The Early Life of the Young Cuckoo

QL
696
C83W52
1902
Birds

BY

W. PERCIVAL WESTELL

Member of the British Ornithologists' Union and the Selborne Society ;

Author of "A Year with Nature," etc.

ILLUSTRATED WITH FOUR REMARKABLE PHOTOGRAPHS
TAKEN *DIRECT FROM NATURE* BY
J. PEAT MILLAR.

London :

THOMAS BURLEIGH, 376, STRAND

1902.

3/6
7
autograph

Yours very truly
W. L. Wallace

Sept 1. 55.

QL
696
C83 W52
1902
Birds

THE EARLY LIFE OF THE YOUNG CUCKOO

BY

W. PERCIVAL WESTELL

Member of the British Ornithologists' Union and the Selborne Society ;

Author of "A Year with Nature," etc.

ILLUSTRATED WITH FOUR REMARKABLE PHOTOGRAPHS

TAKEN DIRECT FROM NATURE BY

J. PEAT MILLAR.

London :

THOMAS BURLEIGH, 376, STRAND

1902.

BARNICOTT AND PEARCE
PRINTERS

Young Cuckoo ejecting young Yellow Bunting, shewing Cuckoo well up in the nest. The Cuckoo is here about four days old.

[COPYRIGHT]

Photo by

J. Peat Millar, Bath.

696
C83W52
1902
Birds

THE EARLY LIFE OF THE YOUNG CUCKOO.

THE Cuckoo has always been the subject of considerable controversy and debate, and with all our wonderful strides in the Scientific world we have as yet failed to solve many of the mysteries which surround its life and habits.

With all our years of careful and patient observation we have not yet fathomed the mystery of why the Cuckoo does not build a nest of its own, and as to how many eggs one female lays during a season True, we have by this time exploded the altogether erroneous statement that the bird lays its eggs in the nest of the species with which it had decided to entrust its offspring, as it is now proved beyond a doubt that the bird does not lay the egg in the nest nor does it carry the egg in its claws, but first lays the egg on the ground and carries it to the selected nest in its mouth.

Although we have accomplished this much, we have not yet proved in any way why the egg is so very small in comparison with the size of the bird, but my friend, Mr. John Craig, to whom I shall shortly refer, has, so far as I am aware, produced the best explanation of this by stating that he considers it is for the purpose of quick incubation and to allow the egg to be deposited in birds' nests which are smaller than the Cuckoo, and also to allow the Cuckoo to carry the egg in her bill to its destination without breaking it.

As to why the bird does not build a nest for itself, my friend also puts forward the theory that if it did, and laid four or five eggs to the clutch, one on each successive day, the instinctive desire implanted in the young Cuckoo of clearing everything out of the nest in which it is hatched, is so strong that there would be a struggle among them for possession of the nest, the weakest would perish, and they would be in a worse position than at present for perpetuating their species. Mr. Craig thinks that it is incompatible with the perpetuating of their species for more than one egg to be deposited in the same nest. I must say that, so far, these ob-

servations are the most practical that I have as yet seen, and too much prominence cannot be given to the fact that Mr. Craig has paid particular attention to the curious life-history of this interesting harbinger of Summer, and the opinions at which he has arrived are the result of several years' hard work in Field Ornithology.

I have entitled these notes "The Early Life of the Young Cuckoo," and do not therefore propose to enlarge on the life and habits of the adult bird, but to proceed to describe a most interesting series of experiences and experiments with some young Cuckoos which Mr. Craig successfully carried out during the Summer of 1899.

Up to the date of Mr. Craig's valuable observations considerable doubt existed as to how the young Cuckoo ejected its foster-brothers and sisters or the eggs out of the nest in which it happened to be placed. Many theories were expounded, but it seemed that, although so many were ready to put their theories and experiences into print, very few indeed had actually witnessed the occurrence. We had had drawings illustrating the young Cuckoo in the act of ejection, but these

were not convincing enough to those of a sceptical frame of mind, although those who had actually witnessed the performance readily accepted the drawings as correctly representing the mode of procedure.

Controversy in a certain channel reached fever height in 1899, and my Ayrshire friend at once set to work and secured a wonderful series of photographs *revealing*, as well as illustrating, the young Cuckoo in the very act of ejecting an egg and a young bird, which photographs and observations have by this time been heard of throughout the Ornithological world.

What Mr. Craig has accomplished is a perfect revelation to many people, the more so when one considers how extremely difficult it is to accomplish such a feat ; but owing to his well-directed enthusiasm, patience, care, knowledge of his subject and whole-heartedness, he has placed bird-lovers under a deep obligation to him, and, as Dr. Japp says in his book on the Cuckoo, "whom all the world will thank for so far decisively setting this matter at rest."

On June 2, 1899, Mr. Craig found a Meadow

Pipit's nest containing two Cuckoo's eggs and three Pipit's. One of the latter eggs was broken by my friend to ascertain how far incubation was advanced, so that he would know about when to return to resume his observations.

A diversity of opinion arises as to whether the two eggs were deposited in the one nest by the same Cuckoo, but the opinion of Mr. Craig, and also of the writer, is that they were deposited by different Cuckoos. The eggs were different in colour, size, and shape ; but it must not be assumed from this that I am of opinion that the same identical bird could not lay eggs quite as different in marking, colour and shape.

It is rare that the Meadow Pipit lays a clutch of eggs numbering less than four, and this being so it is reasonable to suppose that the Cuckoo (or Cuckoos) when depositing the eggs had taken away one or more of the Pipit's, leaving five in all, that is, including the two Cuckoo's eggs.

On June 6, the eggs were still unhatched, but two days later both the Cuckoos were out of the shells, and one of the Pipit's eggs was found lying outside the nest, and the other remaining egg of the

Pipits (as Mr. Craig had already broken one of the eggs only two remained) was also missing ; probably it had been turned out of the nest by one of the young Cuckoos and carried away by the parents.

The two young Cuckoos appeared at first to be quite happy together, but a struggle of extraordinary violence was soon commenced between the two birds. What was apparently the stronger bird of the two got what was evidently the weaker on its back and strained every muscle to hoist it to the top of the nest, while the other was holding on to the nest with its claws for all it was worth. After a severe struggle they both became exhausted and went to the bottom of the nest, but after a short respite the battle was again commenced time after time, each bird fighting for dear life.

On visiting the nest the following day, (June 9), one of the Cuckoos was found outside the nest. Before putting it in again a young Pipit was secured and put in the nest. The Cuckoo in the nest hoisted it again and again on its back and climbed up the side of the nest backwards with it, but the Pipit always got jammed near the top. The other Cuckoo was then put in again and a desperate

struggle was witnessed. Sometimes the birds put their bills and heads against the opposite side of the nest when commencing to climb, to get more pressure. Several times the top bird tumbled over the head of the other, like a rider falling over the head of a horse. The birds, being somewhat exhausted, had a short rest, but they soon became extremely restless and again commenced the struggle.

It was unfortunate that although snap-shots were taken of these avine battles they all proved useless. The following day, (June 10), one of the Cuckoos was again found outside the nest. It was placed back again, when the Cuckoo in possession of the nest began to hoist the other on its back and climbed up the side of the nest backwards and threw it out of the nest, which it had little difficulty in doing as the one found outside the nest had become weak through want of food. After this the weak bird was placed in the nest to give it a chance to recover, and the stronger one was taken away for about an hour. On returning, the bird was put back into the nest again, whereupon the weak bird made several attempts to eject its stronger companion, but without effect, as it was far too weak. It

then acted on the defensive by lying in a canted position by keeping the side that was next its opponent downward, one of its legs being stretched out and its claws against the opposite side of the nest, to try and prevent its opponent from getting under it. The nest was then bolstered up to give the weak bird a chance to recover, but on June 11 the weak bird had disappeared altogether ! The foster parents paid no attention to the young Cuckoo when it was outside the nest, although the bird was frequently sitting on the side of it.

Thus far no photographs of any value had been secured, although such excellent opportunities had been presented. Not to be outwitted, Mr. Craig procured a young Yellow Bunting, which was admirably suited for his purpose. This he placed, on June 12, in the nest beside the sole remaining occupant, *i.e.*, the strongest young Cuckoo. After a few minutes' delay the Cuckoo hoisted the Yellow Bunting on its back and climbed up the side of the nest backwards and shot the bird over the nest ! The young bird was put back into the nest again and again, but the Cuckoo repeated the operation each time.

Six snapshots were taken at various stages, and two of the most successful are here reproduced. By this time the Cuckoo was five or six days old and the Yellow Bunting was about three or four, and it should be remembered that for the first few days the young Cuckoo is quite blind.

The nest was then stretched out (it should be stated that the nest of the Meadow Pipit is built on the ground), to try and save the young Yellow Bunting, but on visiting the nest the following day (June 13) the bird was found lying dead outside.

The next visit was paid on June 17, when a young Hedge Sparrow was placed in the nest to see what further performances would take place, but the two birds sat quite contentedly together, and the following day (June 18) they were still living quite amicably. On June 19 both birds were progressing very rapidly, and it seems strange that the bird, who would not allow anything to be beside it only a few days previously, now allowed a young bird to live in harmony with it. When the young Hedge Sparrow was put into the nest it would be about eight days old and the Cuckoo ten or eleven days.

About the same time as the above-mentioned in-

cidents took place, Mr. Craig found another Cuckoo's egg in a Meadow Pipit's nest, and this bird ejected all the four Pipit's eggs, one of them being thrown out when the bird was not twenty-four hours old. One of the photographs taken and here reproduced illustrates the young Cuckoo with the egg in the hollow of its back in the very act of throwing it out of the nest.

In conclusion, I may state that the young Cuckoo has a depression on the back, which gives a more secure lodgment to the young bird or egg it wishes to eject, and the back is broad considering the size of the bird. It makes considerable use of its wings in steadying the bird on its back, and to prevent it from rolling back into the nest again, as well as in examining, as it were, a bird or an egg in the nest.

The Cuckoo right at top of nest: the young Yellow Bunting just about to fall over. It will be noticed in this photograph that the Cuckoo has its wings extended to keep the young bird from rolling back into the nest; and the manner in which it has placed its legs in order to get a firm grip is also worth a close study.

Photo. by

[COPYRIGHT]

J. Peat Millar, Beth.

A FEW GENERAL NOTES
ON
THE LIFE HISTORY OF THE CUCKOO.

CUCKOO (*Cuculus Canorus.*)

EVERYBODY almost has heard the welcome note of 'Kook-oo, Kook-oo' in early April, and almost everyone in the country anxiously waits to draw first blood. But everybody is not acquainted any farther with the bird's mysterious life and habits other than it cries 'Kook-oo,' that it is with us only during the Summer, and that it lays its eggs in some other bird's nest.

It is impossible to give as lucid an account of this mysterious bird as I should like, without devoting pages to it, and I must perforce content myself with a few general notes about the bird, which gladdens our sense of hearing as the Swallow does our sense of seeing, and one or two extracts from the writings of other Naturalists.

Probably, no bird has caused such controversy as

the Cuckoo, and discussions have often been carried to such fever heat that the parties have become life-long enemies. This is not as it should be—we should all work to find out the truth, and when unmistakable evidence is brought to bear to shew us we are wrong, it is only right we should cave in.

The bird may generally be looked for in the British Isles about the middle of April, and those people who are continually sending silly records to their local papers of its appearance in February and March might note this with advantage. A few well authenticated instances of its appearance in our Country towards the end of March have been forthcoming, but generally speaking, it is rarely heard or seen previous to the end of the first week in April. It winters in Central Africa and Southern India, for which part of the world it quits our shores towards the end of August, although young birds of the year often stay later.

The Cuckoo is one of the very few polygamous birds in the British Isles, and as to the reason why the bird chooses to hand over the care of its young to foster-parents some Naturalists assert that the construction of the bird does not allow it to sit on

a nest, but this appears a very unlikely reason, and there is still much to be learned in this respect.

As to the number of eggs laid by one female, opinions differ. Some say half-a-dozen, others as many as a score, the laying season extending for a period of about six weeks. Probably, if the latter number is halved, we are somewhere near the exact position of affairs.

Extraordinary indeed are the nests chosen wherein to lay its egg—according to Mr. Bidwell's list there are over 100 known species.

At a meeting of the British Ornithologists' Club, held on March 18th, 1896, an exhibition of Cuckoo's eggs and those of the foster-parents was held, and the following list, prepared by Mr. Bidwell, was laid before the meeting.

List of Western Palæarctic species in the nest of which the Cuckoo's egg has been found: Mistle Thrush, Song Thrush, Fieldfare, Blackbird, Ring Ouzel, Rock Thrush, Wheatear, Isabelline Wheatear, Black-throated Wheatear, Eastern Black-throated Chat, Eared Wheatear, Eastern Pied Wheatear, Whinchat, Stonechat, White-tailed Stonechat, Redstart, Black Redstart, Bluethroat,

White Spotted Bluethroat, Redbreast, Nightingale, Thrush-Nightingale, Whitethroat, Lesser White-throat, Black-headed Warbler, Orphean Warbler, Blackcap, Garden Warbler, Subalpine Warbler, Speckled Warbler, Barred Warbler, Dartford Warbler, Golden Crested Wren, Fire Crested Wren, Chiff-Chaff, Willow Wren, Bonelli's Warbler, Wood Wren, Grey-tailed Warbler, Icterine Warbler, Melodious Warbler, Booted Warbler, Reed Warbler, Marsh Warbler, Great Reed Warbler, Sedge Warbler, Aquatic Warbler, Paddy Field Warbler, Grasshopper Warbler, River Warbler, Cetti's Warbler, Hedge Sparrow, Alpine Accentor, Dipper, Great Titmouse, Wren, Tree Creeper, Pied Wagtail, White Wagtail, Grey Wagtail, Blue-headed Wagtail, Black-headed Yellow Wagtail, Yellow Wagtail, Tree Pipit, Meadow Pipit, Red Throated Pipit, Tawny Pipit, Richard's Pipit, Water Pipit, Rock Pipit, Golden Oriole, Great Grey Shrike, Lesser Grey Shrike, Isabelline Shrike, Red-backed Shrike, Woodchat, Spotted Flycatcher, Pied Flycatcher, Swallow, Martin, Greenfinch, Hawfinch, Goldfinch, Serin, House-Sparrow, Tree-Sparrow, Chaffinch, Brambling, Snowfinch, Linnet, Mealy

The young culprits who ejected the young birds and eggs is here shewn living in harmony with a young Meadow Pipit. It will be observed that the Cuckoo has made considerable progress since the last photograph was taken, and would now be about eleven days old, by which time the desire to eject anything seems to cease. The nest being apparently too small for them, they were found lying snugly encoined close together in the soft grass at the side of the nest. In that position this photograph was taken.

Photo. by

[COPYRIGHT]

J. Peat Millar, Beith.

Redpoll, Lesser Redpoll, Twite, Bullfinch, Northern Bullfinch, Black-headed Bunting, Corn Bunting, Yellow Bunting, Meadow Bunting, Cirl Bunting, Yellow-breasted Bunting, Ortolan, Reed Bunting, Lapland Bunting, Starling, Jay, Magpie, Jackdaw, Skylark, Woodlark, Crested Tit, Short-toed Lark, White-winged Lark, Desert Lark, Green Woodpecker, Ring Dove, Stock Dove, Turtle Dove, and Little Grebe. One hundred and nineteen species in all.

I have always found the Hedge Sparrow to be charged with the rearing of the great sprawling youngster more than any other bird, and I well remember one lucky day in Bedfordshire, some six or seven years ago, finding half-a-dozen of these nests in one morning, each containing an egg of the Cuckoo. Other favourite foster-parents are the Robin, Meadow Pipit, Whitethroat, Reed Warbler and Pied Wagtail.

The egg is laid on the ground, and carried to the selected nest in the bird's beak, not in the claws as has been erroneously stated. It is the smallest egg laid by any British bird in comparison to its size, being very little larger than a House Sparrow's, or

perhaps, almost the size of a Skylark's. In its colouring the egg varies a good deal, and columns might be devoted to this point alone.

In the collection at South Kensington there are three varieties of blue Cuckoo's eggs which were laid in the nests of the Hedge Sparrow, Redstart, and Pied Flycatcher, all of which lay blue eggs ! The colour of the egg certainly is, in a great many instances, almost, if not quite, identical with the bird upon whom the Cuckoo has thrust its charge, but I have yet to find one of these blue varieties. The general colour, however, is white, closely freckled and mottled with grey, or sometimes reddish brown, and in all those specimens which have come under my notice, a few black specks or dots were noticeable. I invariably look for them, because a faded Skylark's may be easily mistaken for the egg of the bird under consideration.

Many people do not know what takes place when the unruly young beggar emerges from the shell. He at once assumes command of the homestead, and the shovelling-out process takes place. No matter whether eggs or young are in the nest, both or either are doomed, but sometimes when the other

occupants are in the nest for a few days they are trampled upon and ignored, and the usurper gets more than his "fill." The ejection business is carried out by means of the rump, not by the bill as many observers state, which appears to be admirably suited for such performances, and the bird is aided by the featherless wings and muscular legs. When twelve days old the hollow in the middle of the back fills up, but by this time its purpose has been fulfilled, and the foster-parents have as much as they can do to satisfy their adopted fledgling's voracious appetite. The foster-parents very rarely seem to resent the intrusion, or to notice their consequent losses.

The following from Mr. Evans's excellent book (included in the Cambridge Natural History Series), "Birds," in connection with the Cuckoo's parasitical habits, is worth quoting here. He says : "The eggs are invariably deposited in the nests of other birds, which rear the intruder and feed it until it leaves the Country ; but it is doubtful how many are produced in a season—possibly five or six—or whether the same hen ever places two or more in one nest. It is now certain that the egg is laid on the ground and conveyed to the chosen nursery in the bill, an oc-

currence said to have been actually witnessed by Adolf Muller, a forester in Darmstadt. Closely connected with the above parasitical habits is the question of the colour of the egg. Red or blue specimens have undoubtedly been found in Germany and elsewhere, as well as the typical brown or greyish varieties ; but they do not always assimilate to those of the foster parent, albeit to the eggs of Pipits, Wagtails, and so forth, that of a Cuckoo is often exactly similar. The theories advanced to account for this are by no means conclusive, though hereditary habit may afford a clue ; we may, however, be sure that the hen cannot determine the colour of her egg. With it the most usual foster-parents are the Meadow Pipit, Pied Wagtail, Reed Warbler, Hedge Sparrow, and Robin, perhaps in the above order. They seldom, if ever, seem to resent the intrusion, or to notice their consequent losses. The careful observations of Jenner, Hancock, and Mrs. Blackburn show that the young Cuckoo when some thirty hours old begins, unaided, to remove from the nest the rightful progeny or unhatched eggs by means of its broad back, which has a central depression for the first twelve days ; but after this

Young Cuckoo with egg in hollow of back in the act of ejecting same.

Photo. by

[COPYRIGHT]

J. Peat Millar, Beith.

hollow is filled up the desire is said to cease. It pushes below a nestling with its wings, and raises it with much exertion to the edge of the nest, finally ejecting it by a supreme effort. The probable reason why the Cuckoo's egg often hatches first is the hen's habit of selecting nests with only one or two fresh eggs. Subsequently she neglects her offspring entirely."

A further quotation, from the writings of Edward Step, F.L.S., is also worth inclusion, although it trespasses over somewhat the same ground as has already been walked upon. The observations of more than one writer, however, are much safer than one, and between the different opinions and observations one may see where any divergence is apparent. "For ages mankind has shown great interest in the Cuckoo, and has invented several apocryphal stories about it. This is not to be wondered at when one considers the wandering habits of the bird, its superficial resemblance to a Hawk, its polygamous conduct, and freedom from family and domestic cares. Everybody knows the Cuckoo builds no nest, and many will remember how the National schoolboy declared in his essay that 'The Cooku is

a bird what don't lay its own eggs ;' some of us may still believe that the newly-hatched Cuckoo swallows its foster-brothers and sisters, ultimately changing into a Hawk and swallowing its foster-parents also. Briefly stated, the truth about the Cuckoo appears to be something like this : The birds do not pair, but the hen does lay her own eggs, and about a score of them, extending the laying period over about six weeks. She lays them on the ground, then taking them in her bill, deposits them without permission in the nests of other birds. There are over a hundred species of European birds in whose nests she has been known to place them, but she has her favourites, and the first half-dozen of these appear to be the Hedge-Sparrow, Redbreast, Reed Warbler, Meadow Pipit, Garden Warbler, and Whitethroat. Very often the parent appears to have a keen eye for colour, and places her freckled eggs where they will not contrast strongly with those laid by the foster-parent elect ; but this is by no means invariably the case. In comparison with her size the Cuckoo lays a small egg, but this may be due to a consideration of convenience in respect to carriage. The gape of the bill ex-

tends much further back than is usual among birds, and this peculiarity allows the bill to be opened sufficiently wide to hold the egg. Within a few days the young Cuckoo shows that he has inherited the knowledge that his little foster-parents will have as much as they can do to satisfy him, and that the presence of nest fellows means overcrowding and short commons for all. So he at once secures his own comfort and well-being by getting his back under each of his brothers in turn and hoisting them out of the nest. Of course they perish, and the infant murderer and supplanter flourishes, his foster-parents thinking great things of themselves for having gotten so fine and large a child.

The Cuckoo commences to lay about the middle of May, and often saves the labours of its offspring by removing some of the eggs laid by the builders of the nest. There is a good deal of variation in the colour and markings as well as the size of the Cuckoo's eggs, but some modern authorities believe that the score of eggs laid by any one hen show little if any difference between themselves. This, however, is a statement very difficult to prove, and differs from the experience of egg collectors in the case of other

birds. It is quite a common event to find that of four or five eggs laid by a nest-builder, one or two will differ considerably from the others in form, size, or colour—perhaps in all these particulars.”

It is a popular belief in Norfolk that whatever you are doing the first time you hear the Cuckoo you will do the most frequently all the year. Another belief is that an unmarried person will remain single as many years as the Cuckoo, when first heard, utters its call. Milton says in his sonnet to the Nightingale—

Thy liquid notes, that close the eye of day,
First heard before the shallow Cuckoo's bill
Portend success in love.

Heywood, in his epigram “Of Use” (1587), thus alludes to the remarkable change of note in the Cuckoo—

In April, the Koocoo can sing her song by note ;
In June, of tune she cannot sing a note ;
At first, koocoo, koocoo, sing still can she do ;
At last kooke, kooke, kooke—six kookes to one koocoo.

The following from an article in the *Musical Courier*, by Charles Lunn, will be read with inter-

est : "In the year 1894 I took occasion to make this bird an especial study, as I wished to find out certain problems respecting its song. At my country place, Cleeve Prior, Worcestershire, I heard one sing F and the D below, another F and D# below, and I heard two singing simultaneously in a field opposite my cottage ; while one sang F# and D, the other was sounding G and D#. Later on I heard one sound G and E below, then one which gave only G repeated and another A and F below. The notes we tested by what, I believe, is called a 'harmonica.' These observations were all made about Whitsuntide. A little later on, there was one bird that made a curious glide, E and F, then to D below. The two first notes were a 'scoop up' like an ill-trained vocalist's slur. Later on again, one sounded G and E, and G and Eb. The Eb was perceptibly flatter than the D# of the earlier bird, or, perhaps, of the earlier song. Later on still, the birds got to a repeated monotone."

One word in conclusion : the Cuckoo is of great benefit in the number of caterpillars it destroys, especially the hairy ones. But does the feathered lives which are sacrificed (generally insectivorous

ones) result in a balance being struck in the bird's favour. I think it does?

The food is entirely insectivorous, consisting, besides the insects already mentioned, of beetles, lepidopterous insects and larvæ.

The bird is often mistaken for a Hawk and is thus persecuted. Small birds too are often seen flying after it. Do they actually mistake it for a Hawk, or are they angry because of the bird's habit of placing under their care its unruly offspring?

The only Local names known to me are those of Cog, Gowk, and Grey Cuckoo.

The upper parts are bluish ash, somewhat of a darker character on the wings, but lighter on the neck and breast; whitish, with transverse dusky streaks predominates underneath; quills barred on the inner webs with white oval spots; blackish tail feathers, tipped and spotted with white. The beak is dusky, with a yellow edging; orbits and inside of mouth yellow; iris and feet same colour. The young are ash-brown barred with reddish brown; the tips of feathers are white, and there is a white spot on the back of the head. Length, thirteen and a half inches.

TO LECTURERS AND TEACHERS.

LANTERN SLIDES

OF THE

PHOTOS OF THE YOUNG CUCKOO

Appearing in this Booklet and many others of Sea and Land Birds can be obtained from

SANDERS & CROWHURST

MAKERS OF THE

New Folding 'Sandhurst' Camera

WITH IMPROVED
FOCAL
PLANE SHUTTER
AND
COOKE LENS.

THE CAMERA
FOR
NATURALIST-
PHOTOGRAPHERS.

Illustrated Catalogue of every requisite for Photography
(50 pp.) Post Free.

FREE LESSONS TO PURCHASERS.

SOLE PUBLISHERS OF . .

“IN BIRDLAND,”

A unique Series of Slides of Birds, Nests, Eggs and Young in their
Natural Situations and Surroundings.

SANDERS & CROWHURST,

Opticians & Photographic Dealers,

71, Shaftesbury Avenue, LONDON, W.

Natural History Works

By W. PERCIVAL WESTELL,

Member of the British Ornithologists' Union, the Selborne Society, etc.

"A YEAR WITH NATURE."

OVER 170 ILLUSTRATIONS.

Price 10/6; by Post, 6d. extra.

"COUNTRY RAMBLES."

Being a Field Naturalist's and Country Lover's Note-book for a year
With an Introduction by F. G. AFLALO, F.R.G.S., F.Z.S., etc.

OVER 100 ILLUSTRATIONS.

Price 10/6; by Post, 6d. extra.

"A.B.C. OF CAGE BIRDS."

ILLUSTRATED.

PRICE 1/-; BY POST, 2d. EXTRA.

"A HANDBOOK OF BRITISH BREEDING BIRDS."

PROFUSELY ILLUSTRATED.

Price 6d. Cloth; 1/- Leather; by Post, 1½d. extra.

These Books may be obtained from all Booksellers, Bookstalls and Newsagents, or direct from the Author, 5, GLENFERRIE ROAD, ST. ALBANS, HERTS.

Mr. Westell can supply Photographs or Drawings of Natural History and Country Subjects either for Collection or Reproduction in Books, Papers, etc.; Articles on Natural History and Country Life; and is prepared to deliver popular Lectures on these subjects on moderate terms. Address as above.

Published by Barnicot
Athenaeum Press, Taunton.

SMITHSONIAN INSTITUTION LIBRARIES

3 9088 00703 5561

Bibliotheca Somersetensis.

A Catalogue of Books, Pamphlets, Single Sheets, and Broad-sides, in some way connected with the County of Somerset; with a General Introduction forming an Analysis of the work. Bath books have also a special Introduction. A full Index brings together all references to place-names and also the chief points of subject interest. By *Emanuel Green, F.S.A.* Three vols., crown 4to. £3 3s. net. 250 copies only issued.

Index to Collinson's History of Somerset :

With Supplemental Index to all the Armorial Bearings of Families mentioned by *Collinson*. Only 500 copies printed. 20s.

Wells, Chapters in the Early History of the Church of.

A.D. 1136—1333. Drawn from unpublished documents in possession of the Dean and Chapter of Wells. By the *Rev. C. M. Church, M.A., F.S.A.*, Sub-Dean and Canon Residentiary of Wells. With numerous illustrations. 15s. net. 500 copies only printed.

Selworthy, in the County of Somerset.

Some Notes on its History. By *Frederick Hancock, M.A., S.C.L. and S.A.*, Rector of the Parish; with nine illus. 10s. 6d. net. 200 copies only printed.

Norton-Sub-Hamdon, in the Co. of Somerset.

Notes on the Parish and the Manor, and on Ham Hill. By *Charles Trask*. With map and nine illus. 10s. 6d. net. 250 copies only printed.

North Curry : Ancient Manor and Hundred.

Notes on the Ancient and Modern History of the three Parishes—North Curry, Stoke St. Gregory, and West Hatch—contained therein. By *Hugh P. Olivey, M.R.C.S.* With many illustrations from original drawings by *E. Sprankling*, and maps and plans. 10s. 6d. net. 250 copies only printed.

Annals of the Royal Forest of Exmoor.

By *Edwin J. Rawle*. 4to., with maps, etc. 12s. 6d.

In preparation :

Taunton and Taunton Deane.

By *Beatrice F. Cresswell*. With map and illus. 2s. 6d. net

Minchhead, in the County of Somerset.

By the *Rev. Prebendary Hancock, M.A., S.C.L., F.S.A.*

Published annually :

Proceedings of the Somersetshire Archæological and Natural History Society.