north-western Africa, migrating for the winter to southern Africa and Asia. It occasionally wanders to Britain on migration, occurring most frequently on the south and east coasts in autumn, but has been met with in

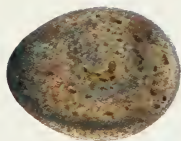
all parts, sometimes in spring ; it is recorded from the Orkneys and St. Kilda, although it is not found far north in Scandinavia.

This conspicuous and noisy bird usually travels in parties, but its normal migration route does not pass through Britain, and its occurrence in our islands is apparently accidental ; though not infrequent, it is hardly a regular bird of passage. It may at once be recognised by its bright dress, Jay-like appearance and slightly hooked strong bill ; it calls attention to itself by a noisy harsh chatter. The name is derived from its habit of "tumbling" in the air during courtship, but as a rule its flight is easy and strong ; the rolling is often the prelude to a quick "shooting" descent towards a perch. It feeds on insects, worms and frogs, and sits on some elevated perch—a tree, bush or telegraph-wire—watching for prey after the manner of a shrike. It is described as restless and noisy, but little has been recorded about its habits during its short visits ; as in the case with the Hoopoe and Bee-eater, most notices are mere obituaries. There is no record of the Roller nesting in Britain—it nests in holes and has white eggs—but what would happen if spring visitors were unmolested no one can say.

The Roller is greenish blue, slightly glossed, with a chestnut mantle. The central tail feathers and the wing-coverts are darker blue, the outer tail feathers tipped with black. The bill is almost black, the legs yellowish-brown, and the irides dark brown. Length, 12 ins. Wing, 7·7 ins. Tarsus, ·95 in.

Order STRIGIFORMES. Owls.

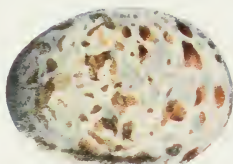
The Owls are separated from the diurnal Birds of Prey on account of certain structural characters, some of which are shared by certain families of the Accipitriformes. The feet have the outer toe reversible ; the usual position when perched is



Cuckoo.



Swift.



Nightjar.



Kingfisher.



Hoopoe.



Marsh-Warbler.



I Pl. 119.

Barn Owl.



U 289.

Tawny Owl

two toes in front and two behind. They are raptorial, suited for grasping or snatching prey. The bill is strongly curved and hooked ; the eyes are directed forward, and usually surrounded by a well-marked facial disc. The plumage is soft and downy, noiseless in flight.

Family FLAMMEIDÆ, Barn-Owls.

Barn-Owl. *Flammea flammea* (Linn.).

The Barn-Owl (Plate 119), a resident in Britain, is found throughout southern Europe, northern Africa and western Asia. In central Europe the Dark-breasted Barn-Owl, *F. f. guttata* (Brehm), replaces this paler form, and a few individuals of this sub-species have reached our south and south-eastern coast as wanderers in autumn and winter.

Of all the owls the White or Barn-Owl is the best known, for it is more frequently associated with human habitations than other species. It is often described as white, the under parts being most noticeable when, with desultory flight, it reels and wavers through the dusk. Crepuscular and nocturnal in its habits, it eludes observation ; it appears, a noiseless shadow, and vanishes at once, for its soft pinions make no sound. It is, however, a familiar inhabitant of old buildings, church towers, and house gables, even frequenting thickly populated suburbs. Jardine was certain that the Barn-Owl hooted, but all depends upon what is implied by a hoot ; the ordinary note is a hiss, heard first when the downy young, perched outside the nesting hole, continually call for food. The old bird also hisses. A captive always greeted me with a hiss and an amiable, contented chirrup when I brought food. In young the hiss deepens into a snore, but the usual call of the old bird is a loud, weird scream or screech, from which the bird gets the name of Screech Owl. This begins with a hiss, but continues as an

accentuated combination of chirrup and snore, and has a startling effect when heard from the invisible bird. During its nightly rounds, for it has regular beats, it screeches repeatedly, a habit calculated to discount the advantage gained by its silent flight. The suggestion that small mammals are startled into movement is hardly supported by experience, for the alarmed mouse or shrew instantly "freezes" and is then difficult to detect.

In the daytime the Barn-Owl roosts in some regular spot, either in a building, hollow tree or a sheltered bank; I have seen it under the brambles overhanging a small coastal inlet. Its pose is bolt upright, its long legs distinctly knock-kneed, its toes, if standing on the flat, point in all directions, but when perched two are, as a rule, in front, two behind the object grasped; my captive occasionally perched with three toes on one foot in front. The Barn-Owl uses its feet for grasping its prey; they are strong and armed with sharp talons; the claw on the middle toe is pectinated. The bird fights with the feet, and will throw itself on its back ready to repel an attack; the grip of the feet drives the sharp claws into an incautious hand. When at rest the round facial disc becomes oval, but the bird watches through slits of the apparently closed eyes, and follows the movements of the observer by turning the head without shifting the body or legs. I found that a loud noise seldom disturbed my tame Owl, but that a slight scratching always interested it. It would turn its head sideways, until at right angles to its body, or even entirely reverse it, for the neck, though so fully feathered as to be hardly visible, is long and thin. Displeasure is shown by more grotesque contortions; an angry Owl will lower the head and swing it to and fro, close to the ground, like an irate bull, or, hissing, will stretch its head forward, drooping its wings, and snap its bill.

The Barn-Owl is one of our most useful agricultural allies, feeding extensively on rats, mice, voles and shrews; small birds

are eaten, the House-Sparrow being a favourite prey. These are captured at night when at roost in ivy and evergreens. The fur and bones of the creatures devoured, together with the elytra of beetles, on which it also feeds, are regurgitated in the form of oblong pellets or "plugs," a habit common to most insectivorous and animal-feeding birds. Examination of these pellets reveals the favourite food of any particular Owl; in 14 I found remains of 73 separate animals, 33 being shrews and 20 voles. Mammals so large as a rat will be swallowed whole, the tail often hanging for hours from the mouth whilst digestion of the swallowed portion progresses. The tail, pelvic girdle and legs, with the almost complete skin of the rat, curiously reversed, is finally disgorged. My bird hid surplus food in the rafters of its shed. When the young are being fed the Barn-Owl will hunt in the daytime, but as a rule it does not set forth until after dusk.

No nest is made, but the four to eight, or even more white eggs (Plate 131) are often placed on a layer of dry pellets amongst the rafters of a barn, house, church tower or other building, or in a hollow tree or crevice in a rock. They are laid usually late in April, and though laid at intervals of several days are incubated at once; thus eggs and young of varying age are found in the nest at the same time. A second brood is usual, and eggs in December are recorded. The young at first are clad in thick white down.

The colour of the upper parts is orange-buff, vermiculated with grey, and spotted with grey and white; the under parts are white with a few dark grey spots. Round the eyes the facial disc is rusty, and the white bill is almost hidden by a double ridge of white feathers. The legs are clothed down to the feet with white hair-like feathers; the toes are dusky, the claws brown, the irides almost black. In the Dark-breasted migratory form the under parts are buff and more thickly spotted, the facial disc is often rusty red throughout, and the

upper parts much greyer. Length, 14 ins. Wing, 11'25 ins. Tarsus, 2'4 ins.

Family STRIGIDÆ.

Long-eared Owl. *Asio otus* (Linn.).

The range of the Long-eared Owl (Plate 120) is practically Palæarctic, and it is more migratory than many other owls. In the British Isles it has a wide distribution as a resident, and occurs in the north, at any rate, as a passage migrant, whilst numbers reach the east coast as winter visitors in autumn. There seems also to be some internal movement southward in autumn, when flocks containing as many as a score of birds have been observed.

Fir-woods are the favourite haunts of this species, but it also frequents the slopes of hills and open country where firs are in small clumps, and woods where conifers are absent. During the day it remains in its roost, sometimes screened by ivy, but often sitting bolt upright on a branch, pressing its apparently attenuated body close to the trunk; in this position it is difficult to detect, but when it is disturbed or the small birds discover the perch, it is mobbed without mercy. It is said that in the day the elongated feathers on the head, known as the horns or "ear-tufts," a misleading name, are laid back, but whenever I have seen the bird the tufts have been erect and often with their tips close together. At dusk it flies with wavering flight but usually silently; indeed it is a quieter bird than most owls, and the accounts of its notes vary greatly. The hoot is a long drawn-out and quavering *oo-oo-oo-oo*, quite distinct from that of the Tawny Owl; it has a sharp quacking flight call, a yelping bark, and an anger call, syllabled by Mr. Oldham as *woof, woof, oo-ack, oo-ack*. The hunger call of the young resembles the creaking of an unoiled hinge. The male, when courting and also when angry, frequently "claps" his

wings, producing a dull note *bock, bock*. Mr. Pycraft, who like others, asserts that this is produced by the wings striking together above the back, states that the bird immediately after throws itself into the air as if in play. My friend Mr. I. Whittaker, who has carefully watched the bird, supports my view that the wings do not meet, but are sharply struck downwards, with the result that the bird is lifted in the air. In its terrifying attitude, similar to that assumed by the Short-eared Owl, the secondaries are arched and meet above the back and the primaries spread wide; the wings frame the head, whilst with glaring eyes and snapping beak the bird hisses and spits defiance like an angry cat. Birds form a larger proportion of the food of this species than of the Barn-Owl, a fact which can be proved by the pellets; decapitated and partially plucked birds lie in and round the nest.

The Long-eared Owl appropriates the old nest of some bird—often Jay, Magpie, Sparrow-Hawk or Wood-Pigeon—or a squirrel's drey on which to lay its three to five white eggs, rounder than those of the Barn-Owl (Plate 131). Occasionally it nests upon the ground, even when apparently suitable nests are near (Plate 121). The eggs are laid early, in March as a rule. The young are covered at first with buffish-grey down, but later the down is barred with grey and brown; though the feet and legs, as in the adult, are covered to the toes, the fleshy colour shows through. In this stage the bill and cere are dark slate-blue, and the irides pale orange. In the first feathering the facial disc is blackish, and the irides are deeper in colour.

The adult bird has the upper parts buff, marbled and vermiculated with grey and brown and with dark brown streaks; the facial disc is buff, dark close to the eyes. The buff under parts are streaked with brown, and have dusky bars which form crosses or arrow-shaped markings. The bill is brownish black, the claws dark brown, and the irides bright orange. Length, 14 ins. Wing, 11.5 ins. Tarsus, 1.6 ins.

Short-eared Owl. *Asio accipitrinus* (Pallas).

The Short-eared Owl (Plate 120) has a very wide range, being met with in most parts of the world either as a nesting species or winter visitor. In the British Isles it is a thinly distributed resident, but a fairly common winter visitor. It breeds freely in suitable places in the north of England and in Scotland, and a few pairs nest in most English counties; in Ireland it is only known as a winter bird. Large numbers arrive from the Continent in autumn, and are known as "Woodcock-Owls"; many remain to winter, but others are birds of passage. The return migration is in March and April.

Open country—moors, fens, marshes, hills and even cultivated fields—are the haunts of the Short-eared Owl; it roosts and settles on the ground. I have seen it alight on a bush and, once, on a tree, but it shuns woodlands. On the wing it looks a large, bullet-headed, buffish bird with long, narrow, rounded wings and tail; even at close quarters the ear-tufts are rarely visible unless the bird is excited. When hunting and during courtship the flight is uncertain, rolling and noiseless, but on migration or when flying by day, a frequent habit, it is light, slow and direct. The long pinions beat regularly, and it floats freely, with motionless wings held slightly forward, soaring and wheeling like a Buzzard. It has a harsh flight call, and the note of anger is a savage, barking *whowk*. Under excitement it produces a crack with the wings; even when this is inaudible owing to distance the sharp downward stroke, distinctly lifting the bird's body, is plainly visible. When an angry bird was flying just above me, near the nest, it frequently brought its wings almost if not quite together directly under the body, shaking them with a curious excited quiver; Seebohm noted a similar performance when he was at a nest. The bird usually travels at a great height; I





have seen it, a mere speck in the sky, gradually float down, unmoved by the angry mobbing of a Rook and Daw, and when near the earth suddenly shoot with half-closed wings and skim out of sight just above the hedgerows. It is in these skimming descents, no doubt, that it is captured in the flight nets on the coast.

The food—small mammals, birds and beetles—does not differ from that of other owls, but it is evidently partial to voles, for during the over-abundance of these destructive rodents, known as “vole-plagues,” there is always a great increase of Short-eared Owls, nature’s most effective method of reducing their numbers. On migration it feeds upon other avian travellers, capturing them as they fly on misty nights in the glare from the lighthouses.

The nest, always on the ground, may have a little lining, but this is usually the trodden vegetation ; it is amongst the heather on the moors, reeds or sedges in the fens, between or even on the tussocks of a marsh, or on the sand amidst the marram of the dunes. Four to eight white eggs, laid at intervals (Plate 116), are the usual complement, but when voles devastated the sheep-runs of the Scottish lowlands, so many as thirteen or fourteen were found in one nest, and most birds had two or more broods. Nests were also found so early as February, though April is the usual time for laying. The young are at first covered with dirty white down, this appearance being caused by the white tips above sooty or barred bases ; the legs, down clad, show dull yellow, the bill is leaden and the irides pale yellow. When the young bird is feathered it will if threatened assume the terrifying attitude of the Long-eared Owl, framing its head with the wings ; its now bright yellow eyes glare defiance ; it hisses and snaps its bill, and will even jump towards the intruder. The old birds, if the young is touched, will dash at and occasionally strike a man.

The general colour of the adult bird is dark buff, though the

shade varies considerably ; the wings and tail are barred with brown, the upper parts are blotched and streaked, and the under parts striated with dark brown. The facial disc is buff, black round the eyes, and has a whitish frame or border. The bill is black, the legs feathered to the toes, the claws black, the irides bright golden yellow. The female, as in the other owls, is larger than the male. Length, 14 to 15 ins. Wing, 12 ins. Tarsus, 2 ins.

Tawny Owl. *Strix aluco* Linn.

Outside Britain, the Tawny Owl (Plate 119), a sedentary species, is found in most parts of Europe and western Asia. In our islands it occurs throughout Great Britain, is unknown in the outer Scottish islands, and is not native, though introduced, in Ireland.

The names Tawny, Brown and Wood-Owl are all descriptive ; it is distinctly a woodland species. It spends the day amongst trees, usually sitting bolt upright in some hollow, or on a branch with its side pressed against the trunk, and with dreamy half-closed eyes (Plate 122). The hearing of the owls is keen ; it is practically impossible to surprise the bird at its roost. When discovered it is only necessary to move one's position to realise that the bird is really watching through the half-closed lids ; without moving its feet or the position of its body it turns its neck so that the facial disc is always towards us. The dense mass of long soft feathers on the head and neck give the Wood-Owl a top-heavy appearance, and it seldom sinks the feathers so closely as to appear thin and attenuated, as does the Long-eared Owl in a similar position. It is a browner, more mottled bird than the Long-eared Owl, and the pale bars on the wings are noticeable. The voice of the Wood-Owl is the true hoot, though not the proverbial "tu-whit, tu-whit, tu-who." There is a short preliminary

oo, oo, and a long quavering and beautiful oo-oo-oo-oo. The note may be startling, even weird, when heard in the night, but it is certainly musical. The hoot of the young, heard in late summer or early autumn, is similar but more hissing; a captive bird began to hoot at the end of July, prior to that it had made no sound except a chirrup and click of its beak when I fed it. Tawny Owls call frequently throughout the autumn and winter, even during hard and frosty weather, not only in the woods, but when on the nightly round for food. From the young I have heard the only call which resembles *tu-wit*, a shrill sharp note quite distinct from the flight call, *ki-wik*, *ki-wak*, which is shared by old and young. This is a hunger call and also a cry of anger; I have heard a bird call *kwak* when dashing at the head of a boy who was handling its young. Occasionally the bird hoots in the daytime.

The Tawny Owl, except when feeding young, seldom goes abroad in daylight, and when it does it is usually accompanied by all the smaller birds in the neighbourhood; the alarm notes of any species seem to be recognised and call together all and sundry to mob the common foe. Jackdaws and Starlings join with Redbreasts, Chaffinches, Tits and Wrens to hustle the unfortunate Owl from tree to tree. Sometimes a Blackbird or other species will discover the Owl on its diurnal perch and raise a racket, but the bird, without opening its eyes, simply faces its persecutors. It never attempts to attack under these circumstances, though it will kill birds as large as a Blackbird or Starling. In addition to the usual small mammals, birds and insects, the Wood-Owl will eat young rabbits, squirrels, and even weasels; like most other owls it has occasionally been known to capture surface-swimming fish. When young are in the nest the parents often provide far more than they can eat, making a store for future use. The nest is usually in a hollow tree, not infrequently in the deserted nest of some other bird, and occasionally in holes in rocks, buildings, or on

the bare ground ; I have come across two or three instances of nests in rabbit-burrows. In a nest of a Carrion Crow, in which I found a Wood-Owl sitting three eggs, the wool lining was clean and fresh ; either the Owl had added wool or the Carrions had recently deserted ; it is unlikely that the Owl had evicted them. The large white eggs (Plate 131), usually three or four in number, are laid at intervals and incubated as soon as laid. The first down is buff (Plate 133), but later it is barred ; a tame bird moulted its down gradually during July. The young are fed by the parents after they have left the nest, and are boldly protected ; a Tawny with young will strike a man with its claws on the head or neck, though it will not attack his face.

The Tawny Owl is a variable bird, having two distinct phases, grey and rufous ; the latter, figured, is the commoner in Britain. The general colour is warm rufous buff, mottled with dark brown ; pale tips to the secondaries form light bars on the wings. The buff under parts have dark brown striations. The facial disc is grey, margined with brown ; the legs are densely feathered to the toes. The bill is yellowish horn, the claws horn with black tips, the irides dark brown. The female is larger and usually more rufous. Length, 15 ins. Wing, 10 ins. Tarsus, 2 ins.

Snowy Owl. *Nyctea nyctea* (Linn.).

As suggested by its name and white plumage, the Snowy Owl (Plate 123) is a bird of the Arctic, circumpolar in range, and migrating southward in winter. To the Orkneys and Shetlands it is a regular winter visitor, appearing from September onwards and departing again in March and April. It not infrequently reaches the Hebrides and mainland of Scotland, and is occasionally seen in the north of Ireland. Elsewhere in the British





Isles it is a rare straggler which, it may be safely inferred, seldom escapes attention when it appears.

This large and conspicuous bird, that is, conspicuous when met with away from its snow-covered normal surroundings, cannot be confused with any other species. Its flight is with strong measured beats, but rapid; its call, according to Wheelwright, a loud *krau-au*, and its alarm *rick, rick, rick*, rapidly repeated. Its food in the Arctic consists of variable hares, lemmings, Ptarmigan and Willow-Grouse, but in the British Isles it will eat rabbits, mice and insects. It is described as an expert at fish-catching, waiting for them by the holes in the ice and snatching them with its feet. It nests on the ground.

The Snowy Owl is dimorphic, having a light, almost white form with only a few brown marks on wings and tail, and another in which the prevailing colour is white, but barred and spotted with brown; both forms are shown on the plate. The feet are feathered on the soles as well as the toes. The bill and claws are black, the irides orange-yellow. The young in down are sooty and not white. The female is a much larger bird than the male. Length, 22 to 25 ins. Wing, 15·5 to 17·5 ins. Tarsus, 2·4 ins.

Hawk-Owl. *Surnia ulula* (Linn.).

Both the European Hawk-Owl and the American sub-species, *S. u. caparoch* (Müller) have occurred in the British Isles as rare visitors on migration, generally in autumn or winter. The former, distinguished by the narrower bars on the under parts, is found in summer in northern Europe and Asia, migrating to central Europe and Asia to winter. The American bird occurs in northern Canada and Alaska, and winters so far south as the States. Some eight examples have been recorded, and of these three have been European birds—one each in the

Shetlands, Aberdeen and Wiltshire. Four, two in Scotland and one each in Cornwall and Somerset, were of the American form, and one, in Northamptonshire, is uncertain.

The bird is hawk-like in appearance, having the facial disc incomplete, and also in its dashing flight and semi-diurnal habits. It is dark brown above, spotted and mottled with white; a broad black band borders the white disc. The tail is long and graduated, barred with brown. The under parts are regularly barred with dark brown, these bars being broader, redder, and more pronounced in the American bird. The bill is yellowish white, the claws dark, the irides bright yellow. The female is the larger bird. Length, 14 to 16 ins. Wing, 9'2 to 9'5 ins. Tarsus, 1 in.

Tengmalm's Owl. *Nyctala funerea* (Linn.).

Tengmalm's Owl (Plate 117) is a bird of the mountain forests of northern and central Europe and western Asia. In winter it descends to the lowlands and wanders; from time to time examples have reached Britain, both in spring and autumn; it is an occasional visitor in the colder months. The majority of the wanderers have been recorded from eastern counties, but a few have been seen in inland and western shires, as well as in Scotland and the Shetlands.

In its northern haunts, where in summer there is little difference in the light by day or night, the bird hunts at any time, feeding on small mammals, birds and insects. Its call is a soft, long whistle, and Mr. J. M. Charlton states that a bird in captivity had "a low, mewling note," as well as the whistle. From Scops Owl it may be distinguished by the absence of ear-tufts, and from the Little Owl by its barred under parts and feathered toes. The under parts of the Little Owl are streaked, its toes merely covered with bristles. The upper parts of Tengmalm's Owl are umber-brown, mottled with

white, more regularly on the crown than on the back ; the tail is barred with brown. The under parts are white with brown bars and streaks ; the facial disc greyish white. The bill is yellowish white, the claws black, the irides yellow. Length, 9 ins. Wing, 6·5 ins. Tarsus, '75 in.

Scops Owl. *Otus scops* (Linn.).

Scops Owl (Plate 124) is the smallest owl which occurs in Britain, and its visits are uncertain and irregular. It is a summer visitor to southern Europe, north-west Africa and western Asia ; allied forms occur in other parts of the Palæarctic and Nearctic regions, and the American bird has been reported, on evidence considered inconclusive, to have occurred in England. The usual winter quarters are in Africa, but on migration the bird wanders and has frequently been met with in Europe north of its normal breeding area ; in the British Isles it has occurred, for the most part in spring but also in autumn, in England, Wales, Ireland and Scotland and the northern isles.

More nocturnal than the other small owls, Scops Owl spends the day on a branch, close to the trunk, and like the Long-eared Owl instantly straightens up its body and erects its ear-tufts if disturbed ; against the bark its brownish-grey dress is inconspicuous. The monotonous call is spelt by those who have heard it as *kiu*, *ki-ou*, or *kee-oo*, and a Cheshire game-keeper, who heard the bird for two or three nights before he shot it, described it to me as *kew*, *kew*, putting emphasis on the *k*. Though it will eat small mammals, its food chiefly consists of insects.

Scops Owl, easily distinguished from the Little Owl by its erectile horns and from Tengmalm's by its bare toes, is a small grey bird, mottled and vermiculated with brown and grey ; on both upper and under parts most of the feathers have dark

shaft streaks. The wings and tail are barred. The bill and bare toes are dark brown, the claws black at the tips, the irides yellow. Length, 7·5 ins. Wings, 5·9 ins. Tarsus, ·95 in.

Eagle-Owl. *Bubo bubo* (Linn.).

The Eagle-Owl (Plate 123) is a rare wanderer to Britain from the mountain forests of northern Europe. Either the typical bird or closely allied forms are found throughout Europe and in western Asia. The northern birds migrate in winter, and probably those which reach the Orkneys, Shetlands and Scotland are wanderers from Scandinavia. It is doubtful if all the birds which have been recorded from different parts of England were really wild, for in some cases they have been escaped captives, for the Eagle-Owl is a favourite aviary bird. From size alone the Eagle-Owl cannot be confused with any other. It has a loud distinctive and impressive call, *boo, boo*, and a flight note which Col. Verner likens to the cry of the Heron. Not only does it look ferocious, but it is bold and fierce, often attacking its owner when in captivity. In Norway I saw a bird that had been taken when in down from the nest, but it not only assumed the typical terrifying attitude, but made frequent dashes at the wires, striking with its feet. It puffed its feathers out, framed its head in its wings, and fired off a volley of loud cracks from its snapping beak, but what struck me most was the scintillating flash of its great orange eyes. Some years later I read Hudson's account of the Magellanic Eagle-Owl which he wounded in Patagonia. He says, "The irides were of a bright orange colour, but every time I attempted to approach the bird they kindled into great globes of quivering yellow flame, the black pupils being surrounded by a scintillating crimson light which threw out minute yellow sparks into the air." Had I not previously received the same impression I should have thought this description

imaginative. Col. Verner, when feeding his captives, was struck by the accuracy with which they caught in either claw rats or other animals which were thrown to them.

The ear-tufts of the Eagle-Owl are long, and though occasionally drooped are less concealed than in other "eared" owls. The upper parts are blackish brown mottled with tawny buff; the wings and tail are barred. The under parts are paler buff, boldly streaked on the breast, and more finely barred and streaked on the lower breast and abdomen. The bill is blackish horn, the irides orange. The female is the larger bird. Length, 24 to 26 ins. Wing, 18.5 ins. Tarsus, 3.2 ins.

Little Owl. *Carine noctua* (Scop.).

The Little Owl (Plate 124) occurs throughout central Europe, and allied races, more or less distinct, are found in southern Europe, Africa and Asia. It is a sedentary species, little given to migration, but there is no doubt that genuine wanderers have reached us from its Continental home, for it breeds regularly in Holland, Denmark and Germany. But as a well-established artificial colonist the Little Owl must be included as truly British, since it now nests throughout southern England and the Midlands. It has been recorded from Scotland and Ireland.

So long ago as 1843 Waterton released a few Little Owls in Yorkshire, but the attempt to establish them met with small success; later efforts, however, in Northamptonshire, Cambridge, Hertfordshire and Kent have produced results which have caused no small alarm amongst game preservers, for the bird is spreading in all directions; Lord Lilford has been blamed for his repeated introduction of Dutch birds. Within the last two or three years the Little Owl has reached Cheshire and Lancashire and crossed the Welsh border; there is no

saying where it will be a few years hence. The gamekeeper accuses it of destroying game and their eggs, but though a diurnal feeder cannot be expected to refuse an occasional Pheasant or Partridge chick, examination of its pellets reveals no serious crime. Mice and shrews are eaten, but beetles and other insects in fragments are abundant in the pellets; the usefulness of the bird is discounted by the fact that, according to my own examination of pellets, many of the beetles eaten were carnivorous or coprophagous species. The bird has been seen hunting for and eating earthworms, and in the pellets, mixed with mammalian hair, was a considerable amount of earth which had probably come from the stomachs of worms.

The call of the bird is a monotonous and far-reaching *cu, cu, cu*, and some authors speak of a mewling note; but these, I think, are one and the same. Though the bird usually hunts at night it is more diurnal than most owls, and will sit in bright sunshine on some gate (Plate 126), branch or hedge, where it suffers unwelcome attention from other birds. Its flight is erratic, uncertain in direction; its pose when perched erect. The classical student and archæologist is familiar with this bird of Pallas, for its figure appears on many Greek coins.

The nest is in a hollow, but without nesting material; holes in trees, walls, rocks and quarries are occupied, and sometimes the eggs are laid on the ground with hardly any shelter. Four or five white eggs (Plate 131) are laid late in April or in May, incubated, it is said, by the female only. The down of the young is at first dull white, later reddish grey.

The upper parts of the Little Owl are greyish brown, spotted, mottled and barred with white; the spots form streaks on the head. The wings and tail are barred white and brown; the whitish under parts streaked with brown. The bill is yellow, as are the irides; the legs and toes grey, covered with hairy down. Length, 9 ins. Wing, 6 ins. Tarsus, 1.1 ins.



1 Pl. 124.

Scops Owl.

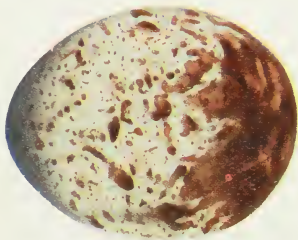


Little Owl.

17 304.



Marsh-Harrier.



Sparrow-Hawk.



Montagu's Harrier.



Hen Harrier.

Order ACCIPITRIFORMES.

Sub-order ACCIPITRES.

The Accipitres are the diurnal birds of prey ; the bills are strongly hooked, the raptorial feet, with three toes in front and one behind, are armed with curved talons, and are fitted alike for clutching prey or perching.

Family VULTURIDÆ. Vultures.

Griffon Vulture. *Gyps fulvus* (Hablizl).

In 1843 a Griffon Vulture was captured near Cork, and Saunders vouches for another which was seen on the wing near Southampton. The bird breeds in southern Europe, including Spain, north Africa and western Asia. As it has wandered to Holland, France and Germany, it is surprising that it has only twice been noticed in our islands. Its great expanse of wing, and the manner in which, when soaring at an immense height, the primaries stand out like fingers, should render it conspicuous, but except by the watchful ornithologist a bird flying high is seldom noticed. The Griffon is a large buff-brown bird, darker on the quills and tail, with featherless, down-clad head and neck, and, in the adult bird, a large white ruff. In birds which are not fully mature, probably until the third year, the ruff is brownish. The under parts of the old bird are streaked with buff. The bill is yellowish, the cere and legs lead-blue ; the irides are reddish yellow. The male is the larger bird. Length, 42-46 ins. Wing, 29 ins. Tarsus, 4.4 ins.

Egyptian Vulture. *Neophron percnopterus* (Linn.).

The Egyptian Vulture breeds in southern Europe, north Africa and Asia as far east as India, where it is replaced by an allied form. One, out of two seen, was killed in Somerset in 1825, and another in 1868 in Sussex; both were obtained in autumn and were immature.

Though not an attractive-looking bird on the ground, especially when feeding, the Egyptian Vulture when sailing with light graceful flight, soaring or sweeping in wide circles, showing the black primaries contrasting with its snowy plumage, presents a magnificent sight. The face and fore part of the neck are yellow and wrinkled, and a ruff of long white feathers stands out on the lower neck. The base of the bill is yellow, the tip horn-brown; the legs and feet are flesh-coloured, and the irides crimson. Until its third year the plumage is very different, dark brown where it is white in the mature bird. The bare skin of the face and the legs are then livid grey, the bill dusky, and the irides brown. The habits of all these useful scavengers are, from our outlook, disgusting, and the Egyptian Vulture collects round its nest a mass of decomposing animals and birds; Col. Verner tells how in Spain he found, in addition to this unsavoury larder, a number of miscellaneous articles surrounding a nest—a bit of rope, filthy rags and paper, a bag of meal-worm riddled flour, and a playing card—the king of clubs. Length, 26 ins. Wing, 19 ins. Tarsus, 3·4 ins.

Family FALCONIDÆ. Harriers, Eagles, Hawks and Falcons.

Marsh-Harrier. *Circus æruginosus* (Linn.).

The Marsh-Harrier (Plate 127) inhabits marshes and low damp country in Europe, north Africa and western Asia, and

migrants winter south of the breeding area in Africa and Asia. In the British Isles, where the bird at one time nested in suitable places in England and Ireland, it is now best known as a rare spring and autumn visitor, though a few pairs still nest, or attempt to nest, in Norfolk and the wilder bogs in Ireland.

The Harriers are variable birds ; age and sex descriptions in most books are misleading, and the examination of a series of skins explains the reason ; no two-birds seem exactly alike. On the wing, however, when details are hidden, the male Marsh-Harrier looks a large brown and grey bird with black wing-tips in marked contrast to the grey of the wing. The head certainly appears paler than the back, but does not look white, as would be imagined from reading descriptions taken from skins. The female looks larger and much darker ; her browner wings do not show up the blacker primaries. The young bird, shown on the plate, is easier to recognise, for the pale head appears almost white against the rich brown of the rest of the plumage. Dense reed-beds or luxuriant marshes are the haunts of the "Moor-Buzzard," not the upland grouse-moors ; it flies low just above the reeds, quartering the ground with strong, purposeful flight. It takes a few deliberate powerful strokes, then sails with wings uplifted, held at an angle of 30 to 45 degrees above the plane of its body. A Coot or Moorhen, a vole, frog, or even a dragon-fly catches its eye, and instantly it drops upon its prey, but it does not attempt to fly a bird down in the open. In the wild Spanish marshes it waits upon the sportsman, retrieving wounded fowl for its own benefit. In spring it subsists largely upon eggs and nestlings of marsh birds, and on these it feeds its young ; it is indeed a harrier of the marsh. On this level expanse, where tall reeds obstruct the view, the low-flying bird is not easily seen, but I found that the alarm cries of excitable Redshanks were a sure indication of its presence ; when the Harrier passed over it was usually followed by one or two yelping Redshanks whose presence it

ignored. Occasionally the bird soars to a great height, rising with wide sweeps, almost like a Buzzard; the tips of the wings recurve, the primaries stand apart.

The nest, a large platform raised above the water or soaking marsh, is built of sticks, reeds and sedges, lined with smaller blades of aquatic plants; it is usually in a dense bed of reeds or other vegetation. Three to five whitish or pale blue eggs (Plate 125) are usually laid, at the end of May in Britain, though on the Continent in April or even March. The fierce little nestlings are clothed in white down (Plate 128). The female is said to incubate and the male to feed her, and both birds hunt for the young. The male will feed the female before the eggs are laid; I watched a pair when nest-building had only just begun, and the male brought food to the selected spot, called and dropped; shortly afterwards the female rose and, flying to a bush, settled and began to devour some prey, presumably this offering. The Marsh-Harrier is, as a rule, a silent bird, and the only note I heard, though I saw both birds repeatedly, was this call to the female, a double note, which sounded to my ears, *ti-keeah*. Dresser gives the cry of the male as *keew*. This pair of birds had frequent scuffles with two pairs of Montagu's Harriers which were nesting in the vicinity.

The adult male Marsh-Harrier is, usually, dark brown on the back and mantle, rufous on the rump, neck and wing-coverts, with dark-brown centres to the feathers. The primaries are brownish black, the secondaries and tail ashy grey. The buffish head and face are surrounded by a frill, a partial facial disc. The under parts are reddish brown, buff or almost white, streaked with dark brown; the thighs noticeably rufous. The bill is brownish black, the cere, legs and irides yellow. The female is a browner bird, lacking the grey on wings and tail, and her head is darker. According to some writers her irides are reddish yellow, and they are certainly darker, reddish brown, in the immature bird. The young are even more variable than



Little Owl.



1 Pl. 127.

Hen-Harrier (male and female).
Marsh Harrier (male, first year).

X 309.

the mature birds, but in their first year they are dark chocolate-brown, as shown on the plate, with paler heads. There may be only a yellowish-white spot on the nape, or the crown, nape, chin and cheeks be buff, creamy or almost white. The female is the larger bird. Male: Length, 21.5 ins. Wing, 16 ins. Tarsus, 3.4 ins. Female: Length, 24 ins. Wing, 16.75 ins. Tarsus, 3.5 ins.

Hen-Harrier. *Circus cyaneus* (Linn.).

The Hen-Harrier (Plate 127) is in most part of its European and northern Asiatic range a migratory bird; it winters in north Africa and India. Most of those which, from time to time, appear in the British Isles are birds of passage in spring and autumn, although some twenty or thirty years ago it was known to nest in many parts of the four kingdoms. So large and conspicuous a bird could not exist where game-preservation was keen, and nowadays it is doubtful if, as a breeding species, it exists anywhere except in the Orkneys, Outer Hebrides and perhaps Ireland.

Although wandering birds, mostly immature, are met with in wooded districts, the usual haunts of the Hen-Harrier are moorlands, hillsides, marshes and open wastes. When seen at close quarters the white patch above the tail is noticeable. The silvery grey dress of the male and the black primaries might be confused with those of Montagu's Harrier, but the under parts of the Hen-Harrier are unstreaked and there is no dark bar on the wing. The barred or "ringed" tail of the female is a good but not distinctive character. Sharing with other Harriers the habit of closely and diligently quartering the ground with buoyant easy flight, the Hen-Harrier more frequently interrupts its progress by hovering, though not like the Kestrel. The wings beat more slowly and the pose is different; when I have seen this hover the tail has not been spread, though when the

bird swerves from side to side, careening gracefully, the expanded tail acts as a rudder. When rising or soaring the long wings curve upwards, the flight-tips separate; the bird will at times undulate, rising and falling as it flies. The Hen-Harrier is a silent bird, but when angry has a quick, chattering cry, a weak imitation of the *hek, hek, hek*, of the Peregrine. Mr. Walpole Bond mentions the "squealing wail" of the female when the nest is threatened. Small mammals—voles, mice, rats and young rabbits—birds, frogs, lizards and insects are its food, and it is a persistent robber of the eggs and young of other species. As a rule it drops suddenly upon its unsuspecting prey, but I have seen it in the Hebrides chase a small wader with dogged determination. The wader saved itself from the pouncing stoops of the Harrier by dropping to the water and diving as the pursuer shot past; swooping round, the Harrier hovered above the small bird until it emerged from the water, and stooped, though missing, as the fugitive again took the water. This one-sided competition was interrupted by a passer-by. In the Orkneys I have seen the bird boldly assaulted by Lapwings and Starlings when it was quartering the ground; it made no attempt to retaliate, but merely swerved from their attacks. It will eat Starlings and larger birds; I have known a Coot and Teal to be killed and partly eaten.

The nest is always on the ground, amongst heather or on a small space trodden down by the birds amongst thick vegetation; it is built of heather, sticks, rushes, grass or any convenient material, and may have a full soft lining of finer bents or be practically unlined. It varies considerably in size and finish, but untidy, badly constructed nests are probably second efforts after first clutches have been destroyed. The four to six eggs are usually laid in April or early May, and only one brood is reared, but late clutches, the result of accident to the first, are frequently found, and these are in hurriedly constructed nests, for the bird apparently does not lay again in a

Young Marsh-Harpies.





1 Pl. 129.

Montagu's Harrier.
(Female and dark male.)
(Adult and immature males.)

X 311.

disturbed nest. The eggs are dull white (Plate 125) or tinged with blue, and in damp situations are frequently stained; rarely, they are faintly marked with brown. The female sits closely and is fed by the male; he will hover above her and drop his gift, which she will spring for and catch in the air.

The male is pearly grey with almost black primaries; the grey on his breast shades into white on the belly; the upper tail-coverts in both sexes are white, though sparsely spotted in the female. The bill is blackish, the cere, legs and irides yellow, the claws black. The female is a larger bird and her facial disc, bordered with buff, is more noticeable. She is brown above with paler markings on the wings, buff tips on the coverts forming bars; the crown is streaked with dark brown. The tail is barred with bluish grey and brown. The under parts are warm rufous, streaked with dark brown. The irides in the female and in the more rufous immature birds are brown. Length, 19 ins. (male), 21 ins. (female). Wing, 13·4-14 ins. Tarsus, 2·6 ins.

Montagu's Harrier. *Circus pygargus* (Linn.).

Montagu's Harrier (Plate 129), a migratory species, is a summer visitor to Britain. It breeds in the central and southern parts of the western Palæarctic region, and winters so far south as Ceylon and Burmah in Asia and the Cape in Africa. A few pairs, thanks to protection, nest in East Anglia, and occasionally elsewhere in England and Wales, but to Scotland and Ireland it is a rare straggler.

Protection has saved Montagu's Harrier from extinction, but it is uphill work, and not only are the nests frequently robbed on account of high prices offered by collectors, but the birds are shot by thoughtless gunners, and, not infrequently, by gamekeepers at the instigation of sportsmen who think more about their own pleasure than the preservation of interesting

and rare species. Though the smallest of the three harriers the proportionately long wings give an impression of size, and Montagu's Harrier is not easy to distinguish from the Hen on the wing. It has the same habits of closely quartering the ground, swerving from side to side, canting its wings, and pouncing suddenly upon its quarry. When skimming over reed-beds its flight, slow and uneven, is buoyant and easy; with uplifted wings it sails gracefully, its extended open primaries rounding the otherwise pointed wings. Soaring flights are common, the bird drifting in wide sweeps and circles at a great altitude; as it turns the light falls on its blue back and dark flight feathers, reminding one of the Hen-Harrier, but at close quarters the band on the wing and brown streaked under parts are noticeable; the pale red spotted thighs distinguish it from the male Hen-Harrier. The female, a brown bird, and the immature of either sex, are difficult to identify, though in the hand the absence of a notch on the outer web of the fifth primary is a sure distinction.

Montagu's Harrier reaches its breeding haunts in April, and though now rare and thinly distributed is, normally, a gregarious bird, travelling in companies and, in Spain and North Africa, where it is common, nesting in colonies. Even here I have known of four pairs on one marsh, and have watched two males quartering the ground at the same time. If undisturbed it remains throughout the summer, leaving in October or even later. Its food is similar to that of other harriers, though as a rule smaller game than that of the Hen; it seldom chases its victims unless they are disabled. Eggs and young birds form a large proportion of its spring diet. During incubation the male waits on and feeds the female; she often takes food from him in the air.

The nest varies in size and finish according to its situation; it may be on a moor, heather or gorse-clad common, rocky waste or marsh; not infrequently it is built in a cornfield. At

times a mere hollow, surrounded by a slight rim of nesting material, suffices, but some nests are constructed of a mass of sticks, reeds, flags and grasses. It is usually on or near the ground, but sometimes on rather than in a bush, or raised above a wet marsh on the beaten-down vegetation. In England eggs (Plate 125) are seldom laid before the end of May; they are similar to those of the Hen-Harrier, but, on the average, smaller; four to six is the usual number. The young in down are white.

The male is blue-grey above, with black primaries and a dark bar across the wing; the upper tail-coverts are ashy grey, and the grey tail has the outer feathers barred. The white under parts have strong rufous streaks. The bill is blackish, the cere, legs and irides yellow. The female is dark brown, streaked on the paler head and neck, white above the eye and on the chin, and with a pale edged facial disc; the tail is barred, the outer feathers with rufous. The under parts are buff, streaked with rufous; the irides are hazel. Young males resemble the female, but the upper parts have buff edges to the feathers and the under parts are almost unstreaked. Dark, sometimes almost black, forms of this variable bird are not infrequently recorded; one of these is shown on the plate. Length, 18 ins. (male), 19 ins. (female). Wing, 15 ins. Tarsus, 2·3 ins.

Buzzard. *Buteo buteo* (Linn.).

Several races of Buzzards occupy the Palæarctic region; our resident bird (Plate 130) is the typical western European form. In the northern parts of its range the Buzzard is migratory, and some numbers reach our eastern seaboard in autumn, and are met with in various places as winter visitors. At one time the bird was well distributed throughout the British Isles, but game-preservation and the consequent ruthless destruction

of any predatory species, has driven it from most of its former haunts, and it now only nests in the wilder and more inaccessible hill districts. It is still fairly common in Scotland, the Lake District and Wales, and a few pairs find sanctuary in Devon and Cornwall and the Pennines. In Ireland, where it once nested, it is now exterminated, and only known as an occasional visitor.

Though heavy, almost ungainly in build, and apparently indolent in habits, the Buzzard is a handsome bird; its size and appearance are too often responsible for its death; it is mistaken for an Eagle. It rises with slow "lumbering" flight, but when well on the wing is a master of aerial locomotion, graceful and easy. It sails, moth-like, with round wings well forward, no angle visible at the carpal joint, and with its flight feathers splayed out like fingers. With motionless wings and expanded squared tail it tilts to suit the wind, lifting and tacking, wheeling and soaring without visible effort. Often two or three will play together with plaintive mewing cries, crossing and recrossing one another's course as they rise higher and higher until mere specks in the blue. They drift over a crag; then the wings are bowed and they sweep down the slope into the valley, rising again with a long curve to top the next obstacle; sometimes the downward rush is checked suddenly by the outspread wings and the bird banks smartly, but often with half-closed wings it drops diagonally until close to the ground, when with a slight change of attitude it skims to a rock or tree and alights. When hunting it flies at a greater height from the ground than the harriers; but like them it seldom attempts to chase its prey, but pounces suddenly upon an unsuspecting victim. Though it will kill a wounded Grouse and drop upon helpless young birds, it does little damage to game; indeed small mammals and insects rather than birds are its victims. Mammals it will kill up to the size of a young rabbit, but its pellets prove that beetles, especially



1 Pl. 130.

Buzzard.



Rough-legged Buzzard.

X 314.



Long-eared Owl.



Barn-Owl.



Tawny Owl.



Little Owl.

large dors, are hunted for, and it is known to devour earth-worms. It has no objection to feed on even offensive carrion, and frequently eats the dead lambs on the fells, but no one can accuse it of sheep slaughter.

In Wales and amongst the Lake Country fells it usually nests on a broad ledge on crag or cliff ; too frequently these sites are easily accessible ; but where there are trees it constructs a bulky nest amongst the branches, and this was its habit when it nested freely in the lowlands. Sticks and large branches, heather roots and stems form the framework, and the lining is of grass with, as a rule, a plentiful addition of green-leaved branches or twigs ; these, as if it rejoiced in decoration, are added after the eggs are laid and even when young are in the nest. Mr. Walpole Bond doubts if the nest is ever lined with wool, and he has had wide experience ; but I have found it in Cumberland with a full wool lining, and there was no indication that it was the old nest of a Crow. The number of eggs varies, but two or three seem the normal complement ; they are dull or tinted white, blotched, streaked or faintly marked with red, brown and violet (Plate 145). They are laid at intervals of some days, and the bird or birds, for both are said to incubate, sit when the first egg is laid. When the white down-clad young are in the nest the old birds occasionally protect them with courage, dashing at and even striking a passer-by, but as a rule, mewling piteously, they keep at a safe distance.

The Buzzard is a very variable bird, but the normal dress is dark brown, except on the lower breast and belly, which are whitish, boldly barred or occasionally streaked with brown. The tail is barred with brown and black. The cere and legs are yellow, the irides dark brown. Females, except for their superior size, resemble the males, but immature birds are paler. Male : Length, 21 ins. Wing, 14·5 ins. Tarsus, 3·1 ins. Female : Length, 23 ins. Wing, 16 ins.

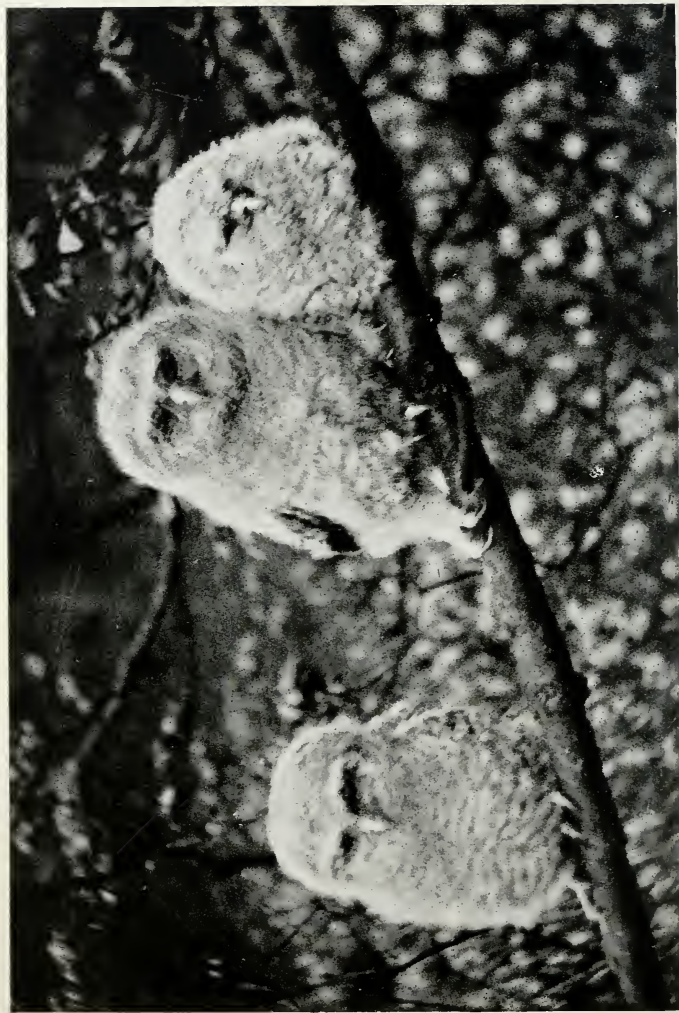
Rough-legged Buzzard. *Buteo lagopus* (Brünn.).

The Rough-legged Buzzard (Plate 130) breeds in northern Europe and Asia, and is an irregular migrant, its movements apparently regulated by weather ; occasionally it wanders south in large numbers. To the British Isles it is a winter visitor and passage migrant ; the majority of those which visit us are immature. It has been met with in all parts, but only in the north and east of Scotland and on the east coast of England with any degree of regularity. Less than a score of birds have been recorded from Ireland.

The feathered tarsi of the Rough-legged Buzzard not only explain its name but are responsible for its inclusion, by some writers, amongst the eagles ; when it appears in any unusual quarter it is generally reported in the press as an "Eagle." It has the same round-winged, moth-like appearance as the Common Buzzard when soaring, but, if not at too great a height, the white patch on the tail is noticeable when the bird turns ; in a good light its head appears almost white. It has a clear ringing *mee-oo*, louder than that of our bird ; a game-keeper described it as "screaming like a cat." I have seen it at close quarters on the Yorkshire coast, where it was beating low over a rabbit-warren and neighbouring fields, working along the ditches which divide them. Sometimes it flew fully thirty feet above the ground, but it often passed near me at no more than six feet elevation ; it frequently hovered almost exactly like a Kestrel, its wings vibrating rapidly, its depressed tail spread, when the white base and sub-terminal bar were very conspicuous. Statements that the bird formerly nested in Britain, which have been frequently repeated, are without foundation. Quicker and stronger in flight than the Common Buzzard this bird prefers larger game ; in England, where it avoids woodlands, it will remain, so long as unmolested, in the vicinity of a rabbit-warren, and has been known to kill leverets



Golden Eagle (immature).



and to devour Grouse, though it is not proved that it struck these down in flight. In Scandinavia it feeds largely on lemmings, but is not particular about its meat being fresh, and will devour carrion.

The upper parts of the adult are dark brown ; the whitish head and neck streaked with brown ; the feathers of the coverts and scapulars have buff margins, showing as pale bars in flight. The tail-coverts and basal half of the tail are white. The under parts are white, barred with brown in the adult, but the lower breast usually is unmarked. In the immature dress, the bars on the under parts are replaced by streaks. Length: Male, 23 ins. Female, 26 ins. Wing, 17·5-18·5 ins. Tarsus, 2·8 ins.

Golden Eagle. *Aquila chrysaëtus* (Linn.).

If we ignore sub-species, the range of the Golden Eagle (Plate 132) is Holarctic. It is still resident in the Highlands of Scotland, although some years ago it was threatened with extinction, and it breeds in the Hebrides; elsewhere in the British Isles it has vanished as a resident, though many years ago, in some cases one or two centuries, it nested in southern Scotland, the Cheviots, Lake District, Wales, and even Derbyshire. It survived until recent years in Ireland, but it is doubtful if any pairs remain. From time to time Golden Eagles are reported from various places, and when these reports are correct the birds are usually in the immature plumage shown on the plate; they are young, wandering in search of a home or merely seeking their fortunes.

The Golden Eagle in romance is fierce, terrible, and a robber of infants; in reality a large, powerful, magnificent bird with a cowardly vulturine character. Noble in appearance, especially in its marvellous airmanship, it is ignoble in habits, stealing young and sickly lambs, but not daring to try conclusions

with a full-grown ewe, and carefully avoiding encounter with its enemy, man, even when he is robbing its eyrie. Flapping its huge wings at intervals, it sails majestically at immense heights, the wing-tips curved upward, the strong pinions spread like fingers. It does not dash on its quarry with the splendid stoop of the Peregrine, but drops suddenly upon the unsuspecting hare or Ptarmigan, gripping its life out with cruel talons. It will sight or smell the long-dead sheep and gorge upon the putrid flesh. Sport, not sentiment, has saved the Golden Eagle from extinction, and on some of the Scottish deer-forests it is almost common; had the shepherd had his way he would have harried it out of existence. The varying hare and perhaps the Ptarmigan and Red Grouse are annoying to the deer-stalker, warning the stags by their rushes or flights when disturbed, and these the Eagle keeps down. On the ground the Eagle is ungainly and waddles rather than walks, but when standing on its favourite look-out, some rock or pinnacle from which it can command the district round, its massive beak, heavy brows and piercing eyes give it a truly regal mien; small wonder that it has been so often selected as a national emblem. As a rule it is a silent bird, but has a loud yelping scream.

The nest of the Golden Eagle, though still occasionally built in a tree, is generally placed on some steep though by no means inaccessible crag; many nests may be reached without a rope. The birds, if permitted, return again and again to the same place, though not annually to the same nest; each pair has two or three alternative nests which are probably used in turns. One of these old nests is patched up each year, fresh material added, so that in time they become huge structures, perhaps six feet across at the base, and consequently requiring a broad ledge for their support. Branches, twigs and heather are piled to a height of perhaps two feet, and the cup of the nest is from 12 to 16 inches across, lined with heather tufts, moss and grass, and, as most authorities assert, usually a

quantity of the great wood-rush. Mr. Walpole Bond, who found wood-rush in some of the nests he examined, also came across a recently plucked sprig of crowberry, apparently added for the sake of decoration. At the end of March or early in April two or exceptionally three eggs are laid; they are white or marbled and blotched with reddish brown and violet (Plate 134). A single brood is reared, and, almost invariably, if the eggs are destroyed the bird makes no effort to nest again that year. H. B. Macpherson, in Scotland, and Mr. E. S. Cameron, in America, by careful watching, taught most that we know about the nesting habits of the Golden Eagle: how the young are fed at first on liver, and later on carefully prepared food, birds plucked and headless and rabbits denuded of their fur, and finally on furred and feathered victims which they learn to tear up for themselves. Until the eaglet is eleven weeks old it cannot fly, and just before this feat was accomplished the nestling began to screen its food with its wings when it stood upon it, rending it with its beak. This is the habit of all raptorial birds.

The Golden Eagle has the legs feathered to the toes, a character that distinguishes it from the White-tailed Eagle. It is dark brown above and below, more tawny on the head, and the long yellowish feathers on the nape are golden in bright light. The beak and claws are blackish brown, the cere and toes yellow, the irides deep yellowish brown. In young birds the feathers have white bases, and the white basal part of the tail often causes confusion with the White-tailed Eagle. Male: Length, 32 ins. Wing, 24 ins. Tarsus, 3·7 ins. Female: Length, 35 ins. Wing, 27 ins. Tarsus, 3·9 ins.

Spotted Eagle. *Aquila fusca* Brehm.

The Spotted Eagle is a casual wanderer to the British Isles, and so far as is known has occurred less than a dozen times.

Its range extends eastward from the Baltic into Siberia and central Asia, and in winter it is met with in southern Europe, Africa and India. In western Europe it is rare.

It is in the immature dress, that of most if not all wanderers to Britain, that the bird deserves its name "spotted"; the brown plumage is then spotted with buffish terminals and edges to the feathers of the wing-coverts and inner secondaries, and the under parts are marked with pale streaks. There is also a patch of pale feathers on the nape which disappears with age. In mature birds the plumage is rather darker than in the Golden Eagle, and there is no barring on the tail; the colour of the soft parts is similar. It is, however, always a smaller bird. Male: Length, 26·5 ins. Wing, 20·5 ins. Tarsus, 3·9 ins. Female: Length, 29 ins. Wing, 21·5 ins. Tarsus, 4·2 ins.

White-tailed Eagle. *Haliaëtus albicilla* (Linn.).

Until recent years the White-tailed Eagle (Plate 135) was more abundant than the Golden Eagle in the British Isles; now it is a scarce resident, on the verge of extinction, in the Shetlands and Outer Hebrides. Elsewhere it is an occasional straggler in autumn and winter, and most of these wanderers are immature. It breeds in Greenland, northern Europe and Asia, and is known as a winter visitor to south Europe, north-east Africa, India and Japan. Formerly the White-tailed Eagle occupied many eyries round our coasts and a few inland; it was found in the Lake District, Isle of Man, Lundy and the Isle of Wight, and until 1910 or thereabouts at least one eyrie existed in Ireland, where it was at one time common. Speaking generally of the Scottish coast, Dixon, in 1882, said, "It will probably hold its own for many years to come, in spite of the price set on its head." No doubt he referred to the determined assaults of gillies and shepherds, but perhaps did not take into

account the price set on its eggs, for undoubtedly the collector has assisted the destruction.

The Earne or Sea-Eagle is more of a coast-haunting species than the Golden Eagle ; its eyries are, or were, usually on some precipitous sea cliff, its favourite perch a rocky, wave-washed pinnacle. There it will sit, watching the water, as grand a bird as the other, sometimes, Dixon says, sunning its outstretched wings like a Cormorant. Its slow, flapping flight and majestic aerial sailing resemble those of the Golden Eagle. Thirty years ago, when it was more abundant, I saw one in the Sound of Hoy, soaring at such a height that only when it turned and the sun glistened on its white tail, could I be sure of the species. Its yelping call, according to Macgillivray, is shriller than that of the Golden Eagle. Both Eagles are frequently mobbed by much weaker birds. The bold Peregrine will stoop with such determination that the Eagle avoids the onrush with a scream of alarm ; the Raven, often itself mobbed by other birds, will follow and buffet it ; gulls and skuas chase the Sea-Eagle, and Mr. Bond saw a Golden Eagle attacked by Rock-Doves. Yet the Sea-Eagle will kill ducks and other large birds, though fish forms a fair proportion of its food. It has been stated that the bird plunges for fish like an Osprey, but this is not its only method of catching them, for it has been seen dropping on trout in the shallows. It will eat any mammal or bird that it can capture and overcome, and it will not refuse carrion. As is the case with all eagles, and indeed with many raptorial birds, the young are great wanderers or gipsy migrants.

In the north the usual site for the nest is a large ledge on a steep cliff or the summit of a crag or stack, but in central Europe it is usually in a tree, and at times on the ground or in a marsh. Sticks, heather, turf or any handy material are used, and a softer lining of grass or heather is added. The eggs, usually two, are white, rough and without gloss, and are laid in April.

At all ages the unfeathered tarsi distinguish the bird from the Golden Eagle, and in its adult dress, not attained until it is six or seven years old, the white tail and yellow beak are distinctive. The upper parts of the adult are brown, and the head is lighter, grey or almost white in very old birds; beneath it is darker brown. The beak, cere, legs and irides are yellow, the claws black. The head seems to be always darker in the larger female. In the darker immature birds the tail is at first brown, but later becomes mottled and greyer, but is never barred as in the Golden Eagle. The cere and legs are duller yellow, the bill is black, and the irides brown. Male: Length, 36 ins. Wing, 24 ins. Tarsus, 4 ins. Female: Length, 40 ins. Wing, 27 ins. Tarsus, 4.5 ins.

Goshawk. *Astur palumbarius* (Linn.).

The Palæarctic Goshawks are divided into a number of geographical races, and those which appear in the British Isles as irregular and occasional autumn and winter visitors are of the European form. The majority of these visits have been to the eastern seaboard of England and Scotland and, as is the case with many raptorial stragglers, have been immature birds (Plate 137). In the days of falconry, according to literary historical evidence, falconers intentionally released Goshawks in order that they might breed in Britain and obtain the requisite degree of ferocity and skill, but game-preservation prevented the permanent establishment of the species. It is possible, too, that some of the records of the bird really refer to the Peregrine, since this bird is still known as the "Goshawk" in some parts. In 1893 a female nested in Yorkshire, but it may have been an escape from captivity, since it is still a favourite bird of the chase.

The short-winged, long-tailed Goshawk, in plumage and habits, is a large fierce Sparrow-Hawk; it beats for its quarry,





1 Pl. 135.

White-tailed Eagle (mature).

Y 323.

then dashes suddenly upon it, turning and twisting with great agility, but does not stoop with the skill of the Peregrine or other falcons. Mammals so large as hares, and birds of the size of Wild Duck and Partridge, are killed by this powerful hunter ; it is not popular with the gamekeeper.

The adult bird is ashy brown on the upper parts, and its tail is boldly banded with dark brown, and tipped with white. The under parts are barred black and white. The bill is bluish black, the cere, legs and irides yellow. The immature bird is brown above, with pale margins, and the tail is banded with dark grey ; the under parts are buff, spotted and striated with dark brown. The irides are bluish white. Male : Length, 20 ins. Wing, 12 ins. Tarsus, 3·1 ins. Female : Length, 23 ins. Wing, 14 ins.

American Goshawk. *Astur atricapillus* (Wilson).

The editors of the "Hand-List" consider that the Goshawks and Sparrow-Hawks "cannot be separated generically," and that *gentilis* is the correct specific name. The American Goshawk breeds in northern Canada and the States and migrates south in winter, and three examples were recorded as having occurred in Ireland and Scotland in 1869 and 1870. These were rejected as unsatisfactory by both the B.O.U. Committee and the editors of the "Hand-List," but a bird shot in co. Tyrone in February, 1919, examined by Mr. Witherby and Dr. Hartert, is by them accepted as a genuine visitor (*British Birds*, XIII., 3, 31), and possibly the other three may have reached us unaided. Under the name *Accipiter gentilis atricapillus* (Wilson) the bird is added to the British list, with the statement that it differs from *A. g. gentilis* (Linn.) in the greater width of the shaft-lines on the feathers of the under parts, "while the cross-bars are more ashy grey and broken up

into irregular cross-markings." In young birds the under parts are usually paler and more heavily spotted.

Sparrow-Hawk. *Accipiter nisus* (Linn.).

The Sparrow-Hawk (Plate 138) is resident in all wooded parts of the British Isles. In the north of its European and Asiatic range it is a migrant, and in autumn considerable numbers reach our eastern shores, and probably some are birds of passage.

With the exception of the Kestrel the Sparrow-Hawk is, in most parts, our commonest bird of prey; incessant persecution has failed to stamp it out. When in flight its short wings give it a long-tailed appearance, and when perched it stands higher and looks a more leggy bird than the Kestrel. Its manner of hunting is different, for it flies low, beating along hedgerows and seldom rising to do more than skim over to the far side. It will fly up a road or lane, frequently topping the hedges, and searching each bramble patch or furze bush for victims; it threads its way amongst the trees in a wood, quickly but silently, dashing suddenly upon any unsuspecting bird. When about to perch it will cross a field, a few feet above the grass, and suddenly rise to a high branch when near the foot of a tree. It will pick out one bird from a flock and chase it, without heeding the cries and occasional mobbing flight of other birds. When Black-headed Gulls and Lapwings assault it, however, it simply avoids their attacks, dodging skilfully, for it turns and twists with ease and grace. The quarry is eaten on the ground; the Hawk stands with both feet on its victim, droops its wings so that they form a tent, spreads its tail as if to give support, and rips off the feathers or fur. The blood-stained remnants of its feast remain to mark the scene of the tragedy. Small passerine birds are its chief food, but it will kill birds as large as Wood-Pigeons, and not infrequently raids the farm for

Young Sparrow Hawks.





Goshawk (first year).

chickens. Careful observers find it does little harm to game. Mice, frogs and insects are also eaten. If disturbed at a meal it rises with a chattering cry of alarm or defiance. In the excitement of the chase the Sparrow-Hawk often gets into difficulties, for it will blindly dash after its terrified victim into a room or crash to death against a window. One male I received had followed a Sparrow into an engine-room, where both were killed by striking a dynamo.

The Sparrow-Hawk builds a substantial nest in a tree (Plate 136), generally selecting a conifer, but it likes a foundation and usually starts on an old nest or squirrel-drey. On this it makes a large flattish nest of fir-twigs, and as a rule the lining consists of bits of fir bark and down. The four to six eggs, generally laid in May, are bluish white, strongly blotched and splashed with dark reddish brown (Plate 125). The eggs in a clutch often vary considerably; the marks may be massed at either end, forming a solid patch, or be in a zone; often one or two eggs have few marks. Both birds help in building, and though the hen is usually found on the nest, the cock at times takes a share in incubating. One brood is normal, but if eggs are destroyed the bird will lay again. Both male and female have been known to breed in their immature dress. If the nest is visited the birds usually keep at a safe distance, flying round with chattering cries, but I have a photograph of one, taken by Mr. M. V. Wenner from about two feet above the back of the sitting bird. By getting her accustomed to his presence in the tree, he was able to stand with a foot on either side of the nest and snap her when she at last came to brood the two eggs. The nest of a previous year is sometimes used; a gamekeeper showed me one where the year before he had trapped three adult birds in succession in a gin placed in the nest itself. When I climbed the tree I found six eggs on a mass of fir-twigs three inches thick, and below this the unprung trap which had been left in the nest.

The adult male has dark greyish slate upper parts, with a whitish spot on the nape ; the flight feathers and tail are dark brown barred with grey. The bill is bluish horn, the cere and legs yellow, the claws black, and the irides orange. The under parts differ markedly from those of the female, for in the male they are more or less rufous barred with reddish brown, but in the female white with brown, or more generally dark grey bars. The female is larger and browner on the back. The young bird is dark brown above, with rufous margins to the feathers, and the white under parts are more streaked than barred with brown. In both sexes there is considerable variation in size. Male : Length, 13 ins. Wing, 7·9 ins. Tarsus, 2·1 ins. Female : Length, 15 ins. Wing, 9·2 ins. Tarsus, 2·4 ins.

Kite. *Milvus milvus* (Linn.).

The Kite (Plate 141) is found in most parts of Europe, and in north Africa and western Asia. In the north of its range it is migratory, but elsewhere, including Britain, a sedentary species ; an occasional straggler, usually immature, reaches our shores, but these visits are very irregular. The story of the Kite as a British resident is, though lamentable, a triumph for the present generation of ornithologists—or for a few of them. In the eighteenth century the bird was common in all parts, a woodland species constantly visiting the towns and villages, though apparently never resident in Ireland, where the few instances of its occurrence rest on slender evidence. In the nineteenth century farmers and game-preservers waged war against the Kite, with the result that by the middle of the century it had vanished from most of its ancient haunts, though a few nested in England and Scotland in the seventies. Twenty years later some twenty pairs lingered in central Wales, and then the egg-collector, fearing that his collection might not contain “British-taken” eggs, raided its sanctuary. In 1903 a few real



I Pl. 138.

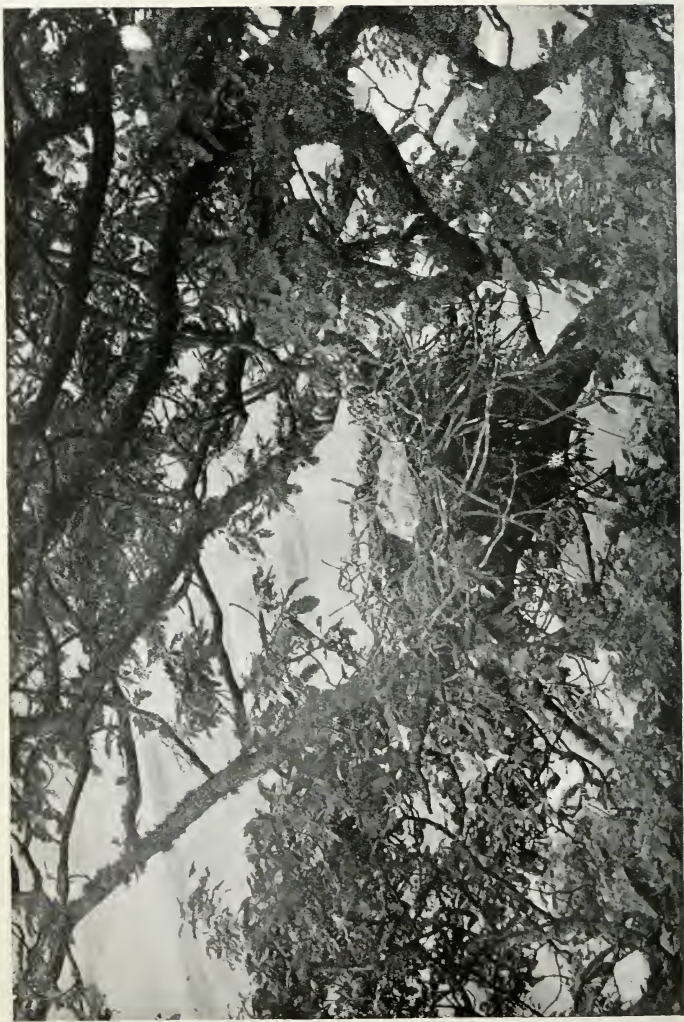
Male.



Sparrow-Hawk.

Female.

V 326.



bird-lovers awoke and efforts were made to protect the survivors, but in 1905 it is believed only five birds remained, and it is doubtful if any got off broods in safety. Carrion-Crows by robbing the nests complicated the difficulties, but careful watching saved the remnant, and though it is early to boast there does seem a chance that the bird will increase once more. On the authority of two good ornithologists we know that a pair nested in Devonshire in 1913, though unfortunately the eggs were taken.

The Glead or Gled, a name derived from its gliding flight, is a magnificent bird on the wing, when it may be recognised by its forked tail and reddish plumage. When hunting it flies low, with steady deliberate wing-beats and easy glides, but when it soars it has all the grace and swing of the Buzzard, and will perform in strong wind and storm. It is not a noisy bird, but has a weak, high-pitched Buzzard-like mew or *wheeo*. It is not a valiant hunter and feeds on small mammals, birds, reptiles and amphibians which it picks up from the ground; its habit of lifting the young of Grouse, Pheasants, and chickens and ducklings in the farm was, certainly, responsible for its decrease. It picks up offal and eats carrion; indeed it was known at one time as a useful scavenger. Its present restricted Welsh haunts are the slopes of wooded valleys, and though it feeds at the edge of the moors, it is by no means a moorland or, normally, a hill bird.

In Wales, though not in all parts of its range, the Kite nests in a tree. It usually, though not invariably, builds an entire nest; occasionally it modifies one of a Crow or other species. The nest is a rubbish heap, for all kinds of litter, turf, grass with its roots, wool, rags and paper are stuffed in amongst the branches which make the main structure. The cup is flattish and the lining mainly sheep's wool, but here again miscellaneous articles are introduced, rags, paper, string, and indeed anything it can pick up. Shakespeare knew the Kite

when he said that where it "builds, look to lesser linen." It is acquisitive. In the only nest I have seen wool and paper showed distinctly in amongst the sticks; it was not a neat or carefully concealed structure, but a large nest some fifty feet up in an oak, well away from the trunk (Plate 139). Both sexes collect this rubbish, but apparently only the female broods. The two or three eggs are dirty white streaked, smeared and lined with reddish brown (Plate 147), and are usually laid in Wales about the middle of April. The young are clothed in white and pale-brown down.

The head of the adult is white, streaked with black, the rest of the upper parts reddish brown with paler edgings to the feathers. The under parts are red with dark streaks. The bill is bluish horn, the cere, legs and irides yellow. The young bird is duller and has a brown head. The female is only slightly larger than the male. Length, 25 ins. Wing, 20 ins. Tarsus, 2'3 ins.

Black Kite. *Milvus migrans* (Bodd.).

The Black Kite, a bird of south and central Europe and north-west Africa, which migrates in winter to tropical Africa, has twice been taken in Britain—in Northumberland and Aberdeen. It has the same habits of hunting for offal and food, and of collecting rubbish for its nest, as our bird. Its tail is less forked, and it looks a darker and "blacker" bird on the wing than our "Red" Kite, but its plumage is little different. It is not so white on the head, is browner and less rufous, especially on the tail, and the margins to the feathers are not so noticeable. Length, 24 ins. Wing, 18 ins. Tarsus, 2'25 ins.

Honey-Buzzard. *Pernis apivorus* (Linn.).

The Honey-Buzzard (Plate 142) is a summer visitor to northern and central Europe and western Siberia ; it winters in Africa. It is now mainly known in our islands as a rare spring and autumn visitor on passage, but has perfect right to rank as a scarce summer visitor, since within recent years it has nested in many parts of England and southern Scotland. At one time it was, undoubtedly, a regular breeder, and until about 1870 nested annually in the New Forest.

The Honey-Buzzard is a bird of the woods, seldom apparently indulging in the long flights and aerial performances of its congeners, though Gilbert White, who knew it well, says it "skims about in a majestic manner." Lilford, who made its acquaintance abroad, found that it delights to sit, sunning itself, and when seeking food walks and runs on the ground with ease. As its favourite food is the larvæ of wasps, it certainly is not honey that it seeks, and though it attacks nests of wild bees it is the grubs it devours. It has no fear of wasps and will scratch out the "cakes," entering so far into the hollow as to be almost hidden, for, as Lilford relates, a woodman in Salcey Forest actually pulled one out of a wasps' nest when he saw its tail protruding. Wise, in his "New Forest," says, "I have frequently watched a couple, sailing with their wings outspread—just circling round the tops of the beeches, sometimes even 'tumbling' like a pigeon, and answering each other with their sharp short cry, prolonged every now and then into a melancholy wail." Most authorities say that it is a rather silent bird. In spite of many assertions that it only feeds on insects, it undoubtedly kills small birds and mammals, and robs nests of eggs ; Mr. F. Nicholson saw one shot when in the act of robbing the nest of a Thrush. A Cheshire bird, which had its stomach "crammed with wasp grubs," was

shot when hovering over a Pheasant, but that does not prove that it would have attacked so large a bird.

Every effort is now made to preserve any Honey-Buzzards which reach the New Forest in spring, but apparently protection has come too late, and within the last thirty years or so but few have nested. High prices were given for these "British-taken" eggs, and Saunders states that nearly £40 was paid for a pair and nestlings. The nest is usually built upon the old nest of some other species or on a squirrel-drey; its chief characteristic is the lining of fresh green leaves and twigs which are sometimes woven into the outer fabric and renewed from time to time. The eggs, usually two or three in number, are very handsome, and consequently coveted by collectors; they are white, boldly blotched and smeared with rich chestnut or red; sometimes the markings almost obscure the white (Plate 145). As in most raptorial eggs the colour is not "fast," and if they get wet are smudged by the sitting bird.

Most raptorial birds are variable in plumage, none more so than the Honey-Buzzard. A usual type is shown on the plate—grey on the head, brown on the back, white spotted and barred with brown beneath. The barring on the tail varies in width and number of bars. Some birds, described as a dark form, are mostly brown on the under parts. The young have often a whitish head and the feathers of the upper parts edged with pale brown, and the tail is mottled and barred. In other immature birds the head is brown. The lores are closely feathered in both young and old, and this may possibly save them from the attacks of wasps, for in many raptorial birds this portion is only protected by bristles. The bill and claws are black, the cere lead-blue, the legs and irides yellow. Most authorities say that the female is slightly larger than the male, but Sharpe gives her measurements as less; as the bird varies in size as well as plumage there is no invariable rule. Length, 22 to 25 ins. Wing, 15 to 17 ins. Tarsus, 2 ins.



Cormorant.



Gannet.



Gyr-Falcon. *Hierofalco gyrfalco* (Linn.).

After considerable controversy about the specific validity of the three gyr-falcons, it is generally acknowledged that the Gyr-Falcon proper, a bird of northern Europe, Greenland and Arctic America, which occasionally wanders southward, is distinct, and has claim to be included as an exceedingly rare straggler to Britain. One was killed in Sussex in 1845 and another in Suffolk in 1867. Doubt is expressed about a Norfolk bird, reported in 1883, and one said to have been killed in Essex is a dark-coloured Peregrine. Indeed, this bird, with its dark slate head and back, barred with paler slate, and its black moustachial stripe, is not unlike a large Peregrine. The under parts are white, spotted with blackish grey, the spots forming streaks. The bill is blue, the cere, eye-rims and feet yellow, the irides very dark brown. The young closely resemble those of the Iceland Falcon. Length, 19 to 22 ins. Wing, 14 to 15 ins. Tarsus, 2'4 ins.

Iceland Falcon. *Hierofalco islandus* (Brünn.).

Greenland Falcon. *Hierofalco islandus candicans*
(Gmel.).

The two northern Gyr- or Jer-Falcons (Plate 144), formerly considered distinct, are now classed as geographical races of one species. Systematists have wrestled long with the various forms of these variable birds, disputing about the salient characters, and even now many good authorities disagree. The Iceland Falcon breeds in Iceland, Jan Mayen, southern Greenland and Western Siberia, and, at any rate, so far as Iceland is concerned, seldom wanders southward. It is, however, an occasional visitor to the Shetlands, Orkneys and Outer Hebrides, and more exceptionally to England, Scotland

and Ireland. The Greenland Falcon breeds in northern Greenland and Arctic North America, and is forced to be more migratory owing to the more rigorous conditions in winter. It regularly visits western Europe, and is an almost annual bird of passage in spring and autumn in Scotland and its islands. In Ireland it is not uncommon, and from time to time birds are seen in England and Wales.

In bearing when perched, in dash and ferocity when stooping on their prey, in angry cries, and so far as is known in breeding habits, these two differ little from our Peregrine. Large birds and mammals are attacked, the main food being hares, gulls, Guillemots, Puffins and waders; Grouse, Ptarmigan and rabbits in Britain. The white plumage of the Greenland Falcon may be said to be "protective," not that so powerful a bird needs protection from enemies, but that its plumage in a land of snow gives it a degree of invisibility which enables it to approach its prey and so obtain food. Owing to its magnificent powers of flight, the visiting Iceland or Greenland Falcon avoids the gun more easily than some of the other birds of prey; it is not uncommon to hear of "white" Falcons seen but not "obtained," most of which were, probably, Greenland birds.

The plumage of the Greenland Falcon is mostly white, except for its dark primaries; on the back are a few blackish-grey bars, on the flanks a few spots, but no bars. The Iceland Falcon is a much darker bird, brownish grey on the head and back, and spotted and barred on its creamy white under parts; the bars on the flanks are distinctive. In both the tail is barred, but much more distinctly in the Iceland Falcon. The bill is bluish horn, the cere, eye-rims, and legs yellow, the irides dark brown. Immature birds are by no means easy to distinguish, indeed they are liable to be confused with the Gyr-Falcon also. They are much browner, and their markings on both upper and under surface browner and broader. The cere is bluish,

Honey Buzzard.





and the legs less yellow. From the adult Gyr-Falcon the Iceland may always be told by its paler, black-streaked head. Male: Length, 21 ins. Wing, 14.5 ins. Tarsus, 2.75 ins. Female: Length, 23 ins. Wing, 16 ins. Tarsus, 3.0 ins.

Peregrine Falcon. *Falco peregrinus* Tunstall.

The handsome Peregrine (Plate 146) is the largest and most powerful of our resident falcons, and is commoner, especially round our rocky coasts, than is usually supposed. In spite of persecution and the repeated burning of nests by farmers, it holds its own. Some closely allied form of Peregrine is found in most parts of the world, and our race breeds in northern and central Europe and is partially migratory, many wintering in Africa. Birds of passage are not uncommon in Britain, especially on the east coast, where they travel with and depend upon other migrants. The North American Duck-Hawk, *Falco peregrinus anatum* Bonap., has been twice recognised as a visitor, in Leicestershire in 1891 and Lincoln in 1910; it is a darker bird than ours.

There is a dash, neatness and finish in the flight of the Peregrine which is purely its own. The wings move rapidly, beating the air for a few moments, and are then held steady in a bow whilst the bird glides forward, sometimes rolling slightly from side to side. The legs, as in other raptorial birds, lie under the tail and are not held forward except when striking; at times one leg will be dropped and shaken during flight. When seen from above the bird looks blue, from below, red or rufous, but if at a distance or high in the air it looks a black arc or swiftly moving crescent. The bend of the bow varies with the speed and inclination of flight; during descent, when the wing tips point backward, it is a sharp curve. Near a coastwise eyrie the bird will sail out over the water, easily and gracefully, rising to a great height, then with wings almost

closed shoot seaward, recovering itself near the water and after a low flight above the waves mount once more. Tiercel and falcon, as the male and female are called, join in aerial gambols, sporting together as one or the other playfully mounts and stoops at its consort. The "stoop" of the Peregrine is its swoop or downward rush with almost closed wings, seen to best advantage when hunting. An aerial fight between two tiercels is a sight to be remembered; the stoops and dodges are no play then; the birds rise to a great height, each striving to get above the other to gain advantage for the stoop, which is avoided often by a sudden upward rush of the lower bird, accompanied by a scream of rage or fear. In one such fight neither bird succeeded in striking, but the turns, twists and ruses to avoid impact by the one which happened to be below were wonderful to watch. The usual cry of the Peregrine when its eyrie is approached is a sharp, quickly repeated *hech* or *hek*; that of the tiercel is a distinct *hak, hak, hak*, but in the falcon it is quicker and runs into a fierce chattering scream, *hek, hek, ek-ek-ek*.

Near the eyrie the birds have look-outs, some jutting rocks or pinnacles on the cliff face. Here a bird will perch for hours, with head sunk into its shoulders, and its breast turned outward, showing white against dark rocks, but hardly visible on the chalk cliffs of the south coast. Occasionally the head, set off by the black moustachial streaks, is turned sharply to watch the flight of some passing gull or wader. On the cliff-top, near the eyrie, are the shambles, scattered litter of blood-stained feathers and the rejected remnants of many a victim. The Peregrine will kill birds large or small—ducks, gulls, Curlew and even small waders; it will kill and eat Daws and Rooks, Grouse, Partridge and Pigeon; indeed it is specially fond of the Stock-Dove and domestic Pigeon, stopping the homing of many a homer. As a rule the quarry is killed in flight, struck down by the "bolt from the blue" and sent hurt-

Y 17. 144.

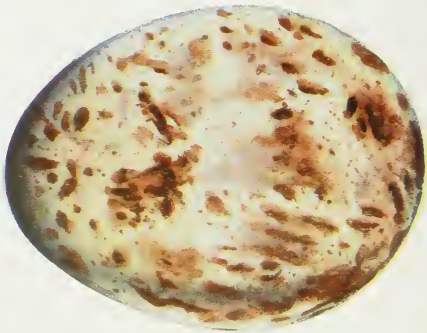
Iceland Falcon (female).



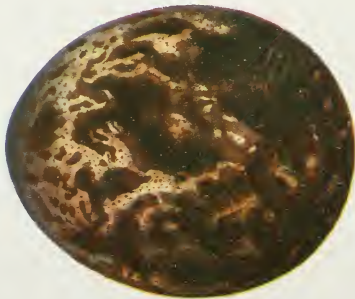
Greenland Falcon.



Y 334.



Buzzard.



Honey-Buzzard.

ling earthward, headless or with back ripped open, amidst a cloud of feathers. Immediately after giving the fatal blow with the hind claw the destroyer shoots upward, descending later to enjoy its meal. The rush of a stooping Peregrine when heard at close quarters is like the sound of a rocket. I have seen a Peregrine stand on the grass close to a bunch of Wigeon which were crouching under the bank, waiting for them to rise and give it an opportunity, but the same tactics are not always employed, nor is the meal invariably secured. A homing Pigeon, crossing the Dee estuary, was persistently chased, but by smart turns and repeated sudden drops almost to the marsh it succeeded in outwitting the much quicker bird; on another occasion a small wader about the size of a Sanderling eluded every stoop by similar drops, and would have escaped had not the Peregrine suddenly changed its methods, and, following every turn and twist of its quarry, fairly out-flew it and caught it with its foot. The Peregrine will visit the rearing-field, and skimming low pick up young Pheasants from the ground.

No nest is made; the two to four richly coloured orange-red or deep brown eggs (Plate 158) are placed in a rough hollow scraped on some ledge of a steep crag or cliff. They are usually laid in April, and though normally single brooded, the bird will lay again if the first eggs are destroyed; I have known young still in the nest in October. Both sexes sit, but the falcon is far fiercer and noisier in defence of the nest than her mate. Until the downy white young are fledged they are fed upon plucked and usually headless food. When very young they lie prone and motionless as long as watched, but when the new feathers are appearing, they scramble about restlessly on the ledge, with a cheeping food call.

The adult male has the upper parts slate-grey with dark bars, the crown and cheeks very dark, and the black moustachial patch conspicuous. The under parts are buffish white, deepest on the breast, and are barred with black, the amount varying

individually. The bill is blue, the cere, eye-rims and legs yellow, the irides dark brown. The female, a larger bird, is darker and the bars are heavier. In immature dress, the plumage of most "passage-hawks" as the migrants are called, the upper parts are greyish brown with buff margins to the feathers, and the yellowish under parts are streaked and not barred. The cere and legs are livid blue-grey, as are the soft parts in the nestlings. Male : Length, 15 ins. Wing, 12·5 ins. Tarsus, 2 ins. Female : Length, 18 ins. Wing, 14 ins. Tarsus, 2·3 ins.

Hobby. *Falco subbuteo* Linn.

The Hobby (Plate 150) breeds in north and central Europe and western Asia, and winters far south in Africa and Asia. Closely allied forms are found in Africa and Asia. Spring immigrants arrive in England early in May, and in southern counties the bird nests regularly, though it cannot be called abundant. Further north it is less frequent, and in Yorkshire and Cheshire only nests occasionally. It has bred at least once in Scotland, but there, as in Ireland, is a straggler on migration.

Most writers follow Seebohm in saying that the Hobby is a miniature Peregrine, but except in the well-marked moustachial stripe it has little in common either in plumage or habits. It is distinctly the falcon of the woodlands, spending much of the day perched in a tree, but hunting with remarkable activity in the early morning, late afternoon and evening until dusk. When perched, and it is not a very difficult bird to approach, its long red shank feathers are very characteristic. It has proportionately long, narrow wings and a shortish tail, and though it will hover for a moment over a bush, its swift gliding flight is quite distinct from that of the Kestrel; the bird with which it is most likely to be confused is the Merlin, from which



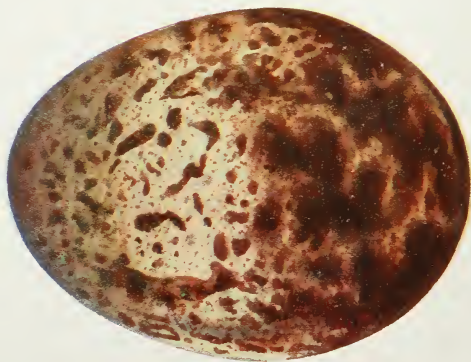
I Pl. 146.

Peregrine Falcon (adult female).

Y 336.



Kite.



Osprey.

it can be told by the thighs and moustachial streaks as well as by its longer wings. Like the Peregrine, its wings winnow quickly before each floating glide. It will kill small birds, even so large as Lark or Starling, but it mainly feeds upon insects, catching dragon-flies with a swift stoop from above, then rising at once and devouring them as it flies. Insects are caught in the foot and transferred to the bill. It nips up the booming dor-beetle in the evening, and will capture the white cabbage butterfly which most birds ignore. Its wonderful speed enables it to strike down or chase and capture the Swallow and Martin, and Mr. Walpole Bond confirmed by actual observation that it could out-fly the Swift. At times it will circle high above the Swifts and Swallows, stooping at them in play rather than with fell intent, for it delights in aerial exercise. In spring a pair will mount together, circle, swoop and dodge in nuptial enjoyment. The call I have never heard ; many authorities describe it as similar to the cry of the Kestrel, whilst Lilford likens it to that of the Wryneck. Mr. Bond says that it is a double note, *quir-ic*, "weak and thin, yet whistling, brisk and somewhat peevish."

The nest is in a tree, but it is doubtful if the Hobby ever builds for itself or makes many improvements or additions to the old nests of Crows or other birds which it appropriates. Norgate used to rob the eggs of Carrion Crows to provide accommodation for Hobbies. The number of eggs is usually three, and they are often similar to the mottled and blotched red-brown eggs of the Merlin, though many have a yellower ground (Plate 158). They are not laid as a rule until June, and a single brood is reared, second layings following disaster. Emigration takes place in September, but there are records of winter birds.

The upper parts of the adult bird are slate-grey ; the ear-coverts and strong moustachial stripe are black, contrasting with white cheeks and chin. The under parts are rufous-white

boldly streaked with black, the thighs and under tail-coverts orange-rufous. The bill is blue, the cere, eye-rims and legs yellow, the irides brown. The thighs of the female are slightly streaked. The young birds are brown above, with pale margins to the feathers, and the under parts are washed with yellow, whilst the red of the thighs and tail-coverts is pale. Male : Length, 12 ins. Wing, 10 ins. Tarsus, 1·25 ins. Female : Length, 14 ins. Wing, 11·25 ins. Tarsus, 1·4 ins.

Merlin. *Falco æsalon* Tunstall.

The range of the Merlin (Plate 148) extends from Iceland across north and central Europe and Asia ; northern birds move south, and many winter in Mediterranean countries and India. In the British Isles it is resident, and to some degree a winter visitor and bird of passage.

As the Hobby is the falcon of the southern woodlands, so the Merlin or Stone-Falcon is the bird of the northern moors. As a breeding species it is hardly known in the south, but from North Wales, Derbyshire and Yorkshire, northward to the Shetlands, and in Ireland, it nests freely wherever it is allowed. Though the smallest of its group it is active and predatory, lordling over the lesser fowl of the uplands. In winter, when most passerine birds desert the bleak moors, it is more widely distributed, but never regularly haunts coverts and woods. Swift on its long narrow wings it glides less than other falcons, and seldom employs the wonderful downwards stoops of Peregrine or Hobby, but following every turn, twist and double of its quarry, fairly flies it down. When it has gained on its victim it rises above it to strike it down with its foot. From several gamekeepers I have assurance that, except for picking up an odd "cheeper," it does little harm to Grouse, though it will, in sport, chase and stoop at an adult bird. Meadow-Pipits, Wheatears and Larks are its favourite victims on the

I Pl. 148.



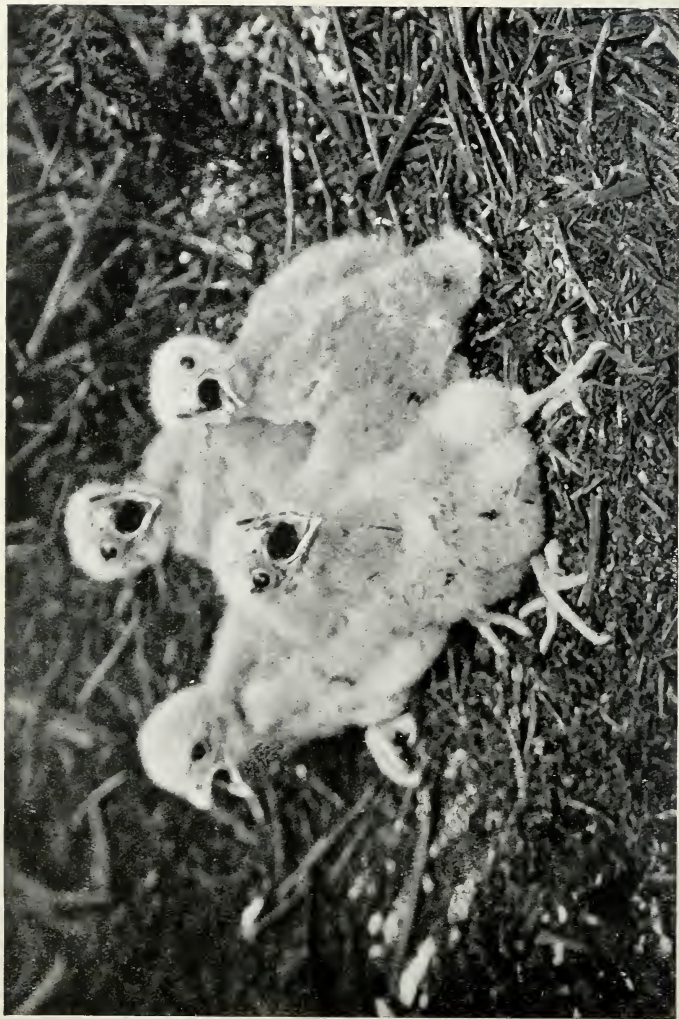
Male.

Merlin.

Female and immature male.



Z 338.



moor, but it will kill so large a bird as Thrush, Snipe and even Lapwing. One Merlin, hot in pursuit of a Pipit, passed so close as to almost brush my head, over-shooting its quarry when it dropped, but doubling again and finally knocking it over; though I was near, it picked up and carried off the still struggling bird. I have seen it follow and stoop at but miss a Sand-Martin, selected from a crowd of twittering birds; in an instant the Martins dispersed in all directions with a noticeable hush. On the coast I have seen it put up and dash into a dense cloud of Knots, Dunlins and other waders, single out its quarry and follow it relentlessly as it dodged close above the waves. Fearlessly it assaults any large bird that ventures near its nest, driving the cowardly Crow and Black-headed Gull away; I have witnessed bold attacks on Short-eared Owl and Peregrine, and once a pair of birds harried a passing Heron until it squawked in terror. Beetles and moths, especially the large-bodied oak-eggjar, so common amongst the ling, are eaten, the latter captured on the wing. The call of anger and alarm has much in common with that of the Peregrine, a hurried shrill *kik, kik, ik-ik-ik-ik*, but when a pair, with many aerial gymnastics, sport together the cry loses its ferocious tone. Mr. S. G. Cummings writes it—*keir, keir, keir, heigh, chup, heigh chup*, and under similar circumstances I have heard a note which reminded me of the *chip-per, chip-per* of the Snipe.

On the moors the Merlin nests amongst the heather or coarse upland grasses, making no real nest, but laying its eggs in a hollow scraped in the ground or a depression amongst the vegetation; at times it is fully exposed, though often screened by ling or crowberry. The bird is not confined to the hills, but haunts the coast and low-lying marshes. On the Welsh coast it nests on the cliffs, often at the top, where the ground is flat, and frequently close to a turf bank or wall, but sometimes on a ledge in a gorge or on the grassy slope some distance below

the edge. I have known the nest amongst the marram on the sand-dunes and under a tussock in a deep inland bog. Rarely, the Merlin nests in a tree. I have seen an old Crow's nest, fifteen or twenty feet up in a tree, from which the hen was shot and the eggs taken. Year after year, even when the nest has been disturbed, a pair will return to the same spot, even to the original "scrape" if it can be recognised. Not far from the nest is the look-out, a rocky outcrop or boulder, a post, wall or grassy mound; this, too, is often the slaughter-house or shambles, streaked with blood-stains and surrounded by feathers and bones of the carcasses plucked and prepared for the young. The eggs are laid in May, usually in the second half. Four is the ordinary number, though five is not uncommon, and many nests only contain three. They are much like those of the Hobby and the denser spotted eggs of the Kestrel, and are usually closely freckled with reddish-brown and almost black spots (Plate 158).

For a very short time the newly hatched young are quiet fluffy white weaklings with ivory, pink-tinted beaks, but they rapidly gain courage and ferocity (Plate 149), and whilst still too feeble to sit up will throw themselves on their backs in resentment at familiarities, defending themselves with beak and claw. Even when just out of the egg they will call, a whispered echo of their parents' angry *kik, kik, kik*, and before the pink flesh is hidden by the thickening greyish down will scream defiance, as shown on Plate 149. When the first dark grey feathers, spotted with yellowish brown, replace the down and the bill is blue and cere already faintly yellow, they will, though still too weak to walk, fight gamely if handled.

The adult male has the upper parts slate-blue with fine black shaft streaks, and the under rufous with broader striations; the tail is barred with black, a broad band near the white tip. The bill is blue, the cere, eye-rims and legs yellow, the irides dark brown. The female is brown, has pale margins to the

feathers of the back, and broad mottles and streaks on the under parts; her tail is distinctly barred black and brown. When old she will sometimes attain male dress. The young are like the female, only redder, as shown on the plate. Male: Length, 11 ins. Wing, 7·8 ins. Tarsus, 1·45 ins. Female: Length, 12 ins. Wing, 8·6 ins. Tarsus, 1·5 ins.

Red-footed Falcon. *Falco vespertinus* Linn.

The Red-footed Falcon (Plate 152) is a summer visitor to eastern Europe and Siberia; it winters in Africa. On migration, usually in spring and summer, it has, not infrequently, wandered to the British Isles. Some forty to fifty have been reported, mostly from eastern and southern localities in England, but it has been met with in the west—in Wales, Lancashire and Cheshire—and in Scotland and Ireland.

Unfortunately whenever a rare visitor is sighted there is such haste to obtain it that information about habits in Britain are ignored. The Orange-legged Hobby, as it is sometimes misleadingly called, has more of the Kestrel than the Hobby in its manner of flight. It is not quick in its sailing and it frequently hovers; it shares with the Hobby one habit, that of hawking for crepuscular moths; the specific name indicates these evening flights. Decidedly gregarious, many will nest close together, and quarter the same ground when feeding. Mice and lizards are eaten as well as insects, but it is not swift enough to capture many birds. Its call is a repeated *ki*, not unlike that of the Kestrel, with which it has many things in common.

The male is very distinctive in plumage; the whole of the upper parts, as also the tail, the breast and under wing-coverts, are slate-grey, darkest on the head and lightest on the quills. The feathers round the eye are almost black. The thighs, belly and under tail-coverts are rich chestnut. The bill

is dark horn, the cere, orbits and legs red, and the claws almost white. The female, which is but slightly larger, has the head, nape, under parts, and under wing-coverts rufous rather than chestnut, and the slate back is mottled and barred with blackish grey; the tail is distinctly barred. Immature birds are browner above and the general colour is redder and paler, whilst the forehead and throat are almost white. They may be distinguished from young Merlins by the absence of distinct striations on the thighs. The soft parts are yellower than in the old birds, but at all ages the claws are very light. Length, 11·5 ins. Wing, 9·8 ins. Tarsus, 1·15 ins.

Kestrel. *Falco tinnunculus* Linn.

The Kestrel (Plate 150), the commonest hawk in most parts of Britain, is both resident and migratory. It has a wide range, embracing most of Europe, north Africa and north and central Asia; the more northern birds winter further south. Even from Scotland and the north of England there is a marked southward movement in autumn, and at this time immigrants reach us to winter or pass further south.

In addition to its chestnut dress and broadly barred tail, the flight of the "Wind-hover" is a sure sign of its identity, for though other hawks hover none has so perfected the art. It hangs twenty to thirty feet above the earth, poised in the air with quivering wings and wide-spread, depressed tail, then slides forward, often without a wing-beat, to halt once more over a fresh patch of ground. For a second or two the swiftly winnowing wings may be held motionless, the bird supported by an air current. High, soaring flight is unusual; it seldom moves at a great altitude unless on migration; low, quartering flight I have never seen. Passages from field to field are easy, steady, but never hurried; the Kestrel obtains its food by quickness of eye, not of wing. The smartest actions are when,



1 Pl. 150.

Hobby (male).



Kestrel.

Z 342.



having sighted quarry when hovering, it dives headlong with almost closed wings, checks itself close to the ground, seizes its victim and mounts again. Seebohm says that other birds do not fear nor heed it, but this is misleading; they mob it constantly. As a rule it pays little attention, sliding away sideways to avoid impact, mounting suddenly upward or, as I have seen when a number of Rooks attacked together, dropping to a lower level. I have seen it chased by Swallows, Wheat-ears, Mistle-Thrushes, Ring-Ousels and a Green Woodpecker, and actually buffeted by a Jackdaw and a couple of Carrion-Crows. Sometimes these attacks seem playful; round a church tower a number of Daws and a pair of Kestrels were flying, and first one species and then the other was the aggressor; possibly both had nests in the tower and were merely sportive companions. The call is a clear *kee, kee, kee*, or, especially in the spring, a double-noted *kee-lee, kee-lee*.

The bird is catholic in its haunts. It frequents moors and rocky crags, woodland and field, and the coast; indeed anywhere it can find small mammals and insects. It kills few birds, probably because it cannot catch them; though it may snatch up an occasional Pheasant chick, the real attraction to the rearing-field is the host of mice which glean the scattered grain. I have examined numbers of the pellets of the Kestrel without finding a single bird bone, though it is true that it does not bolt its food like the owl, and the small fragments of bone in the felted fur are difficult to identify. Even the elytra of beetles are in bits. In the stomach of one bird were a number of surface-feeding caterpillars of some noctuid moth. It is mere sentimentalism to say that the Kestrel never takes larger game than mice and beetles. On three separate occasions I have known the bird kill full-grown Starlings; in one case the bird screamed as it was carried off until the hawk tore open its skull. Another was headless when the bird dropped it. Once, a male, bearing a heavy load, had twice to stop to rest

and then just managed to clear the hedge, but dropped its quarry, a warm but headless leveret.

No real nest is made by the Kestrel. It lays on a ledge of rock, in a scratched hollow, in a quarry or ruin, church tower, or in the deserted nest of some other species. I have found it in the nest of the Sparrow-Hawk in a tall fir, and in Wales in the masses of sticks, lined with wool, recently evacuated by young Carrions. I have also found the eggs in a neat hollow in a thick cushion of thrift. When disturbed the sitting bird will often slip away without a sound, but sometimes fly round at a safe distance expostulating. Once when near the nest the male bird flew beyond gunshot, but the female hovered above me, and stooped repeatedly for at least ten minutes. When about forty feet above me, she closed her tail, slid forward slightly and dived with almost closed wings, shearing off with an angry scream when about ten feet above my head. The eggs are usually four to five in number, though six or more are sometimes found; they are laid in April and May, in Wales and Cheshire usually in the latter month. They vary, but are generally thickly mottled or smeared with red or tawny brown (Plate 158), frequently obscuring the yellowish ground colour. Both birds take some share in incubating, and unless the first eggs are destroyed only one lot is laid. The young at first are clad in greyish down, and though they will squeal feebly if handled, seldom show fight.

The head, rump and tail of the male are slate; the tail has a broad black sub-terminal band and a white tip. The back is pale chestnut or in some examples rufous, spotted with black; the under parts more buff, with black streaks and spots. The bill is blue, the cere, orbits and legs yellow, the claws black, and the irides dark brown. The female is rufous, paler below, barred on the back and striated beneath; her grey tail has in addition to the sub-terminal band several dark bars. The young, until a year old, are like the female, only browner,



Red-footed Falcon.



especially on the tail. A young male in my possession showed the grey rump and tail at the end of the second July, and attained full dress on August 26. Unlike most other raptorial birds, there is little difference in the size of the sexes, both showing great variation. In a number which Mr. R. J. Howard and I measured, the wing measurements of males were on the average slightly larger than of females. Length, av. 14 ins. Wing, 9·5 ins. Tarsus, 1·6 ins.

Lesser Kestrel. *Falco naumanni* Fleischer.

The gregarious Lesser Kestrel is a bird of the Mediterranean basin, where it often nests under the eaves of houses as well as in more natural sites; in winter it migrates to tropical Africa. It has frequently wandered north and west in Europe, and about ten have been obtained in the British Isles, single examples in Scotland and Ireland. Most of these have been mature males, from which we may guess that the visits of the species are commoner than is supposed; males are easier to identify, and probably females have been overlooked, even when shot. The bird is mainly an insect feeder, catching grasshoppers and other insects on the wing. The male resembles our Kestrel, but has no spots on the back, and the secondaries are slate-grey. The female closely resembles our bird except in size, but in both sexes one character is distinctive—the claws are white. Length, 12·25 ins. Wing, 9·2 ins. Tarsus, 1·2 ins.

Sub-order PANDIONES. Ospreys.

The fish-eating Ospreys have, in common with the Owls, the outer toe reversible, but the laterally placed eyes and absence of facial disc agree with the Accipitres. The sole of the foot is

rough, giving grip when holding slippery fish. The order contains but one genus.

Osprey. *Pandion haliaëtus* (Linn.).

The points by which the various species and sub-species of *Pandion* are separated are so slight that some authorities maintain that there is but one, almost cosmopolitan species, for in winter it visits many parts of the world in which it does not nest. Whether it may still be classed as a resident in Britain is an annual question, for one after another its historical eyries have been deserted. Careful efforts to preserve the few remaining sites in the Scottish Highlands have usually ended in failure. In spring and autumn passage birds, mostly immature, visit us with a degree of regularity, and are met with both on the coast and on inland waters.

Blind game-preservation and an objection to rivals on trout and salmon streams were, doubtless, responsible for the rapid diminution of our resident birds, but the greed of collectors and the insane habit of shooting any unfamiliar bird put the finishing touch; the eyrie on Loch Arkaig was deserted in 1911, that on Loch-an-Eilein a few years earlier. In Britain, at any rate, the Osprey (Plate 1) is purely a fish-eater, though not particular whether from fresh or salt water; it will capture surface fish at sea, flounders from a muddy estuary, lazy bream in the meres, or trout in the clear streams. Its flight is not unlike that of the Kestrel; one which passed and repassed within thirty yards of a boat from which I was fishing, flew with slow, powerful strokes and frequently poised and hovered, its head slightly bent as it scanned the water beneath. After these hovering pauses, if nothing moves below it will glide on, or will plunge headlong with a mighty splash and emerge with or without a captive in its claws, for by no means every dive succeeds. The talons strike deep into the flanks of the fish,





which is then carried, head pointed to the front, as recorded by Macgillivray and recently confirmed by Messrs. Bahr and Abbott in America ; this position gives less resistance to the wind. A rainbow trout, about a pound weight, which I handled after an Osprey had left it, had deeply scored wounds in its sides. This bird for nearly three weeks harried the trout in an inland reservoir, and was reported to me as an "Eagle." The Osprey, when fishing, sails at about thirty feet above the water, but will soar and circle at a great height. One, which I saw perched upon a small tree by the side of Crummock Water, peered down with slightly uplifted crest, its cheek-stripe clear and distinct. Spreading its wings it flapped slowly across to a rock that rises out of deep water, a favourite stand of Cormorants, and there the white breast with its darker band showed up against the rocks. Then it rose and soared until a mere speck in the sky and, circling with wide sweeps, drifted towards the north. Other birds fail to recognise that the Osprey is no foe and mob it unmercifully ; the fierce terns will swoop upon it until it screams in terror, and on a Cheshire mere one was chased persistently by Swallows. The note of alarm is described as *killy, killy, killy*, but the bird has a loud shrill scream, and Bahr tells that "when carrying a fish, they would call, very appropriately, '*fish, fish, fish.*'"

In America the Osprey or "Fish-Hawk" is not only common but gregarious, hundreds sometimes nesting close together. In the Highlands the nest was in a tree, or on a rock or ruin, frequently on an islet (Plate 153). In the colony visited by Bahr the nests were anywhere—in stunted maples, on rocks or on the ground. The huge pile of sticks, turf and seaweed is, like the nest of the Kite, a rubbish heap ; Bahr found in one all kinds of "flotsam and jetsam," including the skeleton of a Pheasant, the wheel of a child's mail-cart and many corks ; it was lined with seaweed and cow-dung. The two or three eggs are white, handsomely blotched with deep red or purplish brown and violet

(Plate 147), and are laid as a rule in May. In down the young are said to be protected by their colour, chocolate-brown, with a median white streak ; unlike other raptorial birds, and indeed all true nest building species, they are born with the eyes open. They will make a show of ferocity, but quickly subside if handled.

The male Osprey is dark brown above ; the head is white, streaked with brown, and there is a broad band of brown from the eye to the nape. The under parts, except for a brown breast band, are white. The bill and claws are black, the cere and legs blue, and the irides yellow. The female is the larger bird. In immature birds the dark feathers have pale edges and buff tips, as shown in the plate. Male : Length, 22 ins. Wing, 19 ins. Tarsus, 2·2 ins. Female : Length, 24 ins. Wing, 21 ins. Tarsus, 2·4 ins.

Order PELECANIFORMES.

Birds with the four toes connected by membrane.

Family PHALACROCORACIDÆ. Cormorants.

Cormorant. *Phalacrocorax carbo* (Linn.).

The Cormorant (Plate 155) is found almost everywhere in northern seas and inland waters of large size, and closely allied forms breed in Africa and Australasia. The more northern breeders migrate south, and there is, in the British Isles, a noticeable southward movement in autumn. In the British Isles the breeding range is in many places coincident with that of the Shag, but in the north and west of Scotland the smaller bird predominates ; elsewhere, as a rule, the Cormorant is the more abundant species.

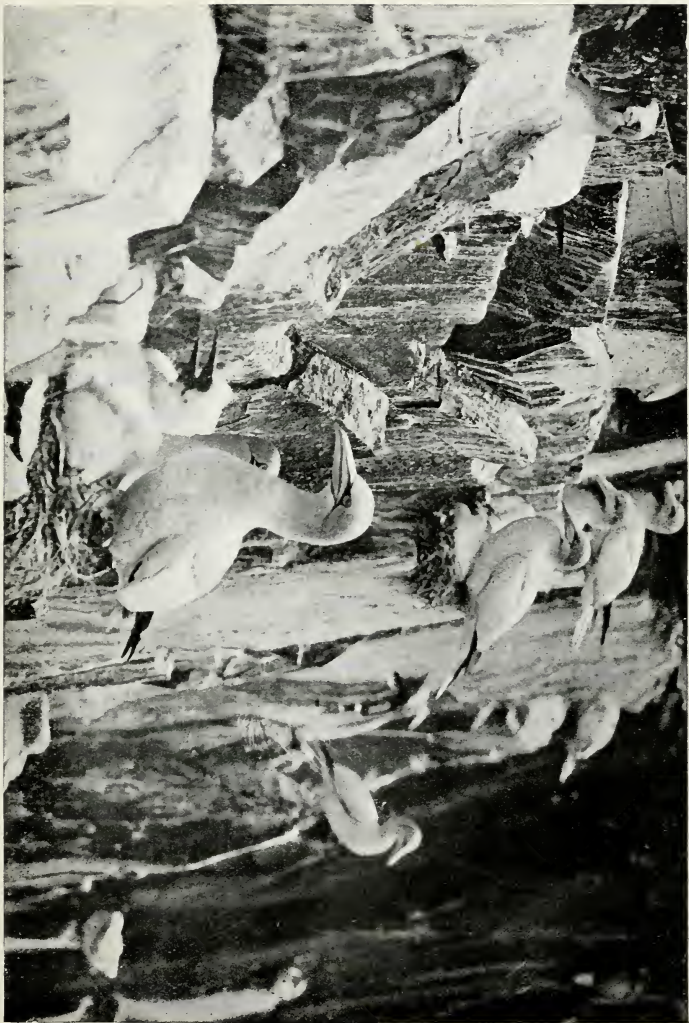
There is much that is ungainly, awkward and uncouth about the Cormorant, yet it is a handsome and interesting bird. Its breeding haunts are rocky coasts, but it may be met with anywhere along the shores, far up tidal estuaries, on broad rivers and inland waters. On the wing, at a distance, it can only be told from the Shag by its size, but at close quarters the white on cheeks and chin and the browner wings and back are distinctive. In the hand the fourteen tail feathers, as against twelve in the Shag, are an unfailing feature. As a rule it flies low over the waves, with long neck outstretched and feet trailed behind, but when crossing land rises to above gunshot, and occasionally, in sport, soars to a height, wheeling and floating with wide-spread primaries. The wing-beats are quick, strong and regular; occasionally it will skim with motionless wings. It swims low, holding the bill pointed upward at an angle of about forty-five degrees, not at right angles like a grebe or downward like the Swan; its head is frequently turned from side to side. If alarmed it sinks the body until the back is awash, swimming with head and neck alone exposed. It paddles like a duck, moving the legs alternately, but beneath the surface they strike together. It dives well, springing slightly from the water with wings fast closed and submerging with a graceful curve; often a spurt of water is kicked up as it goes down. Under water it swims with feet alone, progressing in rapid jerks, driven forward by the simultaneous action of the legs, its neck slightly curved, its head held back, ready to strike at its prey. In the up stroke the webbed toes are gathered together, but are expanded and slightly curved so as to grip the water when propelling itself forward. When turning, checking speed or rising to the surface the wings are slightly, very slightly, opened, but after watching the bird in the sea and in tanks I am convinced that the statements that it uses its wings for swimming under water are erroneous.

Though an occasional young Guillemot, Puffin or other bird

may find its way down the Cormorant's throat, it is really a fish-eater. It out-swims fish under water, and as a rule, at any rate, brings them to the surface before swallowing them. There, if they prove troublesome, they are worried and shaken as a terrier shakes a rat; it will beat them on the surface, carry them below and bring them up again, until their struggles are subdued; then they are gorged, swelling first the extensive gular pouch and later the thin but elastic neck. The dives are irregular in duration, but not so sustained as in some birds; often they last less than half a minute. One bird on the average brought up a fish at every fifth dive. After fishing the Cormorant delights to stand upon some rock or post, drying its outspread sharply angled wings, looking like a long-necked heraldic eagle. Numbers ascend estuaries with the tide and line the shores at the ebb; on the Dee marshes they will sit in rows on the wire sheep-railing, their big inward-turned toes wrapped round the wire; in spite of a stiff breeze and semi-open wings they maintain their balance. As they sit they gape, as if *blasé*; probably they are striving to eject the pellets of undigested food. The note, seldom heard except near the nest, is a deep harsh croak. On rocks the Cormorant stands fairly erect with straight tarsus, but it walks awkwardly, swaying its neck from side to side. In courtship both will raise and dip their necks, a common nuptial action of water birds.

The nests are usually on ledges of a steep crag facing the sea, often many together. In Ireland and Wales there are a few inland colonies on isolated rocks, and in Ireland some nests are built in trees. Turner in 1544 told how the East Anglian Cormorants built in trees, but from 1825 until 1914 this habit was discontinued; this 1914 nest is shown on Plate 151. Inland nests are built of sticks and often lined with fresh green herbage, but on the coast seaweed is freely used, and the nests are often of great size. Nesting material is added after the eggs are hatched. Three or four eggs are laid late in April or in May;

I Pl. 156.



Gannets on the Bass.

Z 350.



Shag.

they are elongated, rough and chalky white, but blue if the outer covering flakes off. The young are at first naked, blind slate-grey little monsters, which squeak as they plunge their bills into their parents' mouths to obtain half-digested food. The down which grows in about a fortnight is woolly and sooty, the bills are flesh-colour and the limp feet brown.

The adult is black, glossed purple and green ; the elongated feathers of the nape form a ragged mane. The mantle is bronze-brown with dark margins forming a network pattern. The lower face and chin is white. From February until about July the nuptial dress consists of white filaments sprinkled over the head and neck, and silky white patches on the thighs. The bill is horn, yellower at the base, and the bare skin surrounding it and gular pouch are chrome yellow. The legs are blue-black, the irides emerald green. In the brown first plumage the dull white under parts are mottled and the irides are brown ; this changes gradually and after the autumn moult shows some gloss, whilst the chin, neck and gular pouch are dirty white. Later the brown tips wear off, leaving the breast streaked and the belly almost white until mature plumage is attained. After the second autumn moult the bare skin shows yellow, and the irides turn from bluish white to green.

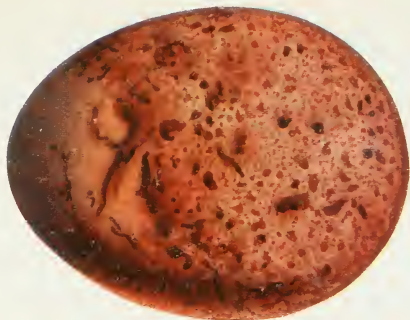
The immature plumages are either irregular or not fully understood, and are complicated by the frequent occurrence of a white-breasted phase, in which dress the bird has been known to breed. Mr. Bolam considers that in some birds the under parts become whiter "during the second and subsequent years" until the black dress is assumed. Mr. Frohawk noticed these white-breasted, apparently adult birds in the Scilly Isles, and Mr. Bolam off the Northumberland coast ; I have seen them in Devon and off Holy Island. Length, about 36 ins. Wing, 14.75 ins. Tarsus, 2.8 ins.

Shag. *Phalacrocorax graculus* (Linn.).

The range of the Shag (Plate 157) is restricted to Iceland and the western shores of Europe ; a closely allied form occurs in the Mediterranean and Black Seas. In the British Isles it breeds freely in the north and west of Scotland, the Orkneys and Shetlands and the west coast of Ireland, and is fairly common along the shores of Wales, of Man, and the south-west of England. On the east coast it is not so plentiful as the Cormorant.

In its nuptial dress, the distinctive feature of which is a short but conspicuous recurved crest, it can always be distinguished from the Cormorant, but this head-dress is only worn during the first six or seven months of the year. At other times the adult bird may be told by its smaller size, green plumage and absence of white on the face. The twelve tail feathers are the safest character in young birds. The habits of the Shag or Green Cormorant differ little from those of the larger bird, but it less frequently visits inland waters. The dogmatic assertion that it never crosses the land is erroneous ; the bird does at times occur inland when there is no evidence of it having been "storm-blown." Indeed it occasionally appears in some numbers in autumn, and it is possible that during a southward movement, an irregular migration, it attempts to travel overland. In one instance an incursion was in January, when the ground was snow-clad and the ponds and rivers frozen. Several birds were shot in Lancashire and Cheshire, and I picked up two full thirty miles from the coast which had been apparently starved or frozen ; six were seen perched together on a snow-covered araucaria.

Although occasionally standing erect, its usual pose is less upright and more graceful than that of the Cormorant ; the body is inclined at an angle, the neck curved like that of a



Peregrine Falcon.



Kestrel.



Merlin.



Hobby.



Swan. This same curve is seen when the bird is swimming, though the bill is carried pointing up at an angle ; the body is often awash. When the bird rises to the surface after a dive it frequently raises the head and neck, looking round cautiously, before exposing the whole back ; if it suspects danger it at once dives again, but without the graceful curving leap out of the water. It leaves the water with some difficulty, splashing with its wings and feet, but when once on the wing flies with steady beats close to the surface. Fish of various kinds are captured by speed under water, the method of progression being the same as in the Cormorant. It is voracious and will kill and devour large-sized fish. I saw one struggle with an eel which was thicker than its neck and considerably longer than its body ; it held it by the head and shook it savagely, though the fish twisted round its neck and body. Unfortunately it sighted me and dropped its prey, so that I cannot say how the contest would have ended.

The Shag is a gregarious nester, building at times on cliff ledges but usually in wave-washed caves. The nests are built of wet, rotting and malodorous seaweed ; the eggs, two to five in number, resemble those of the Cormorant except in size, and are like them, blue beneath their rough chalky covering. The sitting birds are difficult to dislodge ; they sit on the ledges, swinging their heads from side to side if approached, and croak dismally. April is the usual month for eggs, but second broods are common. The young in their sooty brown down, after their naked stage, are quaint little objects (Plate 154).

The adult is glossy oil-green, darkest on the head and neck ; the black gular pouch is spotted with yellow, and the skin at the base of the bill varies from chrome yellow to orange. The bill is black, paler on the under mandible and yellow at the gape ; the legs are black, the irides emerald green. In the first plumage the general colour is brown above and white beneath

mottled with wood brown; the irides are brown, as are the legs. After the first autumn moult the head and neck are bronze-brown, the back bronze-green, and the feathers on the shoulders and scapulars have creamy tips, whilst the blackish quills and tail feathers have creamy margins. The chin is white, the throat creamy, and the under parts white, more or less mottled with brown. In some examples the irides are yellowish green, but in others the brown is apparently retained until later. In the second autumn the green is deeper and more metallic, and the under parts are browner, but, as in the Cormorant, there is a variation in the retention of the white, and in the depth of colour of the eyes. One bird I saw at close quarters had eyes as green as an adult, but a considerable amount of white on the belly. Probably in both Shag and Cormorant the fully mature plumage is not attained until after the third moult. Length, 28 ins. Wing, 10 ins. Tarsus, 2·25 ins.

Family SULIDÆ. Gannets.

Gannet. *Sula bassana* (Linn.).

Apart from the British Isles the Gannet (Plate 159) has only a few crowded breeding places in the Faroes, Iceland and off the east coast of North America. In the British Isles it nests on the "Stack and Skerries," Orkneys; Bressay, Shetlands; Sulisgeir and St. Kilda in the Outer Hebrides; Ailsa Craig and the Bass Rock off the Scottish Coast; Grassholm, Wales; and the Bull Rock and Skelligs off Ireland. In winter it is pelagic, occurring off both east and west shores of the North Atlantic, and entering the Mediterranean and Gulf of Mexico. The total number of known breeding stations, now that Lundy is deserted, is fifteen, and six of these are in our island group.

Off our shores, at almost any season, some of these grand

white birds with black wing tips may be seen floating easily with wide-spread pointed wings, tacking and sailing, without apparent effort, adjusting their aerial pose to benefit by every wind. Some birds are black, or black and white, for the plumage varies greatly with age. In mastery of the air even the Eagles, Kite and Buzzard cannot excel it, nor is the Falcon's stoop more impressive than its headlong plunge into the sea. Its great expanse of wing, exceeding six feet, carries it lightly, high above the waves as it watches for fish below; with half-closed wings it shoots down obliquely, then closing them entirely plunges into the water with a mighty splash; the dive may start two or three hundred feet above the water. It brings no fish to the surface; the prey is captured and swallowed before it reappears, and, flapping heavily for a few yards, catches the breeze and sweeps easily upward. How deep it dives we cannot tell, nor do we know if it chases fish beneath the water; at times, however, it will mount but a few feet before again turning and diving. Herrings and other shoal-swimming fish are its main food, but it will swallow the spine-armed gurnards without difficulty.

The Gannet is noticeably most plentiful in spring and autumn, for there is a distinct southward migration for winter. After the breeding season, from August onward, most of the Gannets wander southward, following migratory fish; they are pelagic but go where fish are abundant. The bird travels regularly on both passages along our west and east coasts. The northward passage is, as the spring advances, more direct and purposeful; I have seen small parties streaming past the Northumberland shores all day long, flying low, undulating over the waves, doubtless heading for the Bass. In spite of these migrations and oceanic wanderings, when the birds remain on or above the water day and night, the breeding haunts are only entirely deserted for a few weeks; in February, even at the end of January, a few reach the rocks, and laggards remain until

December ; the majority, however, arrive in March and April and depart in September and October.

In spring and summer a Gannet colony is a wonderful sight ; the ledges of the precipitous crags are lined with birds, the rocks are whitewashed until an outcrop like Stack Lii, in the St. Kilda group, looks one great white pinnacle. Fifty miles or more east of the rock, when I visited it, birds were passing to and fro, some fishing, others hastening with food for the young. As we drew nearer the crowd became denser until thousands were passing overhead or diving on all sides ; above the rock was a swirling cloud of birds ; an estimate of numbers is the merest guesswork. Mr. Kirkman well describes the colony on the Bass ; he tells how the birds raise their wings and, with stiffened neck and upright pointed bill, prepare to launch forth, how the flight is not a downward swoop, but horizontal or even slightly upward. The arrival of incoming birds is more surprising ; their speed and weight brings them with such velocity that one expects them to dash themselves against the rock, but throwing the wings well forward, they grip the air and check momentum, though it is true they sometimes miss their footing and fall, recovering themselves in the air for another attempt. Mr. Kirkman watched the courtship antics as, with uplifted or flapping wings, they knock their great bills together, or caress one another more gently, frequently growling notes of love, and constantly wagging their heads. The nests are made of seaweed, turf or vegetation torn from the cliff-top, and decorated with all sorts of odds and ends ; golf-balls, paper, a parasol and candle-ends have been found in the nests. Like Rooks and other colonial nesters, the birds are not above petty larceny, and frequent squabbles are caused by nest robbing ; sometimes a fighting couple will fall over the crag into the sea and there settle the dispute.

The single egg is bluish green beneath its chalky outer deposit, and is usually stained by its wet surroundings. The

brooding bird covers it with one or both feet before lowering its body upon it; this extraordinary method of incubation was long treated as a myth. Both birds build and incubate; incubation lasts six weeks. The eggs are laid from March onward, a second egg being laid if the first is destroyed. When first hatched the dark slate young are blind and naked, but patches of down soon appear, and grow in volume into a thick woolly covering (Plate 156). It feeds by plunging its head and often most of its body into the huge gape of the parent, groping for disgorged fish. In a few weeks feathers show, at first on the back, and by degrees replace the down, until, in first plumage, the bird is dark brown, speckled with white. After remaining three months on the rocks they depart in this dress. Storm-driven Gannets in this plumage are not uncommon inland, and occasionally, after a gale, a fagged and starving mature bird is picked up in a field or more unlikely situation miles from the sea. When twelve months old the head and neck are mottled with white and the under parts lose most of their brown colour. After the second autumn moult the entire head is white and patches show on the upper parts. After the third and fourth moults the dark colour is gradually replaced by white. Though in captivity a bird has attained full mature dress in two and a half years, the usual time appears to be the fourth year, though Seeböhm and Saunders say after the fifth moult. There may be irregularity in the duration of immaturity, but individual variation in the distribution of dark and light in birds of the same age may have caused confusion.

The mature bird is white, tinged with buff on the head and neck; the quills are dark brown. The skin round the eye is dark steel-blue, the bill slate-blue with a horn-coloured tip. The legs are slate-blue, lined with green on the toes and front of the tarsus; the claws are horn-coloured. The irides are usually described as creamy white, but were distinctly pale yellowish green in a bird I examined immediately after death; Dresser

says they are yellow. Many writers state that the total length is 33 or 34 inches, but this bird was over 37 inches, and probably the shorter lengths are taken from skins, which are unreliable through shrinkage. Length, about 37 ins. Wing, 19 ins. Tarsus, 2'25 ins.

REPUTED BRITISH BIRDS.

WERE all the birds which, from time to time, have been recorded as British tabulated, the list would be a long one, but it would be a mass of errors. Immense numbers of foreign cage-birds have been imported and many have succeeded in breaking prison; others have been released by those who wished to introduce new species, a risky business and one which tends to complicate the study of geographical distribution. Others, again, have been erroneously identified, and not a few imported specimens have been palmed off as British-killed by unscrupulous dealers. Cold-storage has assisted fraud; it needs an experienced eye to say if a bird in the flesh has been recently killed.

There are, however, a number of birds that have been captured or killed in our islands whose claim to rank as British, though slender, is as good as that of a few which have been accepted. A bird is counted as British if it has reached us unaided, either as a migrant out of its course or a lost wanderer, but if it has alighted on a ship, and thus relieved the strain of continuous flight, it is, by many ornithologists, rejected. The weakness of this argument is that we do not know which birds have taken advantage of passing vessels; it is no uncommon thing for normal British migrants to rest on vessels off our southern shores or in the Mediterranean, but no one refuses a Swallow as British because it may have in this way saved its life. Yet the ship argument is used against any American species.

A bird that has been in captivity and has escaped or been released is obviously not entitled to inclusion, *unless* it succeeds in establishing itself, remaining to breed and so becoming a resident species. Many ornithologists, including those serving on the B.O.U. Committee who drew up the latest list, are hardly consistent on this point. The Little Owl, Red-legged Partridge and Pheasant are in most lists; the Canada Goose is generally thrown out on the argument that it must have escaped from ornamental waters. Yet the Canada, undoubtedly originally introduced, lives a perfectly free and unartificial life in many districts, acknowledging no owner and annually rearing broods of "wild" geese. Some who reject this bird include the Mute Swan.

As stated in the Introduction, the belief has been strong for many generations that no land bird can, unaided, cross the Atlantic, although it is known that certain species, such as the White Wagtail and Wheatear, breed in Greenland and probably annually reach us via Iceland and the Faroes, and an American Redpoll is supposed to have used this route. The repeated appearance of a number of American waders, of two cuckoos and a Goshawk, have modified this view, but it is still strong against many species. It appears to me to be inconsistent to conclude that any American bird must have escaped from captivity, and to accept as genuine unaided wanderers many species, however far they may be from their home or normal migration routes, if they have reached us from the east. The argument of assisted passage should apply to Asiatic and African as well as American species. It is true that these last, when out of their course, have often taken temporary refuge on eastward-bound vessels. In August, 1913, two large curlews, probably the Long-billed Curlew, joined the ill-fated *Lusitania* when 470 miles east of the "Banks," and flew alongside for two days. My informant, an experienced wild-fowler, did not see them come aboard, but suspected that they rested on the ship at night; he

missed them on the morning of the day on which Ireland was sighted. Similar experiences of birds joining vessels are not uncommon, and flocks of unidentified land birds have been seen flying east in various parts of the Atlantic.

Where evidence of identification is slender scepticism is a wise fault, for too many observers are in a hurry to record a bird, but there appears to be a growing habit of throwing doubt on the records of the older and long since departed ornithologists and accepting as reliable information supplied by present-day workers, even when these men are professional shooters and collectors. Many of these older men were careful and accurate observers, and critically examined the data supplied with specimens. We all make errors, and just because here and there we find a past-master at fault, lacking that knowledge which we have gained from others since his day, it is unreasonable to conclude that all his records are unreliable. There are cases—the Calandra Lark, White-collared Flycatcher, and American Goshawk, for instance—in which, owing to later occurrences, we have accepted old and previously rejected records as genuine. The B.O.U. Committee investigated many, though not all of the old records of rare and accidental birds, explaining why they considered them unworthy of acceptance; but their refusal in some cases is discounted by their acceptance of a few other species on what appears to an outsider to be just as slender evidence.

I have no wish to swell the British list unduly; indeed there are one or two species which I think should not be counted, and to my mind the accidental or lost wanderer is of little importance, unless, by keeping careful records, we can prove hereafter that its appearance is more regular than we imagined. I therefore give a list of birds, excluded by the B.O.U. Committee, mentioned as doubtful by Saunders, a most careful and considerate critic, and by others, who handled the records more roughly, and state what my opinion is as to their status. I

firmly believe that our advancing knowledge of the power of flight of birds, when aided by strong wind, may prove that many Western forms reach us accidentally, certainly, but by natural means.

Alpine Chough, *Pyrrhocorax graculus* (Linn.). Oxford, 1881. Rejected as, probably, an escaped captive. Mr. Aplin examined it in the flesh, and found no trace of captivity; though a sedentary species, it has wandered to Heligoland. It should have the benefit of the doubt.

Indian Mynah, *Gracula religiosa* (Linn.). An excellent talker, frequently imported. All occurrences suspicious.

Red-winged Starling, *Agelæus phœniceus* (Linn.). An American species captured and shot many times—Mr. Harting cites thirteen instances, and Yarrell and Newton included it with reserve. It is a favourite cage-bird, and even the example taken at the Nash Light, Glamorgan, may have escaped from a ship, but time may prove that it can fly or be carried 1700 miles on a strong wind.

Black Starling, *Sturnus unicolor* Temm. Included by Lydekker on the strength of a record in "The Country Side." I investigated this record and believe that the bird was a melanistic *S. vulgaris*.

Baltimore Oriole, *Icterus galbula* (Linn.). Shetland, September, 1890. Supposed to have escaped from a ship. Possibly, but it may have been wind-borne or wandered via Greenland and Iceland. It is not fair argument that it has not been met with in Greenland and that that is north of its normal route, when we accept as British the Subalpine Warbler at St. Kilda and Fair Island or the Masked Shrike in Kent.

Meadow-Lark, *Sturnella magna* (Linn.).

Rusty Grackle, *Euphagus carolinus* (Müll.).

Painted Bunting, *Passerina ciris* (Linn.).

American Goldfinch, *Astragalinus tristis* (Linn.). All four are American birds which had, presumably, been brought over

and escaped. Indeed the plumage of the last suggested that it had been caged, though it was killed on Achill Island.

Yellow Seed-eater, *Serinus icterus* (Bonn. et Vieil.).

Canary, *Serinus canarius* (Linn.).

Cape Canary, *Serinus canicollis* (Swain.). Common cage-birds, known to have escaped from time to time. No reliable evidence of their appearance as genuine wild birds.

American White-winged Crossbill, *Loxia leucoptera* Gmelin. Included by Newton; it has been recorded from Greenland and has been met with at sea, flying east. There are several records, and where the identification is satisfactory there is a possibility that the bird reached us unaided via Iceland.

Parrot-Crossbill, *Loxia pityopsittacus* Bork. Rejected by the B.O.U. Committee on account of the uncertainty of its specific rank.

Slate-coloured Junco, *Junco hyemalis* (Linn.). Ireland. 1905. Probably an escape.

White-throated Sparrow, *Zonotrichia albicollis* (Gmelin). At least four records, one being on the Flannan Islands. Impossible to say if the birds had escaped or been wind-borne far from their usual routes, but it is probable that they were helped.

Ruby-crowned Wren, *Regulus calendula* (Linn.). Scotland. 1852. The history of the capture of this bird seems satisfactory, and it is an unlikely species to have been brought as a captive from America. There is the remote possibility of westward wandering from Alaska.

White-rumped Shrike, *Lanius excubitorides* Swain. Rejected as erroneously identified.

Red-eyed Vireo, *Vireosylva olivacea* (Linn.). Two, Derby, 1859. Whitlock believed that these were escaped or released birds.

Cedar Waxwing, *Ampelis cedrorum* (Vieil.). Two, Durham. 1850. Probably escaped birds, but the species has been taken on board ship in the Atlantic far from the American coast.

Siberian Thrush, *Turdus sibiricus* Pallas. Two recorded, but rejected by Saunders on account of insufficient evidence. This bird has been met with elsewhere in Europe and is as likely to wander as many other birds on the British list.

American Robin, *Turdus migratorius* Linn. Four or five records, two of them for Ireland. Mr. Harting thinks that it should be included, as it has been recorded from Heligoland and elsewhere in Europe. It has been released in England.

Blue Rock-Thrush, *Monticola cyanus* (Linn.). Recorded in error.

Siberian Ruby-throat, *Calliope calliope* (Pallas). Recorded as *seen* at Westgate-on-Sea, 1900.

Mocking-Bird, *Mimus polyglottus* (Linn.). Almost certainly all the occurrences have been of escaped cage-birds.

Dusky Bulbul, *Pycnonotus barbatus* (Desfont.). Hastings, 1860. Record discredited.

Cape Bulbul, *Pycnonotus capensis* (Linn.). Waterford, 1838. An even more doubtful record.

Chestnut-bellied Swallow, *Hirundo savignii* Stephens. An error.

Tree-Swallow, *Iridoprocne bicolor* (Vieil.). Derby, 1850. Wolley believed this record to be genuine; it was shot from amongst Sand-Martins and is preserved at Norwich. It is an unlikely cage-bird.

Purple Martin, *Progne subis* (Linn.). Dublin, 1840; Huddersfield, 1854. Others have been reported and proved incorrect, and Nelson was doubtful about the Yorkshire record.

Flicker, *Colaptes auratus* (Linn.). Wiltshire, 1836.

Downy Woodpecker, *Dryobates pubescens* (Linn.). Dorset, 1836.

Hairy Woodpecker, *Dryobates villosus* (Linn.). Four records. The occurrence of these three American Woodpeckers is most unlikely; about this date there was a good deal of trading

in skins. Latham recorded two from Halifax, but it is possible that it should have been Halifax, Nova Scotia.

Middle Spotted Woodpecker, *Dryobates medius* (Linn.). Pennant's Lancashire record cannot be considered satisfactory.

Three-toed Woodpecker, *Picoides tridactylus* (Linn.). Scotland. This record of Donovan's cannot now be investigated.

Great Black Woodpecker, *Dryocopus martius* (Linn.). There are between thirty and forty records for this bird, which occurs in Scandinavia and might easily cross the North Sea. Unfortunately it is one of the birds in which unscrupulous dealers dealt; I have personally come across one case of fraud. In another instance a specimen was bought in a poultry market; it had come with game from Scandinavia. On the other hand, I know one well-known ornithologist who is absolutely certain that he saw one when he was a boy, and a bird was shot in 1897 in Yorkshire. Prior to this date, however, some had been liberated by Lilford. The B.O.U. Committee reject it because every case it was possible to investigate was found by Mr. Gurney and Newton to be unreliable.

Blue-tailed Bee-eater, *Merops philippinus* Linn. Yorkshire (not Durham as usually stated), 1862. An extraordinary occurrence never satisfactorily explained; possibly there was an accidental exchange of skins.

Belted Kingfisher, *Ceryle alcyon* (Linn.). Two, Ireland, 1845. It is considered that the evidence is insufficient, but this American species is a wanderer, is known as a migrant in Bermuda and has been taken in the Azores.

Indian Roller, *Coracias benghalensis* (Linn.). Lincolnshire, 1883. Possibly there was confusion between skins.

Abyssinian Roller, *Coracias abyssinicus* Bodd. Glasgow, 1857. Bree's statement about these two birds cannot now be substantiated.

Saw-whet Owl, *Nyctala acadica* (Gmelin). Yorkshire, 1860. Not proven.

American Screech-Owl, *Otus asio* (Linn.). Two, probably both imported.

Steppe-Buzzard, *Buteo desertorum* (Daudin). Two, from near Newcastle, in the Hancock Collection, and one Wiltshire, 1864. Quite a possible wanderer, but the information about the specimens is insufficient.

Red-tailed Buzzard, *Buteo borealis* (Gmelin). Nottingham, 1860. Cannot now be proved.

Red-shouldered Buzzard, *Buteo lineatus* (Gmelin). Inverness, 1863. Another unsatisfactory record of an American species.

American Rough-legged Buzzard, *Buteo sancti-johannis* (Gmelin). Devon. Considered to be a dark form of the variable *B. lagopus*.

Swallow-tailed Kite, *Elanoides forficatus* (Linn.). Several examples recorded, but it seems that the evidence is nowhere satisfactory; indeed Mr. Harting points out that there has been confusion between the name of this bird and the "Fork-tailed Kite" as applied to our Red Kite.

Black-winged Kite, *Elanus cæruleus* (Desfont.). Ireland, 1862. It is a little suspicious that a number of rare hawks and other birds were recorded about this date.

Pelican, *Pelecanus onocrotalus* Linn. Norfolk, 1663 (Sir Thomas Browne). It has been suggested that this bird strayed from St. James's Park, where Pelicans have been kept for very many years. Not long ago some of the Pelicans flew from this same park and were shot many miles from London. It must, however, be recognised that the bird has been known to stray into northern Europe from its home in southern Europe and Africa.

Red-billed Tropic Bird, *Phæton ætherius* Linn. Hereford, about 1854. Quite a possible occurrence, since this bird has wandered as far north as the Newfoundland Banks, but it is not easy to prove now. No one takes Dr. Charles Leigh's Lancashire "Tropick-Bird" seriously, for there are so many

mythical statements in his "Natural History of Lancashire," etc., 1700. It was "a Bird all White (except only a short Red Beak) about the bigness of a *Pigeon*" which was driven or washed ashore during a violent hailstorm about 1698. His figure is fairly good, but on the same plate is shown a "Brasilian Magpie," apparently a Toucan, that came ashore in the same storm.

American Darter, *Anhinga anhinga* (Linn.). Poole, Dorset. 1851. Cannot be proved, but the bird is not impossible.

INDEX.

- ABERDEVINE.** *See* Siskin
 Abyssinian Roller, 365
Acanthis cabaret, 65; *cannabinna*, 63,
Plates 22, 26, 34; *flavirostris*, 69,
Plates 26, 29, 34; *hornemanni*, 68;
h. exilipes, 68; *linaria*, 65, *Plate*
 28; *l. cabaret*, 65, *Plates* 27, 28, 34;
l. holboelli, 66; *l. rostrata*, 66;
l. rufescens, 65; *rufescens*, 65
Accentor collaris, 235, *Plate* 97;
modularis, 232, *Plates* 84, 94, 95
Accipiter nisus, 324. *Plates* 125, 136,
 138
Acrocephalus aquaticus, 180, *Plate* 75;
arundinaceus, 178; *dumatorium*,
 176; *palustris*, 176, *Plates* 72, 74,
 118; *schænobænnus*, 178, *Plates* 65,
 75; *streperus* 173, *Plates* 65, 72
Ægithalus caudatus, 145, *Plate* 53;
c. rosea, 145, *Plates* 53, 56, 58
Agelæus phæniceus, 362
Agrobates galactodes, 168, *g. familiaris*,
 169
Alauda arvensis, 92, *Plates* 37, 40,
 41; *a. cinerascens*, 95
Alcedo ispida, 284. *Plates* 114, 118
 Alpine Accentor, 235. *Plate* 97
 Alpine Chough, 362
 Alpine Pipit, 118
 Alpine Ring-Ousel, 207
 Alpine Swift, 275. *Plate* 110
 American Darter, 367
 American Goldfinch, 362
 American Goshawk, 323
 American Robin, 364
 American Rough-legged Buzzard, 366
 American Screech-Owl, 366
 American Water-Pipit, 119
 American White-winged Crossbill,
 75, 363
Ampelis cedrorum, 363; *garrulus*,
 154, *Plates* 60, 62
Anhinga anhinga, 367
Anthus campestris, 117; *cervinus*,
 117; *petrosus*, 119, *Plates* 39, 58;
p. littoralis, 119; *pratensis*, 114,
Plates 46, 58; *richardi*, 188; *spino-*
letta, 118; *s. rubescens*, 119; *trivi-*
alis, 112, *Plates* 41, 46
 Aquatic Warbler, 180. *Plate* 75
Aquila chrysaëtus, 317, *Plates* 132,
 134; *fusca*, 319
 Arctic Willow-Warbler, 186
 Ashy-headed Wagtail, 111
Asio otus, 292, *Plates* 120, 121, 131;
accipitrinus, 294, *Plates* 116, 120
Astragalinus tristis, 362
Astur atricapillus, 323; *gentilis*, 323;
g. atricapillus, 323; *fulvibarbarus*,
 323, *Plate*, 137
 BALTIC Rock-Pipit, 119
 Baltimore Oriole, 362
 Barn-Owl, 289. *Plates* 119, 131
 Barn-Swallow. *See* Swallow
 Barred Warbler, 165. *Plate* 69
 Barred Woodpecker, 260
 Bearded Titmouse, 130. *Plates* 53,
 55, 58
 Bee-eater, 280. *Plate* 114

- Belted Kingfisher, 365
 Billy-biter. *See* Blue Tit
 Black-bellied Dipper, 236
 Black-billed Cuckoo, 272
 Blackbird, 204. *Plates* 79, 85
 Blackcap, 162. *Plates* 65, 67
 Black-eared Wheatear, 230
 Black-headed Bunting, 81
 Black-headed Bunting. *See* Reed-
 Bunting
 Black-headed Wagtail, 112
 Black Kite, 328
 Black Lark, 99
 Black Redstart, 212. *Plate* 87
 Black Starling, 362
 Black-throated Thrush, 203
 Black-throated Wheatear, 230
 Black Wheatear, 232
 Black-winged Kite, 366
 Black Woodpecker, 365
 Blueback. *See* Fieldfare
 Blue Dunnock. *See* Hedge-Sparrow
 Blue-headed Wagtail, 110. *Plates*
 41, 45, 48
 Blue Rock-Thrush, 364
 Blue-tailed Bee-eater, 281, 365
 Bluethroat, 220. *Plates* 90, 93
 Blue Titmouse, 141. *Plates* 57, 58
 Blyth's Reed-Warbler, 176
 Bohemian Waxwing. *See* Waxwing
 Bottle-Tit. *See* Long-tailed Titmouse
 Bramble-Finch. *See* Brambling
 Brambling, 61. *Plate* 25
 British Blue Titmouse, 141. *Plate* 57
 British Bullfinch, 70. *Plate* 31
 British Coal-Titmouse, 135. *Plate* 54
 British Dipper, 236. *Plate* 97
 British Goldfinch, 48. *Plate* 18
 British Great Spotted Woodpecker,
 258. *Plate* 104
 British Great Titmouse, 132. *Plate* 57
 British Jay, 32. *Plate* 9
 British Lesser Spotted Woodpecker,
 260, *Plate* 104
 British Long-tailed Titmouse, 145.
Plate 53
Series I.
- British Marsh-Titmouse, 137. *Plate*
 54
 British Redbreast, 214
 British Song-Thrush, 196. *Plate* 80
 British Tree-Creeper, 121. *Plate* 49
 British Willow-Titmouse, 139
 Brown Flycatcher, 243
 Brown Linnet. *See* Linnet
 Brown Owl. *See* Tawny Owl
Bubu bubo, 302. *Plate* 123
 Bullfinch, 70. *Plates* 31, 34
 Butcher Bird. *See* Shrike
Buteo borealis, 366; *buteo*, 313, *Plates*
 130, 145; *desertorum*, 366; *lagopus*,
 316, *Plate* 130; *lineatus*, 366;
sancti-johannis, 366
 Buzzard, 313. *Plates* 130, 145
- CALANDRA Lark, 99
Calandrella brachydactyla, 98; *b.*
longipennis, 98
Calcarius lapponicus, 89. *Plate* 42
Calliope calliope, 364
 Canary, 363
 Cape Bulbul, 364
 Cape Canary, 363
Caprimulgus aegyptius, 280; *europaeus*,
 276, *Plates* 113, 115, 118; *ruficollis*,
 279
Carduelis carduelis, 48; *c. britannica*,
 48, *Plates* 18, 34
Carine noctua, 303. *Plates* 124, 126,
 131
Carpodacus erythrinus, 72
 Carrion-Crow, 21. *Plates* 4, 12
 Cedar-Waxwing, 363
Certhia familiaris, 121, *Plates* 49,
 51, 58; *f. britannica*, 121
Ceryle alcyon, 365
Cettia cetti, 173
 Cetti's Warbler, 173
Chætura caudacuta, 276
 Chaffinch, 59. *Plates* 24, 25, 34
 Chestnut-bellied Swallow, 364
 Chiffchaff, 188. *Plates* 65, 78
 Chimney-Swallow. *See* Swallow

- Chloris chloris*, 44. *Plates* 16, 17, 34
 Chough, 36. *Plates* 10, 13, 15
Cinclus cinclus, 236; *c. britannicus*,
 236, *Plates* 84, 96, 97; *c.*
hibernicus, 236
Circus æruginosus, 306, *Plates* 125,
 127, 128; *cyaneus*, 309, *Plates* 125,
 127; *pygargus*, 311, *Plates* 125, 129
 Cirl Bunting, 80. *Plates* 35, 41
 Citril Finch, 52
Clamator glandarius, 271
 Coal-Titmouse, 135. *Plates* 54, 58
Coccothraustes coccothraustes, 46.
Plates 18, 34
Coccyzus americanus, 271; *erythro-*
phthalmus, 272
Collaptes auratus, 364
 Common Bunting. *See* Corn-Bunting
 Common Buzzard. *See* Buzzard
 Common Whitethroat, 156. *Plates*
 63, 65, 68
 Continental Redbreast, 215
 Continental Song-Thrush, 196
Coracias abyssinicus, 365; *bengha-*
lensis, 365; *garrulus*, 287, *Plate*
 113
 Cormorant, 348. *Plates* 140, 151,
 155
 Corn-Bunting, 76. *Plates* 33, 41
 Cornish Chough. *See* Chough
 Corsican Woodchat, 153
Corvus corax, 19, *Plates* 2, 3, 12;
cornix, 23, *Plate* 4; *corone*, 21,
Plates 4, 12; *frugilegus*, 25, *Plates*,
 5, 7, 12; *monedula*, 28, *Plates*, 11,
 12
 Creeper, 121. *Plates* 49, 51, 58
 Crested Lark, 97
 Crested Titmouse, 144. *Plates* 58, 64
 Crossbill, 73. *Plates* 31, 34
 Cuckoo, 266. *Plates* 108, 111, 112,
 118
 Cuckoo's Mate. *See* Wryneck
Cuculus canorus, 266. *Plates* 108,
 111, 112, 118
 Cutstraw. *See* Whitethroat
Cyanosylvia suecica, 220, *Plates* 90,
 93; *s. cyanecula*, 221
 DARK-BREASTED Barn-Owl, 289
 Dartford Warbler, 167. *Plates* 65, 67,
 71
Delichon urbica, 252. *Plates* 84, 102,
 103
 Desert Wheatear, 231
 Devil-Bird. *See* Swift
 Dipper, 236. *Plates* 84, 96, 97
 Dor-Hawk. *See* Nightjar
 Downy Woodpecker, 364
Dryobates major, 258, *Plates*, 104,
 116; *m. anglicus*, 258; *medius*, 365;
minor, 260, *Plates* 104, 116; *pubes-*
cens, 364; *villosus*, 364
Dryocopus martius, 365
 Duck-Hawk, 333
 Dunnock. *See* Hedge-Sparrow
 Dusky Bulbul, 364
 Dusky Thrush, 203
 Dusky Warbler, 193
 EAGLE Owl, 302. *Plate* 123
 Earne. *See* White-tailed Eagle
 Eastern Black-eared Wheatear, 230
 Eastern Desert Wheatear, 231
 Eastern Nightingale, 220
 Eastern Skylark, 95
 East Siberian Meadow-Bunting, 82
 Egyptian Nightjar, 280
 Egyptian Vulture, 306
Elanoides forficatus, 366
Elanus caeruleus, 366
Emberiza aureola, 84; *calandra*, 76,
Plates 33, 41; *cia*, 82; *ciodes*
castaneiceps, 82; *cirlus*, 80, *Plates*
 35, 41; *citrinella*, 77, *Plates* 30,
 33, 41; *hortulana*, 83, *Plate* 35;
leucocephala, 79; *melanocephala*,
 81; *palustris*, 88; *p. tschusii*, 88;
pusilla, 85, *Plate* 36; *rustica*, 84;
schœniclus, 86, *Plates* 32, 36, 41
Erithacus rubecula, 214, *Plates* 79,
 89; *r. melophilus*, 215

Euphagus carolinus, 362
European Jay, 33
Eversmann's Warbler, 186

FALCO asalon, 338, *Plates* 148,
149, 158; *naumanni*, 345; *pere-*
grinus, 333, *Plates* 143, 146, 158;
p. anatum, 333; *subbuteo*, 336,
Plates 150, 158; *tinnunculus*, 342,
Plates 150, 158; *vespertinus*, 341,
Plate 152

Feather-poke. *See* Long-tailed Tit-
mouse

Felt. *See* Fieldfare

Fern-Owl. *See* Nightjar

Fieldfare, 201. *Plates* 83, 88

Fire-crest, 129. *Plate* 50

Fish-Hawk, 347

Flammea flammea, 289, *Plates* 119,
131; *f. guttata*, 289

Flicker, 364

Flying Toad. *See* Nightjar

Fringilla cœlebs, 59, *Plates* 24, 25,
34; *montifringilla*, 61, *Plate* 25

Furzechat. *See* Whinchat

GALERIDA cristata, 97

Gannet, 354. *Plates* 140, 156, 159

Garden-Warbler, 160. *Plates* 64, 65,
66

Garrulus glandarius, 32, *Plates* 8, 9,
15; *g. hibernicus*, 32; *g. rufitergum*,
32

Glead. *See* Kite

Gled. *See* Kite

Goatsucker. *See* Nightjar

Goldcrest, 126. *Plates* 50, 58

Golden Eagle, 317. *Plates* 132, 134

Golden Oriole, 42. *Plates* 16, 34

Goldfinch, 48. *Plates* 18, 34

Goshawk, 322. *Plate* 137

Gracula religiosa, 362

Grasschat. *See* Whinchat

Grasshopper Warbler, 169. *Plates*
65, 69, 73

Great Black Woodpecker, 365

Greater Whitethroat. *See* White-
throat

Great Grey Shrike, 148. *Plate* 59

Great Reed-Warbler, 178

Great Spotted Cuckoo, 271

Great Spotted Woodpecker, 258.
Plates 104, 116

Great Titmouse, 132. *Plates* 57, 58

Green Cormorant. *See* Shag

Greenfinch, 44. *Plates* 16, 17, 34

Greenish Warbler, 191

Greenland Falcon, 331. *Plate* 144

Greenland Redpoll, 66

Greenland Wheatear, 226

Green Linnet, 44

Green Woodpecker, 262. *Plates* 106,
107, 116

Grey-backed Warbler, 168

Grey-Crow. *See* Hooded Crow

Grey-headed Wagtail, 111. *Plate* 44

Grey Linnet. *See* Linnet

Grey Wagtail, 106. *Plates* 41, 45

Griffon Vulture, 305

Gyps fulvus, 305

Gyr-Falcon, 331

HAIRY Woodpecker, 364

Haliaeetus albicilla, 320. *Plate* 135

Hawfinch, 46. *Plates*, 18, 34

Hawk-Owl, 299

Hebridean Song-Thrush, 196

Hedge-Accentor, 232

Hedge-Sparrow, 232. *Plates* 84, 94,
95

Hen-Harrier, 309. *Plates*, 125, 127

Hierofalco gyrfalco, 331; *islandus*, 331,
Plate 144; *i. candicans*, 331, *Plate*
144

Hirundo rufula, 251; *rustica*, 247,
Plates 84, 101, 103; *savignii*, 364

Hoary Redpoll, 68

Hobby, 336. *Plates* 150, 158

Holböll's Redpoll, 66

Honey-Buzzard, 329. *Plates* 142, 145

Hooded Crow, 23. *Plate* 4

Hoodie. *See* Hooded Crow

- Hoopoe, 282. *Plates* 108, 118
 Hornemann's Redpoll, 68
 House-Martin, 252. *Plates* 84, 102, 103
 House-Sparrow, 53. *Plates* 23, 34
 Huck-muck. *See* Chiffchaff
Hypolais icterina, 181, *Plate* 76;
pallida, 183; *polyglotta*, 182
- ICELAND Falcon, 331. *Plate* 144
 Icterine Warbler, 181. *Plate* 76
Icterus galbula, 362
 Indian Mynah, 362
 Indian Roller, 365
 Indian Stonechat, 224
Iridoprocne bicolor, 364
 Irish Coal-Titmouse, 136
 Irish Dipper, 236
 Irish Jay, 32
 Isabelline Wheatear, 229
Lynx torquilla, 264. *Plates* 107, 109, 116
- JACKDAW, 28. *Plates* 11, 12
 Jay, 32. *Plates* 8, 9, 15
 Jenny-Spinner. *See* Nightjar
 Jer-Falcon, 331
Junco hyemalis, 363
- KESTREL, 342. *Plates* 150, 158
 Kingfisher, 284. *Plates* 114, 118
 Kite, 326. *Plates* 139, 141, 147
- LANCEOLATED Warbler, 171
Lanius collurio, 150, *Plates* 59, 61, 65; *excubitor*, 148, *Plate* 59; *excubitorides*, 363; *meridionalis*, 149; *minor*, 150; *nubicus*, 153; *senator*, 152, *Plate* 60; *s. badius*, 153
 Lapland Bunting, 89. *Plate* 42
 Large-billed Reed-Bunting, 88
 Least Whitethroat. *See* Chiffchaff
 Lesser Grey Shrike, 150
 Lesser Kestrel, 345
 Lesser Redpoll, 65. *Plates* 27, 28, 34
 Lesser Spotted Woodpecker, 260. *Plates* 104, 116
- Lesser Whitethroat, 158. *Plates*, 63, 65
 Lich-fowl. *See* Nightjar
 Linnet, 63. *Plates* 22, 26, 34
 Little Bunting, 85. *Plate* 36
 Little Owl, 303. *Plates* 124, 126, 131
Locustella certhiola, 171; *lanceolata*, 171; *luscinioides*, 171, *Plate* 70; *nævia*, 169, *Plates* 65, 69, 73
 Long-eared Owl, 292. *Plates* 120, 121, 131
 Long-tailed Titmouse, 145. *Plates* 53, 56, 58
Loxia curvirostra, 73, *Plates* 31, 34, *c. scotica*, 73; *leucoptera*, 75, 363; *l. bifasciata*, 75; *pityopsittacus*, 75; 363
Lullula arborea, 95. *Plates* 38, 40, 41
Luscinia megarhyncha, 217, *Plates* 79, 90, 91; *luscinioides*, 220
Luscinia melanopogon, 181; *schwarzi*, 181
- MAGPIE, 30. *Plates* 6, 9, 15
 Marsh-Harrier, 306. *Plates* 125, 127, 128
 Marsh-Titmouse, 137. *Plates* 54, 58
 Marsh-Warbler, 176. *Plates* 72, 74, 118
 Masked Shrike, 153
 Meadow-Bunting, 82
 Meadow-Lark, 362
 Meadow-Pipit, 114. *Plates* 46, 58
 Mealy Redpoll, 65. *Plate* 28
Melanocorypha calandria, 99; *sibirica*, 98; *yeltoniensis*, 99
Melizophilus undatus darfordiensis, 167. *Plates* 65, 67, 71
 Melodious Warbler, 182
 Merlin, 338. *Plates* 148, 149, 158
Merops apiaster, 280, *Plate* 114; *philippinus*, 280, 365
Micropus apus, 273, *Plates* 110, 118; *melba*, 275, *Plate* 110
 Middle Spotted Woodpecker, 365

- Milvus migrans*, 328; *milvus*, 326, 232; *leucurus*, 232; *l. cyenitica*, 232; *occidentalis*, 230; *ananthe*, 226, *Plates* 84, 94; *α. leucorrhœa*, 226; *stapacina*, 230; *s. amphileuca*, 230
- Mistle-Thrush, 193. *Plates* 79, 80, 82
- Mocking Bird, 364
- Montagu's Harrier, 311. *Plates* 125, 129
- Monticola cyanus*, 364; *saxatilis*, 210
- Montifringilla nivalis*, 38
- Motacilla alba*, 101, *Plate* 43; *beaurula*, 106, *Plates* 41, 45; *feldeggii*, 112; *flava*, 110, *Plates* 41, 45, 48; *f. beema*, 111; *f. cinereicapilla*, 111; *f. thunbergi*, 112, *Plate* 44; *lugubris*, 103, *Plates* 41, 43, 47; *rufi*, 108, *Plates* 41, 44
- Moth-Owl. *See* Nightjar
- Mountain Linnet. *See* Twite
- Moustached Warbler, 181
- Muscicapa atricapillus*, 243, *Plates* 84, 99; *cellaris*, 246; *grisola*, 241, *Plates* 84, 99, 100; *latirostris*, 243; *parva*, 246, *Plate* 101
- NEEDLE-TAILED Swift, 276
- Neophron percnopterus*, 306
- Nettle-Creeper. *See* Whitethroat
- Nighthawk. *See* Nightjar
- Nightingale, 217. *Plates* 79, 90, 91
- Nightjar, 276. *Plates* 113, 115, 118
- North African Black Wheatear, 232
- Northern Bullfinch, 70
- Northern Great Spotted Woodpecker, 258
- Northern Nightingale. *See* Blackcap
- Norway Crow. *See* Hooded Crow
- Nucifraga caryocatactes*, 35, *Plate* 11; *c. macrorhynchus*, 35
- Nutcracker, 35. *Plate* 11
- Nuthatch, 124. *Plates* 49, 52, 58
- Nyctala acadica*, 365; *funerea*, 300, *Plate* 117
- Nyctea nyctea*, 298. *Plate* 123
- CEANANTHE *deserti*, 231; *α. albifrons*, 231; *isabellina*, 229; *leucomela*, 232; *leucura*, 232; *l. cyenitica*, 232; *occidentalis*, 230; *ananthe*, 226, *Plates* 84, 94; *α. leucorrhœa*, 226; *stapacina*, 230; *s. amphileuca*, 230
- Old Man. *See* Spotted Flycatcher
- Olivaceous Warbler, 183
- Orange-legged Hobby. *See* Red-footed Falcon
- Oriolus oriolus*, 42. *Plates* 16, 34
- Orphean Warbler, 165
- Ortolan Bunting, 83. *Plate* 35
- Osprey, 346. *Plates* 1, 147, 153
- Otocorys alpestris*, 99. *Plate* 42
- Otus asio*, 366; *scops*, 301. *Plate* 124
- PAINTED Bunting, 362
- Pallas' Grasshopper-Warbler, 171
- Pallas' Warbler, 192
- Pandion haliaetus*, 346. *Plates* 1, 147, 153
- Panurus biarmicus*, 130. *Plates* 53, 55, 58
- Parrot-Crossbill, 73, 363
- Parus ater*, 135, *Plates* 54, 58; *α. britannicus*, 135; *α. hibernicus*, 136; *atricapillus*, 139; *borealis*, 139; *h. kleinschmidti*, 139; *caeruleus*, 141. *Plates* 57, 58; *c. obscurus*, 141; *cristatus*, 144, *Plates* 58, 64; *.. mihatus*, 144; *c. scoticus*, 144; *major*, 132, *Plates*, 57, 58; *α. newtoni*, 132; *palustris*, 137, *Plates* 54, 58; *f. dresseri*, 137.
- Passer domesticus*, 53, *Plates* 23, 34; *montanus*, 56, *Plates* 21, 23, 34
- Passerina ciris*, 362
- Passer roseus*, 41. *Plate* 14
- Peggy. *See* Willow-Wren
- Peggy Whitethroat. *See* Willow-Wren
- Pelicanus onocrotalus*, 366
- Pelican, 366
- Peregrine Falcon, 333. *Plates* 143, 146, 158
- Pernis apivorus*, 329. *Plates* 142, 145

- Phæton ætherius*, 366
Phalacrocorax carbo, 348, *Plates* 140, 151, 155; *graculus*, 352, *Plates* 154, 157
Phœnicurus phœnicurus, 210, *Plates* 79, 87; *titys*, 212, *Plate*, 87
Phylloscopus borealis, 186; *collybita*, 188, *Plates* 65, 78; *c. abietinus*, 188; *fuscatus*, 193; *proregulus*, 192; *sibilatrix*, 186, *Plates* 65, 76; *superciliosus*, 192, *Plate* 70; *tristis*, 191; *trochilus*, 183, *Plates* 65, 77, 78; *t. cœversmanni*, 183; *viridanus*, 191
Pica pica, 30. *Plates* 6, 9, 15
Picoides tridactylus, 365
Picus viridis, 262. *Plates* 106, 107, 116
 Pie. *See* Magpie
 Pied Flycatcher, 243. *Plates* 84, 99
 Pied Wagtail, 103. *Plates* 41, 43, 47
 Pied Wheatear, 232
 Pied Woodpecker, 258
 Pine-Bunting, 79
 Pine-Grosbeak, 73
Pinicola enucleator, 73
 Pit-Sparrow. *See* Reed-Bunting,
 Reed-Warbler
Plectrophenax nivalis, 90. *Plates* 39,
 41
 Post-Bird. *See* Spotted Flycatcher
Progne subis, 364
 Puckeridge. *See* Nightjar
 Purple Martin, 364
Pycnonotus barbatus, 364; *capensis*,
 364
Pyrhula major, 70; *pyrrhula*, 70;
p. europea, 71; *p. pileata*, 70,
Plates 31, 34
Pyrrhocorax graculus, 362; *pyrrho-*
corax, 36, *Plates* 10, 13, 15
 RADDE'S Bush-Warbler, 181
 Rain-Bird. *See* Green Woodpecker
 Raven, 19. *Plates* 2, 3, 12
 Red-backed Shrike, 150. *Plates* 59,
 61, 65
 Red-billed Tropic Bird, 366
 Redbreast, 114. *Plates* 79, 89
 Red-breasted Flycatcher, 246. *Plate*
 101
 Red-eyed Vireo, 363
 Red-footed Falcon, 341. *Plate* 152
 Red Kite. *See* Kite
 Red Linnet. *See* Goldfinch, Linnet
 Red-necked Nightjar, 279
 Redpoll, 65
 Red-rumped Swallow, 251
 Red-shouldered Buzzard, 366
 Red-spotted Bluethroat, 220. *Plates*
 90, 93
 Redstart, 210. *Plates* 79, 87
 Red-tailed Buzzard, 366
 Red-throated Pipit, 117
 Redwing, 199. *Plate* 83
 Red-winged Starling, 362
 Reed-Bunting, 86. *Plates* 32, 36, 41
 Reedling. *See* Bearded Titmouse
 Reed-Pheasant. *See* Bearded Titmouse
 Reed-Warbler, 173. *Plates* 65, 72
 Reeler. *See* Grasshopper-Warbler
Regulus calendula, 363; *ignicapillus*,
 129, *Plate* 50; *regulus*, 126, *Plates*
 50, 58
 Richard's Pipit, 118
 Ring-Ousel, 207. *Plates* 79, 85, 86
Riparia riparia, 254. *Plates* 84, 102,
 105
 Robin. *See* Redbreast
 Rock-Pipit, 119. *Plates* 39, 58
 Rock-Thrush, 210
 Roller, 287. *Plate* 113
 Rook, 25. *Plates* 5, 7, 12
 Rose-coloured Pastor, 41. *Plate* 14
 Rose-coloured Starling, 41
 Rough-legged Buzzard, 316. *Plate*
 130
 Royston Crow. *See* Hooded Crow
 Ruby-crowned Wren, 363
 Rufous Warbler, 168
 Rüppell's Warbler, 164
 Rustic Bunting, 84
 Rusty Grackle, 362

- ST. KILDA Wren, 238
 Sand-Martin, 254. *Plates* 84, 102, 105
 Sardinian Warbler, 164
 Savi's Warbler, 171. *Plate* 70
 Sawfinch. *See* Great Titmouse
 Saw-sharpener. *See* Great Titmouse
 Saw-whet Owl, 365
Saxicola indica, 224; *rubetra*, 224, *Plates* 84, 92; *rubicola*, 221, *Plates* 79, 92
 Scandinavian Chiffchaff, 188
 Scandinavian Rock-Pipit, 119
 Scandinavian Tree-Creeper, 121
 Scarlet Grosbeak, 72
 Scops Owl, 301. *Plate* 124
 Scottish Crested Titmouse, 144.
 Scottish Crossbill, 73
 Screech Owl. *See* Barn-Owl
 Sea-Eagle. *See* White-tailed Eagle
 Sedge-Warbler, 178. *Plates* 65, 75
 Serin, 52. *Plate* 20
Serinus canarius, 363; *caxicollis*, 363; *icterus*, 363; *serinus*, 52, *Plate* 20
 Shag, 352. *Plates* 154, 157
 Shetland Starling, 41
 Shetland Wren, 238
 Shore-Lark, 99. *Plate* 42
 Short-eared Owl, 294. *Plates* 116, 120
 Short-toed Lark, 98
 Siberian Chiffchaff, 191
 Siberian Ruby-throat, 364
 Siberian Thrush, 364
 Siskin, 50. *Plate* 20
Sitta cæsia, 124; *europæa*, 124; *e. britannica*, 124, *Plates* 49, 52, 58
 Skylark, 92. *Plates* 37, 40, 41
 Slate-coloured Junco, 363
 Snake-Bird. *See* Wryneck
 Snow-Bunting, 90. *Plates* 39, 41
 Snow-Finch, 58
 Snow-flake. *See* Snow-Bunting
 Snowy Owl, 298. *Plate* 123
 Song-Thrush, 196. *Plates* 79, 80, 81
 Southern Great Grey Shrike, 149
 Sparrow, 53, 56
 Sparrow-Hawk, 324. *Plates* 125, 136, 138
 Spink. *See* Chaffinch
Spinus citrinella, 52; *spinus*, 58, *Plate* 20
 Spotted Eagle, 319
 Spotted Flycatcher, 241. *Plates* 84, 99, 100
 Sprosser, 220
 Starling, 38. *Plates* 14, 15, 19
 Steppe-Buzzard, 366
 Stonechat, 221. *Plates* 79, 92
 Stonechat. *See* Wheatear
 Stone-Falcon. *See* Merlin
 Storm-cock. *See* Mistle-Thrush
Strix aluco, 296. *Plates*, 119, 122, 131, 133
 Stumpy. *See* Wren
Sturnella magna, 362
Sturnus unicolor, 362; *vulgaris*, 38, *Plates* 14, 15, 19; *v. zetlandicus*, 41
 Subalpine Warbler, 166
Sula bassana, 354. *Plates* 140, 156, 159
Surnia ulula, 299; *u. caparoch*, 299
 Swallow, 247. *Plates* 84, 101, 103
 Swallow-tailed Kite, 366
 Swift, 273. *Plates* 110, 118
 Sykes' Wagtail, 111
Sylvia atricapilla, 162, *Plates* 65, 67; *communis*, 156, *Plates* 63, 65, 68; *curruca*, 158, *Plates* 63, 65, *melanoccephala*, 164; *nisoria*, 165, *Plate* 69; *orphea*, 165; *riippelli*, 164; *simplex*, 160, *Plates* 64, 65, 66; *subalpina*, 166
 TAWNY Owl, 296. *Plates* 119, 122 131, 133
 Tawny Pipit, 117
 Temminck's Grasshopper-Warbler, 171
 Tengmalm's Owl, 300. *Plate* 117
 Thick-billed Nutcracker, 35

- Thin-billed Nutcracker, 35. *Plate 11*
 Three-toed Woodpecker, 365
 Thristle. *See* Song-Thrush
Tichodroma muraria, 124
 Titlark. *See* Meadow-Pipit
 Tom-Tit. *See* Blue Titmouse
 Torr-Ousel. *See* Ring-Ousel
 Tree-Creeper, 121. *Plates 49, 51, 58*
 Tree-Pipit, 112. *Plates 41, 46*
 Tree-Sparrow, 56. *Plates 21, 23, 34*
 Tree-Swallow, 364
Troglodytes troglodytes, 238, *Plates 84, 89, 98*; *t. hirtensis*, 238; *t. zelandicus*, 238
Turdus atrigularis, 203; *aureus*, 209; *fuscatus*, 203; *iliacus*, 199, *Plate 83*; *merula*, 204, *Plates 79, 85*; *migratorius*, 364; *musicus*, 196, *Plates 79, 80, 81*; *m. clarkii*, 196; *m. hebridensis*, 196; *pilaris*, 201, *Plates 83, 88*; *sibiricus*, 364; *torquatus*, 207, *Plates 79, 85, 86*; *t. alpestris*, 207; *viscivorus*, 193, *Plates 79, 80, 82*
 Twite, 69. *Plates 26, 29, 34*
 Two-barred Crossbill, 75
UPUPA epops, 282. *Plates 108, 118*
 Utick. *See* Whinchat
VIREOSYLVA olivacea, 363
 WALL-CREEPER, 124
 Water-Bobby. *See* Dipper
 Water-Colley. *See* Dipper
 Water-Crow. *See* Dipper
 Water-Ousel. *See* Dipper
 Water-Pipit, 118
 Water-Wagtail. *See* Pied Wagtail
 Waxwing, 154. *Plates 60, 62*
 Western Black-eared Wheatear, 230
 Western Desert Wheatear, 231
 Wheatear, 226. *Plates 84, 94*
 Whinchat, 224. *Plates 84, 92*
 White-collared Flycatcher, 246
 White-headed Long-tailed Titmouse 145. *Plate 53*
 White Owl. *See* Barn-Owl
 White-rumped Shrike, 363
 White-spotted Bluethroat, 221
 White's Thrush, 209
 White-tailed Eagle, 320. *Plate 135*
 Whitethroat, 156. *Plates 63, 65, 68*
 White-throated Sparrow, 363
 White Wagtail, 101. *Plate 43*
 White-winged Crossbill, 363
 White-winged Lark, 98
 Willow-Bunting, 84
 Willow-Titmouse, 139
 Willow-Warbler, 183. *Plates 65, 77, 78*
 Willow-Wren, 183
 Windhover. *See* Kestrel
 Woodchat, 152. *Plate 60*
 Woodcock-Owl. *See* Short-eared Owl
 Wood-Lark, 95. *Plates 38, 40, 41*
 Wood-Owl. *See* Tawny Owl
 Wood-Warbler, 186. *Plates 65, 76*
 Wood-Wren, 186
 Wren, 238. *Plates 84, 89, 98*
 Wryneck, 264. *Plates 107, 109, 116*
 YAFFLE. *See* Green Woodpecker
 Yellow Ammer, 77
 Yellow-billed Cuckoo, 271
 Yellow-breasted Bunting, 84
 Yellow-browed Warbler, 192. *Plate 70*
 Yellow Bunting, 77
 Yellow Hammer, 77. *Plates 30, 33, 41*
 Yellow-neb Lintie. *See* Twite
 Yellow Seed-eater, 363
 Yellow Wagtail, 108. *Plates 41, 44*
ZONOTRICHIA albicollis, 363



Coward, T.A.
1919 1

MAY 3 9 59 AM '19
MAY 6 1932

NOV 28 1931

JUL 2 1931

JAN 7 1931

APR 9 1931

AMNH LIBRARY



100105067