Our Bird
Allies

Theodore Wood.
OUR BIRD ALLIES

BY

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PREFACE.

The scheme of the following work is sufficiently explained by its title, and I have only to regret that limitations of space have prevented me from mentioning many birds which I would willingly have described. I have felt, however, that it is desirable to consider at some length those which are more especially beneficial, rather than to treat all alike upon one and the same footing.

I hold, nevertheless, that no British bird is utterly and wholly destructive, but that the misdeeds of even the most mischievous are atoned for in some degree by services rendered to us in other ways. Birds aid us in three distinct manners: firstly, by acting as scavengers, and destroying putrid matter; secondly, by devouring the seeds of the various wild plants which are so troublesome upon cultivated land; thirdly, and most important, by the slaughter of insects. And in one of these three tasks all take their share, lesser or greater as the case may be, but always appreciable and of value.
I may also express my firm conviction that agriculture, as a profitable undertaking, is absolutely dependent upon the preservation of the feathered race. Of all the manifold servants of nature, none are more valuable to us than these, and none more worthy of protection and encouragement to the utmost of our power. And it is to the best interests of those who till the soil that the semi-superstitious prejudices now so prevalent should be dispelled, and that birds, as a class, should receive the treatment which they so thoroughly deserve, and which is yet so generally withheld from them.

In conclusion, I have only to express my obligations to the many correspondents who have given me their kind assistance, and more especially to return my thanks to the Rev. F. O. Morris, the Rev. M. C. H. Bird, and Mr. R. J. W. Purdy, for the original and valuable information with which they have from time to time supplied me.

St. Peter's, Kent.

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CONTENTS.

CHAPTER I.
INTRODUCTORY ... ... ... page 1

CHAPTER II.
HAWKS AND OWLS.

Hawks—Their scarcity in Great Britain—A reign of terror—The Sparrow-hawk—The two sides of its character—The Kestrel—A guiltless sufferer—Mice and the Kestrel—General diet of the bird—A gruesome tale—Flight of the Kestrel—Its nest and eggs—Owls—Their valuable character—The Barn-owl—"Pellets" of rejected matter—Prévost-Paradol on the Barn-owl—Does the bird eat shrews?—Facial discs of the Owl—Their true object—Talons of the Barn-owl—Self-acting muscles—Owl versus Dog—The seamy side of the Barn-owl's character—The Long-eared Owl—Its diet—Its nest and eggs—The Short-eared Owl, and its value to the farmer—The Tawny Owl—Its diet and general character ... ... ... ... page 23

CHAPTER III.
THE NIGHTJAR AND THE SWALLOW.

The Nightjar—Why persecuted—Great value of the bird—The Nightjar and the cockchafer—Mischievous powers of the latter—The entomologist and the Night-
OUR BIRD ALLIES.

jar—A self-acting trap—Cry of the bird—Its domestic arrangements—Swallows—The common Swallow—Its wonderful powers of flight—Food of the bird—How to distinguish the Swallow—The Swift—A feathered Mercury—Uses of the tail—Duration of its stay in Great Britain—Supposed powers of hibernation—The Martin—Its fondness for human companionship—How the nest is made—The Sand-martin—Its sagacity—Birds as excavators—Value of the Swallow and its kin...

CHAPTER IV.

WARBLERS.


CHAPTER V.

TITMICE AND THRUSHES.

Titmice—The Great Tit—Its cannibalistic practices—The Great Tit as a fruit-eater—Its nest and eggs—The Blue Tit—Its valuable services—Does the Blue Tit destroy blossoms?—Nesting arrangements of the bird—The Long-tailed Tit—Its wonderful architectural skill—Number of eggs—A crowded dwelling—
WAGTAILS—The Yellow Wagtail—Nature of its food
—THRUSHES—The Redwing—Its diet and value to
the farmer—The Blackbird—Prévost-Paradol upon its
food—The Blackbird in the fruit-garden—Its value to
mankind—Nest of the Blackbird—Its want of com-
mon sense—A feathered economist—The Thrush—
Its fondness for snails—“Thrush-stones”—General
diet of the bird—Nesting arrangements of the Thrush
—The Fieldfare—FLYCATCHERS—The Spotted Fly-
catcher—Its value to man—A working day of seven-
zeen hours—Nest of the Spotted Flycatcher—The Pied
Flycatcher—Its nest and eggs ... ... page 72

CHAPTER VI.

SHRIKES AND DAWS.

SHRIKES—Their victims and curious larder—A tipsy
Butcher-bird—The Red-backed Shrike—Its fondness
for cockchaferers—Domestic arrangements—Daws—
The Jay—Character of its diet—The Jay in the pre-
serves—The Jay in the corn-fields—A fatal lure—Pro
and con—Waterton on the Jay—Mingled courage and
cowardice of the bird—Its nest and eggs—The Raven
—Its task in the world—The Raven in days of old—
Depredations of the bird—The scavengers of Nature—
The evils of an unbridled tongue—Superstition and
the Raven—Its nesting-places and domestic doings—
The Carrion Crow—Its greatly-reduced numbers—
Food of the Crow—A clever device—Waterton and
the Crow—Character of the bird—The Hooded Crow
—Its mischievous doings—Feathered setters—Nest of
the Hooded Crow—Undeserving sufferers ... page 91

CHAPTER VII.

THE ROOK AND HIS KIN.

THE ROOK—Persecution again—Wiser counsels prevail—
Prévost-Paradol on the Rook—Its occasional mischief
OUR BIRD ALLIES.

—Counterbalancing services—The Rook in the cornfields—The Rook in the turnip-fields—Followers of the plough—Sociable nature of the Rook—Its code of laws—Nesting arrangements—The Rook as a weather prophet—How to distinguish Rooks from Crows

CHAPTER VIII.

THE JACKDAW AND THE STARLING, ETC.

The Jackdaw—Its value to the farmer—Vocal capabilities—A novel use for a Jackdaw—The Magpie—Prevost Paradol once more—Value of the Magpie—Its architectural skill—The uses of a disused nest—The Chough—The Starling—Is the bird a poacher?—Food of the Starling—How its victims are captured—Starlings and cattle—The Starling near Chelmsford—Its amazing numbers—Starlings in newly-sown grass—A feathered host and their guide—Nest of the Starling ...

CHAPTER IX.

FINCHES.

CHAPTER X.

THE SPARROW; ITS VICES.

THE SPARROW—Its character, real and supposed—The balance of evidence—Farmers and their prejudices—Accusations against the bird—The Sparrow in the corn-field—The Sparrow as a bailiff—The Sparrow as a destroyer of thatch—The Sparrow as a destroyer of buds—A lady and her arguments—The Sparrow as a politician—The Sparrow in America and New Zealand—Concluding remarks ... ... ... page 149

CHAPTER XI.

THE SPARROW; ITS VIRTUES.

The case for the defence—Prévost-Paradol on the Sparrow—How the young are fed—33,600 caterpillars in ten weeks—Mischievous powers of a caterpillar—The Sparrow perforce an insect-hunter during many months of the year—*Sitones* weevils and the Sparrow—The cabbage butterfly and the Sparrow—The Sparrow in the fruit-garden—The Sparrow at Maine and Auxerre—Sparrow versus Martin—Martins the usurpers—The Sparrow as a destroyer of thatch—Sparrows and buds—Sparrows and their political views—The Sparrow in America and New Zealand—Acclimatisation and its dangers—A plausible theory—The Sparrow and wild seeds—Summing-up and verdict—Domestic life of the Sparrow ... ... ... ... page 160

CHAPTER XII.

LARKS, WOODPECKERS, ETC.

LARKS—The Skylark—Its food and general character—A hint to farmers—Song of the Lark—The bird in
OUR BIRD ALLIES.

captivity—Larks for the table—Nest and eggs of the Skylark—WOODPECKERS—Unappreciated benefactors—Work of the Woodpeckers—Their wonderful structure—The Great Spotted Woodpecker—Its habits and doings—Distrust of man—Nest of the Woodpecker—Defective sanitary arrangements—The Cuckoo—Its valuable services—Life-history—Maternity by deputy—An interesting exhibit—Why is not the Cuckoo a nest-builder?

CHAPTER XIII.

GAME BIRDS, GULLS, ETC.


CONCLUSION
OUR BIRD ALLIES.

CHAPTER I.

INTRODUCTORY.

NOT the least striking of the many inevitable results of human civilisation is the complete alteration which consequently takes place in the relationship existing between man and the lower animals.

Man, as a primæval and wholly uncivilised being, as a mere animal differing only in his higher organisation from those standing nearest to himself in the natural scale, is at enmity only with those creatures which, from their superior size and strength, are able to prey upon him, or upon which he himself is accustomed to depend for food. In other words, he stands precisely upon a level with every other member of the animal kingdom as regards his natural foes. Of natural friends he has none, save those which are equally friends to the majority of their fellow-creatures, for, keeping no cattle and cultivating no crops, the different beings which might aid him in these
occupations hold with regard to him a perfectly neutral position.

But, with his first step in the long ascent of intellectual advance, his relations with animals undergo a total change. He tills the ground, and in so doing dispossesses from their natural dwelling-places a number of creatures with which previously he never interfered. He takes various plants into cultivation, and *ipso facto* converts from neutrals into enemies the beings which find in those plants their food. He captures certain animals upon whose flesh he wishes to feed, and places them under domestication, in order that they may be always ready to his hand, without the necessity for constantly undertaking the toils of a long and arduous chase; and thus he incurs the direct enmity of the parasites by which those animals are infested. He cuts down trees, and uses the wood for the construction of his dwellings, only to find that that wood is the chosen home of multitudes of insects, which bore into its very heart, and in course of time reduce it to the mere skeleton of its former self. He stores skins and fleeces to serve him for raiment, and finds that they, too, are the appointed food of certain creatures, which now, in carrying out a mission formerly beneficial, are injuring him in place of rendering assistance. And so, by his own act, and in a hundred different ways, man upsets the working of the natural laws, and at once and for ever entirely alters his position with regard to a large and important section of his fellow-beings.
Nor is this all, for the change which he has brought about in the natural balance is as the ripple caused by a heavy stone falling into a pool, which extends itself in an ever-increasing degree until the banks themselves are reached. No one circle, so to speak, of nature is complete in itself, but each forms a link in an endless and endlessly-interwoven chain, whereof every part is more or less intimately connected with every other.

And thus man's catalogue of enemies and friends is practically limited only by the bounds of creation. There is a first, or inmost circle, if we may use the expression, composed of directly and appreciably hostile beings. Each of these beings has its own circles respectively of friends and foes, which, mutatis mutandis, must therefore be inversely ranked as the foes and friends of man in a secondary degree—foes and friends once removed. These, in their turn, have their own friends and foes, which again exert an indirect but unquestionable influence upon man; and so in an ever-widening circle, which grows in complexity as it increases in size.

So with man's friends. Animals which render the world more fit for his habitation; which help him to till the soil and force it to bear its increase; which prosecute an unfailing campaign against others which injure him; which by their superior strength, aided and directed by his intellect, supplement his labours by their own: all these are his friends, and in their turn are objects of friendship or hostility to circle after circle of beings more or less closely connected.
with themselves. And thus man, by the one fact of his civilisation, launches himself upon an endless combat with one division of animated nature, and an equally endless coalition with the other, every species existing upon the earth being in some manner and degree linked to that first small band, the members of which are either directly injurious or directly beneficial to the interests of the human race.

But it must be borne in mind—and to this point I wish to direct particular attention—that there is a great and most important difference between the two groups of beings, the friendly and the unfriendly. And this, briefly stated, is as follows:—

The ravages of the latter, which injure his crops, which decimate his herds, which reduce to a mere mass of crumbling dust the mightiest works of his hands, are at once visible and appreciable; both the effect and its cause lie unmistakably before him. The good services of the former, on the contrary, are in almost every case concealed from his view. And consequently is manifested a tendency, mischievous enough in its results, to attach undue weight to the doings of the one, and at the same time to pass by unnoticed, in greater or less degree, the equally important labours of the other.

When the locust arrives in its numberless hordes, and leaves the land over which it has passed, in Scriptural phrase, "a desolate wilderness," we see the destroyer, and we realise its power. When the terrible tsetse kills off the team of the African traveller, and leaves him dependent upon his own
personal strength for labours for which that strength is wholly inadequate, he again sees and bears in mind both the cause and its effect. When, once more, the termite gains access to our dwellings, and honey-combs the woodwork so completely that not one cubic inch of solid material is left untouched, we cannot fail to take note of the insect which has caused so great an amount of damage, both the worker and its work, in fact, being not merely noticeable, but forced upon our notice.

But it is far otherwise in the case of our natural friends, whose work, for the most part, although equally influential and important, is carried on in secret. If a flock of birds detect the first small body of locusts, possible progenitors of a future legion, and destroy them before they can find an opportunity of laying their eggs, man is none the wiser. Those birds, by that one act, have saved him, perhaps, from the loss of a whole year's produce; but he knows not the danger which he has escaped. If a parasite prey upon the parasite, and diminish its capabilities for mischief by reducing its numbers, man is unacquainted with the inestimable service thus rendered to him. He finds, later on, that the swarms of locust or tsetse do not make their dreaded appearance, but he remains in ignorance of the cause which has saved him from their ravages. He sees, perhaps, the insectivorous bird, and he sees the hyper-parasite, but he does not connect them with the immunity which he enjoys from the depredations of the creatures so injurious to his interests. And thus, constantly
noticing enemies, and seldom recognising friends, he comes by degrees to receive the impression that the great majority, if not the whole, of living beings are at war with himself, and that he has very much to lose from Nature, and very little to gain.

The evil doings of Nature, indeed, are flaunted in our faces, as though she were ostentatiously proud of her power; her good deeds are carefully concealed from us, as though she were half ashamed of them, and only by long and careful search can we find them out. And, in far too many cases, from want of this study, and acting upon our preconceived impressions, we not only fail to appreciate the benefits conferred on us by friendly beings, but, led astray by imperfect observations and false theories, actually persecute and destroy our natural and invaluable allies.

In no group of creatures has this unfortunate tendency been more strikingly exemplified than in that of the Birds, with which we are brought more closely into contact, perhaps, than with the members of any other of the great divisions of the animal world. Almost from the earliest times of which we have any agricultural record, birds, as a class, have been treated as the foes of the husbandman, and no efforts have been spared, and no efforts are in many cases spared even now, to reduce or even to exterminate them, in the hope of preserving the crops from their real or supposed depredations.

There is something to be said upon the side of the
farmer, no doubt. Few birds, it must be frankly confessed, are wholly and absolutely beneficial throughout their lives. One may feed for eleven months of the year entirely upon insects, but in the twelfth may consume a considerable quantity of fruit, and so appear for a time in the false character of a mischievous being. And to appreciate the visible damage caused is an easy task, to weigh the secret benefits conferred a difficult one.

Another may devour tolerably equal quantities of grain, or other human produce, and of insects, thus leading the farmer, not unnaturally, to suppose, upon a careful investigation of its diet, that it is at least as much an enemy as a friend.

But in this assumption again there is a fallacy. A grain of corn devoured by the bird is a grain, or at most, and in comparatively few instances, an ultimate ear of corn lost, and no more; for, whatever the results of the harvest, an adequate amount of seed corn must be saved, and the grain eaten by the bird is therefore drawn only from the profits of that individual crop, and not from the provision for a future one. But an insect killed by the same bird is not merely a destroyer destroyed, but may, and very frequently does, represent many hundreds of grains of corn, or their equivalent in another crop, saved. An insect's life, be it remembered, is, generally speaking, a long one, and its powers of mischief, if it happen to be injurious, far greater than any one but an entomologist would deem possible. And if this insect's life be cut short while yet its tale of mischief
is incomplete, if not only its personal capabilities for evil be ended, but also its power of giving rise to a future generation, all with equally great mischievous capacities and reproductive powers of their own, the service rendered by the bird in that one act counterbalances a long list of the losses which the farmer may suffer from its own occasional thefts.

And the immense majority of the insects killed by birds are killed before the great aim and object of their existence is achieved. For the provision for a future generation, in the insect world, is in nearly every instance followed by almost immediate death, so that an insect slain while carrying on its ordinary avocations is presumably an insect which has not laid its eggs; while, in the case of the eggs themselves, the grubs, and the pupae, all of which are largely devoured by birds, there can, of course, be no possible doubt upon the subject.

And there are very few birds indeed whose diet does not consist in some degree of insects and other injurious creatures; while, even by the exceptional few which are strictly vegetarian, and thus apparently hostile throughout their entire existence, so large an amount of wild seeds is devoured, more especially of such troublesome weeds as the groundsel, the thistle, the dandelion, the cherlock, and the many others which disfigure and exhaust cultivated soil, that agriculture is benefited in one way by the very creatures which injure it in another. Even the wood-pigeon itself, in whose behalf it is difficult to say a word, takes its share in this branch of the good work, and com-
pensates in some degree for the terrible mischief which it causes in other ways.

So it often is with Nature, who, at one and the same time, is an open enemy and a secret friend. Visibly she strives against us; invisibly she aids us. What she takes with one hand in the view of all, she restores, often immeasurably augmented, as it were surreptitiously with the other. She resents man’s interference with her arrangements, and resents it bitterly, and yet she assists him in ways many and various to carry that interference to a successful conclusion. And man, carelessly ignorant of all that with which he is not actually brought face to face, sees only the evil and passes by the good, and the years roll by and leave him still imbued with the almost superstitious prejudices of his forefathers, working against his own interests with all his energies, and blind to aught that might convince him of his mistakes.

An animal helps him throughout its life, and he persecutes it to the utmost of his power. Another injures him seriously, and he kills off the creatures which Nature has appointed to restrain its increase within due limits. And thus his life and labour form one long opposition to natural laws, and he persistently strives, by every practicable means, both to increase the already numerous difficulties which beset him, and to alienate or even altogether destroy the very beings by whose assistance alone he can hope to win the victory.

It is frequently urged, and with much apparent
show of reason, that, although certain birds are undoubtedly beneficial in some degree, we have allowed their numbers to increase beyond their natural bounds, owing to our wholesale destruction of hawks and other creatures appointed to prey upon them. Consequently, it is asserted, care for our own interests compels us to reduce their abundance to such an extent as may still enable them to perform their good work, and yet prevent them, on account of superfluity of numbers, from altering their position towards us, and becoming a curse instead of a blessing.

This theory, however, like many others which involve interference with natural provisions, falls to the ground as soon as it is looked into. For have we not, by our own folly and that of our predecessors in the past, encouraged the increase of certain destructive insects, and so created the need for more birds than Nature, if left to herself, would have found it necessary to provide? More than that, have we not persecuted the small birds as well as the large, thus not only neutralising the effect of our destruction of hawks, &c., but doing upon a greater scale that which Nature would have performed on a less? And is not this relentless persecution carried on to the present day?

How many birds, even of the obviously beneficial species, fall victims each year to the cockney "sportsman" or to the village gunner, both of whom, merely for the love of slaughter, shoot every feathered creature which is unfortunate enough to cross their path? How many nests and eggs are destroyed every spring to assist in the formation of a collection
—not a scientific collection, but one to be treated and considered much as a collection of crests or monograms? And the nest-hunting schoolboy is by no means the only offender in this respect. How many adult birds are killed off by agriculturists, owing to mistaken ideas of their character? Still more unpardonable, because justified by no possible shadow of excuse, how many thousands—nay, how many millions—are annually slain, that their plumage may aid in the so-called adornment of feminine costume?

As few are acquainted with the extent of this shameful traffic, I quote the statistics of a single metropolitan auction-room for the first four months of the year 1885. In that short period of time, and in that one room, were sold more than seven hundred and sixty thousand skins of West Indian, Brazilian, and Indian birds, besides thousands of Impeyan pheasants, birds of paradise, and others from different parts of the world. And even this number, appalling as it is in its magnitude, represents little more than two-thirds of the victims slain to supply this one small branch of the trade, a large proportion necessarily being so mutilated in the slaughter as to render them totally worthless for purposes of commerce.

All countries alike, from the Arctic regions to the Tropics, are called upon to yield their quota of victims to this hateful and deplorable fashion. From a leading article in one of the daily newspapers we learn that forty thousand terns, or sea-swallows, were
killed at Cape Cod alone in a single year for exportation to the millinery establishments of Europe; that near Philadelphia one million rails and reed-birds (or "bob-o-links") were killed in the same time for the same purpose; and that one New York merchant estimates his daily trade at three hundred skins in a favourable season. Humming-birds, those gems of the feathered race, are rapidly becoming extinct; paradise birds, already greatly lessened in numbers, are travelling the same path, although at a slower rate; and there is, in fact, scarcely a known bird which could by any possibility be utilised in this abominable trade that has not been persecuted to a serious extent.

If yet further evidence be required, it may be found in an admirable article recently published by the Animal World, from which I quote the following passages:—

"The Cork Constitution recently advertised that 12,000 sea-gulls were wanted; and it added, that 'clean birds are indispensable, as the feathers are required for the decoration of ladies' attire.'

"A well-known journal (Forest and Stream) mentions a dealer who, during a trip to South Carolina last spring, prepared 11,018 bird-skins, and 'the person referred to handles, on an average, 30,000 skins per annum, of which the greater part are cut up for millinery purposes.'

"'An enterprising person,' says the Sun (Baltimore), 'has contracted with a Paris millinery firm to deliver, during the present summer, 40,000 bird-
INTRODUCTORY.

At forty cents apiece. ... The birds comprised in this wholesale slaughter are mainly the different species of gulls and terns, or sea-swallows, of which large numbers could formerly be found.

"A high-class American journal (Science) contains a supplement devoted to this subject. It says that '... the same sad havoc has been wrought with the egrets and herons along our southern shores, the statistics of which, could they be presented, would be of startling magnitude. We only know that colonies numbering hundreds, and even thousands, of pairs have been simply annihilated—wholly wiped out of existence—in supplying the exhaustless demand for egret plumes. The heronries of Florida suffered first and most severely; later, the slaughter was extended to other portions of the Gulf Coast. As an instance of the scale on which these operations are carried, it may be mentioned that one of our well-known ornithologists, while on an exploring tour in Texas, heard an agent of the millinery trade soliciting a sportsman to procure for him the plumes of 10,000 white egrets. ... Grebes are used to such an extent that the source of the abundant supply was not at first evident, owing to the comparative scarcity of the birds in the Atlantic states. It is found, however, that the supply is derived from the far West, mainly from the Pacific shore, where these birds are more abundant, and whence their skins are brought east in bales, like the peltries of the furriers or the "robes" of the bison. The number must range
Our Bird Allies.

far into the tens, if not hundreds, of thousands annually. "A few weeks ago we asked one of the largest London firms to oblige us by posting a catalogue of real birds they had on sale. The list came, and consisted of mixed birds, mixed humming-birds, golden-breasts, canaries, paroquets, choice picked birds, merles, cardinal birds, &c.; 306,000 in all.

"A society paper announced the other day that a woman appeared at a ball carrying on her person as many as sixty little birds; while a dressmaker had received an order to put one hundred and four birds on a single garment."

Comment upon statements such as these is scarcely necessary, and I need only ask my readers to bear in mind that the cases instanced are but a few out of many, a mere sample of many hundreds equally shameful and indefensible.

Nor is this wholesale destruction confined to exotic birds alone, for myriads of larks, sparrows, robins, starlings, &c., are now annually killed, and their plumage so dyed as to resemble that of others which have already been persecuted to the very verge of extinction. Only a few weeks ago the society papers recorded the appearance of a lady in a dress trimmed with robins, and, although she was very properly ostracised by the remainder of the company, it is to be feared that the disfavour with which she met was due rather to the halo of semi-superstitious sentiment surrounding the robin, than to the fact that fifty or more useful lives had been sacrificed, in order that one inordinately vain and silly woman might for a few
hours decorate her person with the victims of her wicked and barbarous cruelty.

And, as Mr. R. Bowdler Sharpe well remarks in a recent contribution to one of the scientific magazines, this most culpable fashion, involving a wanton destruction of life utterly appalling in its extent, is not confined to the women of the higher classes alone. "The difference," to quote his own words, "between the factory-girl and the high-born lady is only one of degree, the former paying as many halfpence for the starling's wing in its natural state as the latter does in shillings for the same article, dyed or gilt out of recognition as it may be." One of the most striking and contemptible features in the present fashion of dress is its tendency to servile imitation, a tendency which induces women to voluntarily inflict upon themselves severe physical discomfort, or even acute and prolonged suffering, merely because a few recognised "leaders" are foolish enough to set the example. And if these "leaders," in their unceasing attempts to introduce some novelty into the all-absorbing study of personal decoration, appear in public tricked out with these blood-stained ornaments, hundreds of thousands of others, from the highest class to the lowest, will follow in their footsteps. Nor, the mischief once done, can they quell the spirit which they have raised. Throughout the length and breadth of the land their vanity bears its inevitable fruit. Like some vast network, its ramifications spread far beyond their reach; and, though they themselves, the original and responsible
offenders, may come to repent of their deed, years must pass before its consequences can be considered as finally at an end.

It may be urged that this terrible and baleful waste of life is, after all, due more to thoughtlessness than to set design, that women originate and follow the fashion in question without considering all that it involves, and that, therefore, they are less to blame than would at first sight appear. Perhaps. But thoughtlessness carried beyond a certain point becomes a sin; and when it involves, not only a destruction of living and beneficial beings frightful in its almost illimitable extent, but also an irreparable and constantly-increasing injury to the entire world, no words can be too strong, no condemnation too severe, with which to judge and visit it.

Let it be remembered that this world of ours is but an entailed inheritance, and that we are morally bound to hand it to our successors in a condition better, if possible, than that in which we found it. Can we do so if we upset all Nature's laws? Can we exterminate a large and highly-influential class of beings without entirely altering the natural balance? Can we justify our conduct in depriving both ourselves and those who will follow us of the most useful allies which could possibly have been provided for us? And can we afford, for a purpose so altogether trivial as personal adornment, to incur the annual expenditure of it may be millions of pounds, in performing work which would otherwise have been taken off our hands?
The sentimental view of the subject I leave to be treated by others. But I say that its practical side is a matter of supreme importance, that it is a question which will admit of neither evasion nor neglect, and that the greatest danger with which agriculture is, or ever has been, threatened lies in the wholesale destruction of birds now being carried on. Birds, from their very nature, are beings with whom the farmer is brought closely and constantly into contact; their influence upon his avocations is so great that his failure or success must always to them in great measure be due. And as a loss to the farmers is equally, although indirectly, a loss to the entire community, we are all personally concerned in the settlement of a question the importance of which can scarcely be estimated too highly.

In weighing the merits and demerits of any individual bird there is much to be considered, and the task is one which can only be satisfactorily accomplished by the co-operation of a number of independent observers, every one of whom must be thoroughly competent, not only to observe, but also to form trustworthy deductions from the facts which come beneath his notice.

To find out and bring together such men is by no means a light undertaking, more especially as they cannot, save in a few and exceptional instances, be drawn from the ranks of those who are chiefly interested in the results of their investigations, and to whom one would naturally turn for information upon
the subject. A report upon injurious or beneficial creatures of any kind which is principally based upon the evidence of agriculturists themselves is not worth the paper upon which it is written. So wide an allowance must be made for the influence of the various prejudices which are handed down from one generation to another, and for the ignorance which prevails even when prejudice is wanting, that little or nothing remains which can possibly prove of service, either to the farmer, by distinguishing his friends from his foes, or to the large group of misunderstood creatures by revealing to their human persecutors the true character of their influence in the world.

There are men in the ranks of the agriculturists, no doubt, who are justly regarded as exceptions to the ordinary rule, and who not only observe and reason for themselves, but distrust the verdict of others if it should prove irreconcilable with their own observations. But such men are still very few, and many even of those farming upon the largest scale are as ignorant of the commonest facts of nature as if from their earliest childhood they had never passed without the precincts of a town.

Only a few days before writing these lines I received a striking confirmation of this statement from a correspondent, who writes as follows:—

"I was walking one day with the well-known agriculturist, Mr. ——, and he mistook a fly-catcher (sitting on a fence within a dozen yards of us) for a sparrow, and would have had it killed as one!"

And there are very few farmers indeed who possess
any real knowledge of the economy of the various creatures which they see around them. They do not know how to observe; they do not even recognise the necessity for observation. But they are contented, on the principle that "what was good enough for my father is good enough for me," to accept with blind and unquestioning faith the wild and absurd traditions which are still surprisingly prevalent in country districts; they ignore all that would tend to convince them of their error; and they work against their own interests by the very means which they take to further them. Of what value is the testimony of such men as these, the vast majority, be it remembered, of the farming race?

No evidence should be accepted save from men who, in some degree at least, are both ornithologists and entomologists—and by the former term I do not mean a collector of birds, nor by the latter a collector of insects. Each observer should possess sufficient knowledge to enable him to identify both the insects which attack the crops and the birds which attack the insects. He should also be thoroughly acquainted with the life-histories of the former, in order to gain a true conception of the amount of mischief of which they are capable under the most favourable circumstances; and he should be equally familiar with the economy of the latter, in order that he may judge in what numbers the insects in question are killed.

Nor is it enough merely to ascertain that the food of a bird consists in such a degree of insects, for he must also take into consideration, in the case of each
bird separately, the proportion of insects, &c., to the
gross amount of its annual food, the character of
those insects, whether injurious, friendly, or neutral, the
amount of wild seeds which it destroys, the mischief,
if any, which it causes by devouring fruit or grain, and
the good or evil which it may cause in any manner
peculiar to itself. Then must he balance with the
utmost care the debtor account against the creditor,
and finally, by comparing his own conclusions with
those of others, he must ascertain whether he has
given due importance, and neither more nor less, to
every branch of his investigation. And not until
this has been done by qualified and trustworthy
observers in all parts of the country can we pretend
to judge, with any degree of certainty, upon the true
value of any bird in its relationship to the interests of
mankind.

And, even should the final verdict prove adverse,
a word of warning is necessary with regard to our
subsequent proceedings. A war between man and
bird may perhaps be inevitable, but—it must not be
a war of extermination. No matter how mischievous
an animal may be, its numbers should never be
reduced beyond the point at which it ceases to be
injurious to man; for it must be borne in mind that
in so doing we cannot but disturb the whole balance
of Nature, and thus very possibly bring upon our-
selves a calamity far worse than that which we
attempted to avert.

Let us suppose, by way of illustration, that we
utterly destroy such an insect as the cabbage butter-
fly, concerning whose injurious propensities there can be no manner of doubt. We save our cabbages for the time, perhaps, but we sweep away the appointed food of many other creatures, which Nature had appointed to restrain the increase of the butterfly within due limits. Now, these creatures must either find for themselves a different food, or die. In all probability they choose the former alternative, and attach themselves as parasites to some other being, very likely of a beneficial character, whose labours for good they now restrict just as they formerly restricted those of its predecessor for evil. And so we should lose in one way what we had gained in another, while the secondary and indirect consequences of our act might very possibly prove of a still more harmful and disastrous nature.

Some birds, of course, are far more useful than others, and with these I shall deal in the following pages, setting forth and laying stress upon their services, and at the same time showing as fairly and impartially as possible the mischief by which those services are sometimes qualified. Before entering upon this task, however, I must once more remind the reader that an insect killed and a grain of corn destroyed by the same bird do not counterbalance one another, but that, speaking with moderation, the insect killed is equivalent to forty or fifty grains of corn saved; with this difference, that the loss of the latter is immediately felt, while the gain caused by the
slaughter of the former is spread over a considerable period, increasing, meanwhile, at a sort of compound and very high interest.

The farmer, therefore, in tolerating or encouraging such birds, mischievous at one time but useful at another, enters upon an investment, so to speak, and submits to a present and small loss to insure a future and greater gain. He sinks capital, in fact, in order that he may obtain profits. And there is this great advantage, that, by merely scaring the birds from his fields during their season of mischief, instead of mercilessly shooting them down, he can reduce the necessary outlay of capital—and reduce it largely—and at the same time obtain his profits in undiminished measure; while his expenses in so doing will be no greater than if he adhere to the ordinary system.

Paradoxical as the statement may appear, our wisest plan in the struggle with Nature is to enlist Nature herself as our ally. Her power is far too great for us to overcome in fair fight. If we persist in opposing her, there can be but one possible result, and that a disastrous one for ourselves. But by taking advantage of her sympathy with us, by accepting the hand which she holds out to us in friendship, and by meeting her overtures half way with our own, we can ensure for ourselves success far greater than any which, by reliance upon our own unaided and impotent efforts, we can ever hope to attain.
CHAPTER II.

HAWKS AND OWLS.


Thanks to the gun of the farmer, the gamekeeper, and the amateur naturalist, the once extensive catalogue of British hawks is now practically represented by two species only. The Eagle, the Peregrine Falcon, and the Goshawk have been banished to the far north, where, among their mountain fastnesses, they yet linger, although in numbers sadly diminished. The Osprey, from a regular inhabitant of the country, has been reduced to the position of an occasional visitor; the Buzzard and the Kite, once plentiful enough, are almost extinct as far as the English counties are concerned; and the Merlin, the Hobby,
and the Harriers can make their appearance only at the imminent risk of their lives. But for the Sparrowhawk and the Kestrel, in fact, the hawk tribe would be almost unrepresented in Great Britain; and even these two comparatively favoured species have been so persecuted for many years past, that to catch sight of them is fast becoming a noteworthy event in a country ramble.

The following extract from one of the Rev. F. O. Morris's "Letters to the Times" shows to what a terrible extent the slaughter of birds of prey has been carried in some parts of the country:—

"Only the other day a cousin of mine in the North Riding sent me, quite casually, the following list of birds of prey destroyed on one estate alone—Glengarry, in Scotland—in three years, namely, between 1837 and 1840. No wonder that some of them are totally extinct now, and others all but so, for the same work of destruction has been carried on, more or less, ever since. The list is by Mr. A. E. Knox. Here it is:—

"'27 white-tailed eagles, 15 golden eagles, 18 ospreys or fishing eagles, 98 blue hawks, 275 kites, 5 marsh-harriers, 63 goshawks, 7 orange-legged falcons, 11 hobby-hawks, 285 common buzzards, 371 rough-legged buzzards, 5 honey-buzzards, 462 kestrels, 78 mulen-hawks, 83 hen-harriers, 9 ash-coloured hawks, 6 ger-falcons, 1,437 hooded and carrion crows, 475 ravens, 35 horned owls, 71 common fern-owls, 3 golden owl, barn, or white owl, comparatively rare in Scotland, and 8 magpies.'"

As far as the Sparrow-hawk is concerned, it must
be owned that there is some justification for his slaughter; for both the poultry-yard and the covert are among his favourite hunting-grounds, and his frequent depredations therein of course tell very much in his disfavour. But, like almost all other mischievous creatures, he has his redeeming features,

and, as the late Mr. E. Newman well remarks, if left to himself will save the wages of at least three boys, merely by scaring the sparrows from the ripening corn. Mice are also frequently numbered among his victims, and upon the mischievous capabilities of these little creatures it is needless to enlarge.
On the other hand, poultry, and more especially game animals, suffer very considerably at the hands—or rather talons—of this hawk. Swooping suddenly and silently from some coign of vantage, a hapless chick or duckling is carried off before it is aware of its danger, and the hawk secures its retreat long before the theft is discovered. Or, it makes a raid upon the domains of the gamekeeper, and wreaks havoc among the young pheasants and partridges which have been tended with so much care. Nor does a leveret or a young rabbit come amiss to it, and, its appetite being practically insatiable, it may well be understood that its presence in a preserve is by no means a thing to be desired.

Here let me draw a broad distinction, however, between the mischief caused by such birds as this, which are chiefly noxious on account of their game-loving propensities, and that of others which feed upon grain or other agricultural produce, and so directly injure the food of the people. Game, as it is at present preserved, is a luxury restricted to a certain class, and nothing more. It is most irrational, therefore, to treat upon a common level creatures which occasionally make free with a partridge or a pheasant, and so injure a comparatively small minority, and others that devastate the crops which are to all alike a necessary of life. The sparrow-hawk and the wood-pigeon are both exceedingly mischievous, the one, as already stated, ransacking the coverts, and the other devouring immense quantities of corn and pulses; but between the amount of true harm wrought
by these birds respectively there can be no possible comparison.

Far more useful than the sparrow-hawk is the well-known Kestrel, or Wind-hover, which, unfortunately, is only too frequently confounded with its unpopular relative, and doomed to expiate the misdeeds of another: a kind of feathered "whipping-boy." There can be little doubt, also, that it frequently suffers in consequence of its family characters. A hawk is a hawk to many an unobservant farmer
or gamekeeper, and the possibility that a member of the hated race may almost wholly confine its attentions to non-preserved and highly injurious creatures is an idea that never enters into his imagination. And so, only too often is the kestrel to be seen adorning the barn-door, or the “keeper’s tree,” in company with the various unfortunate beings which are collectively ranked and treated as “vermin.”

According to a computation made many years ago by an experienced observer, each individual kestrel destroys, upon an average, during its stay in this country—roughly speaking, from February until October—no less than ten thousand mice. Whether this conclusion be exact or not, there can be no doubt that the number of these small rodents which annually fall victims to the bird is simply enormous. But for the labours of the kestrel by day, in fact, and of the owl by night, we should stand in considerable danger of sharing the fate of Bishop Hatto—save that mice would take the place of their larger relatives—and of being devoured, with all our substance, by our tiny but irresistible enemies.

Mice, however, do not form the entire food of the kestrel, for it is particularly fond of certain beetles, and is especially serviceable in preying upon the cockchafer and the June-bug, which, as grubs, devastate various crops by gnawing through the roots, and, as perfect insects, are almost equally mischievous by stripping trees of their foliage. These it captures and devours without pausing in its flight, deftly seizing its victim in its claws as it dashes past, and trans-
ferring the captive to its beak almost by the self-same movement.

Should neither mice nor beetles be forthcoming, the bird disdains not to alight upon the ground and thereon to search for insects, or even to pull unwary earthworms from their burrows. Sometimes, when pressed by hunger, it will attack a small bird, or even make a repast upon a young partridge or a pheasant; and we have more than one well-authenticated report of kestrels swooping suddenly over a stream, and snatching therefrom a hapless fish which was basking too near the surface. Such lapses from the path of virtue, however, upon the part of the kestrel are very few and far between, and, save under exceptional conditions, the bird may be considered as the unqualified friend of man.

According to Mr. R. Bowdler Sharpe, this bird, under certain circumstances, is apt to "make its generation messes to gorge its appetite." He tells us a gruesome story, at any rate, of four specimens, a male and three females, which he had for some time in his possession, and which, upon one occasion, were accidentally left for a few hours without food. The hens, unable to restrain their appetite, banded together and set upon the unfortunate cock, who was the smallest and weakest of the party, and by the time that a supply of the legitimate food arrived, only a few feathers remained to bear witness to the tragedy which had been enacted.

Most of us are familiar with the appearance of the kestrel, as it hovers motionless in the air many
hundreds of feet above the ground. Its sight is so wonderfully keen, however, that even from this great height it can discern an insect crawling upon the surface of the ground, and swoop with unerring precision upon its victim. More astonishing still, perhaps, than its mere keenness of sight is the ease with which its eyes adapt themselves to the fast-changing focus during its rapid descent, serving their owner as well when only two inches from the quarry as when, hundreds of feet above, they first detected its presence.

Following the fashion set by many of its kin, the kestrel is remarkably averse to building a nest upon its own account when it can find one ready made which will suit its purpose. The deserted abodes of jays, magpies, crows, or pigeons, are commonly in request, and every nest-hunter knows how frequently these "last year's" tenements will yield the handsome, ruddy eggs, which form such conspicuous objects in a collection. These eggs are generally five in number, one of which is generally much smaller than the rest, and the colour and markings are somewhat variable. The ground colour, however, is almost always some shade of reddish-brown, marked with darker blotches which differ considerably in size and form.

Closely connected with the hawks are the Owls, those strange creatures of the night which are even now regarded in many parts of the country with a sort of superstitious reverence. To see an owl is
“unlucky,” to hear its hoot very unlucky indeed, and the bird is almost as much feared by the rustic mind as in the days when it was looked upon as the chosen attendant of witches and wizards, with their fearsome following, and the incarnation and concentration of all that was evil and unhallowed.

The screech-owl, screeching loud,
Puts the wretch that lies in woe
In remembrance of a shroud.

So wrote Shakespeare three hundred years ago, and so, with almost equal truth, might be written now, for even yet the harmless and useful owl is looked upon by the lower classes more as an emissary from the powers of darkness than as a kind of nocturnal hawk, taking up by night the work which the kestrel carries on by day.

It is really a difficult matter to say which is the more valuable bird of the two. We have already seen how untiring is the combat which the kestrel wages against the smaller rodents, but the owl, perhaps, has even greater opportunities, and no one can assert that it fails to make use of them. Waterton tells us, in one of his celebrated essays, that, during the nesting season, the barn-owl brings a mouse to its young every twelve or fifteen minutes. Also that every pellet rejected by the bird contains the skeletons of from four to seven mice, and that, in the course of sixteen months, no less than a bushel of such pellets were taken from the abode of a single pair of owls.

And evidence with regard to the barn-owl is, for a wonder, strikingly unanimous. It is persecuted, no
doubt, by ignorant farmers and gamekeepers who know nothing of its ways and doings, but all who have troubled themselves to ascertain the true nature of its work in the world agree in regarding it as the consistent friend of man, with scarcely a blemish in its character.

Prévost-Paradol, from whose researches into the diet of birds I shall have frequent occasion to quote in the course of the following pages, states that, in barn-owls dissected by himself during every month of the year, the contents of the stomach consisted of mice, field-mice, and shrews, the latter being in a considerable minority.
It is sometimes thought that shrews, although killed by the barn-owl, are invariably refused by the bird as food; and it has even been suggested that the owl confounds them with true mice, and slaughters them by mistake. Such, however, is not the case, for a careful examination of the pellets rejected by the bird proves the contrary beyond possibility of dispute. Dr. Altam, a German naturalist, showed this to be the case as long ago as the year 1862, when he published the result of an examination of seven hundred and six pellets of the barn-owl. The principal remains found in these consisted of sixteen bats, three rats, two hundred and thirty-seven mice, six hundred and ninety-three field-mice, fifteen hundred and ninety shrews, and twenty-two birds—incontrovertible evidence that the owl is not too dainty to devour the shrews which it captures.

Now and then the barn-owl varies its diet with fish, eels, large insects, &c., the latter consisting principally of the various ground-beetles which stir abroad only after darkness has fairly set in. The wonderfully keen vision of the owl, however, enables it to detect a far smaller object than many a ground-beetle; its eyes, indeed, seeming to be almost as sharp by night as are those of the kestrel by day.

It is commonly thought that the bird owes its singular powers of vision to the large feathery discs which surround the eyes, and which are supposed to concentrate the rays of light upon them. Waterton,
in one of his published letters, employed his powers of sarcasm upon this theory with crushing effect, although he did not think it necessary to put forward any more plausible explanation:—

"Supposing your theory to be true," he writes, "then indeed has Dame Nature most cruelly punished your 'type,' the barn-owl; for even in the month of June she directs this bird to hunt for mice, and she shows it how to catch them when the sun is blazing in a cloudless sky. This I myself have seen repeatedly. To what intense pain must this poor bird be doomed, if its feathery 'facial disc' has the power of reflecting the burning rays of the sun upon its eye! If the facial disc could reflect this, the barn-owl would assuredly be aware of it, and she would either, in common prudence, keep her room till nightfall, or borrow a parasol to protect her eyesight from the flaming luminary.

"If the dame judged it necessary to furnish your 'type' with this 'facial disc,' in order to increase its power of nocturnal vision, we must lament that the bittern, the heron, the wild duck, and many others have been sadly neglected by her; for none of these birds have that which you term 'facial disc,' still they all search for food in the darkest night, and wing their way in safety through the darkest sky."

Strangely enough, Waterton omits to mention two far more conclusive arguments, which of themselves are amply sufficient to refute the theory in question. The first of these is that in many owls the feathers of the disc are brown, and so would absorb the light
rather than reflect it to the eye. The second is that, in order to see any given object, the eye is only concerned with those rays of light which proceed directly from that object to itself; in other words, the object, and not the eye, must be illuminated. Light arriving from any other quarter serves merely to dazzle, a fact abundantly proved by our instinctive habit of shielding our eyes from a bright sun when gazing intently at a distant object. A telescope, again, shuts off all rays save those proceeding directly to the eye from the object upon which it is directed, thus greatly relieving the optic nerve by freeing it from the strain which would otherwise be so painfully felt.

The true object of the feathery disc appears to be that of a natural "splay-window," enlarging the field of vision, and enabling the bird to command a large area of ground without obliging it to alter its position; and this is very necessary when we consider the voracious appetite of owls and their young, and the small size of the creatures upon which they chiefly feed.

The hawk-like character of the owls is sufficiently shown by the size and strength of their formidable talons, the first grip of which generally causes the immediate death of their captive. Contrary to popular belief, no "stroke" is voluntarily delivered by these birds. The claws, indeed, are self-acting, the muscles being so formed that the mere weight of the body rapidly descending from a height causes the feet forcibly to contract upon the victim. The talons are thus automatically driven into the body of the
prey, and that so deeply that instant death is generally the result.

It is to this same structure, it may here be remarked, that birds owe their power of perching for hours together upon a branch without suffering from fatigue.

The barn-owl seems to be fully aware of the power and sharpness of its natural weapons, and is always ready and willing to use them in self-defence, even against a greatly superior foe. A case is on record in which a dog was completely blinded by one of these owls, which struck violently at the poor animal as it approached, and drove a talon into each of its eyes. Even man himself is tolerably sure to suffer severely if he is foolish enough to seize the bird with unprotected hands, for the claws cut like so many knives, and the bird wields them with such agility and address that it is by no means easy to avoid their stroke. When thus fighting, the bird always rolls over upon its back, in order to use its feet to the best advantage.

As to the *per contra* of the barn-owl, accusations against him are wonderfully few. Excepting for his supposed connexion with the powers of evil, in fact, I can find but two counts against him, neither of a very serious nature.

The first, which comes to me from a friend, on the authority of a Norfolk gamekeeper, is, in the words of the former, as follows:—

"Our gamekeeper told me that he has seen a barn-owl (*Strix flammea*) sit on the top of a coop
containing hen and young pheasants, flap its wings on the coop, and, when the young pheasants ran out, alarmed by the noise, it pounced on them and carried them off one by one. I myself have often seen the owls hawking round the pheasant-coops, but always put it down as evidence of the presence of mice, coming, no doubt, after the scraps of food left by the young pheasants. If the barn-owl does thus destroy young pheasants, he ought to be reckoned as doubly a farmer's friend in these anti-game days!"

The second accusation is of much the same character, and is to the effect that a brood of young pheasants has been found inside an owl; "or," suggests my informant, by way of parenthesis, "say two owls." It has often been stated that the barn-owl is apt to be troublesome in the preserves, but the occasions upon which it misbehaves itself seem to be so very few and far between as almost to be unworthy of consideration.

The Long-eared or Horned Owl, although less plentiful than the preceding, is yet far from uncommon in many parts of Great Britain; and, although the services which it renders to mankind are qualified in some little degree by certain unlicensed proceedings, the bird is yet fully worthy of our protection and encouragement.

The following statement by Prevost Paradol will give an idea of the usual character of the food of this owl:—

"January, mice; February and March, the same;
April, cockchafers; May, rats, squirrels, and cockchafers; June, meal-worms, beetles, and shrew-mice; July, mice, ground and other beetles; August to November, shrew and other mice."

Dr. Altam, in the course of a rather limited investigation, found that this owl fed principally upon field-voles, for in twenty-five pellets which he examined he discovered the remains of six mice, thirty-five voles, and two small birds. Other observers have found traces of rabbits, leverets, &c., in the nest; and during the breeding-season the bird is said to visit the nests of the smaller birds in the neighbourhood, and to carry off the half-fledged young for the purpose of replenishing its larder.

This owl is seldom seen by day, and prefers to conceal itself in the inmost recesses of a thick wood—a fir wood by choice—only issuing therefrom after darkness has set in. It is an indolent bird, as far as nesting is concerned, for it infinitely prefers to avail itself of the work of others to building a nest on its own account. Its favourite habitation is the deserted winter abode of a squirrel, and therein it lays the four, or occasionally five, white eggs which differ so little from those of other members of the tribe.

It is a rather curious fact that this owl, like many others, is strangely dilatory in the matter of laying its eggs, which it deposits in detachments at long intervals. Its usual plan, in fact, is to lay two eggs, wait until they are nearly ready to hatch out, and then lay two more, so that the latter pair are hatched
almost as much by the first-born as by the parents themselves.

Concerning the diet of the Short-eared Owl, first cousin to the preceding, Prévost-Paradol has the following remarks:

"January, mice; February, harvest-mice; March, mice; April, crickets and field-mice; May, shrew-mice and cockchafers; June, beetles; July, field-mice and birds; August, field-mice and shrews; September, field-mice and beetles; October, the
same; November, common and field-mice; December, mice, spiders, and woodlice."

This owl also varies its diet with birds, bats, rabbits, and occasional chickens, while now and then it turns poacher for the nonce, and makes free with a partridge or a young pheasant. The above details of its ordinary food, however, afford ample proof that its influence is decidedly beneficial, and its occasional depredations in the preserves must be considered as a kind of toll, or commission, upon the services which it renders to man. We do not grudge our debt-collectors their five per cent., and the demands of the short-eared owl are certainly no more exorbitant.

The Tawny or Brown Owl, author of the celebrated "hoot" which is still so commonly accepted as the sure presage of approaching woe, is an equally serviceable being, as may be seen from the following statement by Dr. Altam:—

"Number of pellets examined, 210; remains found: rats, 6; mice, 42; voles, 296; shrews, 33; moles, 48; birds, 18; beetles, 48."

Like most of its relatives, however, it is a poacher at times, and that to no little extent, as may be gathered from the statement, for which the Field is responsible, that in a single nest were found at one time no less than five leverets, four young rabbits, three thrushes, and a trout nearly half a pound in weight—part of a day's rations for the three hungry young. Magpies and young rooks also occasionally
fall victims to its talons; but there can be no possible doubt that, on the whole, its merits far outweigh its 

mischievous propensities, and that it ought to be considered as a valuable ally of the agriculturist.
CHAPTER III.

THE NIGHTJAR AND THE SWALLOW.


Few of our British birds, perhaps, have been accredited with such ridiculously impossible proceedings as the Nightjar, whose alternative title of "goat-sucker" testifies to the character of the mischief once attributed to it. Nor is its reputation even yet cleared with many, for, while the old absurd belief is still prevalent in country districts, the majority of gamekeepers look upon the bird as highly injurious, and shoot it whenever they can find an opportunity.

Yet the nightjar is, in the fullest sense of the term, a beneficial creature. Feeding entirely upon insects throughout its residence in this country, it
confers a benefit upon us which can only be realised by those who know the mischievous capabilities of its victims, while the counter-accusations which have from time to time been brought against the bird have invariably proved, when carefully looked into, to rest upon no foundation whatever. The trial of

The Nightjar.

the nightjar, in fact, has from first to last resulted in favour of the defendant, and the bird has left the court of inquiry without a stain upon its character.

No doubt the old belief in the nightjar's illicit proceedings with regard to milch kine originated in the frequency with which the bird was, and is, to be seen in close proximity to cattle after nightfall,
leaping up to them again and again, as though to suck the milk from their udders. The true object of its presence, however, may be traced to the insects which invariably torment cattle alike by night and by day, and which fall victims in their thousands to its voracious appetite. And it may be noticed that the animals themselves in no wise object to its presence, seeming, indeed, to be acquainted with its good offices, and to welcome rather than to dread its arrival.

Still more serviceable is the nightjar in devouring cockchafers and June-bugs, which it destroys literally by thousands before they are able to lay their eggs and provide for a future generation. Now a cockchafer, before it becomes a perfect beetle, passes no less than three years as a grub beneath the surface of the ground, feeding upon the roots of various crops, and destroying even more than it actually devours. And the damage which these grubs cause is almost incredible. Large fields of produce are utterly destroyed by their incessant attacks, and, as they live entirely concealed from view, it is practically impossible to destroy them until they emerge from the ground as perfect beetles.

Nor when their life as grubs is at an end are they impotent for further mischief, for the perfect cockchafer is as destructive to foliage as its larva is to roots, and frequently even in this country, and commonly upon the Continent, strips entire trees of their leaves, and injures them severely, of course, in so doing. A bird, therefore, which preys principally upon these beetles, and destroys them by myriads before
they can find an opportunity of laying their eggs, is a benefactor in no small degree, and is deserving of every protection and encouragement which we can possibly extend to it.

The night-flying moths, also, are destroyed in great numbers by the nightjar, and as many of these, such as the Turnip and Cabbage moths and the common Yellow Underwing, are exceedingly injurious, the bird in killing them again benefits the farmer very considerably, and puts forward another claim upon his gratitude.

By the working entomologist, however, the night-jar is less appreciated, owing to the manner in which it rapidly acquires both a knowledge of his proceedings, and the art of obtaining therefrom a considerable personal advantage.

In this wise.

The collector, with a view to capturing the greatest possible number of moths at the least possible expense of time and trouble, prepares an alluring mixture of treacle and rum, with which he paints the trunks of trees as the shades of evening are falling. Half an hour later he lights a bull’s-eye lantern, arms himself with a number of chip pill-boxes of various sizes, and commences the round of his baits. Every tree yields him numbers of specimens, which with extended trunks are rapidly absorbing the enticing mixture, and passing into a state of semi-intoxication which renders them careless of danger and oblivious of all but their repast. Pill-box after pill-box imprisons its captive, round after round of the trees is
made, and at last the successful hunter returns home, laden with the spoils of his expedition, and rejoicing greatly at the additions which he has made to his collection.

Such is an ideal description of a night's "sugaring," the success of which, however, is generally to some extent marred in more ways than one. Perhaps the moon shines, or an easterly wind blows, and the moths disregard the preparations made for their entertainment. Or the collector smears his mixture upon smooth-barked trees, and finds his baits comparatively deserted. Or some strongly-scented blossom in the neighbourhood proves a still greater attraction, and the prepared trees are altogether unvisited.

But even if none of these ills befall him, the collector must still prepare himself for a certain amount of loss by reason of the proceedings of the bat and the nightjar, which quickly learn the secret of the prepared trees, and, swooping past on noiseless wing, neatly pick off the revellers without pausing in their flight. I have frequently watched both mammal and bird thus engaged, and have myself been a loser by their depredations, a shadowy form darting past me as I approached a baited tree, and snapping up my anticipated captives before my eyes.

Unlike the kestrel, which captures flying insects with its claws, and transfers them during flight to its beak, the nightjar employs its mouth as its sole weapon in the chase. But then, what a mouth it is! Opening so far in the gape that, when fully extended,
the head seems almost to be severed in two, there are few insects which it cannot contain, while the strong feather-like bristles with which the beak is fringed are of great assistance in preventing the escape of the victim. Even this provision, however, is supplemented by another, for the saliva of the bird is as glutinous as that of the ant-bear or the manis, and is in itself sufficient to hold any but an exceptionally powerful and active insect.

Owing to its nocturnal habits, the nightjar is seldom seen, excepting by those who are accustomed to be abroad after nightfall, and to keep their eyes open for the various creatures which are then only to be observed. The curious "jarring" cry of the bird, however, is familiar to many who have never caught sight of its author, and may generally be heard upon a quiet summer evening by any one who takes the trouble to listen for it. The great peculiarity about this cry is the length of time during which, in many cases, it is continuously uttered. I have sometimes attempted to hold my breath from the first "churr" until the cry ceased, but the bird almost always beat me easily, sometimes, so far as I could judge, by at least two minutes.

Now and then, however, the bird breaks up its cry, so to speak, into fragments, allowing an interval of a few seconds to elapse between its utterances, and then repeating its cry for about an equal length of time. Only a few days before writing these lines I flushed a pair of goatsuckers, which flew past me uttering this curiously disjointed cry as they went. The appear-
ance of the bird during flight is very singular, the head seeming to have been amputated, and the neck rounded off just in front of the shoulders.

Although the nightjar is only with us for a few months in the year, it nests—or, rather, lays its eggs—during its visit, and remains until its young are sufficiently strong to accompany it upon its journey south. The eggs, two in number, are always laid upon the ground, sometimes in a slight hollow, sometimes not, but always concealed as far as possible beneath a friendly gorse-bush, or a tuft of heather; a frail shelter, but one which is more effective than one would think as a protection from the gaze of a passing foe.

The place occupied by the nightjar after dark is filled during the daytime by the various members of the Swallow family, so that during the whole of the twenty-four hours either one or the other is incessantly at work.

The general habits of the swallows are so universally familiar that they need not be here described, but it may be casually mentioned that a mere glance at their bodily structure would be sufficient to inform an ornithologist previously unacquainted with their very existence—did such an one exist—of almost every detail of their life-history. For the long, sickle-shaped wings and the stiff, closely-set plumage would at once show him that they were gifted with great powers of flight; the small and feeble limbs would point them out as birds which, from their very inca-
pacity for terrestrial locomotion, must spend almost the whole of their active lives in the air; while the wide gape of the mouth would satisfy him that their diet must be wholly of an insect character.

Nor would he be mistaken in his surmises. In the first place, the flight of the swallow is flight carried to its highest point of excellence, a sort of aërial combination of the easy grace of the seal in the water with the marvellous speed of the antelope on the land. The swallow, in fact, is the Mercury of the air, and is as much superior both in elegance and swiftness to the vast majority of the feathered race as is the greyhound to the turnspit, or the race-horse to his humble cousin of the plough.
Nor are its powers of endurance less remarkable, for the bird is on the wing, with but little intermission, from sunrise until after sunset, its tireless pinions appearing as unwearied at the end as at the beginning of the day. Excepting during migration, indeed, fatigue seems to be a sensation to which the swallow is a total stranger, in spite of the exertion necessary to sustain its body in the air for so long a period of time, and one must perforce marvel at the perfection of the muscular system which can achieve such results at the expense of so little apparent effort.

The food of the bird, practically speaking, is entirely of an insect character. It has now and again been detected in the act of feeding upon sandhoppers on the shore, it is true. But such proceedings are the exception, and not the rule, for, in the vast majority of specimens, insects constitute the whole of the diet during the whole of life, and are captured in almost incredible numbers. If a swallow be shot when on the wing, its crop is certain to be found filled to repletion with the bodies of its victims, and so tightly is this receptacle sometimes packed that the enclosed mass, when released, will at once swell out to almost double its dimensions.

Now, such a mass, large though it may be, forms but a small part of the bird's provisions for the day, so that the whole number of insects killed by a single swallow during its stay in this country must be almost too great to express in figures. Nor is the benefit which it thus confers upon us qualified by any counterbalancing mischief. Save that it is fond of
erecting its nest beneath the shelter of our eaves, or in our chimneys, and thus occasionally introducing insects of a rather unpleasant character into our dwellings, it injures us in no way whatever, and is most assuredly a being to encourage which is not merely an advantage, but a manifest duty.

From the swift and the martin, with which it is frequently confounded, the swallow may be at once distinguished by the great comparative size of its forked tail, which, as may be seen by the accompanying illustration, rather exceeds the entire body in length.

Equalling the swallow in the speed and strength of its flight, the Swift even surpasses that bird in point of agility, the quickness and certainty with which it alters its course reminding one more of the vagaries of a flash of lightning than of those of a mere denizen of air. Most remarkable, perhaps, is the infrequency with which the wings are moved, the bird shooting through the air and twisting and turning almost as though its progress were due to the mere power of its will, and not to the exercise of its physical powers. The tail, of course, bears its share in the flight, acting as a rudder by which the course may be directed, and a close observer may notice that this organ is in almost incessant motion, now being spread and now folded, even while the wings themselves are held closely to the sides.

From other members of the family the swift may
be known by its dull, sooty hue, relieved only by a small greyish patch beneath the chin.

The swift seems even more intolerant of cold than the swallow, arriving later and leaving earlier than any of its kith and kin. It is but seldom that a swift is to be seen in this country much before the second week in May, while even the last stragglers have gene-

![The Common Swift.](image)

rally taken their departure by the end of August. The swallow, which usually reaches us in April, remains, as a rule, until October, so that its visit to us extends over just one-half of the year.

Every now and then a swallow or a swift is noticed in the middle of winter, leading many to suppose
that the old stories as to the hibernation of these birds were not altogether false. For, as I need scarcely remind my readers, it was for long considered that the swallow and its relations passed the winter months in clusters beneath the surface of a pond or stream, there remaining in a state of torpor until the warmth of spring roused them from their long slumber, and lured them back to active life. The old authors, indeed, were very positive upon the subject, and even went so far as to offer evidence of the truth of their theory. Here is the quaint account of a writer in the seventeenth century:

"One here (Königsberg) in his net drew up a company or heape of swallows as big as a bushel, fastened by the legs and bills in one, which, being carried to their stoves, quickened and flew, and coming again in the cold air, dyed."¹

The presence of an occasional swallow or two at unseasonable times can be far more plausibly explained. The bird, like many others, is double-brooded, and sometimes brings up even as many as three families in the course of a single season. Now, there can be but a short interval between the time that the members of the last of these broods are fledged and that when the birds are constrained by the rapid approach of winter to leave this country for a warmer climate. And, in the great majority of cases, the migratory instinct predominates over the

¹ "Travels of Master George Boukely," circa 1620.
parental, and the birds leave their young rather than remain behind after their companions have taken their departure. It is far from unlikely, therefore, that such belated sojourners as have from time to time been noticed were deserted birds, which had managed for a time to pick up a scanty livelihood, their parents having left them just as they were able to fly, although not yet sufficiently strong to undertake a journey across the seas.

More familiar even than the swift is the White-bellied Martin, whose domiciles of clay beneath the eaves are so great an eyesore to many householders. For the bird is one of those which are strongly attached to human habitations, and which are seldom to be found far away from the abodes of man. Year after year a pair of martins will return to the same nesting-place, and, if unmolested, will become so tame as to carry on their domestic arrangements within a foot or two of a window belonging to a room in constant use. Every now and then, however, some suitable cliff or especially attractive rock overcomes their repugnance to solitude, and such favoured spots are to be seen literally studded with the little edifices in which the bird brings up its young.

The material of which these nests are composed consists principally of the fine earth which is thrown up in the form of "worm-casts," and which, moistened by the bird's saliva, is carefully kneaded until of a proper consistency for building purposes. Some-
times, when the wall against which it is fixed is comparatively smooth, and affords no firm hold for the clay, the nest is supported on a kind of pedestal formed of the same material, and often of some little size. Although similar in many respects, there is one very striking difference by which a martin's nest may be distinguished from that of a swallow; for,

while the abode of the latter bird is invariably open above, the martin always contrives that an overhanging roof or beam may form a ceiling to its domicile; and this is a rule which seems never to be broken.
The Sand-martin, whose small size at once serves to distinguish it from others of its kindred, is a bird of very different character, and cares nothing, one way or the other, for the proximity of human beings. Provided that it can find a sandy cliff or bank in which to tunnel it is perfectly contented, and there throughout the summer it may be seen in numbers, either sitting at the entrance to its burrows, or hawking for insects in the neighbourhood.

Near Erith, with its immense sandpits, this interesting little bird is the most plentiful of the family, and I have often noticed the care with which it constructs its holes just out of reach of any one leaning over the top of the cliffs. In the railway cuttings, however, it seems perfectly aware that "trespassers will be prosecuted," and excavates in all parts of the banks, even within four or five feet of the ground.

The usual depth of the burrows is from one to two feet, but in some exceptional instances the bird will penetrate for more than twice the latter distance into the sand before it is satisfied with its labours. No nest worthy of the name is built, but at the end of the tunnel a little straw and a few feathers are generally collected, and upon these the delicate, pinky-white eggs are laid.

In the work of excavation, which occupies some little time, the closed beak is the principal tool employed, the feet being used merely for the purpose of removing the loosened soil, and not for actual digging operations. The hole, once made, is used again and again in succeeding years, the excavator
seeming to enjoy a prescriptive right to it, which is respected by all his fellows.

As the diet of the swift and the two martins is of exactly the same character as that of the swallow, I have thought it necessary to call attention to it only in the one case. Suffice it to say that all four birds are strictly beneficial, that no misdeeds—

![The Sand-martin.](image)

save the very trifling offence of disfiguring human habitations by their own—can be brought against any one of the four, and that, like the nightjar, they are indubitably entitled to all the protection and encouragement which we can extend to them. In the words of a writer of eighty years since, "they should everywhere be protected by the same popular veneration which in Egypt defends the ibis, and the stork in Holland."
CHAPTER IV.

WARBLERS.


Small, soberly coloured, and timid to a degree, the Whitethroat, although plentiful enough, is known only to those who take a special interest in the feathered race, or who are brought into contact with the bird by the nature of their avocation. And by the latter of these, unfortunately, the whitethroat is by no means appreciated at its true value. For it has a way of helping itself to a little fruit in summer and autumn, and thereby incurs the wrath and vengeance of the gardener, who never troubles to inquire whether there is a better side to the bird's character, but at once sets himself to destroy it whenever he can find an opportunity of doing so. He does not
see the caterpillars which the same bird consumes, and which would have grieved his very heart by their ravages upon the choicest products of his skill. He appreciates their absence, no doubt, but he remains in ignorance of the source to which that absence is due. And so the theft of a little fruit, which he does see, is allowed to outweigh the slaughter of multitudinous destructive insects, which he does not; and the whitethroat, in common with so many other birds, suffers a punishment which it has by no means deserved.

The bird, in fact, is one of that large class of beings the members of which are at once injurious and beneficial. They rob us to some degree, but prevent others from doing so to a far greater, and are, in fact, natural police, who exact a certain payment from us in consideration of their services in repressing insect criminals.

A very favourite article of diet with the whitethroat is the caterpillar of the Cabbage White butterfly, that mischievous creature with whose ravages most of us are well acquainted, and which every gardener anathematises from his inmost soul. But few insects or grubs come amiss to the bird, which, but for the depredations above referred to, would be an unqualified friend to mankind, and which, even as it is, is an ally whose services merit far more recognition than they usually receive.

The nest of the whitethroat, which is a singularly pretty one, is always built near the ground, generally among brambles, nettles, or even long grass. The
eggs are four or five in number, and are of a peculiar greenish-grey hue, spotted and marbled with darker markings.

First cousin to the whitethroat is the pretty little Chiffchaff, or Lesser Pettychaps, one of the very smallest of all our British birds. Notwithstanding its diminutive proportions, however, it is a most useful little creature, destroying insects literally by hundreds, and so benefiting both the farmer and the horticulturist.

The Rev. C. A. Johns mentions that for two
successive years a specimen of this bird took up its abode in his garden, and systematically cleared some China roses trained against the house of the aphides, or "green blight," which infested them. And the Rev. Maurice Bird tells me that he has often watched chiffchaffs hawking for insects, after the fashion of the fly-catcher, upon warm, sunny days in the early part of the year.

The caterpillars of the Green Oak moth, too, that pretty but destructive little creature, are slaughtered by the bird in myriads, and there can be no doubt that to its efforts we are largely indebted for the preservation of our forest oaks from serious injury, if not from total destruction. For these caterpillars, small though they may be, compensate by their numbers for their individual insignificance, and, if not kept down, will soon strip a large tree of its foliage; and a tree thus treated receives a very severe shock, which, if often repeated, can end only in its death. The services of the bird, therefore, are really of a very valuable character, and fairly entitle it to a high position among the friends of man.

The chiffchaff, whose peculiar cry has earned for it its popular title, is the first of the warblers to arrive in this country and the last to depart, its visit extending over as nearly as possible seven months, from the middle of March, broadly speaking, to the middle of October. The nest is not unlike that of the wren, and is always built either on or near the ground, and the eggs, five or six in number, are greyish white, spotted and speckled with dull red.
The closely-allied Willow Warbler is also a great destroyer of insects, and, being less given to invading the fruit-garden than the whitethroat, is perhaps even more distinctly a beneficial species. It generally arrives in this country towards the middle of April, and within a few days of that time its cheery little song is almost sure to be audible in its favourite haunts.

The nest of this bird is generally very carefully concealed, and often gives even an experienced nest-hunter some little trouble before he can detect its exact whereabouts. I well remember on one occasion putting up a willow warbler from among some long grass, and, as the bird rose almost from beneath my feet, I felt convinced that she had left her nest. This, however, a long and careful search failed to detect, and I was just upon the point of leaving the spot when my hand slipped from a small hillock upon which it had been resting and came into contact with the eggs. I then found that the bird had not only built a domed nest, after its usual fashion, but had furthermore constructed, by way of approach, a tunnel of some little length, by carefully fastening the grass stems together at three or four inches from the ground. And so carefully had it performed the operation, and so well was the nest concealed, that, had it not been for my accidental slip, I am quite sure that my search would have proved unavailing.

The graceful little Wood Warbler, which strongly resembles the preceding species both in appearance
and habits, deserves honourable mention by reason of its fondness for many more or less destructive insects, by whose slaughter it earns a just claim to our favourable consideration. It is especially fond of the leaf-rolling caterpillars which often cause so much mischief, and may be seen busily at work upon a sunny day, flying round and round the tree, and picking off the destructive grubs as they hang suspended from the boughs by their silken threads. The green oak moth, too, whose mischievous character has already been described, is a favourite morsel with the bird, which is, therefore, a prominent factor in the task of preserving our oak woods from destruction.

Passing by the Black-cap, which, although in great measure insectivorous, calls for no special mention, the Nightingale next claims our attention.

Fortunate indeed is this among birds, for, although it is a somewhat frequent visitor to the fruit garden, the beauty of its song saves it from serious persecution. On the other hand, however, it destroys an immense number of insects, and so more than compensates for its occasional robberies.

Prevost Paradol's investigations with regard to the diet of the nightingale give the following results:—

"April, flies, beetles, and worms; May, butterflies, weevils, cockchaferers, and grubs; June, spiders and wood-boring beetles; July, worms, grubs, grass-hoppers, moths, and flies; August, grasshoppers, glow-worms, weevils, and grubs."

Against all this we have to set only the relatively
small amount of fruit stolen during the heat of summer from our gardens, and the result is so obviously in favour of the bird that it is unnecessary to enter into long explanations and comparisons.

The far-famed song of the nightingale has been so often described in so many different ways, that it is almost impossible to say anything upon the subject which has not already been said many times over. I cannot refrain from disagreeing, however, with an author lately deceased (the Rev. C. A. Johns), with regard to the alleged "sadness" of the bird's song. "It is a disputed point," he remarks, "whether the nightingale's song should be considered joyous or melancholy. This must always remain a question of taste. My own opinion is, that the piteous wailing note which is its most characteristic nature (qy. feature?) casts a shade of sadness, as it were, over the whole song, even those portions which gush with the most exuberant gladness. I think, too, although my assertion may seem a barbarous one, that, if the nightingale's song comprised the wailing notes alone, it would be universally shunned as the most painfully melancholy sound in nature. From this, however, it is redeemed by the rapid transition, just when the anguish of the bird has arrived at such a pitch as to be no longer supportable, to a passage overflowing with joy and gladness."

I have heard the songs of many nightingales in the course of my life, and I have listened to the bird for hours together, alike by night and by day, but I cannot say that upon any single occasion I have
noticed the intense sadness which, according to Mr. Johns, is the prevailing characteristic of its utterances. On the contrary, it has always seemed to me that the song was more or less bright and joyful throughout, and, although some parts may be more restrained and subdued than others, there is always, to my ears, an under-current of pride and content, giving one a dimly-realised impression that the floods of melody are forced from the bird by its utter inability to restrain the expression of its happiness.

There is a very general belief, dating back for three centuries at least, to the effect that the nightingale is a strictly nocturnal songster, remaining persistently mute until after the shades of evening have fallen; and another, equally fallacious, which holds that the hen-bird is the vocalist. Portia, for instance, delivers herself of her conviction that—

The nightingale, if she should sing by day,
When every goose is cackling, would be thought
No better a musician than the wren.

*Merchant of Venice*, act v. scene i.

Shakespeare, of course, was far from being an accomplished naturalist, and, for the majority of his zoological statements, seems to have trusted entirely to popular report. And, in the present instance, he expressed an opinion entertained by many from that day to this, which, strangely enough, has held its own in spite of its utter falsity.

That the bird is generally *heard* at night I grant,
for the song is more conspicuous in the stillness of
the evening than during the hours of day, when the
attention, as a rule, is occupied with other matters.
But no one in the habit of taking a country ramble,
and noticing that which passes around him, can have
failed to learn that the nightingale is seldom silent
until the eggs are hatched, for provided that it be
unmolested, and that the neighbourhood in which it
takes up its abode be not unduly close to the haunts
of men, there is scarcely an hour of the twenty-four
in which it may not be heard, pouring out its song
as gaily by day as by night. And, even in the
immediate vicinity of human habitations, it is not at
all uncommon to hear the bird singing away merrily
at mid-day, although its vocal performances are in
such a case less continuous than when it has chosen
for its residence the heart of the woodland.

Everybody protects the Robin, not on account of
its usefulness, but owing to the superstitious rever-
rence with which the bird is almost universally
regarded. We learn in early childhood that

The robin and the wren
Are God's cock and hen,

a somewhat meaningless couplet, which by many is
looked upon as conclusive evidence in the bird's
favour. "Similes," says a somewhat cynical modern
writer, "are not arguments; that is why they con-
vince people so." And nursery rhymes and proverbs
may rank with similes in this respect.
Next, probably, we learn by heart a certain poem concerning the robin’s proceedings in the event of a north wind and a snowfall. We are told, too, of the laudable behaviour of robins towards the Babes in the Wood; and we mourn over the untimely death of Cock Robin at the hands of the bloodthirsty sparrow. And so at last we come to look upon the robin as rather an ill-used bird, with some special and undeniable claim to the kindly consideration of mankind, which should for ever preserve it from persecution or ill-usage.

And the feeling is a just one, although founded upon false and merely sentimental premises, for
the robin is undoubtedly entitled to encouragement and protection as the friend of man. Throughout the year it devotes its energies to the slaughter of the various creatures whose powers of mischief are so disproportioned to their size, and its success in the search for victims may be inferred from the experiment, now a matter of history, which proved that the bird, in order to maintain its health and weight, requires no less than fourteen feet of ordinary earthworm in the course of the twenty-four hours, or an equivalent in other food.

Quoting again from Prevost Paradol, we find the food of the robin given as follows:—

"January, insects, worms, and chrysalids; February, insects, worms, and woodlice; March, chrysalids and worms; April, moths, eggs of insects, and cockchafers; May, grubs and beetles; June, flies, moths, spiders, and worms; July, moths, butterflies, and woodlice; August, the same, and worms; September, the same; October, eggs of insects, and aquatic insects; November, worms and chrysalids; December, chrysalids, grubs, and eggs of moths."

Every votary of horticulture must have noticed the extreme diligence with which the bird carries on its search for food, for it is about soon after sunrise, and continues its quest long after most of the feathered race have retired to rest. When digging over the ground, the gardener is almost sure to be attended by at least one pair of robins, which will approach within a few feet of him in order to obtain the worms and insects turned up by the spade. I have had a
robin actually perching on my knee during my gardening operations, to so great an extent did hunger and the ardour of the chase overcome its natural fear of man.

This robin, from the date of my first acquaintance with him, was always a very friendly and sociable bird, and I was seldom in the garden for even a few minutes without noticing him a few feet away, anxiously on the watch for any worms or insects that I might turn up. And even during the autumn and winter months, when family cares no longer oppressed him, his appetite seemed as insatiable as ever; and I have seen him carry away ten large worms in the course of as many minutes.

It may be objected that in so doing the bird proved himself, not a friend, but a foe, for the earthworm is a most beneficial creature, and aids greatly in the preparation of the soil which enables it to sustain vegetation. And this, as far as the open country is concerned, is certainly true. A field in which earthworms are plentiful will always, other conditions being equal, yield far more abundantly than one in which they are sparsely represented. But in the garden, and especially in the seed-beds, so far as my own experience goes, they are decidedly injurious. The ground stands in little need of their services, for it is thoroughly manured during the winter months, and is, generally speaking, brought to a far higher degree of cultivation than can ever be the case with the soil of a large field. And the mischief which is caused by the worms, under such circumstances, is very
marked. They thrust themselves through the rows of seedlings, overturning the sprouting seeds at the most critical period of their growth. They loosen the soil in the onion-beds, and diminish the resistance which is necessary for the due development of the bulbs. They perforate the leaves of young cabbages, cauliflowers, &c.; and even take down entire lettuces, when just planted out, into their burrows, destroying in this way the fruits of many an hour of labour. And when I mention that from 600 square feet of newly-sown grass I lately took, in less than a week, no less than 1,650 large worms, which had rendered two previous sowings almost wholly abortive, it will be seen that the robin, in thinning their numbers in a garden, is really performing a beneficial act.

On the other hand, the bird, when destroying the same creatures in the field, must be considered for the nonce as injurious. Undoubtedly. But, in the first place, the robin much prefers gardens to fields; and, in the second, as the earth is less often turned over in the latter, the bird has there fewer opportunities of capturing worms. Considering the matter from every point of view, therefore, I think that we may safely look upon the robin as an almost unqualified benefactor, and extend our protection to it, not merely on account of nursery tradition, but from the sense that it is to our best advantage to do so.

Many of us are well acquainted with the nest of the robin, which is always situated on or near the ground, and generally contains five whitish eggs,
mottled and marbled with light reddish-brown. Occasionally, however, perfectly colourless eggs of this bird are found; and I once met with a nest which contained no less than ten eggs, five of which were perfectly white, while the remaining five were of the ordinary character.

The only explanation which I can give for so very unusual a phenomenon is that the hen bird, immediately after depositing her eggs, was accidentally killed, and that the cock at once took to himself a second mate. Possibly she was slain in battle, for the robin, despite its gentle and timid appearance, is a remarkably quarrelsome bird, and will fight to the death, even in defence of fancied rights. A case is recorded, for instance, in which a male robin, having taken up his abode in a small greenhouse, killed no less than twenty others of his own kind which had presumed to invade what he chose to consider as his private premises. Verily, the bird is not altogether the meek and inoffensive creature which we are accustomed to consider it.

Who does not know the Titmice, those bold, saucy little creatures which almost force themselves upon one's notice, and which are so commonly to be seen in all parts of the country?

Little is there to be said against these pretty and inoffensive birds, whose diet consists wholly of insects, and which carry on the warfare with man's enemies throughout the entire year. Several species are natives of Great Britain, and of these we will select
for description the three most generally known—viz., the Great Tit, the Blue Tit, and the Long-tailed Tit,—and treat them as representatives of the family.

All three birds are alike in one respect, viz., that they can perch upon any object, provided that its surface be not perfectly smooth, and that they are able to assume almost any position. A titmouse, in fact, is quite indifferent whether it is perching like birds in general, hanging, head downwards, from a branch, or clinging at right angles to its foothold, carrying on its search for food in any attitude, and appearing to be equally at ease in all. All three, again, feed upon insects, and upon insects alone, save with few and occasional exceptions; as in the case of the Great Tit, which at times seems to find a certain monotony in that diet.

His proceedings under such circumstances, however, are by no means to be commended, for his usual plan is to attack some luckless comrade—and he is expert in the arts of war—slay it, split open its skull with his powerful beak, and feast upon its brains. The Rev. C. A. Johns mentions a case in which a great tit, placed for a night in a well-filled aviary, killed every one of his companions before the next day with the exception of a quail; and to this, when discovered, he was in the very act of dealing the fatal stroke.

At times, also, the great tit is said to be in the habit of pecking holes in apples and pears, both ripe and unripe, as they hang upon the tree; and I have
occasionally seen individual fruit nearly one-fourth of which had been thus destroyed by small birds of some kind. Such mischievous practices, however, are confined almost entirely to hot and dry weather, when moisture is not to be otherwise obtained, and the birds are parched with thirst. The rook at such times will carry off the succulent tubers of the potato; and many other birds are driven by sheer necessity to make free with fruits, &c., which at other seasons they seldom or never touch—just as Kaffirs eagerly seek and devour during drought the roots of the babiana plant, for which, when water is plentiful, they care nothing.
The nest of the great tit, like that of most of its tribe, is formed of moss with a lining of feathers, and is placed in a hole in a tree, or some similar situation. The eggs, from six to nine in number, are white, spotted and speckled with red.

The Blue Tit, a more common, and consequently more familiar species than the preceding, resembles it in many respects, although the two birds cannot well be confounded with one another. This is a most indefatigable little creature in the great work of insect slaughter, especially during the nesting season, at which time it has been seen to visit its young, as the Rev. F. O. Morris tells us, no less than four hundred and seventy-five times in the course of a single day, never bringing with it less than one large or two...
or three small grubs—a rate of at least 4,000 per week.

In early spring this bird may sometimes be seen apparently destroying the young buds, and I have seen it pecking away vigorously at the blossoms of a cherry-tree, and causing the petals to fall to the ground in quite a small shower. In all such cases, however, the buds or blossoms in question seem to be infested with insects, which would not only themselves have performed the work of destruction in an equal degree, but would also, if permitted to live, have in their turn become the parents of hundreds of equally mischievous creatures.

In selecting a site for its nest, the blue tit is by no means fastidious. Perhaps a hole in a tree is that most frequently chosen, but beehives, pumps, the weathercock upon a church steeple, a pillar letter-box, a suspended bottle, inverted flower-pots, the hat of an old scarecrow, and the deserted abode of a blackbird, have all been laid under contribution by the bird at different times. The only requisites, indeed, for which the blue tit seems to care are a chamber of sufficient size to contain the nest, and a moderate amount of concealment; and, granted these, it is in no wise particular, and will build in almost any conceivable situation.

An ornithological friend has been in the habit for some years of fastening a number of specially-made boxes in different parts of his grounds, a hole being provided by which a bird can enter, while the lid can be removed and the inmates observed from above.
These boxes are entirely monopolised by titmice, which become almost perfectly tame, and will allow themselves and their young to be freely inspected, without further remonstrance than the serpent-like hiss which is their invariable protest in such cases.

The nest of the Long-tailed, or Bottle Tit, is a far greater triumph of architectural skill than that of either of its above-described relations, for it is not placed in a hole at all, but is built, as a rule, in the fork of some branch, and so beautifully covered with lichens, fragments of bark, &c., that it can only be detected by a very sharp and experienced eye. In the majority of cases this nest is built in some low
bush, but I have once seen it nearly twenty feet from the ground.

The materials of the nest consist of moss, hair, wool, feathers, and the silk of spiders and caterpillars, all being interwoven in the most marvellous manner, and clothed, as above remarked, with a kind of outer garment of lichens and bark, always of a colour suitable to the surroundings. The nest is a very large one in comparison with the size of the builder, and is shaped somewhat like a very rounded egg, a small opening being left in one side for purposes of ingress and egress, and occasionally another, rather higher, for those of ventilation. The female bird is always the builder, her mate seeming to be devoid of the necessary skill for such an undertaking.

The eggs are more numerous than those of any other member of the family, and average nine or ten in number, while it is not unusual for twelve, or even fifteen, to be found in a single nest. I have once known eighteen eggs to be taken from a bottle-tit's nest, but these were removed, two or three together, at intervals, and under such circumstances the bottle-tit, like many other birds, will replace those of which she has been robbed.

It may well be supposed that, even in so capacious a nest as that provided for them, this large family must after a time become sadly inaccommoded by want of room. And, as a matter of fact, such is very frequently the case, the young birds being so tightly packed that their every movement is noticeable through the walls of their abode. It would
also seem that, when in want of fresh air, the little creatures, by a simultaneous exertion, expand the sides of the nest to the utmost possible degree, thus causing the atmosphere from without to make its way into every part of the interior. In a very full nest this movement will take place ten times or more in an hour.

The pretty little Yellow Wagtail, which we may take as a type of the family to which it belongs, is another great insect-destroyer, and is particularly fond of the flies, &c., which torment cattle so greatly during the summer months. What the nightjar is by night, in fact, the yellow wagtail is by day, both birds preserving the cattle from an immense amount of unnecessary annoyance and suffering.

Unlike many of its race, the yellow wagtail cares little for the neighbourhood of water, and may often be seen in meadows far distant from any stream, hopping along with its peculiar, jerky movement, and ever and anon picking up an insect from among the roots of the grass. Even upon a dusty road the energetic little bird will carry on its researches, and the frequency with which it delivers its quick, pecking strokes forms sufficient evidence of the number of its victims.

Passing to the family of the Thrushes, we come to the Redwing, a winter visitor only, but one whose services are yet of a highly serviceable character. For during its entire stay in this country it is working
in our behalf, and, being less addicted to fruit-eating than others of its kin, there is but little counter-balancing evil to place on the other side of the account.

While the weather continues mild and open, the redwing feeds principally upon slugs, worms, and the occasional insects which appear during winter, or which leave their retirement for a time when the temperature is unusually high. During sharp frost, however, victims such as these are not obtainable, and the bird then falls back on snails and other hibernating molluscs, the eggs of insects, and the various pupæ which pass through their period of quiescence in exposed situations. In very severe seasons even these fail, and in such a case the bird frequently dies of sheer starvation.

Still more useful, because remaining with us during the entire year, is the well-known Blackbird, whose services, however, are somewhat marred by its illicit proceedings when garden fruit is to be obtained.

Concerning the food of the blackbird, Prévost-Paradol testifies as follows:—

"January, seeds, spiders, and chrysalids; February, the same; March, worms, buds of trees, and grubs; April, insects, worms, and grubs; May, cockchafers and worms; June, worms, grubs, and fruit; July, all sorts of insects, worms, and fruit; August, the same; September, the same; October, worms, chrysalids, and grubs of butterflies; November, seeds, corn, and chrysalids; December, the same."
To this list of victims must be added the slug, which the bird sometimes devours in considerable numbers.

The blackbird is somewhat fanciful in its diet, even when fruit is in question, and will attack one tree day after day, while another, to all appearance even more enticing, is left perfectly untouched. Last year (1885) three cherry-trees in the garden were entirely stripped of their fruit by blackbirds, which picked all the flesh from the stones, and left the latter still adhering to the stems. But the trees of a neighbour, which were separated only by means of a wall, and which, moreover, bore fruit of a very much finer character, were entirely passed by.
I willingly pardon the bird for such depredations, however, annoying as they are at the time, in consideration of the vast amount of insects, &c., which it destroys by way of compensation; and I would as soon think of driving a blackbird from the garden as of turning out the tits themselves.

Neither in building nor in concealing its nest is the blackbird an adept. Who does not know the untidy structure which, situated in a thick bush or a hedge, seems almost to invite the notice of the passer-by? And who is not familiar with the loud, terrified squall with which the bird calls attention to the presence of her abode, when suddenly alarmed by a passing footstep? In such respects, indeed, the bird seems utterly devoid of common sense, and one almost marvels that, with all its efforts to attract attention while engaged in family duties, it should still be so plentiful as it is.

The nest itself, in spite of its loosely-built appearance, is a tolerably firm and compact edifice, owing chiefly to a coating of mud with which the interior is lined. Within this mud coating is a layer of grass, and upon this the eggs are laid. These are generally five in number, and are too well known to require description.

Upon one occasion I found a nest built apparently by a blackbird of an economical turn of mind, for it was semi-circular, like that of a martin, and was fastened against a fence, which did duty for the remainder of the circumference.

The Thrush, equally plentiful and still more useful,
is another of our most familiar birds, and we both hear and see him wherever we go. And even professional gardeners, the bitter enemies of most of the feathered race, unite in giving to him the praise which he deserves.

Among the many destructive beings which are slaughtered in their thousands by the thrush, the common garden snail deserves special and particular mention; for it forms, perhaps, the favourite diet of the bird. One can scarcely pass through a garden without noticing one or more of the stones which serve as sacrificial altars, and the number of broken
shells surrounding them testify most thoroughly to
the beneficial character of their destroyer.

Each thrush seems to select some particular stone,
to which it brings all its victims, even from some
little distance, and hammers them thereon until their
shells are so broken that they can easily be extracted
and swallowed—very much as the black and the
hooded crows open mussels, by dropping them from
a height upon the rocks. I once found twenty-one
of these stones in a single garden in the course of a
single morning, the broken shells scattered around
them ranging from six to about twenty-five in
number.

In addition to snails, the thrush feeds largely upon
slugs, worms, and insects, and thereby fully estab-
ishes its claim to the gratitude and protection of the
agriculturist. During the nesting season it is espe-
cially useful, and has been known to feed its young
more than two hundred times in the course of a
single day.

It cannot be denied, however, that during summer
and autumn it is a frequent visitor to the fruit-garden,
wherein its proceedings are not altogether of a bene-
ificial character. But, just as in the case of many
other birds, we must weigh the evil with the good;
and no one is likely to assert that in the case of the
thrush the latter does not preponderate.

The nesting arrangements of the thrush are, so far
as concealment is concerned, little if at all better
than those of the blackbird, save and except that it
does not publish the whereabouts of its domicile by
the peculiarly lacerating screech which the latter bird invariably utters when in any way alarmed. The nest itself, however, is even more conspicuous than that of the blackbird, for its architect is just as likely to build upon an exposed branch as in a bush, and seems to consider concealment of any kind as wholly unnecessary. So obtrusively visible, in many cases, is the nest, indeed, that I have often caught sight of it from a distance of fifty or sixty yards.

As regards the actual construction of its abode, however, the thrush as a builder must take very high rank, as all will admit who have ever examined the result of her labours.

First comes the outer wall of the nest, which is formed principally of roots, twigs, and mosses, neatly interwined after the manner of basket-work. Then comes a layer of a somewhat unpleasant but apparently a very useful substance—viz., cowdung—which, moistened by the bird's saliva, is carefully plastered and worked into place. Lastly comes another layer of decayed wood, kneaded and pressed by the beak, and the result is a smooth, hard surface, which, when once dry, is almost as impervious to moisture as an earthenware vessel. The eggs, which are of a pale blue colour, spotted at the larger end with black, are generally five in number, and two broods of young are brought up in the course of the season—circumstances, such as nest-hunting school-boys, permitting.

Another of our British thrushes, and a very useful
bird, is the Fieldfare, which, however, being only a winter visitor to our shores, is of course less valuable than its relative above described.

During mild and open weather the fieldfare feeds upon worms, and also upon such insects as it can manage to find; and there can be no doubt that it devours large quantities of the latter during its stay in this country. Being with us for so short a time, however, and at a period of the year when insects for the most part are in hiding, its opportunities for serving us are comparatively limited.
The very name of the Flycatchers is a testimony to their insectivorous character, and that their title is well-deserved no one can doubt who has ever watched their proceedings, even for only a few minutes. The usual system of the birds is to perch upon a post, or bush, or a low branch, and thence to dart out upon every flying insect which approaches, and in this way they destroy a really wonderful number of mischievous creatures during the few months which they spend in this country. As I write these lines a flycatcher is busily at work before me, capturing its insect victims at the average rate of nine or ten a minute.

Of the two British species the Spotted Flycatcher is by far the more plentiful, and this is generally to be seen everywhere towards the end of May, the bird being later in arriving at our shores than most of our summer visitors. Its stay with us is by no means a long one, for it takes its departure rather before the end of September; the Rev. F. O. Morris, however, records an instance in which the bird was seen as late as the 16th of October. But, as it feeds wholly upon insects, never, so far as is known, making free with fruit of any kind, it is really of more service during the few months which it spends with us than are many non-migratory birds during the whole of the year.

Its persistency in insect-hunting is really marvellous, as may be judged from the fact, recorded by a well-known naturalist, that, upon a day when placed under close observation, a pair of these birds_
menced their work at twenty-five minutes to four—
*i.e.*, before sunrise—in the morning, and did not cease from their labours until ten minutes before nine—or after sunset—in the evening. During the intervening period they fed their young no less than five hundred and thirty-seven times, so that these two birds, supposing them to have brought a single victim

only at each visit, and to have swallowed no more than one hundred additional captives themselves, must have killed between four and five thousand insects in the course of every week.

Unless needlessly molested, the spotted flycatcher cares little for the vicinity of man, and will hawk away busily for flies within a few feet of the observer. As a general rule, it attaches itself to one particular

The Spotted Flycatcher.
spot, returning to perch thereon after each of its frequent flights, and remaining constant to the same situation throughout its residence in the country. One pair of these birds which I often watched had selected the poles of a lawn-tennis net by way of watch-towers, and, unless the courts were actually in use, they might at any time be seen carrying on their unceasing pursuit of prey.

The nest of this flycatcher is generally placed either against a wall—whence its builder is often known by the alternative title of Wall Bird—or else upon the horizontal branch of some sturdy fruit-tree; but it is not very fastidious in its choice of an abode, and will at times build in almost any situation which affords sufficient room for its purpose. More than once I have found the nest in a hole in a tree, or rather in the fissure left by a branch which had been torn down by the wind. The eggs, which are four or five in number, are of a dull greyish-white colour, spotted rather thickly with brownish red, and somewhat remind one of those of the robin. As a general rule, one batch of eggs only is laid, but now and then a second family is brought up in addition.

The Pied Flycatcher, the only other British representative of the family, is a very much less plentiful species, and seems to be common nowhere save in parts of the lake district. It is a smaller bird than the preceding, from which it may be readily distinguished by the peculiarity of colouring from which it takes its name.
The pied flycatcher arrives in this country earlier than its spotted relative, and is generally to be seen, in the localities which it frequents, by the middle, or at latest the end, of April. In its diet and habits there is little of a distinctive character, and, indeed, were it not for its nesting arrangements, the same description would answer almost equally well for either bird.

Both the nest and the eggs of the pied flycatcher, however, are totally different from those of the preceding species. The former, instead of being placed upon a wall, or a beam, or a branch, or in any other of the manifold situations which the spotted flycatcher occasionally selects, is always built in a hole in a tree, and the eggs, which range from four to eight in number, are of an uniform pale blue colour, very similar to that with which we are so familiar in the case of the common hedge-sparrow. The nest is generally a somewhat loosely-built structure, composed principally of moss, hair, and dried leaves.

Very interesting birds are the Shrikes, or Butcher-birds, which almost deserve to take rank with the owls as regards the slaughter of mice, shrews, and various other small creatures which have earned for themselves the undying hatred of the agriculturist. Birds, frogs, lizards, beetles, grasshoppers, all the larger insects, in fact, fall frequent victims to the shrikes, which have a strange way of impaling their victims upon thorns in the neighbourhood of the nest, and so forming a kind of larder from which to draw when required.
The real object of this curious habit has never been ascertained. Some writers have suggested that the bird is taught by instinct, as the outcome of the accumulated experience of many generations, that the flavour of game is superior to that of newly-killed meat, and that this flavour can only be produced by waiting for incipient putrefaction to take place. This theory, however, at best a somewhat fanciful one, offers no explanation of the fact that insects, which only dry up under similar treatment, are impaled quite as frequently as larger victims. Others have supposed that the thorn serves the purpose of a fork, and holds the prey firmly while it is pecked to pieces and devoured. But the bird, when feeding, holds its victim with the claws, just as does any other bird of prey. It may of course be that the shrike is a provident and foreseeing bird, and lays up a supply of food in the event of a subsequent dearth, but whether this be the true explanation of this curious habit yet remains to be proved.

Upon one occasion, when quite a boy, I found a shrike take very kindly to sweets, but that, perhaps, was under circumstances which would scarcely be considered as affording a fair base for a scientific experiment.

I was "sugaring" for moths at the time, and, noticing a bird fluttering rather helplessly in a bush, boy-like, "made for" it, captured it after a lengthened pursuit, and ascertained it to be a young shrike, which had probably just left the nest for the first time. As the bird lay in my hand with its beak widely opened, I
presented the treacle-brush to it, and was rather surprised to find that it took a large gulp of the mixture, and apparently enjoyed it immensely. Again I offered it the brush, and again it swallowed a large mouthful of the treacle, and this was succeeded by four or five more before the bird showed signs of having taken sufficient.

The effect of the intoxicating mixture, however, was exceedingly rapid, for, when I put my prisoner upon the ground, he was quite unable to walk, or even to stand upright. In spite of all his efforts he could not succeed in keeping his balance even for a couple of seconds, turning over on his back as often as I placed him on his feet, and waving his legs helplessly in the air.

At last I propped him up in a forked branch and left him to recover from his excesses; and as he was not to be seen when I next visited the spot, I conclude that his intoxication passed off as rapidly as it overcame him.

Only one of these birds is really plentiful in Great Britain, and that is the Red-backed Shrike, or Lesser Butcher-bird, which in some parts of the country is known by the provincial titles of Flusher, Murdering Pie, and Jack Baker. Like so many others of our birds, it is only a summer visitor, reaching our shores about the middle of April, and taking its departure at the close of the summer.

This shrike is not quite so bitter an enemy to mice, &c., as its larger but scarcer relative, the Great Grey Shrike, but, on the other hand, it slaughters so
many insects that it must be considered as one of the most valuable friends of the farmer. Of cockchafers in particular it is especially fond, and three or four of these destructive beetles generally form part of the

shrike's provision stores so long as they remain upon the wing.

These impaled insects form a sure guide to the nest of the shrike, and, as though scorning the least pretence to concealment, the birds give vent to such a passionate outburst of cries and shrieks if their nest be approached that its position is at once made
manifest to the most careless of observers. In this respect, indeed, the shrike is even more foolish than the blackbird; for, whereas the latter bird flies away from its nest while uttering its cry of alarm, the shrike remains therein, or at any rate in the immediate neighbourhood, and so throws away its last chance of escaping observation.

The nest itself is a rather bulky object, and is placed either in a hedge or a thick bush, generally in such a manner that it can be seen by every passer-by. I have even found a nest of this bird in a dead bramble bush, scarcely two feet in height, where it could hardly escape observation. Shrikes, indeed, seem utterly devoid of caution, and have only themselves to blame for the frequency with which their homes are despoiled of their contents. The eggs are four or five in number, and vary so greatly that it is impossible to write a description which may apply to all. Even the ground tint is by no means constant, and yet the egg has an individuality of its own, and can hardly be mistaken for that of any other bird.

Few people have a good word for the Jay, a bird which is terribly persecuted by farmers and game-keepers, and which yet by no means merits the obloquy so commonly bestowed on it. To this Prévost-Paradol bears witness in the following account of its diet:—

"January, grubs of cockchafers, acorns, and berries; February, chrysalids and different grains and seeds; March, grubs, insects, wheat, and barley; April,
grubs, beetles, and snails; May, cockchafers and grasshoppers; June, eggs of birds, cockchafers, and beetles; July, young birds, flies, and beetles; August, the same, acorns, grubs, and dragon-flies; September, the same, and fruit; October, beetles, slugs, snails, and grain; November, the same; December, the same, and haws and hips."

The range of diet here given is tolerably extensive, but the bird really seems almost omnivorous, and very few eatable objects or substances come amiss to its voracious appetite. By gamekeepers it is greatly detested, owing to its fondness for both the eggs and the unfledged young of game birds, and a perpetual warfare is carried on against it, which bids fair before many years have passed to result in its almost total extermination so far as these islands are concerned. In some parts of the country, however, it still holds its own, and appears even to increase in numbers—possibly owing to the large number of immigrants which visited our shores two or three years ago.

My friend Mr. R. J. W. Purdy informs me that the jay is especially fond of barley at the time when the grain, although still soft and milky, is beginning to ripen. For nuts of various kinds, too, it evinces a special liking, while acorns are devoured by it in such numbers as to have earned for the bird the specific title of *glandarius*, signifying a lover of acorns. Of all the various eatables in which it indulges, however, there is none which appears to exercise so irresistible a fascination over it as the egg of another bird, and a trap baited with so tempting a
dainty is almost sure to lure the bird to its destruction. During the autumn and winter months, when genuine eggs are not to be obtained, artificial ones are often used in their stead, and are attacked with equal readiness by the undiscriminating jay.

To weigh against one another the merits and de-

merits of the jay is by no means an easy task, for the bird is the undoubted author of so much mischief that it is difficult to decide whether its services in killing other injurious beings compensate or not for its own depredations. It must be borne in mind, however, as I have already remarked, that, in cutting short the life of a mouse or a destructive insect, the
bird not only slays an enemy of the farmer, and so
saves him from present and future loss, but also in
numberless instances prevents its victim from pro-
viding for a succeeding generation, or generations, of
equally mischievous creatures. In other words, it
kills at the same time both a single actual victim,
and many hundreds of possible future ones—and
prevention, as we all know, is better than cure.

Again, as I have before remarked, the slaughter of
game must not be considered as commensurate with
the destruction of agricultural produce. Pheasants,
partridges, and other birds specially preserved are in
no sense a necessary of life, but merely one of its
luxuries, the unlicensed slaughter of a small number
inflicting no injury whatever upon the majority of
mankind, and causing but a trifling loss even to the
favoured few for whose benefit they are bred and
protected. We have, therefore, to take into account
the actual damage caused by the jay in devouring
corn, peas, beans, fruit, &c., and the chiefly theoretical
injury brought about by its destruction of young game;
while, on the other hand, we must remember its
services in the slaughter of mice, shrews, snails, slugs,
and mischievous insects of different kinds, laying
particular stress upon the havoc which these and their
descendants would have caused had those which the
bird devours been permitted to die a natural death.
And I think it will be pretty generally admitted that
the result is considerably in favour of the jay.

So thought Waterton, whose life-long study of birds
and their ways gave him an acknowledged right to
judge as to their merits. Not that he attempts to deny or to gloss over the mischievous proceedings to which the bird is at certain times addicted. On the contrary, he carefully recapitulates the various ways in which it is inimical to man, while at the same time expressing his sincere conviction that its merits outweigh its faults. “Our peas and ripe cherries,” he writes, in one of his celebrated essays, “have attractions which this well-known bird cannot resist. To these it unfortunately resorts, and loses its life by the gun of the watchful gardener, who never fails to magnify a petty act of plunder into a downright commission of felony. . . . . The gardener, in discharging his gun at it, is sure to make bad worse by his officious interference; for, in his eagerness to kill the poor bird, he never once reflects that the contents of his piece do ten times more harm to the fruit and to the tender shoots of the cherry-tree than the dreaded presence of half a dozen jays, all with empty stomachs. . . . . (It is) a bird which will ever have a friend in me, notwithstanding its acknowledged depredations in gardens and in orchards. Its pilferings are of short duration: they are too trivial to cause uneasiness, and of far too light a nature to demand the forfeiture of life.”

I may here, perhaps, be permitted to call attention to the fact that the slaughter of birds by gardeners is not always due to the personal wishes of the men themselves. Only a day or two ago I found a neighbour’s gardener armed with a gun, and on the watch for starlings, which, he said, were very apt to steal
both ripe and unripe cherries. Pointing out the extreme value of the bird in other ways, I asked him whether a few small robberies could not be forgiven it in consideration of its great usefulness, and was met, rather to my surprise, by a prompt acquiescence. For his part, said the gardener, he had no wish to kill the birds, but, unless he shot a certain number every year, his employer would accuse him of neglecting the fruit, and would very likely dismiss him from his situation.

The master, in this case, and probably also in thousands of others, is more to blame than the man.

As regards its temperament, the jay is a curious mixture of boldness and timidity. It will mob and persecute an owl, a weasel, or a stoat, and will display a courage akin almost to rashness while so doing; so much so, in fact, that an owl or a ferret is often used by professional bird-catchers as a lure to attract the jay, limed twigs being ranged round it in such a manner as to capture the bird as it makes its impetuous onslaught. On the other hand, it holds man in wholesome dread, and generally dashes off with a terrified squall as soon as it catches sight of him, more especially if he happen to be clad in velveteen and to carry a gun. Perhaps, however, under the circumstances, "discretion" would be a more appropriate word than "fear," the bird having learned by bitter experience that man is far more to be dreaded than all the beasts of the field. It is, doubtless, owing to the caution of the bird in approaching human beings that the war of persecu-
tion so long waged against it has not long since succeeded in driving it altogether from the country.

The nest of the jay, which is a somewhat clumsily-built structure of twigs, grass, and roots, is never placed very high from the ground, and is generally situated either in the top of a low tree, or against the trunk of a tall one. A favourite locality is the fork of some creeper, at a moderate height from the ground. The eggs, which vary from four to six in number, are rather larger than those of a starling, and are of a dull, greenish hue, freckled with light brown.

Next upon our list comes a group of birds of a totally different character, which, although certainly benefiting the agriculturist by the slaughter of his numerous enemies, are yet of greater service as natural scavengers, feeding principally upon carrion, and so destroying a substance which would pollute the atmosphere if allowed to decompose. These birds occupy the same position among the feathered race, indeed, as do the burying-beetles and the blow-flies among insects, assisting in the great and important task of purifying the world, and rendering it suitable for the habitation of higher beings.

First among these valuable birds comes the Raven, victim in only too many parts of the country to the "spread of civilisation," and fast dying out even in districts wherein he still takes up his abode. Time was when he was by no means a rarity, when he ranged free and undisturbed over the land, when game-
keepers as yet were not, and farmers, like most of their fellow-men, found vent for their slaughterous instinct in warring with human foes rather than with creatures standing lower in the scale. Each succeeding year, however, drives the bird farther and still farther afield. Man and he cannot live in peace together, and man, being the stronger, drives the raven again and yet again from his favoured haunts. And, before many years have passed away, the last raven will in all probability have been driven for ever from our shores.

There is some reason, no doubt, for the feeling against him. It is true that at times he will make a raid upon the poultry-yard, and incense the proprietor thereof by carrying off a duck or a chicken. True, that he will anger the gamekeeper by poaching upon his preserves. True, again, that in the course of his morning's flight he may espy from afar a weakly lamb, and, anticipating nature, may accelerate its latter end by the judicious use of his powerful bill. But even his greatest detractors cannot assert that such proceedings form part of his daily routine, and, when they do occur, his victims must be considered as the commission paid him in return for his services.

Carrion is by far the most favourite article of food with the raven, whose powerful wings enable him to survey an immense track of land in a comparatively short space of time, while his keen sight detects the presence of a dead sheep or lamb at a considerable distance. Should he fail to make such a discovery,
he will content himself with a rabbit, a bird or two, or even, in default of larger game, with a repast of insects or worms; and there is no doubt that of these latter he destroys a large number in the course of the year.

Still, however, his principal duties lie in removing from the earth the garbage which, by its putrefaction, would become the source of disease. Like that of the vulture, the hyæna, and the burying-beetle, his mission is to transmute death into life, to purify the atmosphere without which that life cannot be maintained, and to benefit others higher than himself while yet providing only for his own individual requirements.

He knows not the work that he does, nor yet that he works at all. But his labours are none the less real and appreciable, serving by one effort a double purpose, and rendering him that performs them a worker in that vast scheme which numbers among its servants all living beings, and which is bounded in its wide comprehensiveness only by the limits of time itself.

To the efforts of such as he we owe the very possibility of our existence in the world. In ages long since past, when marsh and swamp and unwholesome morass overspread the surface of the globe, the reptile race reigned supreme, for none of a higher organisation could breathe the foetid air, or withstand the deadly influence of the miasmatic vapour which hung like a pall over the reeking earth. Year after year, and century after century, they laboured
on, gradually, but surely, winning from pestilence and decay the land which, when reclaimed, could no longer afford them a home, and then gave place to others, who, taking up the work where these had left it off, again bore their share in the mighty task which even yet is not altogether accomplished. And in the raven and his fellow-workers we see the latter-day representatives of this mighty host, mighty in the present, mightier still in the past, and until the purification of the world is complete, and their services are no longer required, they will continue to work on in the interests of man, unless man himself should be foolish enough to prevent them from doing so.

There is, or was, in some parts of the country a curious tradition, alluded to by Addison, to the effect that the raven was originally white, and that his change of hue has been caused by his want of control over that unruly member, the tongue. In Addison's own words,

The raven once in snowy plumes was drest,
White as the whitest dove's unsullied breast;
His tongue, his prating tongue, has changed him quite
To sooty blackness, from the purest white.

The exact manner in which so remarkable a change was brought about, however, does not seem to have been explained.

Another tradition, more complimentary to the bird, and probably due in the first place to the scriptural
account of the feeding of Elijah the prophet by the brook Cherith, is mentioned by Shakespeare:—

Some say that ravens foster forlorn children
The whilst their own birds famish in their nest.

*Titus Andronicus*, act ii. scene 2.

In folk-lore generally, however, the bird appears in a far less amiable light, and is generally associated with deeds of darkness and the unhallowed rites practised by witches and their chosen followers. Necromancers, again, were always attended by a raven, generally considered as the embodiment of the familiar spirit to whose dearly-bought assistance their magical powers were due. And ravens have always been looked upon as "unlucky" birds, the mere appearance of which boded certain ill to those whose path they crossed.

Well for the raven if such superstitions had survived for a few years longer, for the warfare against it would then have been less bitter, and its eviction from its ancient haunts less rapid. But increase of knowledge and common sense, while benefiting some creatures, has injured others by dispelling the superstitious theories which saved them from injury; and the raven is one of the latter group.

Few of us nowadays have the good fortune to see the raven in its native fastnesses, but there are yet districts in which the bird is tolerably sure to be noticed, and in which it breeds year after year. The nest is a large and bulky structure, sometimes placed
on an almost inaccessible precipice, sometimes in the upper branches of a lofty tree, and composed always of sticks roughly lined with wool and hair. When once a pair of ravens have selected their nesting-place, they usually return to it in succeeding years, and thus, in course of time, a vast accumulation of materials takes place. The eggs, four or five in number, are very like those of the rook upon a larger scale, the ground colour being a dull green, variegated with sundry spots and blotches of brown.

The mere name of the Carrion Crow is evidence of its beneficial character, showing that we have in the bird an ally of the raven in the great task of purifying the world. The crow, in fact, is, both in appearance and in habits, a smaller edition of the raven, and merits our approval and encouragement in quite an equal degree.

Unfortunately, however, the bird in this respect but too seldom meets with its due. Men bear in mind the evil which it does, and close their eyes to the good, and the crow, like so many others of the feathered race, shows by its decreased numbers the relentless persecution which has been directed against it. Where ten crows might formerly have been seen, scarcely one is now to be found, and every year the bird seems to become more scarce, and to retire yet farther from the haunts of men.

Not that it is possible to deny the mischief of which it is frequently the cause, alike in the sheep-fold, the poultry-yard, and the preserves. Like the
raven, the crow will attack a weakly lamb, or carry off a leveret and a chicken, while at times it incenses the agriculturist by making a meal upon corn. But, on the other hand, it devours so large a quantity of carrion as to compensate in one way for the evil which it causes in another.

Like the raven, also, the crow is practically omnivorous, and will devour any eatable object which it may happen to find. Game, poultry, carrion, eggs, young birds, frogs, lizards, insects, and worms, none of these come amiss to its insatiable appetite, while it will frequently visit the seashore, and there feast heartily upon the various marine creatures which are washed up by the tide.

Of mussels it seems especially fond, and cracks them by the simple device of carrying them into the air, and allowing them to fall from a considerable height upon the rocks below—a proceeding which savours rather of reason than of instinct. The raven, by the way, is credited with doings of a similar character. Finally, the bird, paying a visit to the fruit-garden, will occasionally feast upon ripe cherries and walnuts.

Waterton's paper upon the carrion crow is one of the most interesting of all his interesting essays, more especially as he devotes a large proportion of his remarks to investigating the amount of damage caused by the bird in the preserves. And it is scarcely necessary to say that his verdict is strongly in favour of the crow.

"If we were to sum up, on one side," says he,
"the probable number of pheasants and partridges destroyed in one season by the carrion crow; and, on the other, reckon up how many times the keeper has disturbed the game by going in search of this bird, and thus exposed the nests of partridges and pheasants to certain destruction by vermin of all kinds; and then if we take into the account the many heads of game which the keeper had killed in his steel-traps and rabbit-snares, we should conclude, I think, that in the long run the game actually suffers more from the keeper, in his attempts to destroy the crow, than it really does from the crow itself while catering for its young. Indeed, I have made out the account myself; and, finding the balance to be against the keeper, I have renewed the order which I gave to his predecessor, never, upon any score, to persecute what is commonly called flying vermin."

In another part of the same essay he remarks:—

"With the exception of these two petty acts of depredation (i.e., devouring cherries and walnuts), he does very little injury to man during nine or ten months of the year; and if, in this period, he is to be called over the coals for occasionally throttling an unprotected leveret or a stray partridge, he may fairly meet the accusation by a set-off against it in his account of millions of noxious insects destroyed by him. However, in the spring of the year, when he has a nest full of young to provide for, and when those young begin to give him broad hints that their stomachs would like something of a more solid and substantial nature than mere worms and caterpillars,
his attention to game and poultry is enough to alarm the stoutest-hearted squire or henwife. . . . From what I have written, the reader may be able to form a pretty correct idea of the habits of the carrion crow; and he will perceive that, for nearly ten months of the year, this bird, far from being considered an enemy, ought to be pronounced the friend of man.”

The balance seems certainly in favour of the crow. Two months of enmity are more than counterbalanced by ten months of service; and had we no worse foes with which to contend than the carrion crow, we might deem ourselves fortunate indeed.

Owing to the great similarity between the two birds, the crow is frequently confounded with the rook, from which, however, it may be distinguished by the fact that the base of the beak is surrounded with feathers, whereas in the latter bird it is encircled, after the first few months, by bare, scurfy skin. The crow, too, is generally a solitary bird, and is rarely seen in company, while the rook, as we all know, is eminently a sociable creature, and eats, drinks, and sleeps in large companies, often consisting of many hundreds of individuals. This latter rule, however, does not always hold good, for the crow is occasionally to be seen in flocks of fifty or more.

As regards the nesting arrangements of the crow, there is little to chronicle. Like the rook, it builds in the topmost branches of some lofty tree, and constructs its abode of sticks, roots, grass, and hair, the latter material forming the lining upon which the
eggs are placed. The nest is generally rather loosely put together, and is seldom of any great depth. Five or six eggs, generally varying considerably in size, are laid, and these, although smaller than those of the raven, are otherwise very similar.

It is a rather curious fact, by the way, that both the raven and the crow nest very early in the year, and are generally sitting before the month of February is at an end.

The Hooded or Royston Crow is very similar in many respects to the preceding species, from which it may at once be distinguished by the greyish hue of the back and the breast. It is not at all a common bird in England, but is more abundant in Ireland, Scotland, and the adjacent islands, where it breeds freely, and is to be seen at all seasons of the year.

The services of this bird, unfortunately, are considerably qualified by the mischief which cannot but be attributed to it. Young, weakly lambs, and poultry, game-birds and their eggs it destroys in numbers, "quartering the ground" in search of the latter, as my friend the Rev. M. C. H. Bird tells me, "like a setter." On the other hand, it devours quantities of carrion and myriads of insects, so that it is by no means without its redeeming features.

While visiting the sea-shore it varies its diet a good deal, seeking for marine animals when the tide is low, and retiring inland when it rises in search of food of a different character. Shell-fish it destroys by dropping them from a height, as recorded of the
carrion crow, and is said sometimes to vary the process by carrying a stone into the air, and then allowing it to fall upon the shells. This last statement, however, may or may not be true.

Unsociable as it is during ten months of the year, the hooded crow seems still less inclined for society when it takes upon itself family cares, and builds away from others of its own kind, where there is none to watch its going out and its coming in. The nest is constructed upon much the same principles as that of the carrion crow, saving that heather generally enters somewhat largely into its composition, and the four or five eggs differ but slightly in colour and markings from those of the allied species.

In weighing the character of both the common and the hooded crow, we must take into consideration the fact that these birds are not only natural scavengers, but insect-eaters on a large scale as well. They serve us in two distinct manners, therefore, while injuring us in one—for their thefts of fruit and grain are so very few and far between as to be almost unworthy of consideration. But their mischief, unfortunately both for themselves and for us, is of a very visible character, while their services are rarely seen by us, and still more rarely appreciated. And so the crows have for many years suffered under imputations which they do not deserve, and have been so greatly reduced in numbers that there are now few parts of the country where they may be considered as plentiful.
The lot of such birds as the crows is indeed a deplorable one. Nature forces them to qualify the benefits which they confer on man by a certain amount of mischief very much less in extent. Man notices the latter, and passes by the former, and the birds suffer the penalty of human ignorance and folly.
CHAPTER VII.

THE ROOK AND HIS KIN.


The position of the Rook in popular estimation has greatly altered, and very much for the better, in the course of the last few years. Not so very long ago it was pretty generally regarded as the deadly foe of the agriculturist, one which at all costs must be kept down in order that the earth might be enabled to yield her increase. Traps were set, poisoned grain was laid down (always a most dangerous experiment), and the gun was brought into use, until it seemed more than likely that the rook would suffer the same fate which has befallen so many others of the feathered race, and be driven from the country by the very men whom he benefited so greatly.

At last and by gradual degrees, however, it was realised that a bird which is mischievous during a part of the year may be so useful during the remainder as to more than compensate for its former ravages.
Farmers, in fact, began to understand that a choice of two alternatives lay before them. The one, to kill off the rooks, and allow their crops to be wholly destroyed by insects; the other, to allow the birds free access to their fields, and to submit to the loss of a small part of their produce in consideration of the preservation of the great remainder. And common sense and self-interest at last led them to choose the latter.

It is somewhat strange, however, that such a precedent should not have been followed in the case of
other birds. Most, if not all, of those which are now persecuted are beneficial to some degree, while not a few are regarded from a wholly false point of view, and treated as enemies although they are unqualified friends. Let us hope that the spread of natural history will ere long plead for these as it has already pleaded for the rook, and put a stop to slaughter which is as foolish as it is unnecessary.

Prévost-Paradol gives the food of the rook as follows:—

"January, field-mice and grubs of cockchafer; February, the same and red worms; March, larvæ and chrysalids; April, slugs, worms, and chrysalids; May, beetles, larvæ, prawns, and wireworms; June, cockchafers, eggs of birds, and wood-boring beetles; July, young birds, beetles, &c.; August, birds, field-mice, weevils, grasshoppers, crickets, &c.; September, grubs and worms; October, grasshoppers, ground-beetles, and young animals; November, young rabbits, different insects, and grubs; December, different animals, and decaying substances."

This list, however, is less complete than it should be, for the rook varies its diet at certain times of the year with corn, fruit, walnuts, and potatoes; the latter usually during drought, when moisture is rare, and the succulent tubers are particularly attractive. It may be, however, that the bird extracts the potatoes for the sake of the grubs, &c., which are sometimes to be found feeding upon them, occasionally to so great an extent as totally to unfit them for purposes of the table.
Now and again, too, the rook, like the raven and the crow, is apt to visit the coverts and appear in the guise of an amateur poacher, making off with a young bird or two, or perchance a nest of eggs; and it has been noticed while "quartering" the ground, just as has already been described of the hooded crow. But all such illicit seizures, whether of game, fruit, or corn, form but a very small set-off to the immense benefit conferred by the rook upon agriculture by its incessant slaughter of injurious insects, and notably of such giants of mischief as the cockchafer grub, the wireworm, and the grub of the daddy-longlegs (Tipula). All three of these creatures, living beneath the soil, are not only inaccessible to ordinary means of destruction, but attack the different crops in their most vital parts, devouring the roots, and so rendering inevitable the speedy death of the infested plants. And very few roots escape their ravages. Corn suffers terribly from their jaws, and all root-crops are injured greatly by them, while, to descend to produce of less importance, the Rev. C. A. Johns states that he has known a large portion of a bed of garden lettuces destroyed by a single cockchafer larva, which he followed up from root to root, and finally captured as it was beginning upon a previously untouched plant. And every farmer and every gardener knows the extent of the mischief wrought by wireworms. I have found a large mass of tubers of the Jerusalem artichoke so eaten away by them that barely one-half of the substance remained. And, as the grub of the cockchafer lives for three and the
wireworm for five years underground, during almost the whole of which time their depredations continue, and as both destroy far more than they actually devour, it may well be understood that the agriculturist has no more bitter foes, and none whose slaughter confers upon him a greater benefit.

And that these three insects are among the favourite food of the rook may be seen from the following extracts, which are of so valuable and conclusive a character that, although I have already made use of them elsewhere, I offer no apology for quoting them again.

The first, which is taken from Mr. Curtis's valuable work upon "Farm Insects," and quoted by him from the Magazine of Natural History, is as follows:—

"In the neighbourhood of my native place, in the county of York, is a rookery in which it is estimated that there are 10,000 rooks; that 1 lb. of food is a very moderate allowance for each bird; and that nine-tenths of their food consists of worms, insects, and their larvae; for, although they do considerable damage to the fields for a few weeks in seed-time and a few weeks in harvest, particularly in backward seasons, yet a very large proportion of their food, even at these seasons, consists of insects and worms, which (if we except a few acorns and walnuts in autumn) compose at all other times the whole of their subsistence. Here, then, if my data be correct, there is the enormous quantity of 468,000 lb., or 209 tons, of worms, insects, and their larvae destroyed by the rooks of a single rookery in one year. To every one
who knows how very destructive to vegetation are the larvae of the tribes of insects . . . . fed upon by rooks, some slight idea may be formed of the devastation which rooks are the means of preventing."

A correspondent of the Gardener's Magazine, vol. ix., p. 718, makes the following remarks upon the same subject:

"I have repeatedly examined the crops of rooks; in six young that had been shot the crops were nearly filled with wireworms; in the crops of others I have found the larvae of the cockchafer, and other grubs that I am not entomologist enough to know the names of. In one or two instances, in frosty weather — when, of course, wireworms, &c., could not be obtained — I have examined the crop of one or more rooks that had been shot: it contained dung, earth, and a small portion of grain. I will just notice that the land adjoining Mr. Wiles's rookery is annually sown with pulse or grain, and in no instance have I known or heard that the land has in consequence failed of a crop."

The following communication also appeared in Science-Gossip for September, 1880:

"About ten days ago a rook from amongst a flock which were feeding in a meadow here was shot for the purpose of ascertaining what they were so busily looking after. In its mouth, or pelican-like pouch, in which they carry food to the sitting hens and to their young ones, were found twenty-one Tipula grubs, which no doubt were intended for young which had escaped rook-shooting. I find rooks in an hour, on
an average, visit their young in nests about four times; and if we take that as a fair specimen, eighty-four of these grubs are destroyed per hour for each nest."

And it must not be thought, when rooks are seen congregated in a newly-sown field, or in one in which the corn is ripe, that they are necessarily feasting upon the grain. "The only rook," writes the Rev. M. C. H. Bird to me, "that I have opened during 'crow-scaring' time had been feeding on absolutely nothing but wireworms." Neither must it be supposed that the tufts of corn, grass, &c., which it occasionally pulls from the ground are destroyed in a spirit of mischief. Beneath each a grub was lying, only to be reached by rooting up the plant; and, as the grub in question would have destroyed, not only that individual plant, but also a large number in addition, the gain resulting to the agriculturist from the rook's so-called "mischief" is really very considerable.

Sometimes a badly-infested piece of ground presents a very strange appearance after the rooks have performed their good work upon it. "I have seen," says Mr. Bird in the letter above referred to, "rods of ground on the (Norfolk) marshes pecked up by the rooks in search of grubs, the moss lying about as if the grass had been bush-harrowed. Thus, I take it, they doubly benefit the farmer."

Another accusation frequently brought against the rook is that it drives its beak into the roots of turnips, or swedes, and so damages them as to spoil them for the market. The bird in so doing, however, is in almost every case busied in extracting the grubs of
the turnip-moth \((Agrotis segetum)\), which, as every entomologist knows, work their way into the root during August or September, and there remain until fully fed, eating away a large chamber in the lower part. Now these turnips, when once attacked by the caterpillar, are doomed, and even if the rook were to cut them to fragments he could damage them no more, while in killing the larvae he would prevent their conversion into moths, whose eggs in the following season would produce a large brood of fresh caterpillars. "Whenever I see a flock of rooks at work in a turnip-field," writes Waterton, "which, in dry weather, is often the case, I know that they have not assembled there to eat either the turnips or the tops, but that they are employed in picking out a grub which has already made a lodgment in the turnip."

To destroy a rook while thus employed, indeed, would be about as rational as to shoot a policeman for following a noted burglar into a house which he had forcibly entered.

Most of us, no doubt, have seen the rook following the plough, and picking up the grubs and worms as they are turned out of the ground. Sometimes quite a flock of the birds may be seen thus engaged, and there can be no question that the number of mischievous creatures which they at such times destroy must be very considerable. Save and except at seed-time and harvest, indeed, a rook in a field is a rook in his right place, and the farmer who most encourages him will be the most likely to grow a successful crop.
In its social habits, the rook is a curious contrast to the crow, which, as I have before stated, is a remarkably solitary bird, and is very seldom seen in company with others of its kind. A single rook, indeed, is a rare sight, while a flock of many hundreds is not at all unusual, and in some cases, such as that already referred to, these hundreds are replaced by thousands. Each community is governed by certain laws which are rigorously administered, any breach thereof being visited by prompt and certain punishment. The younger birds, for instance, are not allowed to build at a distance from the main body; and the stealing of sticks, &c., from nests belonging to others is a crime of the deepest dye. In all breaches of these regulations, the main body of birds appear to band together against the offender, who in serious cases is even condemned to death and executed upon the spot.

About the second week in March great excitement is usually manifested in the community, and a general inspection takes place of the last year's nests. Some, which have suffered severely from the storms of winter, or which are situated in trees showing signs of decay, are adjudged to be no longer safe, and the materials are removed to do duty elsewhere. Others which have received less injury are carefully patched and made whole; while the young birds and those whose dwellings have been condemned are busy at work selecting sites for building operations. Day after day the work of repairing and constructing is carried on, the rooks retiring at nightfall to their winter
roosting-places, until at length the nests are completed, the eggs laid, and the final migration takes place to the breeding-ground.

In almost every case the nest is placed among the topmost branches of a lofty tree—an elm being, perhaps, the favourite—and so inaccessible is the chosen situation that even the most daring and agile of nest-hunting boys is generally baffled in his attempts to take the eggs. These are four or five in number, and are of a dull, greenish hue, mottled and marbled with a deeper tint, and varying to a slight degree both in shade and markings.

Rooks are generally considered to take high rank among the many natural weather-prophets with which the country resident soon becomes familiar, intimating, by sundry divings and tumblings in the air, the near approach of heavy rain. At such times, the birds generally mount to a great height, and then descend, or rather allow themselves to fall, with most wonderful rapidity, the wings causing a curious rushing sound as their owner passes through the air. Waterton, however, refuses to allow that such proceedings in any way presage an impending change of weather. “It is merely the ordinary descent of the birds,” he writes, “to an inviting spot beneath them, where, in general, some of their associates are already assembled, or where there is food to be procured. When we consider the prodigious height of the rooks at the time they begin to descend, we conclude that they cannot effect their arrival at a
spot perpendicularly under them by any other process so short and rapid."

Such is Waterton's comment upon the subject, in which, however, he fails to explain why it is that the birds should at one time ascend to so great a height, while at others they content themselves with a much lower elevation.

As already stated, the rook may be easily distinguished from the carrion crow, which otherwise it much resembles, by the fact that the skin at the base of the bill is destitute of feathers. It was for many years supposed that this nudity was due to the frequency with which the beak is thrust into the ground, the feathers being in consequence worn down by the incessant friction. But this theory has been shown to be altogether incorrect, for not only do the feathers fall out in rooks brought up by hand, although their owner has never had an opportunity of plunging its beak into the ground at all, but the growth of the feathers in the wild bird wholly ceases, whereas, were they merely worn away, Nature would as constantly attempt to replace their loss.
CHAPTER VIII.

THE JACKDAW AND THE STARLING, ETC.


The noisy, impudent Jackdaw is another of the many birds which combine in themselves the properties of a friend with those of a foe, and, as is so frequently the case, the former qualities seem greatly to preponderate. That the bird is terribly destructive to ripe fruit, peas, &c., its best friend cannot deny; that it devours myriads of injurious insects, its worst enemy must perforce admit.

Especially is this the case during the breeding season, at which time the jackdaw carries vast quantities of insects to its mate and its hungry young. But there is no time of year—save, perhaps, during hard and prolonged frost—when insects and other mischievous creatures do not form a great part of its diet; and if its occasional thefts be weighed
against its frequent services, the result is overwhelmingly in favour of the latter.

As the rook is a kind of miniature raven, so in many respects is the jackdaw a miniature rook, with which bird, indeed, it frequently consorts during the greater part of the year. As the breeding season comes on, however, a separation takes place, for the jackdaw invariably builds under shelter, whereas the rook as invariably nests exposed to every wind that blows. It would seem, indeed, as though the constitution of the jackdaw were unusually delicate in early life, for, although during nine months of the year it roosts in exposed situations, the young are always most carefully
protected from the elements in a tower, a steeple, or a hole in some tree.

Excepting as a cage bird, the jackdaw is scarcely a popular favourite, the incessant chatter which proceeds from a colony being greatly disliked by many people. In some parts of Europe the vocal powers of the bird are put to a novel use, as recorded by Sir H. C. Barkley in his interesting and entertaining work "Between the Danube and the Black Sea."

"We were greatly amused," he writes, "with a jolly, knowing-looking little jackdaw, that chatted to us and hopped about the room without the least fear. "Our host told us that the bird was made use of when shooting foxes.

"A sportsman carries it with him to the forest, and hides himself at the edge of some open space. He then holds the bird by the tip of its wing, which it thinks a great indignity, and holloas and croaks with all its might. If there are any foxes near, they will come creeping out to see what the strange noise is, and then (should the old Turkish flint go off, which it does about once in three attempts), the fox is killed, and its skin stripped off and sold at the next fair."

The nest of the jackdaw is rather a clumsy structure of sticks, roughly lined with wool, hair, feathers, and similar substances. The eggs, which average five in number, are very like those of the rook upon a somewhat smaller scale, excepting that the ground colour is usually of a paler green.

Much that has been said of the jackdaw applies
equally to the Magpie, which also stands before us in the double capacity of friend and foe, and makes good in one way the mischief which it commits in another. This may be seen in some degree from the following extract from Prévost-Paradol's remarks as to its doings upon the Continent:

"January, grubs of cockchafers, beetles, and different corns and seeds; February, the same, and berries; March, the same; April, moles, crickets, water-rats, and field-mice; May, cockchafers, glow-worms, and fruit; June, the same and weevils; July, beetles and field-mice; August, birds' eggs and weevils; September, beetles, worms, barley, and

The Magpie.
grasshoppers; October, grasshoppers, carrion, beetles, and green locusts; November, grasshoppers and kernels of fruit; December, grubs of cockchafers, young rabbits, and berries."

To this catalogue must be added, at different periods of the year, rats, young birds, lizards, frogs, snails, and carrion, while game birds are not unfrequently carried off by a magpie poacher, to the great indignation of the keeper.

Partly on account of its marauding propensities, and partly owing to the superstitious dread with which it is still regarded in many country districts, the magpie has been terribly persecuted, and until of late years was almost without a friend. Waterton, however, protected the bird "on account of its having nobody to stand up for it." Now, happily, better counsels in many cases prevail, and the services rendered by the bird are allowed to atone for the mischief which it commits in other ways. And the services in question are undoubtedly of a very distinct and valuable nature, as may be judged by the above list of its diet; while, to pass from great things to small, cattle are often relieved by it in no small degree owing to the perseverance with which it will follow up and capture the vermin which annoy them so greatly. It is, in fact, only during the breeding season that the magpie is mischievous to any great degree, for beyond the occasional theft of a little fruit, it robs us only to a very slight extent during the remainder of the year.

The architectural powers of the magpie are of a
considerably higher order than those of the jackdaw, for it builds a domed nest, with an entrance at the side, upon an open branch, and lines it carefully with root-fibres and clay. The site of the nest varies very much. Generally a tall tree is chosen, and the nest placed among the topmost branches, but not uncommonly the bird chooses a much lower situation, and will even build occasionally in a hedge. The eggs, which are usually seven in number, are of the ordinary crow type.

The good qualities of the magpie’s nest, after its legitimate owner has left it, appear to be fully appreciated by others of the feathered race, and, in a district in which the bird abounds, quite a small collection might be made of alien eggs taken from its disused abodes. A correspondent of *Science-Gossip* gives the following list of eggs which he has at different times taken from deserted magpies’ nests:—“Kestrel, sparrowhawk, brown owl, blackbird, thrush, starling, stockdove, pied wagtail, redstart, nuthatch, creeper, great tit, blue tit, and once, built in the cross-sticks of the dome, the nest of the long-tailed tit.”

The Chough is so local and comparatively scarce a bird that, although it is both an insect-eater and a scavenger, we will pass it by without further notice, and transfer our attention to the Starling, one of the most useful of all our British birds.

All that can be said against it, indeed, is that it is rather apt, at times, to visit a fruit garden or a cherry orchard, in order to regale itself upon the produce.
Herein, however, it is not singular; and, after all, in so doing it pays a compliment to the care and discrimination of man, who, by long and careful selection, has raised our fruits so greatly above the standard of their wild prototypes. Neither are its depredations so frequent nor so excessive as to tell greatly in its disfavour. A few berries here and a few berries there the bird will certainly take, and only the most churlish of fruit-growers could grudge so slight a repast to a creature whose services are so incessant and so great. For many years the starling bore a bad character on account of its supposed fondness for eggs, more especially for those of pigeons, in whose cotes it is fond of nesting. That this theory was a mistaken one, however, was long since shown by Waterton, who encouraged the bird at a time when its friends were few, and allowed it freely to breed in his dovecotes. The real robbers in such cases, he points out, are rats and weasels, which, carrying on their burglarious proceedings by night, are not generally detected in their wrong-doing, the punishment of which falls upon innocent shoulders. In the destruction of thatch and the stopping of pipes, &c., during the nesting season, the bird is certainly troublesome, but doings such as these scarcely deserve to be taken into the account.

Prévost-Paradol gives the food of the starling as follows:—

"January, worms, grubs of cockchafers, and grubs in dung; February, grubs, snails, and slugs; March, grubs of cockchafers and snails; April, the same; May, the same and grasshoppers; June, flies and
grubs of various flies; July, grubs and fresh-water shell-fish; August, flies, glow-worms, and various beetles; September, green locusts, grubs of carrion-beetles, and worms; October, worms and beetles; November, snails, slugs, and grubs. In summer it

adds fruit, and in winter, hips, haws, and buds of trees.”

Among the favourite victims of the starling is the grub of the daddy-long-legs, that terror of all farmers who lay down their land in pasture, or who are compelled to grow corn, &c., upon a heavy soil. Hidden away beneath the surface of the ground, this grub, generally known as the “leather-jacket,” cuts away the
roots of the vegetation, and thus causes the death of the plants; and so exceedingly mischievous is it that, in cases of bad attack, one can roll up the turf just as though it had been carefully cut with the proper tools.

In some strange way—probably by means of its keen sense of hearing—the starling detects the presence of the grub in the ground, and promptly unearths it with a stroke or two of its powerful beak. During the early morning starlings may be seen thus employed upon almost any grassy piece of ground, every dig of their beaks being the knell of one of these grubs, or of some almost equally destructive creature which was busily at work upon the root, and so attacking the plants at their most vulnerable part.

Starlings are also very fond, like the magpie, of the various parasites which torment cattle so greatly, and may often be seen perched upon the back of a sheep, and industriously searching its fleece, very much as a monkey examines the coat of a companion. Another custom, too, is to follow the animals as they walk along, in order to snap up the insects disturbed by their feet.

In some parts of the country starlings are exceedingly numerous, and the consequent gain to agriculture is proportionately great. Near Chelmsford is a small wood famous for the immense number of these birds which tenant it during the winter nights, arriving from all quarters, and roosting upon the branches almost in masses. Concerning this wood Mr. Prior-Johnson, of Great Baddow, writes to me as follows:—
“The small wood in question is only frequented in autumn and early winter by these flocks of starlings; where they go later on I cannot say. Doubtless their being here at such times is occasioned by their finding suitable food in the locality, and when this supply is exhausted they are off to pastures new.

“My neighbour, who owns the little wood, considers the birds his best friends, and I fully endorse his views. Thousands may be seen upon the grass lands, especially where cattle and sheep are grazing; these animals disturb the grass in eating and walking, and the starlings follow up close on their tracks, and seem busy in picking up food of some such nature as the Tipula, or grey wire-grub, as we call it, and which turns into the daddy-long-legs. I never knew these birds to eat grain of any sort, and if I find them frequenting wheat lands I do not disturb them, for I presume the soil provides them with insect food such as wireworm, which is very destructive in spring to our corn crops.

“When these birds are settling down to roost in their tens of thousands, the noise in the distance, say of five hundred yards, is very strange, and resembles the sound of a lot of hurdles drawn along a roadway. They cover the branches of the wood to such an extent that they give the bare branches all the appearance of being covered with foliage.”

In a recent issue of Land and Water, also, appeared a communication worthy of notice, the writer calling attention to the case of a three-acre field, lately sown with grass. No sooner was the seed laid
down than a flock of starlings took possession of the field, and began pecking away in their usual industrious manner. In order to ascertain whether their proceedings were friendly or hostile, a gun was fired into the flock, and two birds killed. On these being opened, however, their crops were found to contain nothing but insects, proving that the grass-seed had no attractions for them, and that they might safely be trusted to do no mischief, even when assembled in a newly-sown field.

It is a curious fact that these flocks of starlings, during flight, are always under the guidance of a single leader, whose directions seem to be instantly transmitted to every member of his following. And the instantaneous manner in which these commands are obeyed must have been noticed by every one who has watched these birds while on the wing. The flock seems to move by a single impulse, swerving in this direction or in that with the unanimity which characterises a regiment of soldiers, and sometimes going through the most complicated manoeuvres as though indeed actuated by a common spirit. Sometimes the flock will suddenly resolve itself into a number of companies, which, after wheeling and circling twice or thrice, will again unite and continue their onward progress.

How the word of command, if we may use the expression, is so rapidly transmitted is a puzzling question. It may be, of course, that each bird's attention is fixed on the leader, and that its control over its muscles is sufficiently great to enable it to
perform any required evolution exactly in unison with the movements of that leader. Even this theory, however, will not account for the sudden dispersion into smaller flocks, each with its temporary guide, and their equally sudden reunion into a common body. Yet, what other explanation is possible? No sound can be uttered, and, even were some such signal to be given, it could not travel to the extremities of the flock with sufficient speed to account for the perfect unanimity of every movement. Science and conjecture, indeed, are equally at fault when attempting to explain the mystery, and we can only relegate it—at any rate for the present—to the ever-increasing list of natural phenomena the causes of which are still concealed from our understanding.

Like the jackdaw, the starling always selects a sheltered spot for its nest, and generally chooses some such situation as a tower or steeple, an old ruin, a water-pipe, or a hole in a decaying tree. Every now and again, however, a nest is found in an inverted flower-pot, a rabbit-burrow, or some other wholly unexpected locality.

Nest, perhaps, is hardly the right word by which to describe the starling's domicile, for the bird does little more than pile together a quantity of straw, hay, roots, and feathers, its architectural talents seeming to be quite inadequate for the task of building, properly so called. The bird has little idea of concealment, frequently allowing a streamer of straw or hay to point out the position of the nest to the most careless observer, while, as if such a token were in-
sufficient, the incessant chatter of the parent birds can hardly fail in drawing attention to its whereabouts. In this shapeless bundle of material the starling lays from four to six eggs, varying to some little extent in point of size, but always of the most delicate and uniform pale blue colour, without marking of any kind whatsoever.
CHAPTER IX.

FINCHES.


Many of our British Finches are familiar to us all, as much on account of their song as of their varied and beautiful plumage. And, alas! more than one is generally considered as an outcast—an agricultural Pariah—to be driven from our fields, or even destroyed, by every means which lies in our power.

To begin with the Chaffinch, one of the commonest and prettiest of the group, which is so universally distributed that it cannot but be familiar to all. Alike in garden, field, and wood is its brilliant plumage to be seen, while its nest, with the prettily marked eggs, is generally among the first trophies of the schoolboy, when once he has passed the era of blackbirds' and thrushes' nests—the A B C of egg-collecting—and attained to those which, although more carefully concealed, are yet to be discovered by
any one who will take the trouble to search for them.

The chaffinch, unfortunately, is a bird with a bad character. He is detested by the gardener, whose seed-beds he ravages, and is in equally bad repute with the farmer, owing to his fondness for seedling turnips and shooting corn, &c. His great passion, however, is for pungent seeds; and if he should happen to light upon a plot of freshly-sown radishes, or mustard and cress, he will pursue his investigations until five-sixths of the seed is destroyed. Even in the flower-garden he is mischievous at times, and seems to have a special partiality for the flowers of the polyanthus, which he destroys as soon as the buds show signs of bursting. And that there are good grounds for the dislike of the farmer may be judged from the fact that three acres of ground sown with turnips, in which the young plants were just showing above the soil, were entirely stripped by chaffinches in the course of a single day.

Robbery on so large a scale as this, however, is most unusual, and, as a general rule, the losses due to the bird in the course of the year do not amount to any great sum. On the other hand, it eats an immense quantity of noxious seeds—and every such seed devoured is a probable weed destroyed—and also kills myriads of insects, so that its mischievous qualities are counterbalanced by its services. That this is a well-ascertained fact may be judged from Prévost-Paradol's account of its diet, which is as follows:—

"January, seeds, berries, and kernels of fruits;
February, the same, and corn; March, the same, and insects; April, moths, flies, and insects of various kinds; May, cockchafers, grubs, and eggs of insects; June, the same, and wild fruits; July, the same, and grubs of beetles; August, moths and butterflies; September, eggs of insects, worms, and seeds; October, wood-boring beetles, seeds, and insects; November, seeds; December, seeds and buds."

The Chaffinch.

It will be noticed that during eight out of the twelve months insects form a part, and often a large one, of the chaffinch's diet; and as the young are brought up wholly upon insect food, and as the parents, moreover, devour a vast number of noxious seeds during the winter months, it will be seen that the bird amply atones for its misdemeanours at
certain times, and justifies its claim to our encouragement and protection. During seed-sowing, no doubt, it must be kept at a distance; but upon no account should the bird be killed.

The chaffinch is a capital architect, and makes one of the neatest of nests with moss, hair, wool, feathers, and lichens, the latter of which it carefully fastens upon the exterior by the aid of spiders' web, so as to assimilate the walls, as far as possible, to the appearance of the surrounding branches. In almost every case the nest is placed in the fork of a branch at its junction with the main stem, or with a larger bough, and a sharp eye is generally needed in order to detect it from below. The eggs, four or five in number, are of a peculiar dun colour, spotted and streaked towards the larger end with dark brown.

The Goldfinch, again, is a very useful bird to the agriculturist, feeding largely upon the seeds of plants which not only exhaust the soil by their growth, but can only be eradicated by dint of considerable labour and expense. Of such seeds as those of the thistle and groundsel the goldfinch is especially fond, and may often be seen chasing them as they are blown along by the wind, or tearing them out in quantities before they have left the parent stem. Quite a little flock of these birds may often be seen in spots where these weeds abound, perching upon the stems, and devouring the seeds by thousands before they are dispersed by the wind.

In the spring, too, and particularly during the
breeding season, the goldfinch is also a great destroyer of insects, upon which the young are almost wholly fed. The bird, therefore, is doubly useful to the agriculturist, and as no serious accusations in the way of grain or fruit stealing have ever been brought against it, we are justified in ranking it among the most valuable of the farmer's friends.

The nest of the goldfinch is a singularly neat and pretty structure, and is frequently placed in the fork of a standard fruit-tree, or among the thick foliage at the end of the branch. Sometimes, however, it may
be found in a bush or a thick hedge, but the former situation is by far the more common one.

The materials vary in accordance with the site selected, the bird always endeavouring, like the chaffinch, to assimilate the exterior of her abode as far as possible to surrounding objects. The nest of the goldfinch, indeed, is generally a most difficult one to find, for not only do its tints harmonise almost exactly with those of the branch upon which it is built, but the surrounding foliage generally conceals it from sight; while the bird, instead of starting out from the nest itself, is cautious enough to make its way for some little distance along the bough before taking to wing. The four or five eggs are of a pale bluish-white colour, variegated with sundry dots and streaks of purplish brown.

Everybody is more or less familiar with the Greenfinch, which is one of our commonest birds, and may be seen in almost any number in the course of a country ramble.

Although less valuable than its relative the goldfinch, this bird must certainly be considered as the ally of the farmer, sadly though it may rob him at times of a part of his produce. During the breeding season more especially it destroys great numbers of insects to serve as diet for its young, while at other periods of the year it turns its attention to seeds, and so takes a prominent share in the important task of reducing the abundance of weeds. Prévost-Paradol's
researches with regard to the food of the greenfinch give the following results:

"January, seeds, berries, wild fruit, and worms; February and March, the same; April, the same and insects; May-August, the same; September-December, seeds, berries, wild fruit, and worms."

The Greenfinch.

As far as the art of building is concerned, the greenfinch is decidedly inferior to both the preceding birds, although its nest is yet a neat and beautiful structure. The chosen situation is generally a thick thorn hedge, and the materials usually employed are moss, roots, grass, and hair. The eggs, from four to
six in number, are bluish white, with a number of reddish spots and markings.

The well-known Linnet is another of the many beneficial finches, its services to the agriculturist in destroying wild seeds and insects far out-weighing the trifling robberies which alone can be brought in evidence against it. Gardeners in this neighbourhood (Isle of Thanet) seem to unite in attributing to the bird the mischievous habit of stripping gooseberry-bushes of their buds in early spring. I cannot ascertain, however, whether this opinion rests upon actual observation or upon mere conjecture; judging by the way in which gardeners and farmers usually leap to conclusions upon such subjects, I should say the latter.

I quote the following from Prévost-Paradol's report:—

"January, seeds and berries; February–April, the same; May–September, the same and insects; October–December, berries, seeds, buds, and fruit."

Much confusion frequently arises with regard to the linnet owing to the difference between its plumage in summer and that which it assumes in winter. The most striking distinction lies in the feathers of the head and breast, which during the spring and summer are reddish brown tipped with bright red, while, as winter draws on, this latter tint almost wholly disappears. The female is lighter in hue than her mate, and the red colour less pronounced. If the bird be kept in captivity the change is far less notice-
able, and the brilliant red so conspicuous in wild specimens is never assumed. The nest of the linnet can generally be found without much difficulty, the bird usually placing it in a low bush—furze being its favourite—and taking little trouble to conceal it from view. Now and then, however, the nest may be found in a tree, and at some little height from the ground. Twigs, moss, hair, wool, and feathers are the materials most commonly employed, and the eggs, from four to six in number, are of a pale bluish white, marked with brown and red. They are so variable, however, both
in size and colour, that no generally applicable description can be given.

Concerning that remarkably handsome bird the Bullfinch there is much difference of opinion.

That the testimony of farmers and gamekeepers is almost universally against him there can be no manner of doubt. Nor can it be denied that the bird will often entirely strip fruit-trees of their buds, and so destroy the crop of fruit for the year. On the other hand, we know that it also devours a vast number of wild seeds during the autumn and winter; and two theories have been brought forward with the intention of proving that the bullfinch is not altogether an enemy.

The first of these is to the effect that the buds which it destroys are tenanted by grubs, which would not only have caused an equal amount of mischief themselves, but would, by propagating their kind when mature, provide for a future generation of equally mischievous beings. To a certain extent, no doubt, this belief is correct; and it has certainly more than once occurred that gooseberry-bushes have been almost completely disbudded by the bird, and have nevertheless yielded a heavy crop of fruit.

But it cannot be denied that a great number of buds are destroyed which do not contain an insect at all. When a bullfinch attacks a bush or a tree, in fact, it sets systematically to work, and takes off the blossoms without previous investigation of any kind. And those who have carefully studied the habits of the bird, and who would only too willingly protect it
were it not to their disadvantage to do so, seem to consider that even to tolerate it is impossible. "I am sorry to say," writes Mr. R. J. W. Purdy, of Aylsham, to me, "that we are obliged to prosecute a never-ceasing warfare with the bullfinches; otherwise our crop of fruit would be utterly destroyed. I believe at certain seasons they consume a number of seeds of noxious plants, and I often regret being compelled to kill such beautiful birds."

Not at all times, however, is the bullfinch thus mischievous in a garden. The Rev. F. O. Morris, for instance, in one of his well-known letters to the *Times*, says:—"I could say much, too, for that most beautiful bird the bullfinch, which, often as it has visited my garden in the spring, and then only as it passed on from wood to wood, has never done me any damage to the value of the head of a pin that I have been able to find out."

The second theory, which has been suggested to me by the Rev. M. C. H. Bird, is of a different nature altogether. "May we not compare the bullfinch," he writes, "to the pruning-knife or disbudder of Nature? We know that heavy cropping weakens trees, stops growth of wood, 'draws the land,' &c. May not the bullfinch, therefore, do good as to natural growth of trees, without reference to their 'bearing,' when artificially pruned by man?"

In this suggestion there seems much truth, although, of course, it does not in any way affect the position of the bullfinch as regards its present relations with man. I have only mentioned the bird, indeed, in
order to point out, firstly, that its services in destroying wild seeds in some degree compensate for its ravages among our fruit-trees; and, secondly, that in a state of nature it is very likely beneficial owing to the very habit which renders it so noxious in cultivated districts. I do not assert that the bullfinch is the friend of man. But I do say that the bird is not wholly his enemy, and that, but for the fact of his civilisation, it would not injure him in any way at all.
CHAPTER X.

THE SPARROW; ITS VICES.

The Sparrow—Its character, real and supposed—The balance of evidence—Farmers and their prejudices—Accusations against the bird—The Sparrow in the corn-field—The Sparrow as a bailiff—The Sparrow as a destroyer of thatch—The Sparrow as a destroyer of buds—A lady and her arguments—The Sparrow as a politician—The Sparrow in America and New Zealand—Concluding remarks.

In entering upon a description of the common Sparrow in its relationship to man, I am aware that I undertake an unusually difficult task, and one in which, no matter whether my own individual judgment be favourable or adverse to the bird, I cannot but differ from many independent observers. For, during many long years, the true character of the sparrow has been a source of perpetual discussion, as much among ornithologists themselves as among agriculturists and others whose interest in the matter is of special and personal importance; and it cannot be said, even with all the advantages of modern science, of the collective testimony of naturalists from all parts of the country, and even of a Select Committee of the House of Commons appointed to inquire into the subject, that a final and unquestionable decision has, as yet, been arrived at.
OUR BIRD ALLIES.

The sparrow has its enemies, who contend that its total extermination is the one and only method to preserve English agriculture from total ruin; its apologists, who own its faults, but argue that they are in some degree counterbalanced by its virtues; and its friends, who consider that its services, when carefully weighed in the scale, far outbalance the depredations which it undoubtedly commits. And, after collecting all possible evidence, experimenting and observing for myself, and considering the entire subject from every point of view, I take this opportunity of unhesitatingly stating that I enrol myself as a member of the latter class.

I do not say that the sparrow is harmless, but I do say that it is the friend of man. I do not deny that its ravages are at times excessive, but I do assert that its services are even greater. I do not say that under no circumstances should it ever be killed, but I do say that even its partial extermination would be little short of a national calamity. And I ask the reader to follow me through the evidence and arguments, both for and against the bird, which I am about to lay before him, and to reserve his final judgment until he shall have fully acquainted himself with all the facts of the case.

Were the testimony upon both sides of the question to be carefully collected, there can be no doubt whatever that by far the greater proportion would tell against the bird. For one witness in favour of the sparrow, indeed, there are twenty against him; and
thus many would be led to believe that, with so preponderating a weight of evidence upon the side of the prosecution, there can be no reasonable ground to doubt that the adverse judgment generally recorded is the only true and possible one.

But, in thus leaping to conclusions, we forget a very important point, and that is, that the immense mass of this testimony is invalidated by the fact that it proceeds from farmers; and farmers, as a class, are as little to be depended upon in such matters as almost any body of men upon the face of the earth. For their verdict is not based upon original observations, but is merely the outcome of the ingrained prejudice against the bird with which they enter
upon agricultural life, and which is itself the result of traditions handed down from generation to generation, and accepted as established facts which it would be little less than heresy to doubt. And this not in the case of the sparrow alone, which is merely one victim out of many. The mole is useful in four distinct ways, but the mole is persecuted by nineteen farmers out of every twenty. Titmice are wholly beneficial throughout their lives, but titmice are shot down in hundreds. And these, as every naturalist knows, are by no means isolated instances. The life of an average farmer, indeed, is a fierce and perpetual conflict with all the living creatures around him, his intelligence refusing to recognise the fact that one animal is not necessarily injurious because another may happen to be so. Of its true influence and economy he probably knows nothing; its supposed enmity towards mankind he has never troubled himself to confirm. But he cares neither for evidence nor for observation, and prefers to pin his faith to the old fallacies, in accordance with which he persecutes both friends and foes together.

There are, of course, a few exceptions to this rule, men who understand that the influence of certain beings tells in their favour, while that of others tells against them, and that there is, consequently, one class of animals which they should encourage, and another which they must restrain. But such men, unfortunately, are very rare, and even they, in too many instances, are apt to magnify the evil, and
under-rate the good; a tendency not unnatural, perhaps, when their own interests are at stake.

Much of the persecution to which the sparrow has been subjected has undoubtedly arisen from the fact that its bold and defiant character has led it to perpetrate its thefts in full view of its human enemies, thus forcing its mischievous deeds upon their notice, and earning for itself a hatred such as has been incurred, perhaps, by no other creature. And, under any circumstances, a small evil due to a bird—or to any other animal—is far more conspicuous than a great good; and we are naturally more prone to lay stress upon the former than upon the latter. Are not most of us more ready with blame than with praise? And do we not, albeit unconsciously, exaggerate the guilt of a criminal, and pass over unnoticed the virtue of one void of offence?

Let me not be understood to assert, however, or even to infer, that none of the many accusations which have from time to time been brought against the sparrow are true and well-founded. I champion the bird owing to my firm conviction that his merits outweigh his faults; but I do not deny the latter. Much of what is said against him by farmers and gardeners is perfectly and absolutely true, and at certain times of the year he is one of the most destructive creatures with which the farmer has to contend. So mischievous is the sparrow at such times, in fact, that, were not his misdeeds atoned for by counterbalancing services, the farmers would
be perfectly justified, not only in reducing his numbers, but even in exterminating him from the face of the earth; and it would be impossible for the greatest advocate of the bird to say a single word in his favour.

I hope to show, however, in the succeeding chapter, that such is not the case, and that the services of the sparrow are so great during one part of the year as to atone, and more than atone, for its misdeeds in another. The bird, in fact, is one of the many to encourage which at all seasons of the year is absolute folly; but to kill which, in place of driving it away, is greater folly still. Scaring a bird is no more expensive than shooting or trapping it, and, even were it possible only at double the cost, the alternation would be a profitable one in the end.*

Passing from assertions to facts, we will take, firstly, the various crimes and misdemeanours of which the sparrow is accused, and, secondly, the arguments which may be put forth in favour of the bird, and the different services by which its character is redeemed.

Now, the first and greatest crime laid to the door of the sparrow is that it is a terrible robber of grain; and this, under certain circumstances,

* I may here, perhaps, be allowed to remark that the "hawk-kites" sold in the toy-shops are among the most effective scarecrows that can be devised, if suspended in such a manner as to appear actually hovering in the air. These dummy hawks are largely employed in the allotments in this part of the country (Isle of Thanet), and seemingly with the best results.
I freely acknowledge, with regret that such should be the case. As soon as the corn begins to ripen the bird wends its way to the fields, and there strips ear after ear of its contents in order to satisfy its appetite. The sheaves, as they stand in the fields, it also lays under contribution, and until the corn is fairly stacked it is almost equally mischievous, seizing the stems one by one, and stripping them as before. And the mischief thus wrought by a single bird is sometimes very great.

A correspondent of the Zoologist states that upon one occasion he took one hundred and eighty grains of wheat from the crops of five sparrows, or an average of thirty-six to each individual specimen; and this is by no means an unusual allowance when the bird is left in undisturbed possession of a field.

Most corn-growers, no doubt, could tell a similar tale. Mr. Prior-Johnson, for instance, writes to me:—
"I had nearly half an acre of barley spoilt by these lazy birds just as the grain was plumping up. They are so bold that they care not for the report of a gun more than to go a little further in the field and carry on their mischief. They spoil twice as much as they actually consume by settling upon the ear and bending or knuckling down the straw, which stops the flow of sap."

In late autumn, when wheat is sown, the sparrow is again to the fore, picking up the grains as they lie half exposed after the drill has passed over the ground, and before the harrow has followed it. So far as I can ascertain, however, the bird never digs for the
seed after it is once fairly covered in. Once more, in spring, it turns its attention to seed barley and oats, and, unless scared away, will sometimes seriously diminish the future crop. There are thus two seasons in the year during which it is necessary to keep the sparrow from the corn-fields, viz., at seed-time, and again at harvest.

The next accusation against the bird is that it drives away the martins from the neighbourhood of our houses, and sometimes even usurps their nests. And so, as the case is generally put, the sparrow, which is only partly insectivorous, drives away birds which are entirely so, thus depriving us of the services of more useful beings than itself.

That it does occasionally so drive away the martin I cannot deny, for the accusation comes to me from all parts of the country, and is, moreover, one of very long standing. As is always the case when two creatures are forced into opposition by the struggle for existence, the weaker goes to the wall, and the bodily strength and bold, defiant disposition which have enabled the sparrow so greatly to multiply, give him the advantage over his less-favoured rivals, and enable him to drive them from the field.

The next count in the indictment is that sparrows are great destroyers of thatch, digging out holes therein in order to make room for their nests, and so annually causing a vast amount of damage. This, again, I cannot deny. The bird, naturally a builder in trees, is always ready to make use of a more
sheltered situation for its nest, and thatch, of course, suits it admirably for its domestic preparations.

Count number four is to the effect that sparrows are very fond of buds, and will strip gooseberry-bushes in early spring, just as has been recorded of the linnet. Only a few days ago I was told by a lady that sparrows had greatly damaged her gooseberries during the spring of the present year (1886), and had stripped off and eaten all the buds; which statement I respectfully ventured to doubt. Pressed for evidence, my informant repeated her assertion, and further told me that the sparrows must have been the offenders, "because they hung their tails down and looked so guilty when she saw them afterwards!" — an argument which, of course, could not well be refuted.

Of further accusations against the bird I have the following:—

No. 1, from an Essex agriculturist:—"I have discovered the sparrow to be a Radical, for on going to pick a bunch of primroses in the garden to wear yesterday (April 19th), these wretched little creatures were picking them all to pieces. What their object was I cannot tell; it seemed for love of mischief."

No. 2. "Sparrows have destroyed a wall."

No. 3. "Sparrows have destroyed all the flowers in a garden."

No. 4. "Sparrows have pulled up and eaten several rows of lettuces."

No. 5. "Sparrows have eaten up an old lady's thatch."
It is also brought in evidence against the sparrow—and on this point particular emphasis is generally laid—that both in New Zealand and America, into which countries it has lately been introduced by the intervention of man, it has not only increased to a very great and wholly unexpected extent, but has almost entirely abandoned the work of insect destruction for a diet of grain and fruit. And, again, there can be no doubt whatever that such is the case. Miss C. F. Gordon Cumming tells us that the fifty sparrows originally imported into New Zealand have multiplied into millions, and that upon one estate alone a ton and a half of grapes were devoured, and five fig-trees entirely stripped in the course of only ten days. And Dr. E. C. Coues tells us much the same story of its doings in America. In both countries, in fact, the bird has done a work the very opposite of that for which it was imported, and has proved a curse instead of the anticipated blessing.

The foregoing list comprises all the many faults and failings of the sparrow, so far as I have been able to ascertain them.

The reader will notice that as yet I have brought forward no evidence in favour of the bird, and have not attempted to show either that the various losses ascribed to its mischievous proceedings may possibly, when fully considered, prove less serious than at first sight they appear, or that they are counterbalanced by services rendered in other ways. This task I reserve for the following chapter, in which I shall take
the foregoing accusations one by one, and endeavour to point out the true value of each, and the degree in which all collectively are outweighed by the benefit conferred upon us by the bird in the all-important work of insect destruction.
CHAPTER XI.

THE SPARROW; ITS VIRTUES.

The case for the defence—Prévost-Paradol on the Sparrow—
How the young are fed—33,600 caterpillars in ten weeks—
Mischievous powers of a caterpillar—The Sparrow per-
force an insect-hunter during many months of the year—
Sítónes weevils and the Sparrow—The Cabbage Butterfly
and the Sparrow—The Sparrow in the fruit-garden—The
Sparrow at Maine and Auxerre—Sparrow versus Martin
—Martins the usurpers—The Sparrow as a destroyer
of thatch—Sparrows and buds—Sparrows and their political
views—The Sparrow in America and New Zealand—Ac-
climatization and its dangers—A plausible theory—The
Sparrow and wild seeds—Summing-up and verdict—
Domestic life of the Sparrow.

"The Sparrow only lives near the habitations of man.
It varies its food according to circumstances. In a
wood it lives on insects and seeds; in a village it eats
seeds, grain, grubs of butterflies, &c. In a city it
lives on all kinds of débris; but it prefers cockchafers
and some other insects to all other food."

So writes Prévost-Paradol, whose statements, be it
remembered, are the outcome of long and careful in-
vestigations, carried on during every month of the
twelve, and therefore entitled to all attention and
respect. And very few, excepting those who are
rabid enemies of the bird, and wilfully blind to aught
that may tell in its favour, can deny that the sparrow devours a considerable number of insects in the course of the year.

Especially is this the case during the breeding-season, at which time a pair of sparrows have been found to bring to the nest an average of forty caterpillars in each hour to serve as food for the hungry young. Now, twelve hours is by no means a long working day for the sparrow, which, although not one of the earliest risers among the members of the feathered race, is yet on the wing very soon after sunrise, and steadily carries on its labours until dusk. But, granting that it works for twelve hours only in the day, we yet have a total of four hundred and eighty caterpillars killed per diem by the one pair of birds, or three thousand three hundred and sixty in the course of the week, irrespective of those which the parent birds themselves appropriate for private consumption.

Again, the sparrow brings up two broods at least of young during the spring, and the breeding season may be taken to average ten weeks in all. Carrying on the calculation, therefore, we have a grand total of thirty-three thousand six hundred caterpillars killed for each nest during those ten weeks.

Now let us suppose, for purposes of argument, that there are fifty pairs of sparrows, upon an average, to each square mile of arable land,—an estimate certainly far below the mark,—omitting all consideration of the extensive area of pasture and garden ground which also profits by the services of the bird in the
way of insect destruction. On this computation, we find that 1,680,000 caterpillars would thus be destroyed, during those ten weeks only, upon each square mile of ground. And as, in the United Kingdom, there are at present 34,765 square miles of arable land, we have a total of 58,405,200,000 caterpillars, all more or less destructive, killed by sparrows while the various crops are at the most critical stage of their growth.

And it must be borne in mind that an insect, during the larval or caterpillar stage of its development, eats an amount of food almost incredible in comparison with its bodily size and weight. Almost the whole of the interior of the body, indeed, is occupied by the digestive organs, and the life of the insect, during this period of its existence, is little more than one prolonged meal. It has been calculated, for instance, that a caterpillar, one month after birth, has increased to nearly ten thousand times its original weight on leaving the egg, and has devoured meanwhile no less than forty thousand times that weight in food. And the majority of caterpillars remain as such for considerably more than a month, their daily allowance of food, of course, increasing in proportion to their growth, until it almost passes the bounds of belief.

Now let us consider what a terrible quantity of human produce, of one kind or another, these 58,405,200,000 caterpillars would devour, were they permitted to live on until the natural close of their career. Also, in what greatly-increased numbers they would make their appearance in the following
year were they not prevented from attaining to their perfect state, and making provision for a future generation. And, again, that their abundance in the third, fourth, and fifth years would increase, not merely by leaps and bounds, but by a sort of arithmetical progression, rendering them, before five summers had passed away, so great and terrible a scourge, that England would be as wholly devastated by their ravages as was Egypt of old by the plague of locusts. Imagine the face of the country without a vestige of verdure; no crops in the fields; no foliage upon the trees; everywhere utter and complete desolation, with nothing to conceal the bare earth from view, save the hordes of writhing, creeping creatures by whose agency the work of destruction had been brought about. And that is a picture, by no means overdrawn, of the extent to which insects would increase were they not kept down by such birds as the sparrow, and of the results which would necessarily ensue from their unrestrained depredations.

Nor is this all that can be said in favour of the sparrow as a destroyer of insects, for, notwithstanding the assertion of a contemporary writer to the contrary, the bird kills numbers of insects at almost all seasons of the year, and kills them, moreover, for its own consumption. Indeed, when grain is not to be procured, the bird is an insect-killer by sheer necessity, and perforce devours numbers of highly-mischievous creatures. It would greatly prefer corn, no doubt; but corn it cannot procure, and so is literally driven to a diet of a more useful character.
Quite early in the spring, before the nests were completed, I have watched sparrows working their way along the rows of peas in a garden, and picking off the *Sitones* weevils, which are so terribly destructive to the plants in the early stages of their growth. More than this, on opening specimens of the bird, I have found both crop and gizzard full of these and other weevils—a conclusive answer to those who, like a recent correspondent of *The Queen*, assert that adult sparrows kill insects only for the use of their callow young.

These *Sitones* weevils, I may here remark for the benefit of non-entomological readers, are the small beetles which nibble away the leaves of beans and peas, frequently reducing the plants to mere skeletons, and preventing all possibility of a future crop. To kill them by ordinary means is not easy, for, although a certain proportion may be picked off by hand, the great majority fall to the ground at the vibration caused by the first footstep, and their sombre tints harmonise so exactly with those of the soil that the sharpest eye cannot detect them so long as they continue to lie motionless. In destroying these mischievous little creatures, therefore, the sparrow is conferring a great benefit upon us, and one which alone should entitle him to some little consideration.

With the permission of the Rev. F. O. Morris, also, I quote the following extract from one of his "Letters to the Times":

"I will give you another fact. While taking a walk in Newton Cap Park, in the spring of 1847, the
gardener came and asked me to go into the garden to see the state of the fruit-trees, caused by insects, which he said had been brought by the east wind. It was just after the cold wet weather in April and May, which made us to have so few of our summer visitants; and although he had two women and a boy employed every day to destroy the insects, yet many of the trees were denuded of almost every leaf; the cause I pointed out, and advised him not to destroy the birds (as I was aware he had killed some), but to sow his seeds a little deeper, and employ a boy to prevent them eating his peas, &c., when they made their appearance above ground.

"Some nine or ten days after I saw him again, when he told me that the sparrows from the old hall adjoining had found out the pests, as he called them, and had done more in clearing the trees in a few days than the people employed had in as many weeks; and that for the future, instead of killing them as enemies, he would do what he could to protect them. . . .

"But how is it, it is argued, that he—i.e., the sparrow—is found in winter with grains of corn inside him? What is the history of that same corn? It has been already partaken of by the horse! Has the objector ever noticed what rooks are similarly engaged about on a high road when covered deep with frozen snow? Otherwise it has been picked up in the stubble-fields, where every one knows there is plenty to be met with in the late autumn and winter. . . .
"One word as to the period of time when any mischief is really done—for such, to some extent, I have never denied there really is. I stated that a month, or about a month, might be taken as the average time of getting in the harvest in any one district, and this opinion is confirmed by the following statement made by Mr. Hawley:—'I have waited upon three of our most eminent and enlightened farmers in this district for their opinion on this subject, and they agree upon one point, that six weeks is the very outside (but two of them think a month nearer the truth) that sparrows do in any way injure the agriculturist.'"

While engaged in the work of insect slaughter the sparrow is generally very industrious, and labours away systematically to obtain every possible victim. And many of our most destructive insects are among its principal victims. I quote, for example, the following passages from a letter of the Rev. M. C. H. Bird, who, although not altogether an advocate of the sparrow, yet acknowledges that there is much to be said in his favour:—

"I have seen them," he writes, "taking caterpillars from cabbages, searching them day after day, and spinach beet, too. . . . I have also seen them take Garden Whites (butterflies) on the wing."

Again, in a subsequent letter, he tells me:—"On gooseberry trees, later on in the year, I have seen them taking the larvae of the gooseberry saw-fly repeatedly, and of the currant moth from currant trees, and green caterpillars from cabbages, &c."
This latter note is especially interesting, inasmuch as, probably owing to some ill flavour, the caterpillar of the currant moth is almost invariably refused by toads and insectivorous birds; and every gardener and fruit-grower knows the importance of keeping down its numbers. The gooseberry saw-fly, again, is at times peculiarly destructive; and it is needless to enlarge upon the mischievous capabilities of the cabbage white butterfly. It is only fair to say, however, that when other food, such as grain, is attainable, the sparrow will frequently neglect these and other insects in its favour.

I have also been told by another clerical friend, who was for many years a resident in Norfolk, that at one time he was the only inhabitant of his parish who protected the sparrow, the neighbouring farmers and gardeners persecuting it without mercy, as farmers and gardeners will. He himself, however, not only protected, but encouraged the bird, allowed it free access to his garden, and refused to allow such as took refuge therein to be in any way molested or disturbed. The sparrows took advantage of his indulgence, and made the garden their principal stronghold; and yet the crop of fruit, year after year, was the finest in the neighbourhood. Even in seasons when, as not infrequently happened, the surrounding district was ravaged by destructive insects, his garden alone escaped—a clear and positive proof that the presence of the bird is less detrimental than is generally supposed.

And I have seen much the same myself in the
case of a large kitchen-garden in Kent, which is bordered upon two sides by a gooseberry field and an orchard belonging to a different proprietor. In the former, sparrows are protected, and are unusually numerous in consequence, becoming so tame that they do not take to flight until one is within three or four feet of them. In the adjoining ground, on the contrary, they are mercilessly persecuted, and the report of the gun may be heard from morning to night throughout the spring and summer months. Yet the produce of the garden is always far more heavy, relatively speaking, than that of the orchard and field; and even in seasons when the currant saw-fly is in the greatest profusion, the currant crop is as heavy as ever—and that is saying a good deal. Nor do I know—and my experience extends over several years—that any other crop in the garden suffers from the presence of the sparrows in such unusual numbers. Failure of any kind seems to be a thing unknown, the gardener takes prize after prize at the local horticultural shows, and no mischief of any kind appears to detract from the services rendered by the bird.

I may also call attention to the fact that at Maine, some thirty years ago, sparrows were in great measure exterminated in accordance with government edict, with the result that, in the following year, crops of all kinds, together with even the foliage of the trees, were almost wholly destroyed by insects. And at Auxerre, about the same time, a similar occurrence took place with an exactly similar result.

It may be urged, perhaps, that the general opposi-
tion to the sparrow is more the result of its doings in the corn-field than in the garden, and that the bird cannot be encouraged, or even tolerated, in the former situation without the certainty of considerable loss. I do not deny it. I merely suggest that its good deeds elsewhere outweigh its theft of grain; that it should be scared away from the fields at seed-time and at harvest; and that, even when most busily engaged among the corn, its proceedings may not be wholly and altogether injurious. The Thanet corn crop is perhaps as fine and heavy as almost any in the kingdom; yet sparrows in Thanet are unusually numerous. Of those who would assert, without reservation, that in corn-growing districts the bird is productive of nothing but harm, I would ask why it was that sparrows were originally introduced into New Zealand in order to kill off certain insects destructive to corn, had they never done as much in the mother country?

Next as to the fact that sparrows occasionally drive martins from the abodes of men. That they do so, as I have already stated, I do not deny; but I do not think that the mischief which they cause in so doing is nearly so great as is generally supposed.

For, in the first place, as an almost invariable rule, they merely evict the birds; they do not kill them. Excepting, therefore, that in some few cases the ejectment may take place after the eggs are hatched, and the young brood be thus destroyed,
the damage caused is more apparent than real, for the outcasts must still carry on their search for food, and so merely transfer their services elsewhere.

In the second place, I need scarcely remind my readers that martins are not altogether pleasant lodgers, having tenants of their own very closely allied to that flat and disagreeable insect which can only be mentioned under a pseudonym to ears polite. The parasites in question, moreover, have an uncomfortable knack of deserting the abodes of their natural hosts beneath the eaves, and making their way through any window which may happen to be open below. And such unwelcome visitors, like their more familiar relative, are not to be expelled without the greatest difficulty.

Thirdly, in the struggle between sparrow and martin, the former bird does not seem invariably to prove the conqueror, for cases have been recorded, and cases not a few, in which usurping sparrows have been literally walled up in their stolen nests by the rightful owners thereof, who thus have achieved by craft what by strength they could not perform. More writers than one have doubted the truth of such tales on the ground that no sparrow would be likely to sit still and allow itself to be thus imprisoned, and that, even were it to do so, a few minutes' work would enable it to open a passage for its escape. But it must be remembered that, in the first place, a bird, when sitting upon its eggs, is most unwilling to leave them; in the second, that a creature respir-
ing so freely as a bird of flight would probably be suffocated before it could break through the walls of its prison; and, in the third, that the same story comes to us from several independent observers.

One writer, the Rev. C. A. Johns, has doubted the possibility of such a proceeding on the part of the aggrieved martins on the ground that the act in question would imply a certain amount of reasoning power; and no animal save man, he says, has been granted the gift of reason. This last assertion, however, cannot be upheld by any one who has ever studied the ways of animals; and with it, of course, the objection falls to the ground.

Lastly, it may be fairly urged that, in driving away the martins, the sparrows are scarcely to blame, for, while they themselves remain with us throughout the year, their weaker rivals are summer visitors only, and so, for a time, are usurpers of a position which is scarcely theirs by right. They poach, in fact, upon the preserves of the sparrow; and the sparrow very naturally resents their intrusion.

Supposing that, in an unreclaimed country, tenanted by a people who had there lived from time immemorial, a body of strangers were to pay an annual and undesired visit extending over the best months of the year, to settle uninvited in the native villages, and to support themselves upon the game furnished by the neighbourhood. Would not the rightful inhabitants in such a case be fully justified in resorting to force in order to rid themselves of their un-
welcome visitors? And can the sparrow justly be blamed for pursuing, under similar circumstances, an exactly similar course of conduct—one, moreover, which causes but little, if any, real and appreciable injury to man?

The destruction of thatch, unfortunately, is a decided blot in the character of the sparrow, which can only be palliated by a remembrance of its usefulnness in other ways. It forms an item in the account, in fact, a part of the annual payment exacted by the bird for its services; and as such it should be regarded.

Of the bud-destroying propensities of the sparrow I can find no confirmation, and the evidence thereof which I have been able to collect is of an extremely slender character. A local gardener certainly tells me that sparrows do eat buds; but then local gardeners are not always to be depended upon in such matters. A lady friend, too, as I have before stated, has told me the same; but, without undue disparagement of the fairer half of creation, I may, perhaps, be permitted to remark that ladies sometimes make mistakes. And none of the correspondents to whom I have written upon the subject—and who, as a rule, are enemies of the sparrow—have ever known the bird to commit damage of such a character.

As to the political views of the sparrow, I can hardly be expected to offer an opinion; and, after all, a
certain and not inconsiderable section of mankind would be disposed to praise rather than to blame the bird for entertaining convictions of an advanced Liberal character. At the same time, I would suggest that its seemingly unjustifiable behaviour in destroying primroses, more especially upon such a day as the nineteenth of April, was probably due, not so much to petty spite towards those differing in politics from itself, as to the fact that the blossoms in question are frequently tenanted by the little beetle known to science as *Eusphalerum primule*; and that the sparrows, after their impetuous and headstrong manner, failed to recognise the possibility of capturing the insects without destroying the flowers.

Counts two, three, four, and five of the second series require no comment of mine.

Concerning the ravages of the sparrow in America and New Zealand, I think there can scarcely be two opinions.

We will grant that the bird has increased to an utterly unforeseen extent, that it has completely failed in the mission which it was expected to carry out, and that, so far from rendering itself of service, it has become an unmitigated pest, itself destroying the crops instead of preventing them from being destroyed by others.

But there is this very important point to be considered, that the sparrow in both countries is merely a naturalised foreigner, introduced for our own pur-
poses by our own act, and in no sense a provision of nature. The case, indeed, is one of the many in which man has taken upon himself to alter, and, as he supposed, to improve upon natural arrangements, only to find that his short-sighted policy leads to results which he never anticipated, and leaves him in a position far worse than that from which he sought by a bold step to extricate himself. Has he not met with precisely similar retribution in other cases? Did he not, urged by sentimentally patriotic motives, plant the thistle upon Australian soil, to find, in the course of a few years, that it had become a pest never to be eradicated? Did he not likewise introduce the sweet-briar, for the sake of old associations, and afterwards strive in vain, even with the aid of ropes and cart-horses, to prevent it from spreading in like manner? Did he not import rabbits into the same country, and afterwards incur the expenditure of millions of money in the vain attempt to reduce their increase? Acclimatisation—more especially in such a country as Australia or New Zealand, the natural denizens of which, both animal and vegetable, are comparatively weak and feeble—is always a highly dangerous experiment; and when, knowing this by reason of many a disastrous failure in the past, we wilfully undertake it, we have only ourselves to blame if the results are not quite what we could wish.

What wonder if the sparrow, both in America and New Zealand, should turn from a diet of insects to one of grain and fruit? Does not even man himself alter his food in accordance with the climate? Does
he not, leaving England for a warmer country, depend more upon vegetable food and less upon animal? And are not both New Zealand and America, at any rate during the summer months, considerably warmer than our own country?

To bring forward as evidence against the bird in England its evil doings in foreign countries into which man himself introduced it, and in which the natural conditions are widely different, implies so complete a lack of ordinary reasoning powers that it is really wonderful to find in how many cases testimony so utterly inconsequent is accepted as of direct and vital importance. Do we argue, because the Esquimaux clothe themselves from head to foot in furs in their own inclement latitudes, that they would do the same were they to migrate to southern Europe? Would any one be found to assert that savages who can dispense with clothing beneath the burning sun of the equator could do the same in the bleak and chilly lands of the far north? And food and clothing, be it remembered, have this in common, that upon both depends the preservation of the bodily warmth.

Yet, although we at once recognise the manifest absurdity of propositions such as these, we continue to bring forward the old false and ridiculous argument, that a bird which lives wholly upon grain and fruit in one country must necessarily do the same in another the conditions of which are altogether different. The sparrow, as a British bird, and with reference to its influence upon British agriculture,
should by every law of justice and common sense be judged by its doings in Great Britain alone; and we may leave agriculturists elsewhere to settle the question independently and for themselves.

To the frequently-employed argument that sparrows, being unduly numerous owing to our persecution of the hawks, &c., appointed to prey upon them, must be killed off in part, although not entirely, I have already referred in the introductory chapter. But I may, perhaps, once more be permitted to remark that the argument in question is based upon a total fallacy. We have killed the hawks, it is true; but we have also killed the sparrows. We have killed them in the past, and we do kill them in the present. Only a day or two before writing these lines I was told by a gentleman farming upon a somewhat extensive scale that, in the course of the previous week, he had paid eight shillings and tenpence for sparrows’ eggs taken upon his farms at the rate of three halfpence and twopence per dozen; so that, at a low computation, seven hundred sparrows’ eggs had been destroyed by him during that one week alone. And no one with any knowledge of the ways of agriculturists will pretend that this is an isolated instance of the persecution which the bird endures at the present day.

And have we not had sparrow-clubs in all parts of the country? And have not gardeners and farmers trapped and killed the bird in every conceivable manner? And have not nest-hunting boys harried
its homes year after year? And have not cockney "sportsmen" and village gunners treated it as the legitimate victim of their love of purposeless slaughter?

And yet we argue that the bird has been allowed to increase, almost without restraint, owing to our destruction of hawks! If, instead of persecuting those birds, we could have multiplied them twenty-fold, if we could have allowed them to carry out their mission undisturbed and unmolested in any way, they would not—they could not—have killed one-tenth of the sparrows which we ourselves have slain.

Once more—as I have already shown—by our folly in killing off the various insectivorous creatures we have allowed the insects to gain the upper hand. More than that, the great increase in the area of cultivated ground has brought about, in accordance with Nature's unvarying law, a corresponding increase in the number of insects which find their food in the crops which we raise thereon.

Briefly stated, Nature's system is this. If there be one square mile of ground planted with any one vegetable, a certain number of insects feeding upon that vegetable will be found upon that piece of land; and the number will vary little, upon on average, from one year to another. But, if we double, treble, or quadruple the space thus planted, we shall also double, treble, or quadruple the number of the insects at the same time; for an abundant food-supply is always the principal factor in bringing about the increase of an animal.
Now, even within the last forty or fifty years, a considerable area has been reclaimed from marsh or forest, and taken into cultivation. With increased acreage of arable land an increase of crops necessarily follows; and with the increase of crops comes the increase of insects. And thus we require an increase of birds.

The contention, therefore, that sparrows must be reduced in number, although not exterminated, merely on account of their abnormal abundance falls to the ground; for their abundance is not abnormal at all. We have at the present time, in fact, a decreased number of birds, owing to the manner in which we have ruthlessly slaughtered them, and an increased number of insects, owing partly to our persecution of their natural enemies and partly to the increased area under cultivation; and the excess, consequently, is scarcely upon the side of the birds.

Nor does the usefulness of the sparrow consist in its slaughter of insects alone, for, at certain times of the year, the bird devours a great quantity of wild seeds, more especially those of plants which, like the dandelion, the groundsel, and the plantain, are especially annoying to horticulturists and farmers. Most of us must have noticed sparrows diligently pecking away upon the flower-beds in our gardens, or working as industriously in the fields at times when neither insects nor grain are to be obtained; and in almost every such case the birds are busily devouring the
minute seeds which no eyes less keen than theirs would be able to detect.

The case against and for the sparrow, therefore, stands as follows:—

On the one hand, the bird annually devours a large quantity of grain, destroys a certain amount of thatch, ejects sundry martins from their homes, sending them "to fresh fields and pastures new," and is mischievous, to a small degree, in the flower and the kitchen gardens.

That is the case for the prosecution.

On the other hand, each pair of birds kill, during the breeding season, more than thirty thousand caterpillars, devour a very large number of other destructive creatures at other times of the year, and also feed to a considerable extent upon the seeds of troublesome and mischievous weeds. The insects which they kill they destroy, in almost every instance, before their tale of work is complete, and before they have had an opportunity of providing for a subsequent generation. And so, while the grain which they devour is merely so much grain destroyed, the insects which they kill represent, not only a vast amount of human produce saved, but an immense decrease in the numbers of such destroyers during the ensuing year. And, as I have before shown, the lapse of a very few years without the intervention of such creatures as the sparrow and its allies would result in the disappearance of man from the face of the earth.
That is the case for the defence.

We must look upon the sparrow, in its relations to human interests, as one of the parties to a debtor and creditor account, performing certain services, and claiming a certain payment in return for the same.

Is it alone in doing so? Is labour of any kind to be obtained in this world for nothing?

Our soldiers preserve our country and its dependencies from invasion and conquest; and our army costs us rather more than eighteen millions of money per annum.

Our navy protects our coasts and our commerce; and our navy costs us nearly thirteen millions.

Our police and constabulary preserve our domestic peace, and protect our personal property; and we pay them three millions and a half in the year.

Why, then, should we grudge to the birds a small share of our produce, seeing that they save for us so much? Why cannot we regard them as Nature's army, navy, and police, which, in return for their services, must be maintained at a not excessive cost? We reap the benefit of their labours; why should not ours be the expense?

It is true that the sparrow charges more highly—to continue the metaphor—for its services than many other birds. But in wages there is always a degree; and those who perform the most and the best work are not as a rule the most highly paid. Some will work for a large salary; others for a low. But, so long as the returns exceed the outgoings, however
high those outgoings may be, the investment, if we may so call it, is a profitable one. And I trust that I have succeeded in showing that, in the case of the sparrow, the receipts undoubtedly preponderate over the expenditure, and that for the wages which it exacts a fair equivalent of work is obtained.

Not that I wish to recommend that the bird should in all cases and at all times be encouraged. During harvest, for instance, it is an unmitigated nuisance, and must, if possible, be kept at a distance from the cornfields. But I do say that, even at such times, the farmer best consults his own interests by merely scaring the bird away in place of destroying it, and that sooner or later he will reap his reward for his wise forbearance.

As regards the domestic life of the sparrow there is but little to chronicle. Who is not familiar with the large, loosely-built, and untidy nest which is placed in a tree, beneath the eaves of a house, or in the thousand and one situations which seem almost equally acceptable to the bird? As a general rule, the nest is built at some little height from the ground, but such is by no means invariably the case, and I have found it situated in a hole within easy reach of my hand. Five eggs, of a whitish colour marked with grey and brown, are laid, and there are always two, and sometimes three broods in the course of the year.

The general habits of the bird necessarily depend very much upon the nature of its surroundings: a sparrow in the city is a different creature from a
sparrow in the fields. But the bird everywhere preserves its spirit of independent, almost defiant, boldness and its aggressive disposition, even towards others of its own kind. A flock of sparrows can seldom remain in company, even for a few minutes, without quarrelling and fighting amongst themselves, and not unfrequently a general engagement takes place, which sometimes results in the death of one or more of the combatants. And who has not witnessed the furious passion which one sparrow will often manifest while in pursuit of another which has given it some cause of offence?

Even towards birds much larger and more powerful than itself will the sparrow behave in the same hectoring, domineering manner. I have heard, for example, of a sparrow following a starling over a lawn and taking its worms, &c., away from it as soon as they were captured. The nature of the bird, indeed, is essentially pugnacious, and to this fact it owes its present position in the world; a position the more remarkable when we consider the terrible persecution which for so many years has been waged against it.
CHAPTER XII.

LARKS, WOODPECKERS, ETC.

LARKS—The Skylark—Its food and general character—A hint to farmers—Song of the Lark—The bird in captivity—Larks for the table—Nest and eggs of the Skylark—WOODPECKERS—Unappreciated benefactors—Work of the Woodpeckers—Their wonderful structure—The Great Spotted Woodpecker—Its habits and doings—Distrust of man—Nest of the Woodpecker—Defective sanitary arrangements—The Cuckoo—Its valuable services—Life-history—Maternity by deputy—An interesting exhibit—Why is not the Cuckoo a nest-builder?

The Skylark stands in a somewhat strange position, the vast majority of mankind looking upon it with favour on account of the perfection of its song, and the remainder, consisting principally of the agricultural classes, treating it as a creature to be kept under by every possible means.

In this, as is not unfrequently the case, the agricultural classes are wrong, for the mischief which the bird causes in some ways is counterbalanced by its services in others. Witness the details of its year's food, as afforded us by Prévost-Paradol:

"January, seeds of wild plants; February, seeds and corn; March, various insects, worms, seeds, and corn; April, insects, beetles, corn; May, beetles;
June, flies and various insects; July, grasshoppers, worms, and corn; August, crickets and grasshoppers; September, insects, corn, and seeds of weeds; October, seeds, worms, and barley; November, seeds, corn, and berries; December, seeds of wild plants."

It will be seen that, in this list, insects and seeds figure to a far greater extent than grain, and that there is no month in the year during which the bird is wholly injurious.

On the other hand, the bird is certainly mischievous at times, and during winter and early spring often injures the sprouting wheat very severely. Upon this habit, and the best method of prevention, the Rev. C. A. Johns has the following very pertinent remarks:

"Farmers would effect a great saving if they sowed their wheat deeper than is the usual practice. The only part of the young plant which the lark touches is the white stalk between the grain and the blade. In its effort to obtain this it frequently destroys the whole plant, if the grain has been lodged near the surface; but if the young shoot have sprouted from a depth of an inch or more, the bird contents itself with as much as it can reach without digging, and leaves the grain uninjured and capable of sprouting again."

With reference to this suggestion, I would also urge that by deeper sowing the damage wrought by sparrows at seed-time would likewise be minimised; for the birds, so far as I can ascertain, never dig up the grain when once it is fairly covered in. Now, under
ordinary conditions, much of the seed lies exposed, perhaps for half an hour, after sowing, until the harrow has passed over the ground; and thus, such birds as the sparrow find an opportunity for making off with a very appreciable quantity. But, were the grain to be sown rather more deeply, the earth would necessarily fall in behind the drills as they passed along, and, the seed being at once covered, all danger of such petty larceny would be at an end.

The persecution to which the lark is subjected, unfortunately for itself, is not due to its occasional robberies alone, for there are two other causes which annually lead to its capture in immense numbers.
The first of these is the well-known song of the bird, which brings it into great request among bird-fanciers, and so proves a curse rather than a blessing to its owner. To condemn a lark to life-long imprisonment is perhaps a greater cruelty than to treat any other bird in a similar manner, for its delight in freedom is so great, and its exuberant exultation as it mounts aloft so evident, that one cannot but pity it intensely when deprived of all that made life pleasant to it, and doomed to fret away its existence within the bars of its narrow cage. Yet one has only to pass through the centres of the bird-fancying fraternity to realise to how great an extent this cruelty is carried on.

The remaining cause for the persecution of the bird is, of course, the great demand for it as a dainty for the epicure's table; and in order to supply this demand, thousands upon thousands of larks are sometimes trapped in a single locality in a single day.

Against this traffic, however, there is less to be said, for the birds are captured for a real, if luxurious, object, and are killed at once instead of being subjected to months or years of wearisome and hopeless imprisonment. The fact, however, remains, that thousands upon thousands of an useful bird are annually killed for a practically needless purpose, and agriculturists injured to no little degree by the consequent loss of their services.

Even in the immediate neighbourhood of a large
manufacturing town, the skylark may often be noticed towering aloft, and pouring out its floods of melody; and frequently when the bird itself is a mere speck in the sky, its wonderful song gives evidence of its whereabouts to dwellers upon earth. Once, and once only, I have known a skylark to sing while sitting upon a fence, and upon that occasion I watched it for fully three minutes, during the whole of which time its song continued.

The nest of the skylark is invariably placed upon the ground, generally in some small hollow, and is composed of dry grasses, leaves, and hairs, the structure harmonising so well with the surrounding soil that, generally speaking, it can with difficulty be detected. Most of the larks' nests that I myself have found I have discovered by pure accident. The eggs, four or five in number, are brownish-grey, marked with a deeper shade of colour, and two broods of young are generally brought up in the course of the season. The skylark is more intelligent than many of its feathered relatives, and has not unfrequently been known to remove its eggs or young to a place of safety when menaced by an unexpected danger. In one well-authenticated instance the parent birds co-operated in the task, the male helping the young on to the back of their mother, who carried them off one by one.

The Woodpeckers, again, belong to that large group of beings the members of which, although in reality beneficial, are generally looked upon as destructive in
the highest degree. We see that a large hole is cut in a tree; we find that the woodpecker is the operator; and we leap to the conclusion that the woodpecker kills the tree.

It would be as reasonable were we, finding a physician in the sick-room of a patient, to assume that he must have been the cause of the disease. *Here* is an invalid; *there* is a doctor. Can anything be more plain?

The true facts of the case are these:—

A tree, from some unknown cause, becomes feeble and sickly, and shows signs here and there of incipient decay. Before many weeks have passed, it is attacked by various wood-boring beetles, whose habit it is to tunnel through and through the bark and wood of weakly trees, and so accelerate their destruction in order to make place for a healthy successor.

But perhaps the infested tree, although unhealthy and out of condition, is yet possessed of sufficient recuperative power to enable it to regain health and strength, were the diseased parts but removed in time. Then comes the woodpecker, cuts away the useless and unhealthy wood, kills the insects which had already begun to further the work of destruction, and so, very likely, saves a fine piece of timber from untimely decay. Absolutely sound wood the bird never attacks, for the simple reason that insects are not there to be found; and whenever the bird is seen pecking busily away, we may safely assume that its proceedings are akin to those
of a surgeon who cuts away diseased flesh in order to save the life of his patient.

The structure which enables these birds to carry on their mission is worthy of special notice.

In the first place, the beak is long, strong, and sharply-pointed, and, urged by the powerful muscles of the neck, is admirably adapted to its task of chipping away the wood. Then the tongue is not only unusually long and slender, and so capable of insertion into the narrow tunnels cut by its insect victims, but is barbed in a rather singular manner at the tip, and lubricated with exceedingly glutinous saliva. According to some authorities, the larger insects are transfixed by the bristle-like barbs, while the smaller adhere to the tongue on account of its glutinous properties; others contend, however, that all insects alike are captured by the agency of the saliva alone.

Again, as the bird must necessarily cling to the trunk itself while working away at a tree, the toes are long, and the claws sharp, curved, and extremely strong. The breast-bone, moreover, is much less prominently ridged than in the majority of birds, so that the body can be pressed closely against the tree, and the leverage upon the limbs minimised; while, lastly, the feathers of the tail are so stiff and strong that the bird uses them as a kind of stool, pressing them upon the bark, and resting the greater part of its weight upon them.

It will thus be seen that the entire frame of the bird is modified in accordance with its work, an admirable illustration of Nature's law that structure shall always
be subservient to habit. And how admirably the natural advantages of the woodpecker suit it for its peculiar labours can be testified by all who have ever watched the bird in its native woods. In some mysterious manner it detects the exact whereabouts of its hidden prey, even when no external burrow gives evidence of their presence, and sets busily to work, chipping away at the bark and the decaying wood beneath, and never failing to extract its quarry in triumph. During the breeding season, too, it excavates a cavity for its nest in just the same manner, always choosing a diseased spot for the purpose, however, and so benefiting instead of injuring the tree selected for its home.

Several of these valuable birds are found in Great Britain, the most interesting, perhaps, being the Great Spotted Woodpecker, which, although scarcely an abundant species, is yet fairly common in many parts of the country.

The Rev. C. A. Johns, in his work on "British Birds in their Haunts," quotes from the Zoologist, vol. viii., p. 3,115, the following remarks:—

"In 1849 a considerable number of trees were cut down in an open part of the country near Melbourne (Derby), which were eventually drawn together and piled in lots. These lay for some time, and were visited almost daily by great spotted woodpeckers. Their habits and manners were very amusing, especially whilst searching for food. They alighted on the timber, placed the body in a particular position, generally with the head downward, and commenced
pecking away at the bark. Piece by piece it fell under their bills, as chips from the axe of a woodman. Upon examining the bark, I found that the pieces were chipped away in order that the bird might arrive at a small white grub which lay snugly imbedded in the bark; and the adroitness of the bird in finding out those portions of it which contained the greatest number of grubs was certainly very extraordinary. Where the birds were most at work on a particular tree, I shelled off the bark, and found nearly thirty grubs in nine square inches; but, on shelling off another portion from the same tree which remained untouched, no grub was visible. Yet, how the bird could ascertain precisely where his food lay was singular, as in both cases the surface of the bark appeared the same, and bore no traces of having been perforated by insects. During the day one bird chipped off a piece thirty inches long and twenty wide—a considerable day's work for so small a workman.

The bird, however, does not confine itself to burrowing insects, but also destroys large numbers of other creatures which conceal themselves in the crevices of the bark, or which hide away beneath it when loosened by any cause. Among its favourite victims are woodlice, or "monkey-peas," as provincial nomenclators dub them, whose powers of mischief are only too well known to every gardener.

All the woodpeckers are very shy birds, and, even if their presence be detected owing to the sound of their proceedings, will keep the trunk of a tree so persistently between themselves and the would-be
observer that only by craft can he contrive to watch them while engaged in their labours. Even careful concealment and perfect quiet upon his part will not always suffice to re-assure the bird, for I have more than once attempted to watch a woodpecker whose tapping I had distinctly heard, and yet failed, although waiting for fully half an hour, to catch sight of it after all.

The burrow, if we may so call it, in which the woodpecker brings up its family is only large enough to admit the bodies of its constructors, who collect the chips cut away during the process of excavation, and form a rude nest, or rather heap, with them at the extremity. Upon this primitive bed five or six glossy white eggs are laid. It is a rather curious fact that the young birds are able to run about on the upright trunk some little time before they are full-fledged, retiring to the nest if threatened by sudden danger, or if they should be in want of food. The burrow, by the way, is, perhaps, more offensively odorous than the habitation of any other living animal, without any exception whatever.

The Cuckoo, again, deserves honourable mention on account of its insect-hunting proclivities, its food consisting, in great measure, of various destructive caterpillars. These it devours in considerable numbers, and, if the stomach of the bird be opened, it is almost sure to be found lined with the hairs of such caterpillars as the Woolly Bear, or others of an equally hirsute and voracious character. Larvae
alone, however, do not constitute the whole of its diet, for insects of almost every kind fall victims to its appetite; and as that appetite is by no means small, and as the bird satisfies it by no illicit means, we must look upon the cuckoo as essentially a beneficial bird, and one which should be protected and encouraged by every means in our power.

The most interesting feature, of course, in the life-history of the cuckoo is its invariable habit of laying its eggs in the nest of another bird, generally that of the hedge-sparrow. It is by no means particular, however, as to the character of the foster-parents which it selects, and is almost as partial to the nest of the pied wagtail or the meadow pipit as to that of the bird already named, while quite a long list might be drawn up of the various birds which are occasionally entrusted with the doubtful honour of rearing a young cuckoo. It seems very probable that the selection is made, in some degree, in accordance with the colour of the egg, which varies considerably, and often harmonises strangely with those of the legitimate owner of the nest in which it is placed. At a recent conversazione of the Croydon Microscopical and Natural History Society, a most interesting exhibit was made of a large number of cuckoo's eggs, each accompanied by an egg or two from the nest from which it was taken. In the majority of cases there was more or less resemblance between the eggs of the two birds, and in one very singular instance a cuckoo's egg, taken from the nest of a wheatear, was of a pale blue colour, with only faint traces of the ordinary
markings. The rule is by no means an invariable one, however, and very often the difference between the intruded egg and those among which it is placed is so great, that one cannot but wonder how it is that the owner of the latter fails to detect the imposture.

As to the reason for the absence of parental affection upon the part of the cuckoo many theories have been put forward, only two of which seem to be worthy of consideration.

The first of these is to the effect that the eggs of the bird are deposited only at long intervals, so that, were a nest to be built in the ordinary manner, the duties of maternity would be spread over a very long period of time, and the mother would have simultaneously under her care eggs, newly-hatched young, and full-fledged offspring. This supposition, however, seems purely conjectural, and rests upon no good evidence.

The second and more plausible theory is based upon the fact that the sexes of the bird are ill-balanced, at least five males being found to every female. It is therefore suggested that the unfortunate members of the weaker sex are so persecuted by the attentions of rival suitors that they really have no time for nest-making, and are forced to transfer their family duties to others with fewer calls upon them. Be this as it may, the fact remains that the cuckoo never brings up its own offspring, and affords us one of the most curious cases of perverted instinct to be found in the whole of the animal world.

Much more is there to be said with regard to this
singular bird, its high-handed treatment of its fosterbrothers and sisters, and the manner in which it arrogates to itself the entire care of those under whom it is placed. But of further treatment our space will not allow, and we must therefore pass on to the next bird upon our list.
CHAPTER XIII.

GAME BIRDS, GULLS, ETC.


Although there is little danger that the Partridge will ever be persecuted, save during the legitimate season, owing to mistaken notions as to the character of its influence, it is so valuable a bird that it must by no means be passed by without notice. It is mischievous at times, no doubt, and is apt to cause a considerable amount of damage in the corn-fields. But against this we must set its services in the destruction of injurious insects, and, more especially, of that highly-obnoxious creature, the grub of the turnip saw-fly.

This is an insect whose powers of mischief are
almost incredible. At certain seasons when, for some mysterious reason, it makes its appearance in numbers unusually great, the turnip-fields are stripped as cleanly of every green leaf as though a veritable flock of locusts had passed over them. Nothing is left but the bare skeletons of the former plants, to most of which are clinging a mass of black, many-footed grubs, to whose insatiable appetites the scene of desolation is due. And thus, by the havoc of a few short days, labour, time, and money may be wasted, the soil exhausted without yielding a due return, and dozens, hundreds, or even thousands of labourers left without employment.
These grubs, however, are a very favourite food with the partridge, which, as most of us know, is generally to be found frequenting the turnip-fields, where it finds both food and shelter. Slugs, again, it looks upon as special dainties; and no gardener or agriculturist needs to be told of the mischief of which those creatures are capable. Caterpillars of all kinds fall victims to the bird, and, lastly, it has frequently been noticed while engaged in the capture of the common garden white butterfly, which, in its larval state, is so destructive to cabbages, leaping up at the insects as they fluttered near the ground, and dexterously seizing them with its beak.

Ants, again, form a large proportion of the food of the partridge, although these insects, of course, exercise no particular influence upon agriculture. The bird is especially fond of the grubs, pupæ, and perfect insects of the wood-ants which are so common in pine-woods, and which raise such huge mounds of the needle-like leaves with which the ground is always carpeted. These nests are generally levelled by the partridge, which sets to work in a most systematic manner, and scarcely allows a single specimen to escape its vigilant search. It is generally considered, by the way, that the flesh of partridges reared upon such a diet is of exceptional quality.

Although partridges pair as early as February, they are among the very latest of birds to turn their attention to domestic affairs, the hen seldom beginning to sit until the very end of May. The young birds are wonderfully strong when first hatched, and sometimes
leave the nest—a very primitive structure—within twenty-four hours of their appearance in the world.

The partridge is singularly careless in its choice of a nesting-place, and never pauses to consider whether its brood will be in danger from undue proximity to mankind. Cases have even, and not unfrequently, been recorded in which the bundle of grass which does duty for a nest has been placed so close to a frequented footpath as to render it almost a miracle that the eggs escaped the tread of the passers-by. After the young birds are hatched, the mother is extremely bold in their defence, and has more than once inflicted serious damage upon the face of an intruder.

The bird, too, has sometimes been known to remove her eggs to a place of safety after the nest had been discovered. In one such instance, no fewer than twenty-one eggs were carried to a distance of forty yards in less than half an hour, both birds, probably, taking their share in the transport.

The number of eggs laid by the partridge is exceedingly variable; almost every individual number, from ten to thirty-three, having at different times been recorded. When more than twenty eggs are found in one nest, however, there is always the possibility that two hens may have combined, and entered into an arrangement by which the duties of maternity should be shared between them. The eggs are of an uniform brownish-yellow hue.

Although the Pheasant is an exceedingly destructive bird, and is said, indeed, to be only second in its
powers of mischief to the ringdove, it partly redeems its character by flashes, as it were, of usefulness, and so deserves a word or two of passing mention. Curtis, in his invaluable work on "Farm Insects," records an instance in which no less than 1,225 grubs of the daddy-long-legs—that pest in pasture-lands—were taken from the crop of a pheasant—unassailable evidence that the bird, though "stained with a thousand crimes," is yet redeemed from utter abandonment by at least one compensating virtue. There can be no doubt, however, that, as far as agriculture is concerned, we should do better without the pheasant.

Migratory bird though it be, and occurring but rarely in the more northern parts of England, the Great Plover, Norfolk Plover, Thick-knee, or Stone Curlew, as it is variously called, is nevertheless well worthy to take rank among our beneficial birds, more especially as its services seem to be qualified by no mischievous depredations.

The bird is a strange one; strange to look upon, and stranger still in its habits. Daylight is distasteful to it, and it is seldom to be seen until night has set in. As soon as the shades of evening have fallen, however, it issues from its retirement, and then seems to continue busily at work during the greater part of the night. Frequently may its strange half-human, whistle-like cry be heard by the belated wayfarer, now above him, now to one side and now to the other, proceeding from an invisible source, and recalling to his mind tales of earth-bound spirits
Doomed for a certain term to walk the night,
Till the foul crimes done in their days of nature
Are burnt and purged away.

Seldom is it seen, but often heard, and many, no
doubt, are familiar enough with its wailing, melan-
choly note who are quite ignorant of the source
whence it proceeds.

The eyes of the great plover are well adapted to
perform their duties during its nocturnal wanderings,
and to detect the slugs, worms, and insects which
prefer darkness to day; and these the bird devours
in great quantities. Not uncommonly, too, it feeds
during the daytime, turning over stones, &c., with its
beak, and capturing the various small creatures which
have taken refuge beneath them. At such times, how-
ever, it keeps itself carefully concealed, and is gene-
rally to be seen at work only by the merest accident.

The great plover seems to entertain a very decided
objection to enclosed ground, and is usually found
only in the open country, where it can travel for long
distances without taking to flight. As a general rule,
it trusts to its legs rather than to its wings, and, when
it does take to flight, almost invariably keeps near
the ground for some little time after rising into the air.

In an average season this curious bird is with us for
less than half the year, arriving in April, and taking
its departure towards the middle of September. Soon
after its arrival it turns its attention to domestic
affairs, and lays two eggs in some depression in
the ground, which cannot by any stretch of imagina-
tion be called a nest. These eggs are of a rather
peculiar yellowish-brown hue, and are marked with sundry blots and splashes of a darker colour.

The Lapwing, or Peewit, again, is entitled to honourable mention on account of its services in the slaughter of such mischievous creatures as grubs, slugs, and various destructive insects. And perhaps, of all our British wading birds, this is the most generally known, for its curious tuft of feathers at the back of the head, its strange, flapping flight, and its remarkable cry compel notice, even from those who are not generally observant. The bird is a very common one, especially in damp meadows and marshy ground.

Another point which has attracted a good deal of notice to the bird is its behaviour when it considers that its home and eggs are in imminent danger. At such times, the male evinces its parental solicitude by rising quickly into the air, and flying round and round the scene of his domestic joys and sorrows, uttering meanwhile his plaintive cry at frequent intervals. The female bird, more cunning by far, resorts to artifice upon leaving her nest, and flies off in a slow, halting manner, as though crippled by some recent injury rendering sustained and steady flight impossible. Thus, not unfrequently, she lures the unwary passer-by from the neighbourhood of her eggs, her artful wiles leading him farther and ever farther from the spot, until he discovers that his chase is a hopeless one, and that he has been neatly taken in.

The nest—if we may so call it—of the lapwing is
by no means easy to find, even when the bird has left it, although the eggs are large, and are conspicuous enough when held in the hand. Selecting a suitable hollow in the ground, the bird carpets it with a few grass-stems, and thereupon places her four eggs, which are always carefully arranged in the form of a cross,

with the smaller ends lying inwards. This bird, by the way, is generally responsible for the "plovers' eggs" which by epicures are considered so great a dainty. The breeding season commences somewhat early in the year.
In some gardens a couple of lapwings or so are kept specially for the purpose of destroying the various mischievous creatures which vex the gardener's heart, and are only to be captured by him at the expense of great labour and perseverance. The lapwings, however, constitute themselves most efficient allies, and save their owner from many a vexatious loss and many an hour of weary labour.

Like the great plover, the Corncrake, or Landrail, is far more often heard than seen, and there are many people who are perfectly familiar with its cry who have never caught sight of the bird itself. And yet it is a tolerably plentiful species, its skill in the art of concealment being due, partly to its great caution, and partly to its disinclination to make use of its powers of flight. Even when flushed it seems to distrust its skill in the air, and usually makes at once for the nearest cover.

As a pedestrian, however, the bird claims high rank, and runs among the stems of grasses, &c., with the most wonderful agility, scarcely a tremor of the blades above indicating the line of passage which it has taken. Among long grass and corn it seems to spend almost the whole of its existence, and there searches for the snails, slugs, and insects which constitute the greater part of its diet. It is very fond, among others, of that terribly destructive insect the daddy-long-legs, and slaughters it in great numbers in those seasons in which it is present in unusual abundance.

If by any chance it should be taken prisoner, the
corncrake will often feign death, after the fashion of many insects, in the hope that its captor, deceived by its seeming lifelessness, may withdraw his attention for a moment, and afford it a chance of escape; and this anticipation is not unfrequently realised.

Like many of its relatives, the corncrake is but a poor architect, and merely places a few straws or stems of dry grass in a small hollow by way of a nest. Herein it lays eight or ten yellowish-brown eggs, spotted and speckled with rusty brown. The young birds are wonderfully strong and active little creatures, and accompany their parents in their rambles almost immediately after they are hatched. Like the great plover, the corncrake is only a summer visitor.
All the Gulls are more or less useful as scavengers, scouring the surface of the sea, and there performing much the same duties as are discharged by the crow, the burying-beetles, and the blow-flies upon the land. To transmute death into life, to remove all that is displeasing to the senses and injurious to health, and to maintain the highest possible degree of purity alike upon land and sea,—such is the task of the gulls and their allies, a task which we ourselves cannot possibly perform, and which cannot be neglected without the absolute certainty of dire and widespread consequences.

Some of the gulls, however, must be considered as doubly the benefactors of man, not only bearing their share in the never-ceasing work of purification, but aiding the farmer to a very considerable degree by the slaughter of the various creatures injurious to agriculture. Near the sea, large flocks of these birds are often—or, rather, generally—to be seen following the plough, industriously searching for the grubs, worms, and insects which are thrown up, and devouring them before they can succeed in burying themselves once more. The number of mischievous insects thus destroyed in the course of the year must be almost incredible, and the success of agriculture near many parts of the coast is undoubtedly due, in great measure, to the ceaseless efforts of these valuable birds.

One of the most useful members of this most useful group is the Black-headed Gull, a very plentiful
British species, which may be seen in numbers in most parts of the shore.

A curious fact concerning this gull is the difference between its summer and winter plumage, which is so striking that the two forms of the bird have often been considered as constituting two distinct species.

This difference lies in the head and the upper part of the neck, which, during the spring and summer months, are of a dark brown colour, so deep, indeed, as to be easily mistaken for black at a little distance. From this peculiarity, of course, the bird has obtained its popular title. At the approach of winter, how-
ever, this brown hue gradually gives place to pure white, and completely alters the appearance of the bird, whose principal distinguishing feature is now the bright vermilion colour of the legs.

The black-headed gull is frequently seen inland, more especially during the breeding season, at which time it often repairs to fresh-water marshes at a considerable distance from the sea. Unlike the generality of gulls, it avoids high and rocky districts for its nesting operations, and always selects low, marshy ground teeming with sedges and reeds. These it tramples down into a slight hollow, and deposits therein three eggs of an olive colour spotted with brown. As a great number of these birds always congregate together at this period of the year, the collection of their eggs for culinary purposes forms quite a small industry for the time; so much so, that in more than one case the breeding-ground is regularly leased at no inconceivable rent. These eggs, by the way, like those of the lapwing, frequently do duty for the "plovers' eggs" for which there is so great a demand.

Last upon our list of specially valuable birds is the Common Gull, whose food is of much the same character as the preceding species, and which follows the plough in exactly the same manner. This bird well deserves its popular title, and there are few parts of the coast in which it is not to be commonly seen.

As a general rule, the common gull resorts to some high cliff or inaccessible rock for family purposes, and there constructs a rough nest with sea-weed,
occasionally mixed with a small quantity of grass. If such a spot be not attainable, however, the bird will content itself with the low, marshy situations to which its black-headed relative repairs. Three eggs at the most are laid, which closely resemble those of the former bird, being of a dull olive brown, spotted with a rather darker colour.
CONCLUSION.

The reader will no doubt have noticed that in the preceding pages I have omitted all mention of many birds which are undoubtedly beneficial, although but in a small and uncertain degree. This I have done with some regret, but, warned by considerations of space that description of all alike would be wholly impossible, I have felt it absolutely necessary to select for treatment those only whose services undoubtedly outweigh the mischief which they may commit, or which, for some special reason, claim a few words at least of passing mention.

No single British bird, so far as I can learn, is utterly and altogether mischievous. Even the ring-dove, upon whose destructive capabilities scarcely too much stress can be laid, devours a certain number of wild seeds during the year, and so, although in but a slight degree, partially atones for its incessant depredations.

On the other hand, few are altogether beneficial, the services of the great majority being qualified to some extent by occasional thefts of human produce, which, although less than those of the creatures of whose presence they relieve us, are nevertheless sufficiently great to cause to us an appreciable loss. In other words, there are but some half-dozen birds
which will work for us without payment, the remainder claiming wages in the form of a commission upon the produce which they save for us.

Such robberies, in fact, as I have before pointed out, must be looked upon as inevitable from one quarter or another, a condition of human existence no more to be overcome than the necessity for breathing or eating. If we kill off the birds, our crops are ravaged by insects. If we allow them to live, they exact a certain amount of payment in return for their assistance. And, as the payment in question is undoubtedly very far smaller than the alternative loss, it is to our own interest to protect the birds rather than to sweep them away, and at the same time to incur an immense and otherwise needless expenditure in destroying the very creatures which they would have kept down, had we but permitted them to do so.

In some way or other the many injurious insects must be kept down: that is one of the first axioms in the art of agriculture. We can perform the task ourselves, although only in an indifferent manner, and at the expense of a vast amount of time and labour; and time and labour, as every one knows, are equivalent to money. Nature is willing to carry out the same work far more perfectly, at the hands of her agents, for a certain remuneration—a small share of the profits, a mere commission upon the results. And we should look upon the arrangement thus offered to us as a business transaction, pressing a little hardly upon us at one time, perhaps, but re-
paying us in far greater measure at another, and, on the whole, so greatly to our advantage that nothing should be allowed to hinder its due performance.

And we must not fall into the common error of assuming that, by the exercise of a little skill and a little discrimination, we can destroy the evil and allow the good to live, thus gaining for ourselves a better position without at the same time incurring its corresponding disadvantages. Why, the good for the most part prey upon the evil, and could not exist without them. In the ideal world of a farmer's dreams, no doubt, every seed put into the ground would yield its full return, untaxed by the depredations of the many creatures which now assert their claim to a share of human produce, and all the various animals which might in any way interfere with his arrangements would be ruthlessly expunged from the registers of Nature. But this can never be. We cannot destroy the present balance of Nature and create in its place a new, and it is unwise, and more than unwise, to interfere unnecessarily and in any great degree with that which already exists.

Nature is a willing servant, but a bad slave. She will work for us, and work her hardest; but only upon her own terms. To coercion of any kind she will not submit, and if we insist upon forcibly altering her arrangements in one way, she is sure, sooner or later, to take her revenge in another. And she has so interwoven the relationships of her numberless servants with one another, so connected each and all alike with bonds invisible yet strangely strong, that
any attempt upon our part to alter and improve upon her scheme must be fraught with consequences whose far-reaching influence it is impossible for us to foretell, and whose ultimate, if not immediate, effect upon ourselves cannot but be disastrous in the highest degree.

We may compare our position in the world, indeed, to that of an ignorant man in charge of a vast and complicated machine, whose construction he does not understand, whose workings he cannot stop, but whose motion will continue harmless and unaltered so long as he can bring himself to abstain from interference with its details. But if, in an ill-advised moment, he turn one single handle, or pull one single crank, he may open the way for terrible and disastrous consequences, of the very possibility of which he was totally unaware. And, moreover, the fatal mistake once committed, he may find it for ever out of his power to redeem his error, while yet deeply deploring its results.

And thus it is with the far vaster and more complicated machinery of Nature. The power of interference is ours, but not the knowledge how that interference may terminate. The handles and cranks are ready to our hands, but we know not what may happen if we lay our hands upon them. We cannot tell what a false step of ours may do. We cannot foresee the mischief which may result from our attempts to improve upon that which we do not understand. We cannot guess how or when such mischief may end. And, in the face of all our ignorance, in the face of
our failures in the past, and in the face of the consequent evils from which we are suffering in the present, is it not rash, is it not foolhardy, is it not mad and senseless in the extreme to set our own puny intelligence against the ineffable wisdom of Nature, and to strike with our feeble might and our feeble weapons against the regulations of a Power which we can neither control nor overcome?

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