

ZS 72





BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

AN ILLUSTRATED MAGAZINE DEVOTED
CHIEFLY TO THE BIRDS ON THE BRITISH LIST

EDITED BY

H. F. WITHERBY M.B.E. F.Z.S. M.B.O.U. H.F.A.O.U.

ASSISTED BY

Rev. F. C. R. JOURDAIN M.A. M.B.O.U. H.F.A.O.U. H.M.G.O.S.

AND

NORMAN F. TICEHURST O.B.E. M.A. F.R.C.S. M.B.O.U.

8 MAY 1940
PURCHASED

Volume XXXIII

JUNE 1939 — MAY 1940



H. F. & G. WITHERBY Ltd.

326 HIGH HOLBORN LONDON



LIST OF ILLUSTRATIONS.

	PAGE
<i>Plate 1.</i> Chart showing times of songs before sunrise and after sunset as given by Song-Thrush and Robin (<i>Drawn by G. Marples</i>) ... <i>facing</i>	4
MAP SHOWING RATE OF SPREAD OF THE REDSTART OVER EUROPE DURING THE SPRING (<i>Drawn by H. N. Southern</i>)	37
CHART OF DAY LENGTHS OF HOME-ROOSTING STARLINGS (<i>Drawn by Miss A. Morley</i>)	40
<i>Plate 2.</i> Flower buds of Apple showing damage by Bullfinch (<i>Provided by J. C. F. Fryer</i>) <i>facing</i>	90
GRAPH SHOWING APPROXIMATE ANNUAL NUMBERS OF BLACK-TAILED GODWIT (<i>Drawn by Miss A. MORLEY</i>)	103
THE SCAR ROCKS, WIGTOWNSHIRE (<i>Photographed by the Rev. J. M. McWilliam</i>)	105
YOUNG GANNET IN NEST ON THE SCAR ROCKS, AUGUST 1ST, 1939 (<i>Photographed by the Rev. J. M. McWilliam</i>)	106
<i>Plate 3.</i> Whinchat (<i>Plate reproduced from Mrs. C. L. E. Perrott's Selection of British Birds, 1835, Provided by H. S. Gladstone</i>)... .. <i>facing</i>	122
Title-page of Part I of Mrs. C. L. E. Perrott's <i>A Selection of British Birds</i> (<i>Provided by H. S. Gladstone</i>)	125
LONG-TAILED DUCK—AN ADULT MALE IN BREEDING PLUMAGE (<i>Photographed by the Rev. Dr. C. E. Raven</i>)	139
<i>Plate 4.</i> Display of Slavonian Grebe (<i>Photographed by E. J. Hosking</i>) <i>facing</i>	170
Display of Slavonian Grebe (<i>Photographed by E. J. Hosking</i>)	171
<i>Plate 5.</i> Display of Slavonian Grebe (<i>Photographed by E. J. Hosking</i>) <i>facing</i>	172

LIST OF ILLUSTRATIONS.

	PAGE
ABNORMALLY MARKED GUILLEMOT SEEN ON HANDA <i>(Drawn by G. Salter)</i>	180
MAP OF BLACK-HEADED GULL COLONIES IN ENGLAND AND WALES IN 1938 <i>(Drawn by P. A. D.</i> <i>Hollom)</i>	204
MAP OF BLACK-HEADED GULL COLONIES IN ENGLAND AND WALES IN 1913 <i>(Drawn by P. A. D.</i> <i>Hollom)</i>	205
MAP SHOWING BREEDING DENSITIES OF BLACK-HEADED GULL IN COUNTIES OF ENGLAND AND WALES	207
<i>Plate 6.</i> F. C. R. Jourdain. Corsica, June, 1937 <i>(Photographed by J. Armitage)</i> ... <i>facing</i>	286
MAP OF ISLAND OF OIGH-SGEIR, NORTH UIST, HEBRIDES	330

BRITISH BIRDS

JUN 1939
PURCHASED

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

JUNE 1,
1939.

Vol. XXXIII.
No. 1.



MONTHLY · 1s 9d · YEARLY · 20s
· 326 HIGH HOLBORN LONDON ·
· H. F. & G. WITHERBY LTD. ·

Volume Three of
**THE HANDBOOK
OF BRITISH BIRDS**

•

The third volume of this recognized standard work on British birds deals with the swans, geese and ducks, diurnal birds of prey, storks and herons. As in previous volumes, there are a great number of coloured plates. The geese have been specially drawn for the work by PETER SCOTT.

•

IN FIVE VOLUMES—

21/- NET PER VOLUME

*H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1*

BRITISH BIRDS

2 JUN 1939

PURCHASED

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND

NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 1, VOL. XXXIII., JUNE 1, 1939.

	PAGE
Additions and Alterations to the British List. By H. F. Witherby	2
Some Notes on the Diurnal Song of Birds. By George Marples, A.R.E., A.R.C.A., M.B.O.U.	4
Notes on the Lapwing and Curlew Breeding Populations of a Cumberland Farm. By R. H. Brown	12
Cliff-Breeding in the House-Martin. By F. C. R. Jourdain and H. F. Witherby	16
Notes :—	
Blackbirds feeding on Tadpoles (Sir Cyril Hurcomb)	25
Exodus from a Breconshire Heronry (R. G. Sandeman)	25
Velvet-Scoter in Somerset (H. Tetley)	26
Cormorants Roosting in Trees in Dumfriesshire (Oliver Carruthers)	26
Little Ringed Plover in Sussex (K. B. Rooke)	28
Iceland Gull in Surrey (D. A. T. Morgan)	28
Short Notes :—	
Birds at Spurn, Yorks. Spoonbills in Cornwall. Bittern perching in a Tree in Lancashire. Influx of Bewick's Swans. Unusual number of Smews in Somerset. Early Lapwings' Nests in Shropshire. Black-tailed Godwits in Northumberland. Black Tern in Wiltshire. Kittiwake in Berkshire. Spoonbill in Kent	29
Reviews :—	
<i>Birds as Animals.</i> By James Fisher	30
<i>At the Turn of the Tide.</i> By Richard Perry	31
<i>British Trust for Ornithology. Fifth Report. Spring, 1939</i>	32
<i>Report on Somerset Birds, 1938</i>	32
Letter :—	
Trapping Methods (P. A. D. Hollom)	32

ADDITIONS AND ALTERATIONS TO THE BRITISH LIST.

BY

H. F. WITHERBY.

SEVERAL changes appearing in Volume II. of *The Handbook of British Birds* have not previously been notified in these pages and these are briefly referred to below. In addition there are some changes in Volume III., and as this is about to be published it will be convenient to refer to them here so that the same names can be used throughout this volume of *British Birds*. Further alterations agreed by the "B.O.U. List Committee" are also included.

THE YELLOW WAGTAIL—*Motacilla flava flavissima* Blyth,
MOTACILLA FLAVISSIMA Blyth, Loudon's Mag., VII., p. 342
(1834—England).

instead of *Motacilla flava rayi* (Bp.). The possibility of a change here was indicated in Vol. I. of *The Handbook* (p. 219, footnote) and the B.O.U. List Committee have since accepted *flavissima* as the correct name of the British Yellow Wagtail (see *Ibis*, 1939, pp. 137-8).

RADDE'S BUSH-WARBLER—*Phylloscopus schwarzi* (Radde),
instead of *Herbivocula schwarzi*, see *The Handbook*, Vol. II.,
p. 26.

THE SIBERIAN STONECHAT—*Saxicola torquata maura* (Pallas),
instead of *S. t. indica* (Blyth). For reasons for this change,
see *The Handbook*, Vol. II., p. 177.

THE HOUSE-MARTIN—*Delichon urbica urbica* (L).

In *The Handbook* (Vol. II., p. 235) we adopted the generic name *Martula* for the House-Martin, but as will be explained in the Preface to Vol. III. the B.O.U. List Committee has now resolved that this name cannot properly be used. The decision rests on the opinion that the specific name *fenestra* used by Wood in conjunction with *Martula* and designated by Mr. G. M. Mathews as the type of the genus is under the Rules a *nomen nudum*. It therefore follows that the other species *riparia* becomes the type and *Martula* becomes a synonym of *Riparia* Forster, 1817, which antedates it. We must in consequence revert to *Delichon* Moore, 1855, as the generic name of the House-Martin.

The following changes will be adopted and explained in Vol. III. of *The Handbook* :

THE PINK-FOOTED GOOSE—*Anser fabalis brachyrhynchus* Baillon,

instead of *Anser brachyrhynchus* as we consider the Bean- and Pink-footed Geese to be geographical races of one species.

THE GREATER SNOW-GOOSE—*Anser hyperboreus atlanticus* (Kennard),

CHEN ATLANTICA Kennard, Proc. New Engl. Zool. Club., IX., p. 93 (Feb. 16, 1927—Black Bay, Princess Anne County, Virginia)

instead of *Anser hyperboreus nivalis* (Forster) as Mr. F. H. Kennard has demonstrated that Forster's description of *nivalis* is insufficient to show to which form the bird belonged and that from present knowledge of distribution Forster's specimens were probably of the lesser form.

THE CANADA GOOSE—*Branta canadensis canadensis* (L.).

ANAS CANADENSIS Linnæus, Syst. Nat., ed. X., i., p. 123 (1758—"Habitat in Canada").

This we add to the list on the grounds that though originally introduced it has lived many years in a feral state in many parts of the country (*vide antea*, Vol. XXXII, p. 119).

Aythya Boie, Tagebuch Reise Norwegen, pp. 308 and 351 (1822—Monotype *Aythya marila*=*Anas marila* L.),

is to be used instead of *Nyroca* for the generic name of the Common Pochard, Ferruginous Duck, Tufted Duck and Scaup-Duck.

Melanitta Boie, Tagebuch Reise Norwegen, pp. 291 and 351 (1822—Type by subsequent designation of Eyton, 1838, *Anas fusca* L.),

is to be used instead of *Oidemia* for the Scoters.

These two names replace *Nyroca* Fleming and *Oidemia* Fleming, *Philosophy of Zoology* published in the same year. It has now been clearly proved that Boie's *Tagebuch* antedates Fleming. In an article by himself in the *Isis* No. 5 (May), 1822, Boie refers to his *Tagebuch* so that it must have been published prior to this. On the other hand, Fleming's *Philosophy* was entered at Stationers' Hall on June 28th, and it must have been published subsequent to that date in order to comply with the law of copyright at that time.

SOME NOTES ON THE DIURNAL SONG OF BIRDS.

BY

GEO. MARPLES, A.R.E., A.R.C.A., M.B.O.U.

(Plate I.)

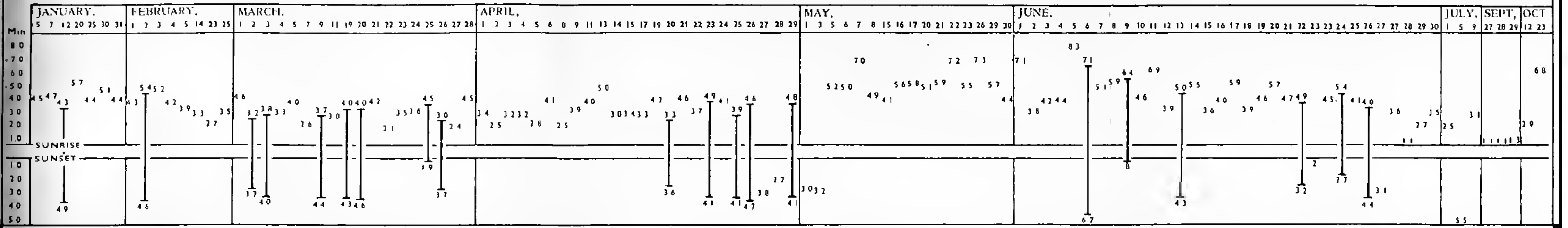
MR. H. G. ALEXANDER in his invaluable paper on the "Song of Birds" (*antea*, Vol. XXIX, pp. 190-8) dealt with, as it may be called, the "longitudinal aspect" of the subject, that is to say with the duration of song between the beginning and end of the year. The following notes contain an effort to present another phase of the matter, one dealing with the times birds begin their songs in the morning and cease singing at night. This may be termed, in contrast to Alexander's "longitudinal aspect," a "transverse view," the "diurnal" as distinct from the "annual" one.

For some years I have practised the habit of rising before the sun with the object of noting the times at which various species of birds begin to sing. This I have done on more than 150 occasions and have noted the vocal efforts of 51 species. As a complement to this I have recorded the times at the other end of the day when birds cease their singing.

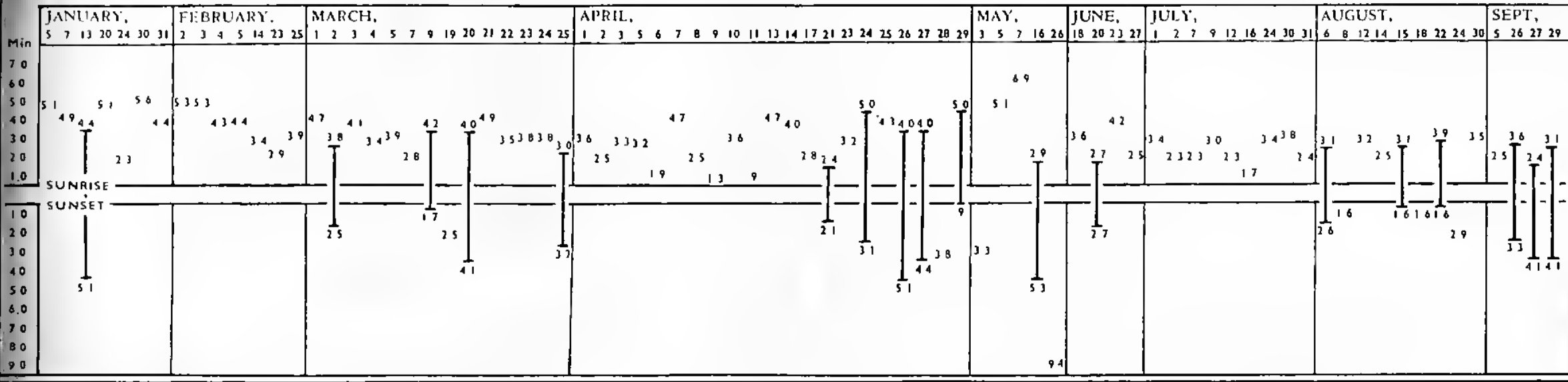
The accompanying chart gives two specimen sets of times in detail showing the commencing and the ceasing to sing on the part of the Song-Thrush (*Turdus e. ericetorum*) and the Robin (*Erithacus r. melophilus*).

A few words in explanation of the chart may be useful. The two lines labelled respectively "sunrise" and "sunset" are datum lines to which the times of beginning and ending song are related. The figures *above* the "sunrise" line show the exact times in minutes before sunrise when a Song-Thrush, or a Robin, gave its first song of the day on which the observation was made. Similarly the figures *below* the line marked "sunset" show the same thing with regard to the last songs given by birds of these two species before going to roost. A vertical line joining a "sunrise" song-figure to a "sunset" song-figure serves to emphasize the length of diurnal song on that particular date. One may hope that the line connects the time of beginning and of ending of the full day's singing of the same bird, but without any certainty. The months and days of the month on which the observations were made are given above the song-times. The times of sunrise and sunset to which the records relate are throughout to be understood as those given in *Whitaker's Almanack* which are

SONG THRUSH.



ROBIN.



Times in minutes of
SONGS BEFORE SUNRISE
and
SONGS AFTER SUNSET
as given by
SONG-THRUSH
(*Turdus c. ericetorum*)
and
ROBIN
(*Erithacus v. melophilus*)
by
GEORGE MARPLES



Greenwich Mean Time and all records are "real" time not "summer" time.

Most of the observations were made in my garden in south Hampshire which accounts for the somewhat restricted number of species appearing in my notes. But some recording was done in the Inverness district of Scotland where, owing to the fact that the sun rises earlier in the north than on the meridian of Greenwich, the birds seem to start singing at a much earlier hour than in the south of England. It was necessary, therefore, in order to arrive at a correct relation between sunrise and the songs to make an adjustment which would bring all song-times of the northern birds into relation with Greenwich times of sunrise and sunset. This was done by deducting the appropriate number of minutes. As an example, the average time the Blackbird (*Turdus m. merula*) began to sing in Inverness-shire was 63.35 minutes before sunrise as compared with the average for the same species of 40.46 minutes in Hampshire. After the adjustment mentioned had been made it was found that the actual average time of commencement of the Scottish bird was 47.04 minutes before sunrise, but this, curiously enough, is still distinctly earlier by $7\frac{1}{2}$ minutes than the time of beginning at the more southern station.

Some particulars must now be given of the species which do not appear on the chart. These fall into groups having different singing habits. With some their *first* songs were always sung before sunrise. On the other hand the *first* songs of others were never heard until after sunrise. Another group failed entirely to relate their first songs to the rising of the sun for they began to sing before that event on some days and, on others, tuned up after the sun had risen. Then again others were heard singing not only in the daytime but throughout the night also.

It was observed too that similar grouping was repeated at the end of day in relation to sunset.

Of the early singers, which began in the grey light of the coming day, I found that the Blackbird, Song-Thrush and Wood-Pigeon (*Columba p. palumbus*) closely competed for the distinction of being the first member of the well-known "dawn-chorus" to sing, for 96 records of the Blackbird showed this bird commencing to sing, on an average, 43.76 minutes before sunrise, while 107 records of the Song-Thrush gave 42.73 minutes and 56 records of the Wood-Pigeon 42.35 minutes as their average time of beginning. The Robin was found to come next with an average time of commencing

of 34.04 minutes before sunrise as shown by 73 records and then the Mistle-Thrush (*Turdus v. viscivorus*), whose 40 records gave its time of beginning as an average of 32.47 minutes.

It may be noted that the Blackbird, Song-Thrush and Robin are species which invariably sang their first song before sunrise and in this way they differed from other species. It was intriguing to find that these birds disclosed the same idiosyncrasy, but reversed, at the end of the day, for they always gave their last song after sunset.

After the five species mentioned above had taken the lead in beginning to sing, others then sang their first song in the following order:—

Name of Bird.	No. of records.	Average time in minutes of beginning before sunrise.
Turtle-Dove (<i>Streptopelia t. turtur</i>) ...	8	27
Pheasant (<i>Phasianus colchicus</i>) ...	33	23.36
Willow-Warbler (<i>Phylloscopus t. trochilus</i>) ...	13	22.46
Wren (<i>Troglodytes t. troglodytes</i>) ...	69	21.55
Great Tit (<i>Parus m. newtoni</i>) ...	27	17.44
House-Sparrow (<i>Passer d. domesticus</i>) ...	33	16.62
Bullfinch (<i>Pyrrhula p. nesa</i>) ...	2	12.5
Green Woodpecker (<i>Picus v. pluvius</i>) ...	10	12.3
Blue Tit (<i>Parus c. obscurus</i>) ...	2	9.5
Chaffinch (<i>Fringilla c. gengleri</i>) ...	13	8.69
Whitethroat (<i>Sylvia c. communis</i>) ...	3	6.66

In addition to these species were others which, though they may or may not be regarded as "singers," made vocal testimony to their presence before sunrise. These were noted as beginning to sing in this order:—

Name of Bird.	No. of records.	Average time in minutes of beginning before sunrise.
Black-headed Gull (<i>Larus r. ridibundus</i>) ...	7	80.71
Mallard (<i>Anas. p. platyrhyncha</i>) ...	2	69.5
Common Sandpiper (<i>Tringa hypoleucos</i>) ...	3	63.66
Heron (<i>Ardea c. cinerea</i>) ...	2	61.5
Herring-Gull (<i>Larus a. argentatus</i>) ...	3	59
Carrion-Crow (<i>Corvus c. corone</i>) ...	3	30
Moor-hen (<i>Gallinula ch. chloropus</i>) ...	13	28
Rook (<i>Corvus f. frugilegus</i>) ...	27	18.03
Magpie (<i>Pica p. pica</i>) ...	7	17.57
Jackdaw (<i>Corvus m. spermologus</i>) ...	2	6

It should be pointed out that these birds, with the exception of the Sandpiper, Moor-hen and Magpie, have their roosting or nesting places some miles away, hence it is almost certain that their earliest vocalization of the day would be earlier than the times they were first heard from the garden.

Several smaller species may now be quoted which began much earlier than any of the species already mentioned, for they started to sing in the darkness of the small hours. Unfortunately as regards two of these, the records are meagre for the birds are not commonly to be heard. Thus, the Reed-Warbler (*Acrocephalus s. scirpaceus*), of which I secured two records, began to sing, as the average of these reveals, at 76 minutes before sunrise, its earliest time being 106 minutes, while the Reed-Bunting (*Emberiza s. schæniclus*) began 48 minutes before sunrise. Also the Yellow Bunting's (*Emberiza c. citrinella*) "Little bit of bread and no cheese" was sung on one occasion at 73 minutes, while the average of 8 records show it as beginning at 50.25 minutes before sunrise.

Though these birds started to sing so early they were easily beaten by the Sky-Lark (*Alanda a. arvensis*), of which I took 30 records. The first of these was at 124 minutes before sunrise and the average was at 98.52 minutes. Sky-Larks are well known as very early singers; often they may be heard pouring out their song in concert when it is quite dark.

But to me the astonishing and entirely unexpected voice to be heard in the darkness was that of the Hedge-Sparrow (*Prunella m. occidentalis*) of whose early singing I made 43 records, which give an average of 55.56 minutes before sunrise for commencing. Among these records was one of a song given on an April day 225 minutes before sunrise, that is, about 1 o'clock in the morning. This effort, together with 11 other songs heard respectively at the early times of 195, 180, 177, 94, 83, 76, 74, 67, 66 and 64 minutes, may be held definitely to place the Hedge-Sparrow in the category of "singers of the night" along with the Nightingale, Sedge-Warbler and other "aquatic" warblers.

There is yet another group of early vocalists to be chronicled. One or other of these birds was to be heard at almost any time before or after midnight during the breeding-season though, saving one perhaps, they are not usually regarded as night-singers. This exception is the Nightjar (*Caprimulgus e. europæus*), which, decidedly as its name implies, comes into this category. I have heard its curious song as early as 151 minutes before sunrise and also at 132 minutes after sunset.

Of the others belonging to this group the Lapwing (*Vanellus vanellus*) not only "calls" but gives its courting song and characteristic display-flight intermittently through the night. It is a most uneasy bird, never quiet. Notes I have made

on 10 occasions show this plover as singing its first song, on an average 100.5 minutes before sunrise, the earliest being at 195 minutes. Four records taken near the close of day give an average of last singing as 92.25 minutes after sunset with 139 minutes as the latest.

A Snipe (*Capella g. gallinago*) was chronicled as "bleating" at midnight and 3 other records of this bird are first performances given at 196, 73 and 69 minutes before sunrise.

The Curlew (*Numenius a. arquata*) was noted 15 times as calling, on an average at 85.53 minutes before sunrise while its congener, the Whimbrel (*N. ph. phæopus*) was noticed once only, at 127 minutes before.

The Oystercatcher (*Hæmatopus o. occidentalis*) was often heard very early in the day giving its distinctive "whittering," the first of these being heard 156 minutes before sunrise. Six records taken of this bird's song give a before-sunrise average for beginning as 120.16 minutes.

The Cuckoo (*Cuculus c. canorus*) is almost as much a bird of the night as the Nightjar, so early and late does it sing. The earliest song in my notes was 316 minutes before sunrise, and the latest 110 minutes after sunset, the average of 51 before-sunrise commencings being 86.39 minutes.

A Land-Rail (*Crex c. crex*) was noted one evening to sing (except for a "crake" dropped at long intervals), without cessation until midnight, at which hour I, unfortunately, fell asleep. On waking at 3 a.m. I found the bird still singing as though it had never stopped through the small hours. About sunrise inter-spaces occurred in the song, these continued and increased in length until the bird was "craking" only at longish intervals. These intervals extended until about 7 a.m. in broad daylight, when the song was abandoned altogether. Records made of the first and last singing of other Land-Rails were 176 and 151 minutes before sunrise and 88 and 96 minutes after sunset.

With regard to these morning singers it was found that certain species were never heard to sing before sunrise; the Starling (*Sturnus v. vulgaris*) was one of these, its earliest song noted being at 9.5 minutes after sunrise. The Goldfinch (*Carduelis c. britannica*) sang next, its average time of commencing being 12.66 minutes after sunrise. The Greenfinch (*Chloris ch. chloris*) began to sing, on an average, 7 minutes later. The Nuthatch (*Sitta e. affinis*) was the last of this group to begin, its average time for the first song of the day being 30.66 minutes after sunrise.

And so, with this late group having begun, the day's

singing was in full swing; it continued until, as sunset approached, one species and then another began to close down for the night.

The last song of the day of any bird is not so easy to chronicle as is its first, consequently on this phase of my subject my information is less complete. Nevertheless I secured sufficient observations to realize that a reverse order of singing occurred at the close of the day. That is to say, species which began their songs before sunrise were the birds which continued their singing until after sunset. Similarly those species which were noted as commencing their song after sunrise seem to bring their singing to a close before sunset. And the birds which started their singing in the darkness of early morn sang on until darkness set in towards night.

From this, just as Alexander has shown the annual duration of song as varying in length with different species, so, it is evident, certain birds have a diurnal duration of song more extended than that of others. In the case of annual song, climatic influence, the approach of the breeding-season and the effect of the moult seem disposing factors. But reasons for differences in duration of diurnal song are not so apparent. The stimulating effect of the dawning light is probably of importance, though this suggestion does not cover all the ground. It does not make clear, for example, the cause of the night vocalization of so many birds of different types. Nor does it throw any light on the difference in the duration of the diurnal singing of, say, the Sky-Lark and Chaffinch, both alike in being birds of remarkable energy.

The birds which I observed as ending their song-period before sunset were the Starling, whose average of 3 last-song records was 9.33 minutes before, the Greenfinch, which finished on an average at 24 minutes, the Goldfinch at 31.5 minutes and the Nuthatch at 35 minutes before sunset. It is of interest to compare these times of ceasing song with the times of beginning song of the same birds as already related.

Other species belonging to the group of those completing their song-period before sunset were the Great Tit whose average time was at 28.75, Bullfinch at 28, Whitethroat at 27, House-Sparrow at 24.66, Blue Tit at 15.2 and Chaffinch at 12; all minutes before sunset.

Some species were found, as in the morning, to be without any regular routine, for sometimes their song ended before, and, at other times, after sunset. Among these irregulars were the Mistle-Thrush, Wood-Pigeon, Green Woodpecker, Willow-Warbler, Hedge-Sparrow and Turtle-Dove.

The three birds, Blackbird, Song-Thrush and Robin, referred to as always giving their first song before sunrise and never after, were appropriately enough, found to give their last song after sunset and never before. Of the evening song of the first of these birds I took 21 records which show that the Blackbird always continued to sing until quite late, its average time of closing down being at 35.38 minutes after sunset. Once, however, a Blackbird's last song was recorded at 88 minutes after sunset.

The average time the Song-Thrush ceased after sunset as shown by 31 records was 34.69 minutes, and a very late song was given at 67 minutes. The Robin as shown by 29 records had an average time of ceasing of 33.13 after sunset; the latest song heard was just over 1½ hours after sunset.

The unlovely song of Swift (*Apus a. apus*) was heard as late as 69, 75 and 75 minutes after sunset.

By comparing the times of evening-ending of Blackbird, Song-Thrush and Robin songs with the times of their morning-commencing, it will be seen that, like the after-sunrise singers, they adopt the reverse order at night. Other species chronicled as singing very early in the morning were found to carry on their singing very late at night. The Cuckoo, for instance, ceased, as 16 records show, on an average at 69 minutes after sunset. But this bird was not the latest of this group by any means, for the Land-Rail was recorded as singing at 88 and 96, the Sky-Lark at 64, 82 and 124, the Snipe as "bleating" at 58, 82 and 118, and the Curlew as having been heard at 97, 122, 131 and 132 minutes after sunset; all these being last songs of the day.

So far nothing has been said about Owls. Of these only two species were heard from my garden—the Tawny Owl (*Strix a. sylvatica*) and the Little Owl (*Athene n. vidalii*). As befits a night bird the former sings all through the darkness, though intermittently. But although it is said to be "essentially nocturnal" this Owl, on occasion, will sing after sunrise and even when it is full day. Among the times noted of a number of these daylight-songs was one given 171 minutes after sunrise! As for the Little Owl, being mostly diurnal in its habits, it usually sings or calls at intervals through the day; still, it may, not uncommonly, be heard in the night. I have 8 records of this being done at times ranging from 25 minutes after sunset to 171 minutes before sunrise. And one night I heard a Little Owl singing at intervals from 11 p.m. until dawn and being answered in like manner by, at least, two others.

How far the vocal efforts of many of the birds under review may be considered as "song" is perhaps a moot point and this is not the occasion for a discussion of its merits, but, in any case, those I have mentioned seemed to be more significant than "calls" or "cries" for they range from the short, challenging "crow" of the Pheasant and the "scream" of the Swift, through the brief, accepted "song-bursts" of the Wren and Chaffinch, to the drawn-out formless, but indubitable "singing" of the Song-Thrush and Nightingale.

In this connection attention may be drawn to the curious fact that all Blackbird records made in January and February, with one exception, related to "tickings" which never developed into true song. And that the same thing was revealed at the end of the season when all records made in August and September, again with the exception of one song, related to "tickings" also.

Stress has been laid on the early singing of the Hedge-Sparrow. Attention may also be called to the odd circumstance that on April 8th, 1938, a Wood-Pigeon was heard abnormally to sing nearly three hours (173 minutes) before the sun had risen. And that on March 23rd, a Blackbird began to sing at 79 minutes before sunrise, there being a full moon by way of incitement. On another, but moonless occasion, a Blackbird was noted singing at 88 minutes after sunset.

Other unusual vocal happenings noted were: Herring-Gulls calling, inland, at 98 minutes before sunrise; a Carrion-Crow croaking at 74 minutes, a Heron vociferous at 80 minutes, a Mallard "quarking" at 81 minutes, and a Rook cawing at 94 minutes after sunset.

NOTES ON THE LAPWING AND CURLEW
BREEDING POPULATIONS
OF A CUMBERLAND FARM.

BY

R. H. BROWN.

DURING 1937 and 1938 a census was undertaken of the Lapwings (*Vanellus vanellus*) and Curlews (*Numenius a. arquata*) breeding on an area of farm-land in Cumberland extending to 650 acres or approximately one square mile. This area is about three hundred feet above sea-level, and lies within a "ring fence" as it is encircled by a third-class country road. The larger half of the land is permanent pasture; about one-sixth is meadow; the remainder is ploughed out in a five-year to seven-year rotation according as to how long the land lies down in grass. The soil is clay. The fields are divided by hawthorn hedges with numerous oaks and ash growing in them, whilst scattered alders fringe the banks of a little stream that meanders through the area. Except for a copse of oaks and beech and odd pines extending to half-acre adjacent to a farmhouse and supporting a breeding colony of Rooks (*Corvus f. frugilegus*) the area is exclusively agricultural.

LAPWING.

In 1937 fifty-one pairs of Lapwings and twelve pairs of Curlews bred or attempted to breed within this area whilst in 1938 forty-seven pairs of Lapwings and ten pairs of Curlews bred or attempted to breed.

In both years twelve fields, consisting of permanent pasture or meadow and aggregating over one hundred acres, held no breeding pairs of Lapwings, whilst several large fields of permanent pasture or meadow held only one or two pairs. Thus a permanent pasture of thirty acres held one breeding pair each year, whilst a meadow of eighteen acres held two pairs in 1937 and one pair in 1938. The heaviest density of breeding pairs was found each year on the cornfields or the fallow-fields to be worked for turnips. A grass field of twenty-three acres that had not been ploughed out for twenty years was limed and ploughed out in the spring of 1937 and sown with oats. Twelve pairs of Lapwings nested in this field, and the following spring, when it was worked and sown with turnips, ten pairs nested. When this field was in grass it never carried more than three or four pairs of breeding Lapwings. An adjacent grass field of twenty-five acres, that had not been ploughed out for seventy years, was limed

and ploughed and sown with oats in the spring of 1938 and it held ten pairs. When in grass two or three pairs nested in it. Four pairs nested each year in an eight-acre field that was sown with turnips in 1937 and with oats in 1938. The smallest field that supported Lapwings was a four-acre field of oats that held one pair. These fields supported the heaviest density of breeding pairs. Other corn and fallow fields, apparently just as suitable as breeding areas, carried fewer pairs. Thus a field of twenty-five acres, sown with turnips in 1937 and with oats in 1938, carried five pairs each year; another field of fifteen acres, similarly sown, supported two pairs each year.

In general, Lapwings rarely nest in clover-hay fields, no doubt due to the fact that in a forward spring it is difficult for the nestlings to make their way through the tangled clover stems and long grasses. In backward springs they will occasionally use clover-hay fields for breeding purposes but the nestlings are led out of the field as soon as possible. In 1937 no pairs were found breeding in five clover-hay fields aggregating seventy acres, but in the exceptionally dry spring of 1938, with considerable frost at night retarding the growth of vegetation, two pairs nested in a fifteen-acre clover-hay field. The previous spring, when sown with oats, this field supported five pairs.

When the nestlings hatch out in cornfields many pairs immediately lead them into neighbouring pasture fields. A few pairs keep them in the cornfields until the corn reaches a certain length when they, too, forsake the fields, evidently regarding the cornfields at this stage in the same light as they regard clover-hay fields. In 1937 two pairs hatched out two nestlings each in a nine-acre turnip-field and both pairs kept their young in the turnip-field until they were feathered. In 1938 two pairs nested in a ten-acre turnip-field, the two nests being thirty-eight yards apart; each pair hatched out four nestlings and within twenty-four hours of hatching each pair had led their downy chicks into neighbouring pasture fields. Ten days later the cock of one pair led two nestlings back into the turnip-field, where they remained another fortnight, and were then led into a meadow hayfield that was in haycock.

In 1937 two nests in a cornfield were eighteen yards apart and in 1938 two nests in a fallow-field were thirty yards apart.

CURLEW.

Unlike the Lapwing the Curlew commonly nests in clover-hay fields and in both years the majority of nesting pairs

were found in these fields or else in meadows, usually one pair to a field, although in 1937 two pairs were found breeding in a fifteen-acre clover-hay field. No pair was found breeding in either year in a cornfield or fallow-field or a well-drained pasture field and in general the birds only feed in clover-hay or meadow or pasture fields. The exception to this was seen during April and May of 1938 when owing to the continued drought the grass and clover fields were as hard as metal roadways and the birds could only probe their long bills in the looser earth of the newly harrowed or cultivated corn or fallow fields. As a result of the hardness of the ground the birds were unable to scrape out their nesting hollows, which they hollow with their feet, and although ten pairs frequented this area in early May when the census was undertaken only four pairs hatched out nestlings, the other pairs forsaking the area by the end of May. Each year several apparently suitable meadows and rough pastures held no breeding pairs yet within two miles a flock of fifty to sixty Curlews frequented during May and June of both years a large area of derelict woodland overgrown with heather and self-sown silver birches.

When the nestlings hatch they and the adults lead a wandering life from one grass field to another. Frequently the family party splits up, one adult looking after two nestlings, the other adult the other two. They may not unite again until the nestlings are about feathered by which time there is probably only one or two young left. The majority of dogs can scent and run down the nestlings in a grass field. One nip from a dog's sharp teeth and the nestling is killed. In districts where foxes are common they take toll of the nestling Curlews. One day in mid-June, about noon, a fox was watched, obviously searching for nestling Curlews in a meadow hayfield where annually one pair of Curlews breed. Six Curlews were flying around above the fox, calling repeatedly, and swooping down at it whilst another adult, presumably the breeding hen, was flapping along the ground evidently trying to distract the fox's attention. As I had a dog with me I set it after the fox and thus scared it out of the field but I imagine that during a summer's night, a prowling fox will often scent and run down a nestling Curlew.

Although both Lapwings and Curlews commonly hatch out four nestlings, yet the average brood reared by either species seldom exceeds two young and with many pairs it is only one young. The heaviest mortality amongst the nestlings of both species occurs whilst they are in the small downy

stage ; if the adults are kept off the nestlings during cold wet weather many die from exposure. When the downy nestlings are led from one field to another, and this often involves crossing a gutter on one side of the hedge and scrambling up the hedge-bank then underneath the hedge and down the opposite bankside one nestling or occasionally two may get lost and left behind and provided the adult has one or two nestlings with her she does not trouble about the others. This is especially the case with the Lapwing ; as regards the Curlew, when the family party splits up each adult has only one or two nestlings to look after and can usually lead them from field to field without overlooking one. A pair of Lapwings hatched out four nestlings in a turnip field ; as soon as the down of two was dry the hen led them, by calling, into a neighbouring pasture field. The other two were left, calling repeatedly, in the nest hollow and during an afternoon of five hours the hen never returned to them. Finally I carried the two nestlings into the pasture field and placed them beside the others, otherwise they would apparently have been left to die in the nest. Hawks and the several species of the crow family take their toll of the nestlings of both species as well as stoats and weasels. On two occasions a stoat has been seen with a nestling Lapwing in its mouth and pursued by all the breeding adults of that field. Cattle and horses kill a certain number of nestlings through walking on them or galloping over them. Usually both Lapwings and Curlews will lead their nestlings out of a grass field if several horses are regularly grazed there.

CLIFF-BREEDING IN THE HOUSE-MARTIN.

BY

F. C. R. JOURDAIN AND H. F. WITHERBY.

IN response to the editorial appeal (*antea*, Vol. XXXII, p. 118) for information on cliff-breeding in the House-Martin (*Delichon u. urbica*) a number of observers have sent in records. From these it is obvious that breeding under natural conditions is far more extensive than was previously suspected, and many reports have been received from England, Wales and the Isle of Man and a certain number from Scotland and Ireland. It is, however, probable that the extent to which this species breeds in cliffs in the two latter countries is as yet imperfectly known owing to the comparatively small number of observers, and present-day notes from many parts of Scotland and Ireland are wanting.

In the following paper we have given a summary of the observations, followed by the detailed reports under each county. For convenience the counties have been arranged in the order of the Watsonian Provinces and the information under each county includes the details culled from published sources, which are given first, together with dates, followed in a separate paragraph by the notes sent in by correspondents. To distinguish further the two sources of information the names of the latter are given in *italic* type.

We are much indebted to Mr. P. A. D. Hollom for assistance in extracting and collating the records.

ENGLAND AND WALES.

In summarizing the results of this inquiry it is more convenient to deal with England and Wales first, as having been more effectively worked than Scotland or Ireland. Out of the 54 counties and vice-counties cliff-breeding has been recorded in the following: Cornwall, Devon, Dorset, Hants (Isle of Wight only), Sussex, Kent, Surrey, Norfolk, Stafford, Glamorgan, Pembroke, Cardigan, Carnarvon, Anglesey, Derby, East and West Yorks, Northumberland, Cumberland and the Isle of Man. It will at once be noticed that all these counties are maritime, with the exception of Surrey, Stafford, W. Yorks and Derby. The only Surrey record dates back to 1900 and relates to isolated nests in chalk quarries. The Stafford record is nearly half a century old and seems to need confirmation from the workers of to-day. Modern evidence of inland cliff breeding all relates to W. Yorks and Derby.

Leaving these for further consideration later on, and

returning to the maritime counties, it becomes clear that the absence of records from the remaining coastal districts is due to the partial or total absence of sea-cliffs in most cases. The low-lying coasts of Essex, Suffolk, most of Norfolk, Lincoln, Gloucester, Cheshire and nearly all Lancashire are necessarily excluded. Some of the Welsh coastal counties may yet prove to be inhabited, but have not been closely worked. There are on the other hand a number of inland counties from which no records are available, but which provide numerous possible sites. Among these we may mention Brecon, Radnor, Montgomery, Denbigh, Monmouth, E. Lancashire and Westmorland. It is, of course, possible that colonies may be discovered here, but it is certainly remarkable that the only two districts where this habit has been known and recorded for many years past are both in the middle of England, roughly about 60 miles from the most northerly to the most southerly locality and yet separated by about 40 miles of country, much of it apparently quite suitable and yet as far as cliff-breeding is concerned, uninhabited.

In the case of our coastal breeding birds there seems to be no connexion between breeding and any particular type of geological formation; the sites may range from tertiary (mud cliffs) to secondary (cretaceous and Jurassic), primary (millstone grit, carboniferous limestone, old Red Sandstone, Silurian, etc.) and also igneous rocks. The inland colonies are mainly on the carboniferous limestone in the Derbyshire Wye and Derwent valleys and on the limestone (possibly also on millstone grit) in the dales of the Aire and Wharfe.

SCOTLAND.

It will be noted that although the great majority of the records come from the coast, breeding also has been established in Perth far inland as well as in a few other cases up valleys at no great distance from the sea. None of these records are recent and some date back over 30 years.

IRELAND.

Here our records are probably very imperfect, but R. J. Ussher's summary (*Birds Ireland*, 1900) no doubt still holds good: that the great cliffs on the west coast are too much exposed to the Atlantic storms to be colonized, though the more sheltered parts of the Ulster, Leinster and Munster coasts are inhabited at many points. Limestone cliffs seem to have a special attraction for the species, though sandstone is also recorded.

With regard to the nest-sites, there is considerable variation and generalization is difficult. Cliffs fully exposed to prevalent gales are avoided. In one case (in Co. Cork) where the cliff faced south-west, it was protected on the east and north. A distinct preference is indicated in the records for cliffs which have some degree of overhang. Where this is not present the nests are often built under the shelter of projecting ledges of rock. Where large caverns or recesses exist at the foot of a range of cliffs, the nests may be placed against the roof, so long as it is high enough to be out of reach of spray. The height from the ground seems to be very variable. Many sites are quite inaccessible, high up on overhung cliffs, sometimes with caves at the foot; others have been recorded within arm's reach of a man standing at the cliff foot. Probably the higher sites, which naturally are not always available, are preferred where high winds and consequent rough seas, are prevalent.

ENGLAND AND WALES.

PROVINCE I.—CORNWALL, DEVON AND SOMERSET (nil).

CORNWALL. About 30 years ago many were nesting on the cliffs about 4 miles south of Helston (*E. Herbert*). At the Lizard there were 5 nests in 1938 about 18 ft. from the top of a 50 ft. cliff, placed beneath small overhangs (*B. T. Brooker, H. A. R. Cawkell*). Near St. Anthony lighthouse, Falmouth, a small colony has existed for at least four years on black shale cliffs. There were eleven occupied nests in 1935, seven in 1937 and five in 1938. They were built under an overhang about 20 ft. above the shore (*A. Farrant*).

DEVON. *J. Gatcombe* (*Zool.*, 1872, p. 3168) states that they breed on cliffs at Seaton and Beer Head and probably Berry Head, Tor Bay. *C. Young* (*op. c.*, 1883, p. 34) also records their breeding at Berry Head, and *W. S. M. D'Urban* and *M. A. Mathew* (*Birds Devon*, 1895) state that they breed on the cliffs at Beer, Teignmouth, Wembury and Berry Head. *W. E. H. Pidsley* (*Birds Devon*, 1891) states that Rawson noticed them breeding between Dawlish and Starcross.

Upwards of 30 nests in 1919 beneath overhung slabs of rock and on the adjacent perpendicular face of the cliffs at Man Sands, Brixham (*J. E. S. Dallas*). In 1908 young were being fed in nests on the face of Peak Hill, Sidmouth. In 1923 there were some nests built of red mud, difficult to see on the red cliffs of Ladram Bay, a few miles west of Sidmouth (*F. L. Blathwayt*). In 1929 about 15 nests Ladram Bay, but they gradually decreased and are perhaps now extinct there (*W. Walmesley White*). A few pairs have nested regularly for past ten years in a high, shallow cave in the cliffs west of the mouth of the R. Yealm (*G. M. Spooner*).

PROVINCE II.—WILTS (nil), DORSET, HANTS AND SUSSEX.

DORSET. Were nesting certainly before 1894 on the cliff at Arishmell, mentioned by *Dr. J. Huxley* (*antea*, Vol. XXXII, p. 118) (*F. L. Blathwayt, H. W. Mapleton-Bree*); here 8 nests in 1935, 10 in 1936. Also breeds east side Worbarrow Tout, many nests 1936 (*S. Smith*). In

1924 and subsequent years one or two nests on the stone (not chalk) cliff above "Mouse Hole" immediately west of Lulworth Cove (*T. G. Longstaff*). Nesting in one or two places on the oolitic limestone cliffs of Portland (*John Armitage*). Nest on cliff wall (Purbeck marble) between Swanage and Kinneridge (*C. I. Evans*).

HAMPSHIRE (ISLE OF WIGHT). J. E. Kelsall and P. W. Munn (*Birds Hants*, 1905) state that they have been noted by Poole to nest under ledges of the cliffs at Small Hope Cliff, Shanklin and by Munn at Dunnose and Freshwater, "and indeed they are found on most of the island cliffs." R. H. Fox (*Nat. Hist. Isle of Wight*, 1906) also notes that many nest at the Culvers and freely on cliffs in the Island, both sand and chalk.

SUSSEX. J. Walpole-Bond (*Hist. Birds Sussex*, 1938) states that a few nest in sea-cliffs, usually under excrescences however slight, and that he never found them in chalk-pits and cuttings inland.

A few years ago Martins nested regularly on the big (inland) chalk-cliffs just outside Lewes near the Eastbourne road. Up-to-date information is lacking (*D. W. Musselwhite*).

PROVINCE III.—KENT, SURREY, ESSEX (nil), HERTS (nil), MIDDLESEX (nil), BERKS (nil), OXON (nil) AND BUCKS (nil).

KENT. N. F. Ticehurst (*Hist. Birds Kent*, 1909) believed that a considerable number bred in cliffs east of Dover, but his observations were limited and required confirmation.

A nest was seen on the cliffs at Dover about 40 years ago before the present harbour was built (*H. A. Gilbert*).

SURREY. J. A. Bucknill (*Birds Surrey*, 1900) states that the nest is not unfrequently affixed to projecting ledges in chalk quarries, the material in these cases consisting of powdered chalk and the nests consequently difficult to see.

PROVINCE IV.—SUFFOLK (nil), NORFOLK, CAMBRIDGE (nil), BEDFORD (nil), HUNTINGDON (nil) AND NORTHAMPTON (nil).

NORFOLK. H. Stevenson (*Birds Norfolk*, 1866) records one instance of a nest at Hunstanton in the face of the chalk cliff.

PROVINCE V.—GLOUCESTER (nil), MONMOUTH (nil), HEREFORD (nil), WORCESTER (nil), WARWICK (nil), STAFFORD AND SALOP (nil).

STAFFORDSHIRE. A. M. McAldowie (*Birds Staffs*, 1893) states that the rugged cliffs and castellated rocks formed by the millstone grit of N. Staffs are favourite nesting-places and that along the Roaches especially hundreds breed annually. There is no reference to this colony by J. R. B. Masefield (*Vict. Hist. Stafford*, 1908).

PROVINCE VI.—GLAMORGAN, BRECON (nil), RADNOR (nil), CARMARTHEN (nil), PEMBROKE AND CARDIGAN.

GLAMORGAN. At least two fair-sized colonies on the coastal cliffs between Porthkerry and Rhoose (*G. C. S. Ingram* and *H. M. Salmon*). In 1938 several pairs nesting on the sea-cliffs at Llantwist Major (*W. R. Philipson*).

PEMBROKESHIRE. T. Ground (*Brit. B.*, Vol. XVIII, p. 233 (1925)) stated that it nested on the coastal cliffs, but in smaller numbers of late years and refers to a colony of about 30 nests at Penrhyn Castle which in 1914 was reduced to one nest.

In 1926 several pairs nesting on the limestone cliffs near Castle Martin. A few pairs on the ordorician cliffs between Newport and Dinas Head (*C. Oldham*). Bertram Lloyd records colonies on the coastal cliffs at Newport in the north, and Boshaston in the south. In large numbers in many places on the Pembrokeshire cliffs (*H. A. Gilbert*). A large coastal colony at Tenby some years ago (*K. Williamson*).

CARDIGAN. In June, 1924, several small colonies of half a dozen pairs on the ordorician cliffs for 4 miles NE. of Cardigan Island (*C. Oldham*). Professor J. H. Salter records a few small colonies on sea-cliffs between Llangranog and Aberporth (*G. C. S. Ingram* and *H. M. Salmon*).

PROVINCE VII.—MONTGOMERY (nil), DENBIGH (nil), FLINT (nil),
CARNARVON, ANGLESEY.

CARNARVONSHIRE. H. Candler (*Zool.* 1884, p. 470) records several nesting near Conway under Pen-maen-bach. H. E. Forrest (*Vert. Fauna N. Wales*, 1907) states that considerable numbers nest in cliffs of the two Ormes Heads as well as in roofs of caverns beneath them. He also states that R. W. Calvert has observed a small colony nesting on a rock at the foot of Moel Siabod. [This observation is noteworthy as though the locality mentioned is only some 12 miles from the nearest part of the sea, it is nevertheless definitely an inland locality and seems to show that possibly more intensive exploration may result in the discovery of other inland colonies in the Welsh mountains.]

There are now about a dozen nests annually on the Great Orme, Llandudno. In 1900 there were considerably more, many below the marine drive about 25 ft. above sea-level, and others higher up above the drive. They were built of reddish clay, conspicuous against the grey limestone (*W. H. Dobie*, *C. Oldham*, *E. Peake*, *E. Ward*, *G. C. S. Ingram*, *H. M. Salmon* and *R. B. Sibson*). In 1907 many pairs Great Orme (*A. W. Boyd*).

ANGLESEY. H. E. Forrest (*Vert. Fauna N. Wales*, 1907) says that it is common on cliffs of E. Anglesey and in his *Handbook* (1919) mentions nests in "Swallows Cave," Bull Bay, N.E. Coast.

In 1902 and 1903 about 30 pairs nesting on the limestone cliffs at Dinmor Point, S.E. coast, and a large colony at Point Lynas. Small scattered colonies all along the E. and N. coasts from Dinmor Point to Carmel Head, limestone cliffs preferred but some small colonies on the ordorician rocks of the N.W. (*C. Oldham*).

PROVINCE VIII.—LINCOLN (nil), LEICESTER (nil), RUTLAND (nil),
NOTTINGHAM (nil) AND DERBY.

DERBYSHIRE. The earliest record of cliff-breeding dates back to June, 1835, when W. Thompson saw many nests on the "chalk" (limestone) cliffs overhanging the R. Derwent near Cromford (*Birds Ireland* I, p. 391). Seebohm in a note communicated to Dresser (*Birds Europe* III, p. 500), says, "I have, however, met with small colonies in Dovedale (a limestone district in North [*sic*] Derbyshire)." This was written in 1875. Later Seebohm writes more strongly: "Thousands of Martins breed on the limestone rocks in Dovedale and in other parts of the Peak of Derbyshire" (*Hist. Brit. Birds*, 1884). Yet strange to say, there is not a single record of a Martin's nest in Dovedale for the last forty years and there is no mention of feral breeding here in Whitlock (*Birds Derbyshire*, 1893). Quoting Storrs Fox, however, he

says that near Stoney Middleton great numbers place their nests on high precipitous rocks on the road to Eyam and a few nests have been seen in Millers Dale. Whitlock also himself records nests on the rocks in Ashford Dale (*Nat.* 1886, p. 132). It seems probable that Seebohm confused his localities when writing from memory (*Jourdain, Vict. Hist. Derby*, 1905).

At the present time they nest in the valley of the Wye annually and in good numbers, starting in Chee Dale on the carboniferous limestone rocks, at times within 10 ft. of the ground, continuing in Millers Dale, where they are most plentiful on Ravens Tor, while a few pairs breed on the rock face about the middle of Water-cum-Jolly Dale (*J. Armitage, Miss M. Wolley, T. R. Tallis and F. C. R. Jourdain*).

PROVINCE IX.—CHESHIRE AND LANCASHIRE (nil).

PROVINCE X.—YORKSHIRE.

YORKSHIRE. *Coastal.* J. Cordeaux (*Birds Humber District*, 1872) found considerable number of nests attached to underside of projecting shelves, Flamborough. T. H. Nelson (*Birds Yorks*, 1907) states that along the sea-cliffs a great number breed annually, placing their nests under ledges, and colonies exist at Saltburn, Boulby, Whitby, Scarborough and Flamborough range.

There was a large colony some years ago on the cliffs at Gristhorpe Bay, midway between Scarborough and Filey, many of the nests not more than 6 ft. from the base of the cliff (*W. J. Clarke*). Stray pairs nest on the Bempton and Flamborough cliffs (*H. B. Booth, W. B. Alexander*). A few nests in 1937 on the high cliffs on Colbourn Nab, Staithes, N. Yorkshire coast (*T. G. Longstaff*).

Inland. Nelson (*op. c.*) states that they breed in cliffs in a few inland localities, as at Malham Cove in Upper Airedale, in a quarry between Kirkby-in-Cleveland and Bilsdale, and at Kilnsey Crag in Wharfedale. The Malham Cove colony has been known for many years. H. Seebohm (*Hist. Brit. Birds*, 1884) has a reference to it and it is also mentioned by W. E. Clarke and W. D. Roebuck (*Handbook V. F. Yorks*, 1881). Nesting in Kilnsey Crag is also mentioned in a review of *Studies in Nidderdale* (*Zool.*, 1884, p. 439).

At Malham Cove during recent years from six to twelve pairs have nested annually high up on the cliffs (*H. B. Booth, R. O. B. Garnett, C. Oldham and E. Peake*). On Kilnsey Crag in pre-war days up to 135 nests have been counted, but the numbers are fewer now (*H. B. Booth, W. F. Fearnley*). In 1935 a number of pairs were seen on a moorland cliff near Grassington, perhaps the same locality (*L. S. V. Venables*). Not less than ten pairs breeding under the overhang of the cliff face from 30 ft. upwards at Kilnsey Crag in 1938 (*C. Oakes*).

PROVINCE XI.—DURHAM (nil) AND NORTHUMBERLAND.

NORTHUMBERLAND. G. Bolam (*Birds Northumberland and E. Borders*, 1912) states that along the northward coast there are many populous colonies both in sandstone and silurian rocks, of which Swallows' Craig near Cockburnspath and the headland beyond the Needle's Eye are but examples. Inland there are also several.

A colony at Cullernose Point near Howick consisted of about 20 pairs in 1922, since when it has increased greatly. A few of the most northerly nests are on the rocks of the basaltic outcrop, but the others are upon the sandstones and limestones of the carboniferous series which are more irregularly weathered (*G. W. Temperley, C. J. Gent, K. Ilderton*).

PROVINCE XII.—N. LANCS (nil), WESTMORLAND (nil), CUMBERLAND
AND ISLE OF MAN.

CUMBERLAND. In 1924 a pair apparently nesting on crags of Blencathra (Saddleback) (*E. Blezard*).

ISLE OF MAN. There are seven active colonies: Port Soderick, Pistol (Santan), Contrary Head (Patrick), Maughold Head, near Peel, in two coastal coves in Kirk Christ Rushen, and "under the roof of a kind of abortive cavern" at Skinscoe (Kirk Lonan). The first named, Port Soderick, has the longest history, having consisted of 5 nests in 1832; there were over 17 nests there in 1927, only 5 in 1932, but again nearly 20 more recently. None of the colonies exceed 20 pairs. In addition to the above, there used to be a colony, now extinct, at Keristal (Braddan) (*C. B. Moffat, E. U. Savage, K. Williamson*).

SCOTLAND.

As the faunal areas based on water-partings are in use in Scotland, we follow them here, taking the areas in the order of the Watsonian groups.

SOLWAY. KIRKCUDBRIGHT. The only record for the area is of a colony on Solway coastal cliffs in May, 1927, at Douglas Hall; most nests built under a shallow arched overhang (*E. Blezard*).

CLYDE. AYR. R. Gray (*Birds Ayr and Wigtown*, 1869, etc.) mentions among cliff colonies a large one at Currarie, south of Ballantrae, and J. M. McWilliam (*Birds Forth of Clyde* 1936) gives the same locality.

ARRAN. J. M. McWilliam (*loc. cit.*) states that there is a colony at Bennane Head.

TWEED. BERWICK. G. Bolam (*Birds Northumberland*, etc. 1912) reports many populous colonies on the coast north of Berwick both in sandstone and silurian rocks; also several inland breeding-places. This is confirmed by A. H. Evans (*Vert. Fauna Tweed Area*, 1911) who states that a very large number of colonies are to be found on the coast from Berwick-on-Tweed to St. Abbs Head and northward, and also on cliffs by the R. Whitcadder. There is also an early reference by R. Gray (*Birds West Scotland*, 1871) to cliff colonies visited at Cove Bay. G. Muirhead (*Birds Berwick*, 1889) gives some details as to localities and defines the Whiteadder locality as near Edrington. The St. Abbs colony is also referred to by Selby as far back as 1833.

Many birds were noted at St. Abbs in June, 1930, apparently breeding (*W. B. Alexander*).

FORTH. E. LOTHIAN. L. J. Rintoul and E. V. Baxter (*Vert. Fauna Forth*, 1935) state that in 1838 Jardine mentions a colony of over 100 nests on the coast opposite the Bass Rock. In 1933 the authors found them breeding the whole way along the cliffs from St. Abbs Head to the cliffs west of Tantallon Castle and reckoned the colony at the latter place at about 70 pairs. MacGillivray (*Hist. Brit. Birds*, 1840) also mentions this locality.

E. LOTHIAN. Near Tantallon there are colonies between 20 and 80 ft. above the shore (*J. Berry, G. L. Charteris, R. K. Martin, H. B. Pounds*).

FIFE. L. J. Rintoul and E. V. Baxter (*loc. cit.*) state that they used to breed on the cliffs below Wemyss Castle but there were none

in 1933. Also that they breed at Kincaig, near Elie, about two dozen pairs being counted in 1933.

FIFE. At Elie 8 nests noted in 1936 (*P. A. D. Hollow*).

TAY, PERTH. J. A. Harvie-Brown (*Vert. Fauna Tay*, 1907) says that among many other sites which could be instanced are Glen Tilt and the cliffs of Ben-y-Gloe, far inland (Col. Drummond Hay); also above the junction of the Tarff and Tilt, near Pol Tarff.

ANGUS. Considerable numbers breed on the cliffs near Lunan Bay (*J. Berry, G. Carmichael Low*). 3 or 4 nests immediately north of Arbroath in 1938 on cliffs of marl and soft red rock (*R. E. Pochin*).

DEE. G. Sim (*Vert. Fauna Dee*, 1903) states that 30-40 years ago nesting took place in villages, but now great numbers breed on the sea-coast in dark caverns and instances a locality on the Kincardine coast.

MORAY. BANFF. J. A. Harvie-Brown and T. E. Buckley (*Vert. Fauna Moray*, 1895) state that T. Edwards speaks of their breeding on the cliffs of the coast.

CROMARTY. C. Young (*Zool.* 1883, p. 34) records breeding in rocks in a gully near the sea in red sandstone. Also in sandstone rocks by side of small stream in woods of Darnaway (Moray).

ARGYLL AND I. HEBRIDES. R. Gray (*Birds W. Scotland*, 1871) mentions cliff colonies near Oban.

NORTH-WEST HIGHLANDS, ETC. J. A. Harvie-Brown and H. A. Macpherson (*Vert. Fauna N.W. Highlands, etc.*, 1904) refer to an "old and at one time well-known haunt among the Stronchrubie limestone cliffs," now apparently deserted, but recorded by Selby as far back as 1834.

SUTHERLAND AND CAITHNESS. It bred in great numbers on E. coast all round, on high cliffs from Noss southward (H. Osborne MSS. in *Vert. Fauna Caithness and Sutherland*, 1887). Harvie-Brown saw none till reaching Dunbeath, where he found a few, and more at Berriedale (*loc. cit.*).

OUTER HEBRIDES (nil).

ORKNEYS. G. Low (*Tour Orkney, etc.*, 1774) states that he found "Swallows, Martins and Sand-Martins breeding at Stowse Head in S. Ronaldsay."

SHETLANDS. A. H. Evans and T. E. Buckley (*Vert. Fauna Shetland*, 1899) record breeding once on a cliff at Spiggie.

IRELAND.

MUNSTER. CO. CORK. Cynthia Longfield (*London Nat.*, 1937) records that observations on a colony on limestone cliffs during a period of 7 years (1929-1935) showed that the number of pairs varied from 9 to 15. Sites faced S.W.

CO. WATERFORD. W. Thompson (*Nat. Hist. Ireland*, 1849) refers to breeding in sea-cliffs near Ardmore, and R. J. Ussher (*Zool.*, 1883) states that for over 30 years he has known the two colonies on sandstone cliffs of Ardmore, under lofty arches overhanging the sea.

LEINSTER. CO. WICKLOW. R. M. Barrington (*Irish Nat.*, 1897) records a colony in the cliffs of Bray Head only about 30 ft. above high-water mark.

Co. DUBLIN. W. Thompson (*op. cit.*) records nesting on Lambay Is. as does R. J. Ussher (*Birds Ireland*, 1900).

There is a colony in the Howth Cliffs (*G. B. Moffatt, J. B. Watson*).

ULSTER. Co. ANTRIM. W. Thompson states (*op. cit.*) that "some hundreds" breed annually at the Gobbins (Isle Magee). He also mentions a considerable number of nests in cliffs at Little Deer Park, Glenarm, in 1842, and gives Church Bay, Rathlin Island as a nesting locality, while Howard Saunders stated (*Zool.*, 1867, p. 621) that they nested abundantly on the cliffs of this island. Thompson also mentions their presence (but not specifically breeding) at Giants Causeway.

Two nests reported at the Gobbins in 1935 (*F. W. Blake*). Nine nests located on the sea-cliffs under broad overhangs 1-2 miles south of Glenarm in 1938 (*R. K. Martin*). Four or five years ago there were 2 or 3 colonies on the cliffs near Cushendun. Many of the nests were on the sides of roofs of caves (*Mary Henderson*). About the limestone cliffs of Larrybane Head (east of Ballintoy) they nest commonly in caves and under large cracks running transversely across the cliff face. A few also nest on the limestone cliffs west of Church Bay, Rathlin Island (*M. N. and D. H. Rankin*).

LONDONDERRY. W. Thompson (*op. cit.*, p. 390) refers to their presence in the breeding-season on the sea-cliffs east of Portstewart, although absent from the town.

DONEGAL. Horn Head is another long established site mentioned by Thompson (*op. cit.*) and H. C. Hart (*Zool.*, 1891, p. 378) states that in Donegal they seem to prefer cliffs to dwelling houses, instancing the cliffs along Lough Swilly and in caves below Carrablagh.

CHANNEL ISLES. Cliffs in Fermarn and Petit Bo Bay seem very favourite nesting-places (*Cecil Smith, Birds Guernsey*, 1879).

We have also received some information from correspondents as to the prevalence of cliff-nesting abroad, but not enough to justify a further report on this widely spread habit at present.

NOTES

BLACKBIRDS FEEDING ON TADPOLES.

THE recent note about Blackbirds (*Turdus m. merula*) feeding on small fish (*antea*, Vol. XXXII, p. 397) recalls to me that six or seven years ago I watched a pair take repeatedly small tadpoles from a shallow bay of the Little Exe, above Dulverton. Both birds caught the tadpoles, as I witnessed on at least three separate days when I was fishing there. They took the tadpoles in mouthfuls to their half-grown young in a nest about 100 yards away. Occasionally the birds swallowed some on their own account. The edge of the water was very shallow and the tadpoles crowded as close in as they could, no doubt to avoid the current and keep in the warmth.

Once in a later year I again saw a Blackbird take tadpoles, but not, so far as my observation went, for the purpose of feeding young. This was on the same stretch of the river, though not quite in the same place. CYRIL HURCOMB.

[I have two records of small frogs being taken; one half-grown being dropped (S. J. White, *in litt.*); the other by Miss H. Terras of a frog $2\frac{1}{2}$ in. long brought to a nest by the male (*antea*, Vol. XXVII, p. 73). I have no previous records of tadpoles.—F.C.R.J.]

EXODUS FROM A BRECONSHIRE HERONRY.

THE heronry in the Rheld Wood, Cwrt-y-Gollen, Dan-y-Parc, Crickhowell, Breconshire, has been in existence for an unknown number of years and the date of its founding is immemorial.

Last year (1938) in early April there was an exodus from this site, and the Herons (*Ardea c. cinerea*) nested in several clumps of trees in our park near the banks of the River Usk, and also in two tall larch trees close to the house. The distance of the new sites from the Rheld Wood is some 800 yards S.W.

Early in April I noticed that the birds were leaving the heronry and frequenting the clumps in the park. These clumps are small and consist of oak, elm, larch, spruce, and Scots pine, some 60 feet in height. In due course the Herons built 14 nests. In one clump there were 4 nests in one larch, and 3 in three oaks. In the next clump some 150 yards away were one nest at the top of a spruce and 2 in a Scots pine and one in an oak.

In the next clump 100 yards west of No. 1 was a single nest

in a sycamore. About 400 yards west of this clump were two nests in tall larch trees close to the house.

The Herons kept visiting a large rookery on the hill above the house, and at first I was under the impression that an attempt was being made to build nests there, but found, to my astonishment, that the birds were pulling out sticks from the Rooks' nests to carry to the nests in the clumps. Furious fights often took place, the Rooks chasing away the intruders, who returned again and again to the attack. I have never heard of or seen this happening before. The Herons in due course hatched their young.

This year another change has taken place. There are only two nests in the clump—one in the spruce and one in the Scots pine tree. There are about 8 nests in the Dukes Wood in tall spruce fir about one mile S.W. of the Rheld Wood, whilst eight birds have returned to the Rheld Wood in the old site.

What was the cause of this exodus I am at a loss to explain.

There is a large rookery situated at the further end which has been in existence for probably as long as the heronry itself, but I have never noticed any friction between the birds, and it is separated from the heronry by almost half a mile. Perhaps your readers can suggest a cause?

R. G. SANDEMAN.

VELVET-SCOTER IN SOMERSET.

As there has been only one record of a Velvet-Scoter (*Melanitta f. fusca*) in Somerset since 1906, and even that is not definite, and as this duck is very scarce on inland waters, it is worth recording that a male was present on Blagdon reservoir in 1939 on January 22nd, February 10th, March 10th to 14th and 26th, and was not seen after this date. From observations made on these occasions it would seem to have been an immature male changing into adult plumage. On many occasions it was seen to dive, and each time it half-raised its wings before doing so, and presumably its wings were open under water; three dives were timed at 65, 67 and 70 seconds. The observers were H. H. Davis, B. King, H. W. Neal and the writer.

H. TETLEY.

CORMORANTS ROOSTING IN TREES IN DUMFRIESSHIRE.

FOR the last fifty years Cormorants have fished in the lake at Dormont, in Dumfriesshire. In pre-war days they used to sit in a very high beech tree on the bank and dry their feathers. There were never very many of them, only three or four at a

time. This was hardly surprising, for Dormont is five miles from the sea, and about forty miles from the nearest stretch of rocky coast, the Dumfriesshire coasts consisting entirely of mud-flats.

After the war the birds came in small numbers, and roosted at night in trees standing on the banks of the River Annan, about 200 yards from the lake. They have been doing this ever since, and now as many as fifty roost there at a time, though more often there are about twenty or thirty of them, sometimes less. But now they only use this district for roosting; there is only an occasional one at the lake, and the birds seldom leave the trees, having once flown up, before dawn.

They roost on five very tall and very old Sitka spruce which are right on the bank of the river and are the border trees of a small plantation of spruces. They perch a few yards from the top on branches overhanging the water and have stripped these branches of all bark and twigs. There is seldom more than one on a branch at a time and they are inclined to sit in a line, all the same height up, the two outside ones being about fifty yards apart. There are one or two other trees interspersed with the spruces but the Cormorants never use these.

They are there in greater numbers in the late summer and autumn than in the breeding season. I have found that they are very regular in their habits, arriving in summer between the hours of 6.45 and 7.15 in the evening and leaving early the next morning.

It would interest me very much to know where they come from as, instead of coming from the south and the sea, they always fly down the River Annan in a southerly direction; to the north the nearest water is the Clyde, except for a certain number of reservoirs. They might have come from the Ayrshire coast, Arran or Ailsa Craig. But this is a considerable distance to fly every night. By the time they reach Dormont they are flying quite low and having circled round a few times they fly up as if they were going to settle, but always have a good look round before they actually alight in the trees.

One which I shot on April 12th, 1939 was ringed, No. 114028, and I am informed by Miss E. P. Leach that this bird was ringed as a young one at Mochrum, Wigtownshire, on July 3rd, 1935. When disturbed by shooting the Cormorants seldom return the same night and must find some other place in which to roost.

OLIVER CARRUTHERS.

LITTLE RINGED PLOVER IN SUSSEX.

ON May 6th, 1939, at 6 p.m., Mr. John Pease and I saw a party of three Common Ringed Plover (*Charadrius hiaticula*) and one Little Ringed Plover (*Charadrius dubius curonicus*) at Cuckmere Haven, Sussex. They were resting on the mud by a brackish pool in the water-meadows, neither feeding nor sleeping, some quarter of a mile from the beach. We watched them for about five minutes through x6 Zeiss glasses at twenty yards range, with the sun behind us. After a detailed comparison had been made between them, they flew off across the marsh and were lost to view. The following description compares the Little Ringed Plover with its larger companions, and is from notes taken down in the field, when neither of us was aware of the most distinctive field-characters of the species. Comparison of our notes with those in *British Birds*, Vol. XXXII, pp. 90-102, left no doubt whatever as to the correctness of the identification.

At rest : Smaller and more delicately shaped about the head and bill. Crown, back and wings definitely sandy-brown in contrast with the muddy-brown of the other three. Black and white head, neck and breast markings similar in distribution, but black banding narrower, especially breast-band which looked about half the thickness of that of the Common Ringed Plover. Eye-ring : yellow markings in eye region first noted by Pease and appeared to me as a narrow ring round the eye, recorded at the time as ? iris, but obviously was on eyelids. Bill : upper mandible was dark or black, in marked contrast with the broad basal orange band of the others ; yellow was not noticed on the lower mandible. Legs : we both noted, independently, that these were paler and yellower than the orange legs of the other species ; Pease thought they were tinged with green.

In flight : Size, more noticeably smaller, giving impression of wing-area ratio of the order of 3 : 4 compared with the larger birds. The most obvious of all distinguishing features was the absence of any wing-bar on the sandy back and wings. The white bars of the Common Ringed Plovers showed up in striking contrast.

Call : Either this was not uttered or it was not distinguished from that of the other three.

K. B. ROOKE.

ICELAND GULL IN SURREY.

ON April 15th, 1939, I watched an Iceland Gull (*Larus leucopterus*) at Barn Elms reservoirs, Hammersmith. When first seen the bird was flying with Lesser Black-backed Gulls

(*Larus fuscus*) so that the size could be compared. At a distance it appeared strikingly white, and the uniformly white wing-tips could be clearly seen.

From the absence of any ashy-brown markings at close range, I judged it to be an adult. I know of no previous record for Surrey.

D. A. T. MORGAN.

BIRDS AT SPURN, YORKS.—We are glad to see that Yorkshire ornithologists are taking up regular watching and recording of migrants at Spurn Point, which years ago attracted many students of migration. Mr. Ralph Chislett contributes an article to the *Naturalist* (1939, pp. 37-42) on the results of visits paid by several ornithologists between July and November, 1938. Among the birds identified may be mentioned a Firecrest (*Regulus i. ignicapillus*) on October 23rd, a Red-breasted Flycatcher (*Muscicapa p. parva*) on September 24th, two Barred Warblers (*Sylvia nisoria*) between August 21st and September 10th and two Black Redstarts (*Phœnicurus o. gibraltariensis*) on October 23rd.

SPOONBILLS IN CORNWALL.—Messrs. W. L. and U. M. Francis inform us that they saw three Spoonbills (*Platalea l. leucorodia*) in the Fal Estuary near Ruan Lanihorne on April 16th, 1939. The wing-tips of these birds in flight appeared black indicating that they were immature. Four Spoonbills were recorded in the same locality on December 16th, 1938 (*antea*, Vol. XXXII, p. 370).

BITTERN PERCHING IN A TREE IN LANCASHIRE.—In connection with the note by Mr. C. A. Norris on this subject (*antea*, Vol. XXXII, p. 370) Miss N. Medcalf informs us that Mr. Blundell at the end of January, 1939, when riding across the park at Scarisbrick Hall, near Ormskirk, saw a Bittern (*Botaurus stellaris*) which flew up into a tree about 20 to 25 feet from the ground. Mr. Blundell watched the bird, which remained motionless except for turning its head from side to side, for some 20 minutes. Later the same bird was seen in the tree by Mr. S. E. Williams, a gamekeeper.

THE INFLUX OF BEWICK'S SWANS.—With reference to the notes on this subject (*antea*, Vol. XXXII, pp. 378-380), Mr. J. S. Watson writes that in *Oxfordshire* there were 16 Bewick's Swans (all adults) on the floods in the Cherwell Valley between Somerton and N. Aston from December 31st, 1938, to February 12th, 1939. Five were seen in the same place in February and March, 1938. Mr. H. E. Forrest has informed us of a large flock of Swans which passed over Ellesmere, *Shropshire*,

about January 6th. Seventy were counted and they were thought to be Bewick's, but the identification of the species cannot be regarded as certain.

UNUSUAL NUMBER OF SMEWS IN SOMERSET.—Mr. H. Tetley informs us that an unusual number of Smews (*Mergus albellus*) was present on the reservoirs in N. Somerset during the winter of 1938-39, the cold weather of December being no doubt responsible. Numbers varied between December 11th and March 26th, the largest being 12 at Cheddar on February 10th, 7 at Blagdon on January 20th, while there were 2 at Barrow Gurney on December 29th and 30th. All were either females or young birds with the exception of one adult male at Blagdon on January 9th and two on the 20th.

EARLY LAPWINGS' NESTS IN SHROPSHIRE.—Mr. J. H. Owen informs us that he found a nest of the Lapwing (*Vanellus vanellus*) with four chipped eggs and another nest with four freshly hatched young on April 14th, 1939, at 1,000 feet altitude, near Oswestry.

BLACK-TAILED GODWITS IN NORTHUMBERLAND.—Mr. H. Tully informs us that he saw 28 Black-tailed Godwits (*Limosa limosa*) on April 22nd, 1939, at Grindon Lough where they were present until the 25th. The birds were mostly in summer plumage.

BLACK TERN IN WILTSHIRE.—As the Black Tern (*Chlidonias n. niger*) appears not to be recorded frequently in Wiltshire, it should be noted that Mr. C. Rice saw one on May 5th, 1939, hawking over a pond near Chippenham.

KITTIWAKE IN BERKSHIRE.—Mr. George Brown informs us that a male Kittiwake (*Rissa t. tridactyla*) in first-year plumage was picked up dead near Hungerford at the beginning of April, 1939.

SPOONBILL IN KENT.—Mr. A. J. Rabbets informs us that he watched a Spoonbill (*Platalea leucorodia*) at Pegwell Bay on April 8th, 1939.

REVIEWS.

Birds as Animals. By James Fisher. (Heinemann.) 12s. 6d. net. In this book Mr. Fisher has, to put it briefly, reviewed the life of the bird by reviewing the literature concerning it. He gives a reference for every statement and his bibliography, which embraces over 800 books and papers, is one of the features of the book. There are objections to this method and some readers will be irritated by the constant references, and often the arguments are so pithy that a good deal of

previous knowledge of the subject is necessary to appreciate the points, while here and there facts are related so bare of explanatory context as to become almost a catalogue. But on the whole Mr. Fisher has performed his difficult task successfully and has arranged and put together a vast array of facts and ideas so cleverly that a valuable and interesting book results. He begins by tracing briefly the birth and rise of the study of birds and follows with a short statement of the probable evolution of the bird itself. Subsequent chapters, some of which are divided rather arbitrarily, deal with Adaptation and Habitat Selection, Variation and Distribution, Environment, Habitat, Numbers, Migration, Colours and Display, Territory, Reproduction, and lastly Birds and Man. Considering the mass of material Mr. Fisher has consulted, his treatment of it is for the most part fair and accurate, but there are some rather careless statements as, for instance, the implication that Pallas's Sandgrouse bred in all the years mentioned, that Mr. Holte Macpherson was one of the discoverers of Fair Island, and that the female (meaning apparently the female alone) incubates in the case of most waders. But these are minor blemishes and Mr. Fisher's book not only reviews in an interesting way what has been learnt about birds, but incidentally reveals how little we know of certain aspects of their lives.

At the Turn of the Tide: A Book of Wild Birds. By Richard Perry. 8vo, pp. xv., 206. With coloured and monochrome plates. (Drummond). 12s. 6d. net.

BIRD-BOOKS are written (and presumably bought) for various reasons. Some write to give observed facts in structure, colour, size, life-story or distribution to the world; others grouping these facts together, search for underlying rules and laws, but generally produce more or less satisfactory theories. Writers of a third class are content to picture in words what they have seen of some aspect of bird life, while the fourth class is content to cut out scraps from other works, rearranging and altering the wording before giving the hotch-potch to the public. Mr. Perry's work does not come under the last heading, for what he writes about is what he has seen; but it does come within the range of the third class, for he caters for those to whom word-painting is the real interest and attraction. "Butterfly-dusted emerald wing-slots exquisitely a-sheen glancing in the sun!" This is not an unfair example of the "purple patches" which occur at intervals throughout the book, and cause either exasperation or admiration according to the type of reader.

We are, however, in entire sympathy with what the author says in his introduction. One sentence will suffice: "We are breeding a nation of urbanites, whose cheap, artificial pleasures are found in towns . . . No longer does a man plant a wood and watch with pride from year to year how fine it grows . . . instead he hacks it down and builds a row of villas in three months, which is a slum in a generation." This is painfully true.

Some of the sketches of estuary and shore life are vivid and the reproductions of many birds' notes are effective and recognizable, but there are curious slips which might well have been avoided. "Colourless" is a strange word to apply to the black bill of the immature Arctic Tern; even more surprising is the paragraph on the colour of the Roseate Tern's bill (p. 105). "Antarctic" is hardly justifiably used to include Australia and Patagonia (p. 122). Mr. Perry tells us that he can end an age-old controversy as to the Fulmar's ability

to stand and walk upright and no doubt he can, but scores of other observers have also seen Fulmars stand (yet not without a certain amount of "give" in the tarsus) and walk a pace or two. In a chapter on Eclipse (curiously entitled "a new theory") he writes: "If the object of the Eclipse is protective, then how foolish it is for the helpless Eider to pack about the reefs at the mercy of any predatory beast." What predatory beasts haunt these reefs beyond an occasional seal, and would not an Eider have a better chance against a seal with a reef at hand than in the open sea?

The illustrations from paintings and photographs are a little unequal in merit but some are really good.

F. C. R. JOURDAIN.

British Trust for Ornithology. Fifth Report. Spring, 1939.

ALTHOUGH this Report covers only eight months owing to a change in date of issue, it shows very considerable progress not only in the scientific work achieved, but in the necessarily slow process of putting the Trust on to a firm basis. The incorporation of the Trust has now been officially agreed, which will enable the Lord Grey Memorial Fund to be transferred to it, the Edward Grey Institute at Oxford has been definitely established, though in temporary quarters, at 39, Museum Road, the library is increasing, a national collection of bird-photographs is being formed and most important of all the number of members is rising though this is still all too small. The Report shows the progress made in the scientific work and our readers must now be well aware of the varied nature of the inquiries already reported on. The Land-Rail inquiry is to continue in 1939, more information being required especially from Ireland, N.W. England and N.W. Scotland; the song-period inquiry is also to continue; while reports on those concerning the Woodcock, Fulmar and Black-headed Gull are nearing completion. A survey of the breeding distribution of the Redshank and an investigation into mortality during hatching and fledging are two new inquiries which have been begun.

Report on Somerset Birds, 1938.

THIS report is as usual well drawn up and the observations have been carefully and critically edited. It contains a large number of notes from an active band of observers. The records of ducks (with tables of counts on many dates), waders and gulls, especially at reservoirs, are a noteworthy feature of the Report. We may draw attention here to a paper by Mr. H. Tetley in the *Proceedings of the Bristol Nat. Soc.* on the birds of the Barrow Gurney Reservoirs.

LETTER.

TRAPPING METHODS.

To the Editors of BRITISH BIRDS.

SIRS,—As Dr. Landsborough Thomson mentioned in the Report of the Bird-Ringing Committee (*antea*, Vol. XXXII, p. 384), a pamphlet is being prepared on traps and trapping. Descriptions of some well-known methods such as the "Potter" trap, string and stick drop-trap, house-trap and bat-fowling have already been received, but a number of ringers have no doubt evolved improvements or modifications of their own which would be of use to others, and I should be very glad to hear of these, as well as any other methods of trapping or special devices for catching particular birds, which have been proved to be successful.

P. A. D. HOLLOW.

ROLVENDEN, HOOK HEATH, WOKING.

2 JUN 1939

PURCHASED

THE POPULAR SERIES OF
BIRD-LOVERS' MANUALS

MORE SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

BIRD MIGRATION

A. Landsborough Thomson. Illus. Sm.Cr.8vo. 5s. net.

HOW TO KNOW BRITISH BIRDS

Norman H. Joy. Illus. Sm.Cr.8vo. 5s. net.

BIRDS OF THE GREEN BELT

R. M. Lockley. Illus. Sm.Cr.8vo. 5s. net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner. Illus. Sm.Cr.8vo. 5s. net.

H. F. & G. WITHERBY LTD., LONDON

**THE BIRD-LOVERS'
BOOK OF VERSE**

*Collected by Christina Chapin, with over 30 Lino-cuts by
Raphael Nelson, F.R.S.A. Crown 8vo. 6/- net.*

"It is a good book, and a beautiful book, and it should be on the
shelf of every bird-lover."—*The Field*.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (*Fondée en 1911*)

La seule publication scientifique belge traitant des oiseaux, spécialement
des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique)

Volume Three of
**THE HANDBOOK
OF BRITISH BIRDS**

•

The third volume of this recognized standard work on British birds deals with the swans, geese and ducks, diurnal birds of prey, storks and herons. As in previous volumes, there are a great number of coloured plates. The geese have been specially drawn for the work by PETER SCOTT.

•

IN FIVE VOLUMES—

21/- NET PER VOLUME

H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND
NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 2, VOL. XXXIII., JULY 1, 1939.

	PAGE
The Spring Migration of the Redstart over Europe. By H. N. Southern	34
Rising and Roosting of a pair of Resident Starlings in Winter and early Spring. By Averil Morley	39
The Vocal Activity of Blackbirds at a winter Roost. By M. K. Colquhoun	44
On the Courtship-display of the Goldeneye. By Donald Gunn	48
Notes :—	
A Case of Bigamy in Montagu's Harrier (G. Dent)	51
Nest-building by male Mallard (A. T. Best)	52
Association of drake Mallard with the Duck and young Brood (C. Oldham)	53
Lapwings nesting at High Altitude (Seton Gordon)	54
Temminck's Stint in Hertfordshire (K. B. Rooke)	54
Short Notes :—	
Barred Warblers at the Isle of May. Green Woodpecker in Lanarkshire. Ruddy Sheld-Duck in Lanarkshire. Pintail Breeding in Yorkshire. Nest of Shag with Nine Eggs	55
Reviews :—	
<i>Transactions of the Hertfordshire Natural History Society and Field Club, Vol. XXI, Part I</i>	56
<i>Transactions of the Norfolk and Norwich Naturalists' Society, 1938</i>	56
<i>Annual Report of the Oundle School Natural History Society</i>	56
<i>Report of the Cambridge Bird Club, 1938</i>	56

7 JUL 1939

PURCHASED

THE SPRING MIGRATION OF THE REDSTART OVER EUROPE.

BY

H. N. SOUTHERN.

THIS study forms the third of a series of five whose object is to show the characteristic migrations of various widespread passerine species northward over Europe every spring. Maps showing the rate of spread of the Swallow (*Hirundo r. rustica*) and of the Willow-Warbler (*Phylloscopus trochilus*) have already been published [1 and 2], and the present map and article deal with the Redstart (*Phœnicurus ph. phœnicurus*).

This is an abundant and vigorous species, though only in some parts of its range attaining the commonness of the Willow-Warbler. Like the latter it feeds in the vegetation. This means that it probably will suffer no delay in its migration, once started, as might be occasioned in species which live mostly on flying prey (for a discussion of this point see the article on the Willow-Warbler [2]). The Redstart winters rather farther north than the bulk of the Willow-Warblers, being concentrated in North Africa, while a large proportion of the Asiatic population winters at comparatively high latitudes. Some are said to winter in Asia Minor, and, if this is true, it is curious to notice from the map that the spread northwards starts latest at this corner of Europe.

It is interesting to note that we are dealing for the first time in this series with a species whose numbers in the British Isles are small, at any rate in comparison with the two summer visitors previously considered. This may be the reason why the quickest rate of spread is seen over the Continent, and there seems to be a slight lag in the bird's appearance on our shores. This contrasts with the Swallow especially and also with the Willow-Warbler, and such contrast can best be seen in the conformation of the April 15th line, which in the case of the two earlier species tilts up towards the west. In the Redstart the westward tilt starts over continental Europe, but declines again when the North Sea is reached. Thus, the main thrust in the spreading of this migrant northwards is through France, and then directly from Holland and north-west Germany across to western Scandinavia. It would appear from this that the British Isles receive only the wash of the main movement, thrown off along its flank, and therefore the arrival is comparatively later.

If migratory behaviour is one result of changes in the

balance of internal secretions, and an expression of a more general raising of the level of activity by reason of these changes, then it is reasonable to suppose that in a crowd of birds this effect will be most sharply marked. Heightened activity on the part of one individual, whether in feeding or in any other competitive way, must react upon neighbours, and, where neighbours are thickest, the total resultant activity will be much more than the sum of individual exertions, if the birds were more spaced out. Thus the main drive of migration in the Redstart is earlier than the progress of sparser breeding populations on the edge of its range. It may be remarked here that the Redstart shows particularly well how careful one must be to distinguish between the general arrival date and isolated birds appearing much earlier. The analysis of the data showed such isolated records much more commonly than in the other species, and it seems as if this may be another manifestation of the same phenomenon. In a sparse population not only will the general level of activity be lower and later but it will be less well regulated and more ill-defined.

This whole point of view accords well with the theories advanced recently by Fraser Darling [3], that breeding activity is synchronized and forwarded by the proximity of a number of individuals. The fact that these passerine migrants subsequently take up territory and subject themselves to intense isolation in no way invalidates the idea suggested. That is a subsequent phase of behaviour and belongs to a totally different environment. In any case Venables and Lack [4] have shown in the case of the Great Crested Grebe how closely related to each other are territorial and colonial behaviour. Such splitting of breeding behaviour into two radically opposed principles is phylogenetically speaking of late occurrence.

That heightened activity may produce changes not only in behaviour but in morphology is known from the case of the migratory locusts, where the activity caused by the collection of great numbers induces the appearance of a form different in colour and shape as well as in behaviour (*i.e.*, migratory as opposed to sedentary).

CHARACTERISTICS OF THE REDSTART MIGRATION.

The map has been compiled in exactly the same way as the previous two. Data were more numerous than for the Willow-Warbler, and the picture may be regarded as fairly complete. Records from the Mediterranean were difficult

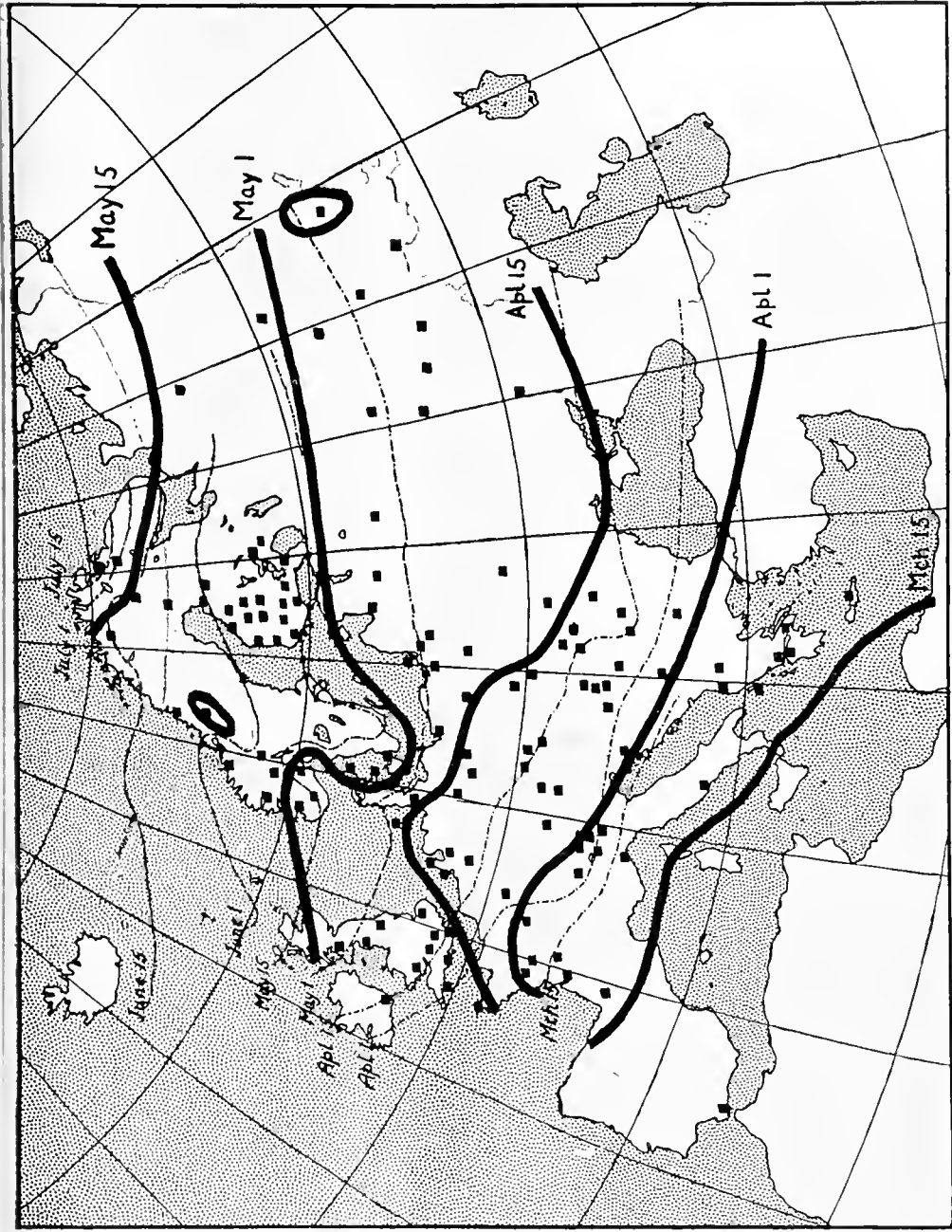
to trace, and many of them too dubious to be included, while there is a signal lack of information for Sweden. Norway and Finland are, however, so well supplied with observers that this creates little disturbance.

The thick black lines represent the appearance and settling in of a Redstart population at fortnightly intervals, the dates being given on the right-hand side of the map. The dotted lines represent the northward movement of the 48° F. isotherm, as shown in Bartholomew's Physical Atlas [5]. The black squares give the points for which average arrival dates were worked out in most cases from a ten-year period.

The migration of the Redstart over Europe lasts from March 15th (Pyrénées, south Italy and the north-east African coast) to May 15th (Inari), a period of 61 days, in which a distance of 2,000 miles in the west is covered and 2,500 miles in the east. This means that the average rate of spread varies from 33 miles per day in the west to 41 in the east. Thus it may be seen that the Redstart spreads northwards at a greater rate than either the Willow-Warbler or the Swallow, which only average 29 and 25 miles per day respectively.

This progress is not quite regular, for the last part of the spread takes place at a much faster rate. Thus, from the Crimea to the White Sea (1,500 miles) a month suffices, and the average rate of progress is here at its greatest, 50 miles per day. Both the previous migrations dealt with have shown a similar tendency to accelerate as they go on, but neither of them to the same degree. Even then the behaviour of the Redstart does not nearly approach that of some American birds mentioned in the first article of this series [1].

If the isochronal lines are compared with the isotherms, the lag along the western seaboard becomes even more pronounced, as also does the drive forward through France and western Germany. This is shown well in the lines for April 1st and April 15th. Apart from these anomalies there is a rough tendency for the isochronal lines to keep pace with the spring from April 1st to April 15th, but after that the isotherms are left behind, and arrival in the high north is six or seven weeks ahead of the 48° isotherm. In the east, however, the effect is marked in the wide gap between the isochronal lines for April 15th and May 1st, and between the isothermal lines for the same dates. It is evident that all migrants, as well as the spring, spread fast over the steppes of southern Russia, and that a similar synchronous effect is shown in the delay, which occurs in southern Sweden and Denmark.



Map showing Rate of Spread of the Redstart (*Phaenicurus ph. phoeniceus*) over Europe during the spring.

The continuous black lines, dated at the right-hand ends, are isochronal lines, showing the stage achieved every fortnight. The dotted lines, dated at the left-hand ends, show the movement of the 48°F. isotherm for comparison. Each square represents a place for which an average arrival date was worked out from local data. [Projection : Bonne's.]

The spread of the Redstart on its spring migration therefore is marked by :—

- (1) a faster rate than either of the two previous species ;
- (2) a lag along the western seaboard of Europe, possibly correlated with a sparser population in these districts, and a thrust forward through France and western Germany to western Scandinavia ; and
- (3) a marked tendency to outstrip the spring from April 15th onwards.

REFERENCES.

[1] SOUTHERN, H. N. (1938). " The Spring Migration of the Swallow over Europe." *British Birds*, Vol. XXXII, pp. 4-7.

[2] SOUTHERN, H. N. (1938). " The Spring Migration of the Willow-Warbler over Europe." *British Birds*, Vol. XXXII, pp. 202-6.

[3] DARLING, F. F. (1938). " Bird Flocks and the Breeding Cycle." Cambridge.

[4] VENABLES, L. S. V. and LACK, D. (1936). " Further Notes on Territory in the Great Crested Grebe." *British Birds*, Vol. XXX, pp. 60-9.

[5] *Bartholomew's Physical Atlas* (1899). Vol. 3. London.

RISING AND ROOSTING OF A PAIR OF RESIDENT STARLINGS IN WINTER AND EARLY SPRING.

BY

AVERIL MORLEY.

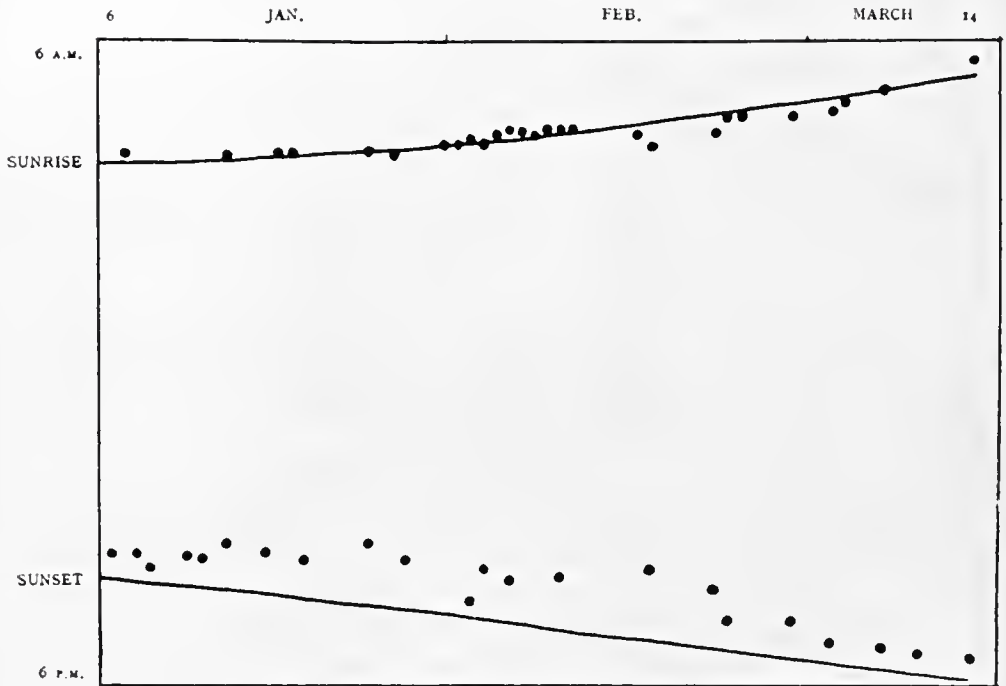
THOUGH the roosting of flocks of the Starling (*Sturnus vulgaris*) has been well studied by Wynne-Edwards, in England work on the roosting of individuals does not seem to have been so thoroughly done, so that the following observations made on a pair in the winter of 1937-38 may be of interest. They differ from Kluijver's experience of birds in Holland [1], which appear to have continued social roosting until the eggs were laid. But A. W. Boyd (in conversation) said he found a pair of ringed Starlings roosting together in a nesting box from December for two successive winters, though not consistently in the same box.

The pair about which I write had been formed in November, though the male had been in possession of the nucleus of their area when watching began in October. They were part of a group regularly watched in a suburban road in Oxford near open ground.

From November to January the pair flew off independently of each other to the communal roost outside the city, which served not only the resident birds of the neighbourhood but flocks from the open ground and fields not far away. Towards the end of December the male, some seconds before leaving, shared with the other resident males the habit of displaying excitement on his chimney stacks-cum-songposts by energetic singing, bill wiping and wing-twitching (two common signs of excitement; the former first seen November 24th, the latter December 22nd). The return was also generally separate, the birds dropping out of different parties flying overhead, from a height of about 40 ft. above the house-tops with a fine zig-zag twisting swoop, the female usually going straight to the back gardens (the feeding ground) or to the "communal" trees, the male perching on his stack or tree for a few seconds to half a minute to display excitement in similar fashion to the evening performance, before going to feed.

On December 30th the male was noticed to be the last of the group leaving his stack for the roost, and later I found this tardiness and unwillingness to leave is a sign that the urge to stay in the territory is not now so easily overcome by the urge to join the distant roost. The home-roosters and away-roosters with no conflict of desires sometimes went to roost 10 minutes before the uncertain birds yielded to one or other urge. They flew off at the same time, perhaps, as the flocks

passing overhead, only soon to return to sing and violently display emotion until the roosting urge grew stronger again and they flew off once more. Normally birds leaving for the roost mounted in a sharp angle and flew unhesitatingly away, but uncertain birds often showed their stress by a low zig-zag course, perching frequently. Uncertain birds appeared sometimes as much as ten minutes earlier in the morning than



Day Lengths of Home-roosting Starlings.

either away- or home-roosters. There was sometimes a range of 20 minutes between first and last birds in the group, but the first were consistently first, the last consistently last.

On January 6th the pair first roosted together in a hole under a roof in their area. Contrary to away-roosting, home-roosting was a joint affair, the birds acting dependently. The procedure was normally as follows :—

About 5 to 15 minutes before the actual time of going into the hole the pair would fly up to the tree in their area, about 12 yards away, where they stayed still or quietly preening (to be distinguished from violent preening, a sign of great stress of emotion). One to two minutes before roosting the male began to display emotion and restlessness by bill-wiping, wing-flickering, plumage-shaking (this excitement action, first seen January 2nd, shows greater intensity than

the previous two), and by flying to the roof-peak or to the gable-point above the hole, or to the rain-gutter in front of it, but however restless he was, never going in before the female. She, usually without any display, would suddenly glide to the gutter, stare fixedly at the hole for half a minute then dart in, the male following very shortly. Gradually the preliminaries lengthened, till, in March, taking over an hour, they seemed to form part of the breeding activity. Abnormally, if through some cause his attention was distracted and he did not follow, after 2 to 4 minutes the female would come out again and was not always ready to return. The male, impatient, would at last fly in himself, also to come out again after 2 to 4 minutes if she had not joined him. After half an hour they might manage to go through the ceremony correctly. Rarely, after such a fiasco, they roosted in separate holes, one in the traditional place, the other in a hole near by.

In the morning the male invariably flew out first, followed either directly or from half to two minutes by the female. Generally he went straight to the tree or one of his stacks (he "owned" 8, but had favourites for song-posts) where he displayed similarly as before roosting.

The actual rising and roosting times (taken from the first bird to fly out and the first to fly in) are as follows* :—

	<i>Date.</i>	<i>Sunrise.</i>	<i>Weather.</i>	<i>Rising.</i>	<i>Roosting.</i>	<i>Weather.</i>	<i>Sunset.</i>
Jan.	1 ...	8.11					4.6
"	6 ...				3.41	Dull	
"	7 ...		Clear	7.58	—		
"	8 ...	8.10		—	3.38	Dull	4.14
"	9 ...			—	3.57	Dull	
"	12 ...			—	3.45	Dull	
"	13 ...			—	3.47		
"	15 ...	8.5	Dark	8.1	3.30	Dark	4.24
"	18 ...			—	3.40	Dull	
"	19 ...		Clear	7.55	—		
"	20 ...		Dull	7.55	—		
"	21 ...			—	3.48	Clear	
"	22 ...	7.58		—			4.36
"	26 ...		Dull	7.51	3.30	Dull	
"	28 ...		Dark	7.55	—		
"	29 ...	7.49		—	3.48	Dark	4.48
Feb.	1 ...		Dull	7.45	—		
"	2 ...		Clear	7.44	—		
"	3 ...		Clear	7.37	4.39	Fine	
"	4 ...		Clear	7.44	4.0	Clear	
"	5 ...	7.38	Fine	7.33	—		5.1
"	6 ...		Clear	7.27	4.13	Clear	
"	7 ...		Dull	7.29	—		
"	8 ...		Dull	7.35	—		
"	9 ...			7.27	—		
"	10 ...			7.29	4.8	Fine	

	Date.	Sunrise.	Weather.	Rising.	Roosting.	Weather.	Sunset.
Feb.	11 ...		Fine	7.25	—		
"	12 ...	7.27		—	—		5.13
"	16 ...		Dark	7.32	—		
"	17 ...		Dark	7.45	4.0	Dark	
"	19 ...	7.13		—	—		5.26
"	21 ...		Dull	7.30	4.30	Dull	
"	22 ...		Dull	7.29	4.22	Dull	
"	23 ...		Clear	7.10	5.0	Clear	
"	24 ...		Clear	7.10	—		
"	26 ...	6.58					5.39
"	28 ...		Dull	7.10	5.0	Dull	
Mar.	3 ...		Fine	7.5	5.25	Fine	
"	4 ...		Misty	6.55	—		
"	5 ...	6.43					5.51
"	7 ...		Misty	6.40	5.31	Fine	
"	10 ...			—	5.37	Clear	
"	12 ...	6.28					6.4
"	14 ...		Clear	6.8	—		

*I am indebted to the Radcliffe Observatory for the once-a-week sunrise and sunset times.

From these figures for one pair it will be seen that from January 15th to February 10th (27 days) they lengthened their whole day 70 minutes or by an average of just over $2\frac{1}{2}$ minutes a day, but from February 10th to March 7th (26 days), by 132 minutes, or just over 5 minutes a day. It is interesting to compare the morning times with Wynne-Edwards for flocks [3] though they were obtained at a different period and place.

Wynne-Edwards's flocks from January 15th to February 10th (27 days) stretched their morning by an average of 32 minutes (over 1 minute a morning), agreeing *exactly* with the Oxford pair's extra 32 minutes on their morning for the same period; but whereas his birds from February 14th to March 16th (31 days) lengthened their morning by 56 minutes (not quite 2 minutes a morning), the pair lengthened their morning in 27 days, February 16 to March 14th, by 84 minutes (just over 3 minutes a day), having almost trebled their rate of increase, while the flocks' increase was progressing at almost the same pace as before.

Now Wynne-Edwards [4] suggested of Starlings "that the state of maturity of their reproductive organs influence the the birds' day-length, *i.e.*, the time they get up in the morning." Until the second week of February parties of Starlings from the Oxon communal roost appeared before the pair "got up," and likewise after they were in their hole parties continued to fly overhead, so that if Wynne-Edwards's supposition is correct, internally at first the pair were no more

advanced than the flocks, and at first as shown above, the rate of increase of daylength is the same. The big difference after the end of the first week of February might thus indicate a more rapid development of the reproductive organs in the resident pair than in the flock-components.

Lastly, I would like to point out that the roost-hole was not only a sleeping-place but a centre of pre-breeding activity. From January 26th visits were paid to it, as Marples [2] noted away-roosting males visiting future nest-sites, by the male, the female showing her interest by accompanying him to the gutter, but she was not seen to enter till February 5th, and this tardiness agrees with Kluijver's experience. From February 23rd grass was brought into it (and thrown out by the female); various forms of flights were performed from it or across it. Moreover the next-door male and female became divorced, in spite of coition (in January) in February, and I think one of the contributory causes of this sad event was the inability to roost together because the only hole possible was the subject of dispute with another, "older," pair. Separate roosting did not help to further (if it did not actively hinder) that "togetherness" which seems necessary for a winter-formed pair, who, with no obvious physiological urge to seek each other out, appear to depend on psychological influences for the permanence of the bond.

I may add that these Starlings were definitely backward in "courtship" activity in winter compared to country birds I have watched, which, one concludes from Rowan's findings, were probably less developed in their reproductive organs at that season than their suburban brethren, though personally I find crowing cocks and bleating sheep more conducive to restless nights than sounds of traffic!

I wish to thank Mr. C. Elton for the graph and Mr. L. S. V. Venables for help and advice.

REFERENCES.

[1] H. N. Kluijver. *Bidrage tot de Biol. ende Ecol. van de Spreeuw Vers. en Med. van den Plantenzeiktenkundigen Dienst te Wageningen*. No. 69, 1933. English summary.

[2] G. Marples. *British Birds*, Vol. XXX, 1936, p. 14.

[3] V. C. Wynne-Edward. *British Birds*, Vol. XXIII, 1929, p. 138 and 170.

[4] V. C. Wynne-Edwards. *British Birds*, Vol. XXIV, 1931, p. 346.

THE VOCAL ACTIVITY OF BLACKBIRDS AT A WINTER ROOST.

BY

M. K. COLQUHOUN.

THE noise made by the Blackbird (*Turdus m. merula*) in going to roost is a characteristic part of the countryside in winter, and is associated in the minds of many with a frosty evening. The following note describes an attempt to measure these roosting calls quantitatively in order that such "vocal activity" might be compared with the meteorological conditions prevailing. The area (one acre) chosen was the corner of a mixed Berkshire copse—mostly dense hazel. Counts were begun 30 minutes after sunset each evening and were continued until complete silence had settled over the wood; only calls coming from within the area were included, all others being ignored. By "call" is meant any vocal sound emitted by a Blackbird, separated from a previous call made by the same bird by a period of not less than two seconds. Thus, a single "chick-" (*Handbook*, 1938) was given the same value as a complete "alarm-rattle" consisting of many notes, providing that there had been a period of two seconds silence between it and the previous "chick-." Calls varied from a single "chick-" to a succession lasting a minute or more, or from one "alarm-rattle" to a whole stream uttered without break. The hysterical (calling) Blackbird is, of course, a difficult subject for any quantitative method, but in the field these counts proved quite practicable. For each day that a count was made general weather conditions were noted and the wind force on the Beaufort Scale was estimated as carefully as possible (no anemometer was used) within the wood, while outside, 100 yards away, temperatures and relative humidity were recorded throughout the winter.

The counts are given in Table I, together with the wind force on the respective evenings—30 observations being recorded for 1938 and the same number for 1939. During the winter there were two cold spells, each with heavy snow lying a week or more, but there was no evidence that the number of Blackbirds was reduced by the end of the period. (Throughout the winter they had access to artificial food.) The greatest number heard or seen together in the roost was four, this number being noted in February as well as November; the necessity for keeping absolutely still (so as not to provoke extra calls) prevented a more accurate count of birds.

The Table supplies the following means for each value of wind force :

Wind force	...	0	1	2	3	4	5	6	7	8
Number of calls...		67.9	54.6	20.7	21.5	11.2	1.0	2.6	1.0	0.3
					(13.6)					

Thus, a wind force of 2 (approx. 5 m.p.h.) cuts down the calls to one third the number on a calm day, while a value of over 4 (approx. 15 m.p.h.) inhibited all calling. Throughout the 60 evenings there was only one exception—February 11th.—and it was recorded then that only the group under observation was calling, other Blackbirds being silent; it seems likely that a prowling mammal was the centre of disturbance, and the figure in brackets above excludes this count. Perhaps an obvious criticism is that an evening of high wind is often accompanied by cloud, and that on such evenings the birds would settle early because of the increased darkness, but this was allowed for by arriving early on the site on many dark evenings and in all instances it was found that the birds were roosting silently. It was more essential to arrive early on a frosty clear day in order to allow the disturbance to die down before counting began.

The winter of 1938-9 was one of almost continuous winds and there were only 18 evenings of calm or light air (wind 0 and 1); for these the temperatures are given in Table II. There is a significant correlation between the number of calls and the minimum temperature of the previous 24 hours, while the evening temperature shows a rather similar correlation. Thus, a fall in temperature has a decided restrictive effect on vocal activity, noticeable in the field. There is a slight correlation with the mean relative humidity, but as a rise in humidity usually coincided with a rise in temperature, this is of little value. It should perhaps be recalled that Alcock (*antea*, Vol. XVIII, pp. 306-312) collected some limited data on what he called "vocal-energy"—being the number of minutes after sunset when a bird ceased singing—in which it appears that wind was the most unfavourable factor for prolonged song, with low temperature exerting less influence.

Activity (other than vocal) did not appear to be diminished by a high wind, and on many occasions a bird was driven from the roost without either Blackbird making a sound audible to an observer; after being driven out it usually flew some distance, returning in a few minutes. On calm evenings such silent scuffling was rarer, and there was nothing to explain the frequent volleys of calls which were the more usual order. Calling was contagious within the area but was

not taken up by distant Blackbirds, in the manner of the Pheasant (*Phasianus colchicus*).

TABLE I.

Date. 1938	No. of calls.	Wind Force 5 p.m.	Date. 1939	No. of calls.	Wind Force 5 p.m.
Nov. 20	1	4*	Jan. 13	21	0
" 21	20	1*	" 14	0	6
" 22	33	3*	" 15	0	8
" 23	0	6*	" 17	0	3
" 24	44	1*	" 18	1	2
" 25	8	6*	" 19	50	1
" 26	83	1*	" 20	133	1
" 27	1	8*	" 21	84	0
" 29	71	2	" 22	15	3
" 30	33	3	" 23	0	5
Dec. 1	0	6	" 24	41	0
" 2	0	4	" 25	0	3
" 3	82	0	" 26	0	4
" 4	0	6	" 27	9	2
" 5	50	1	" 28	3	3
" 6	22	2	" 29	0	3
" 7	8	6	" 30	0	3
" 8	2	5	" 31	5	3
" 9	0	8	Feb. 1	12	3
" 10	13	4	" 2	21	1
" 11	20	3	" 3	3	0
" 12	25	2	" 4	15	2
" 13	9	2	" 5	55	1
" 14	92	0	" 6	131	0
" 15	5	4	" 7	42	3
" 16	42	0	" 9	48	4
" 17	2	6	" 10	115	0
" 18	2	7	" 11	116	3
" 19	0	7	" 12	19	2
" 20	15	2	" 13	35	1

NUMBER OF BLACKBIRD CALLS WITHIN A ROOSTING AREA COMPARED TO THE ESTIMATED WIND FORCE ON THE BEAUFORT SCALE (from 30 minutes after sunset until darkness).

*6 p.m.

TABLE II.

Date. 1938	No. of calls.	Temperature 5 p.m.	Minimum (previous night)	
Nov. 21	...	20	43°F*	36
" 24	...	44	43°F*	37
" 26	...	83	44°F	41
Dec. 3	...	82	43°F	40
" 5	...	50	43°F	40
" 14	...	92	47°F	45
" 16	...	42	48°F	47
1939				
Jan. 13	...	21	41°F	33
" 19	...	50	47°F	46
" 20	...	133	47°F	45

<i>Date.</i>		<i>No. of calls.</i>	<i>Temperature Minimum</i>		
1938			<i>5 p.m.</i>	<i>(previous night)</i>	
Jan.	21	...	84	50°F	44
"	24	...	41	41°F	36
Feb.	2	...	21	35°F	31
"	3	...	3	45°F	31
"	5	...	55	47°F	40
"	6	...	131	48°F	38
"	10	...	115	55°F	49
"	13	...	35	45°F	38

NUMBER OF BLACKBIRD CALLS (ON EVENINGS WITH WIND FORCE OF VALUE LESS THAN 2) COMPARED TO TEMPERATURE.

*6 p.m.

ON THE COURTSHIP-DISPLAY OF THE GOLDENEYE.

BY

DONALD GUNN.

THE courtship-display of the Goldeneye (*Bucephala c. clangula*) is perhaps more spectacular than that of any other duck and therefore has attracted the attention of several naturalists who have described it at considerable length. Among them I may mention F. Brüggemann (1876), J. B. Gilpin (1880), C. W. Townsend (1910), J. G. Millais (1913), W. Brewster (1923) and H. Boase (1924). J. C. Phillips (1923) may also be mentioned as he gives a short description of certain stages of the courting-parade and happens to include one that is of special value because of its rarity.

Like all other ducks, the Goldeneye reserves his most extravagant demonstrations for the occasions when he is in company with other males, as well as in the presence of a female; and it is in this essentially competitive performance that he "shows off" most effectively and goes through with his programme to the last item.

But his display, when addressed to an amatory female and immediately preliminary to the act of coupling is less comprehensive, being made up only of details selected from the general repertoire, and such details do not always comprise its most showy features.

And herein—that he uses gestures borrowed from the general display as an approach to sexual union—he differs from the Mallard who, though displaying elaborately when in male company, reserves for this critical stage one simple movement which is not used when he is "showing off" against rivals. The Mallard's motion peculiar to this occasion is head-dipping, which is done by both sexes and seems to serve both as an auto-excitant and as a signal of assent.

But among those descriptions of the courtship of the Goldeneye to which I have alluded—some of which were made under favourable conditions and set forth the stages of the display in great detail—I have seen no mention of the phase to which I wish to draw attention here. It consists in the exhibition by the drake of the upper surface of his outspread wing while it is supported by his foot. In order to do this effectively he careens his body and extends the wing that then comes uppermost.

There is, of course, a great difference in the advertisement value of the two wing-surfaces, for the under is partly "mouse-

grey" in colour and shows little of interest, while the upper surface is made up of large black and white areas in conspicuous contrast. It follows, therefore, that the most complete method of showing his wing-pattern is for him to roll towards the duck and, while his back is towards her, to spread his uppermost wing. The object in supporting the wing with the foot is, presumably, to enable the drake to retain this somewhat awkward pose, with the wing at full stretch, longer than he could in the absence of such a strut; that it serves its purpose efficiently is certain, for, in a back view, his orange-coloured toes may sometimes be seen projecting between the quills.

When, as sometimes happens, he makes the mistake of careening away from the duck, instead of towards her, the exhibition becomes something of a damp squib, for he then shows only the under surface of his wing; but, as a result of watching him over a good many years, I can state confidently that he is much more often right than wrong in his selection of the proper attitude to adopt and wing to extend.

The item of display mentioned by Phillips—and which I classed as rare because I had never seen it—is for the drake in the culminating stage of his excitement to make repeated rushes backwards. But this has been witnessed by A. H. Macpherson who described it in a letter which he wrote me in 1932.

And now, apropos the wing-display, I might add that the female bird also does this. I am induced to mention it because some writers say that the female does not display at all, or they credit her with only the mildest of gesticulations, in spite of the fact that display in the case of captive females has been described by Lilford. But, though she is less demonstrative and vigorous than the male, there is only one of his various gestures and poses that she lacks, and that is his astonishing "jack-knife" movement (as I call it), when he flashes his fluffed-out head on to his back, holds it there for a second, and then as quickly snaps it forwards again.

She dips her bill; splashes water sideways with it; protrudes her neck at an angle of 45° (the "bowsprit pose" of Brewster); she stabs the zenith; kicks water up behind her; and, as I say, rolls and extends her wing. More than that, she has one curious little performance which is never seen in the male, and which I may describe by an extract from my notes. "A movement by the duck when attracting the attention of the drake; usually associated with periods of 'lying along'

the surface. The head is slowly and completely submerged and then carried forwards in a curve having an upward direction, so as to reappear with the bill pointing upwards at an angle of 45° . As soon as the eyes are clear of the water the movement is arrested, and this position of the head is retained while the whole of the neck is out of sight. At the same time the stern is well elevated in a humped-up way, the heels being exposed though the tail is not lifted from the water. The bird then is more or less in the position taken up by a Great Crested Grebe chick which has been bullied by a stronger brother and, after making his escape by diving, rises and peeps to see if 'the coast is clear.' This pose forms part of an active display by the female bird; and, as such, differs from the common attitude of solicitation, when she half sinks her body and lies extended flat along the surface of the water."

[The above article was written by the late Donald Gunn a few days before his death in March, 1939, at the age of 78. He was of very retiring habits and published little, though a man of wide learning on many subjects. By profession he was a surgeon, but retired from practice to reside in Canada, France and South Africa. He also travelled through Burma. Early in the present century he returned to live in London. He had an extensive knowledge of birds, and during the last twenty years devoted much time studying the habits of ducks.—A. HOLTE MACPHERSON.]

NOTES

A CASE OF BIGAMY IN MONTAGU'S HARRIER.

I THINK it will be of interest to record a case of bigamy in Montagu's Harrier (*Circus pygargus*), which I had under observation in England during the summer of 1938. It is well known that this species has a tendency to nest in small colonies, but I do not know whether cases of one male bird serving more than one hen have been recorded. I have heard of one possibly similar instance, which occurred in Norfolk a good many years ago. Probably these two cases were caused by the rarity of the species, and the consequent difficulty of finding a mate in this country. In this particular case the birds were under continuous observation by a watcher and by myself from the time of their arrival until the young birds left the nests.

The first bird to appear on the territory was a female on May 14th. On the following day she was joined by the male and a second female. All three birds were about together during the morning and there was some sparring between the two hens. Hen No. 2 then left and we did not see her again until May 21st. In the meanwhile hen No. 1 was courted and fed by the cock, and selected her nesting-site in some long sedge. On May 21st hen No. 2 returned and was playing all day with the cock, who was also seen to feed hen No. 1, who had apparently already laid, although we did not visit the nest. When hen No. 2 appeared over the nest of hen No. 1, the latter at once rose and a fierce aerial battle ensued, hen No. 2 retiring a short distance. This sparring continued for a day or two. At the end of that time a working agreement seemed to have been come to and hen No. 2 selected a nesting-site within 70 yards of hen No. 1. For a few days she still showed a tendency to come off the nest out of her turn, and would rise when the cock called hen No. 1 off to take the pass. On these occasions the cock drove her back to her nest, before feeding hen No. 1. After a week all seemed to have settled down amicably, and both hens were fed in turn, only the one who was called off rising to take the prey. After passing his kill, the cock would settle on one of a row of posts close to the nest of whichever hen he had fed, until she had finished her meal and returned to her eggs.

Hen No. 1 laid 4 eggs and hen No. 2 laid 5. The former hatched and reared all 4 which left the nest July 23rd. The

latter hatched only 3, two eggs being infertile. One young bird hatched some time after the others and did not leave the nest until a fortnight after the others had flown.

There was never any question of there being more than one male bird, as he was easily recognizable, and at one time had a broken pinion feather, which showed up clearly. On one occasion he was seen to pass prey to hen No. 1 and then, without going out of sight, killed and plucked a lark close to the observer and fed hen No. 2. On another occasion when the young were well grown in the first nest I saw him bring prey and pass to hen No. 1. She circled round for some time with the prey. Within a few minutes he was back with another kill. He called to her and circled with her over the nest. Seeing she had not disposed of his previous kill he immediately flew over to nest No. 2 and called off and fed the other hen. On one occasion I timed him and he brought five kills in an hour, two to nest No. 1, and 3 to nest No. 2, during the same hour hen No. 1 brought in 2 kills herself. I only saw the cock take prey to the nest himself on two occasions each time to No. 1 nest, when the hen was off hunting. Neither of the hens hunted much until their young were well grown, and both broods were reared almost entirely by the efforts of the one cock bird, no mean achievement on his part.

G. DENT.

[Bigamy has been recorded in this species by P. A. Hens (*Avif. d. Nederl. Prov. Limburg : cf. Beiträge z. Fortpfl. Biol. d. Vögel*, III, p. 22). Mr. P. E. Chance also gave me details of a similar case in Norfolk many years ago observed by his brother, but I believe the particulars have never been published.—F.C.R.J.]

NEST-BUILDING BY MALE MALLARD.

ON March 31st, 1939, on the banks of the Regent's Park Canal close to the Zoo in Prince Albert Road, I noticed a nest of a Mallard (*Anas p. platyrhynchos*) in the construction of which the male appeared to be taking part. This seemed to me so unusual that I watched the birds for some minutes.

The nest was in a hollow at the base of a tree. The duck entered the nest and began to arrange material round the sides, at the same time turning and shaping the nest with her breast. This continued for three or four minutes, during which time the drake was standing a few feet away. The duck then left the nest and her place was taken by the drake, which continued to shape the nest and to arrange material in the same way as the duck, only for a longer period,

eventually settling down on the nest in a position similar to a duck when brooding.

It seemed to me that such exceptional behaviour deserved record.

It would be interesting to know if other observers have noted similar behaviour, especially in ducks nesting in such artificial and unusual surroundings. A. T. BEST.

ASSOCIATION OF DRAKE MALLARD WITH THE DUCK AND YOUNG BROOD.

ON the afternoon of April 24th, 1939, ten newly hatched ducklings, with a duck and a drake Mallard (*Anas p. platyrhynchos*) in attendance, were swimming in the rough water at the foot of the retaining wall of Wilstone Reservoir, Tring. I came on the party suddenly as I topped the embankment and the birds at once took fright. The ducklings, huddled together, scuttled off towards the open water in one direction, whilst the old birds took another at right angles to it. The quacking duck squattered along the water with thrashing wings—characteristic behaviour when the young are in sudden danger. Its excitement decreased as the cause of it grew more and more remote, until ultimately it swam with the drake to rejoin the ducklings, then some fifty yards away, and the whole party made for the middle of the reservoir. The drake did not squatter at all; at the outset he rose from the water but after flying for four or five yards dropped at the side of the squattering duck. In the interval between his doing so and the time when, their composure regained, both birds swam to meet the ducklings, he sprang a couple of feet into the air three or four times only to flop clumsily on to the water again at her side. All his actions and his perplexed and inconsequent demeanour suggested something out of the common, a situation to which he was not accustomed and a departure from routine that gave rise to indecision and a muddled mental state. It seems unlikely that the drake's eccentric behaviour was due wholly or in part to attachment to his mate or solicitude for their young, and an alternative explanation occurs to me.

If a pair of Mallards are faced with sudden danger, whether on land or water, the duck almost invariably rises first, although only by a fraction of a second and the precedence is a real one and evident enough. This habit is not peculiar to the Mallard, but is common to many species of surface-feeding and diving ducks. A strong urge to flight is set in motion by a sudden danger, but when a duck has a young brood that

urge is overcome by another to which she reacts by squatting, and so diverts the attention of an enemy from the young birds to herself. This behaviour is stereotyped, is always adopted in similar circumstances, and there is no reason to suppose that it is the outcome of a thought-out plan to meet a particular case, or is indeed anything but an evolved and perfected instinctive routine. But in this routine the drake Mallard has usually no part. It is exceptional for him to take any interest in mate or young after the eggs are hatched, and it is probable that the drake at Wilstone had neither individual nor ancestral experience of a threatened danger to mate or young.

When the birds were alarmed by my sudden appearance, the impulse of the duck to fly was overborne or supplanted by the impulse to squat and swim away from her brood, whilst the drake's impulse to fly was frustrated or deflected by the failure of the duck to give him a lead, and possibly by the, to him, unwonted behaviour of the duck in squatting instead of rising in flight.

The episode supports Bertram Lloyd's contention (*antea*, Vol. XXX., p. 336) that the occasional association of a drake Mallard with a duck and a young brood is a real and not merely a fortuitous one. CHAS. OLDHAM.

LAPWINGS NESTING AT HIGH ALTITUDE.

At the beginning of June, 1939, in the western Cairngorms, my wife and I passed two pairs of nesting Lapwings (*Vanellus vanellus*) in Ptarmigan country at a height of approximately 2,800 feet above the sea. I do not remember having seen them nesting so high on a Scottish hill before. SETON GORDON.

[Mr. D. Nethersole Thompson states that in the central Highlands the Lapwing nests up to 1800 ft., but that he has met with a few in summer at 3,500—4,000 ft. but has no proof of breeding there.—F.C.R.J.]

TEMMINCK'S STINT IN HERTFORDSHIRE.

A TEMMINCK'S STINT (*Calidris temminckii*) was feeding on the mud at Startop's End Reservoir, Tring, in the evening of May 24th, 1939. I was able to watch it in a good light, often so close that it filled the whole field of the telescope, and took down a full description, of which the following are the most important points.

Shorter, though larger in body, than Yellow Wagtail. Strong resemblance to small Common Sandpiper, due especially to abrupt demarcation between grey-brown upper breast and white of rest of underparts. Head and neck grey-brown,

streaked blackish, with very faint creamy superciliary line; mantle mottled and warmer, due to scattered black-centered and buff-margined feathers. Tail, fanned on landing, showed large white areas on either side of dark central patch. Bill, tapering and slightly decurved. Legs, yellowish-green, browner in some lights. Call, subdued rippling twitter—"twirrik," several times repeated—uttered usually on taking wing.

Mr. Charles Oldham confirmed these details the same evening, and found the bird had gone by 11 a.m. next morning.

A reputed occurrence at Tring in 1887 is unreliable (Hartert and Jourdain, *Novit. Zool.*, XXVII., p. 237), and this appears to be the first definite record for Hertfordshire. K. B. ROOKE.

BARRED WARBLERS AT THE ISLE OF MAY.—During August and September, 1938, one to three Barred Warblers (*Sylvia nisoria*) were seen on twelve days. It was difficult to be sure how many passed through, but nine were caught in the trap and ringed between August 11th and September 9th.

GREEN WOODPECKER IN LANARKSHIRE.—Mr. R. Y. Ferguson reports (*Scot. Nat.*, 1939, p. 49) that a Green Woodpecker (*Picus viridis*) was seen near Dalziel House on November 23rd, 1938.

RUDDY SHELD-DUCK IN LANARKSHIRE.—Mr. N. Hopkins records (*Scot. Nat.*, 1939, p. 86) seeing a Ruddy Sheld-Duck (*Casarca ferruginea*) in Summerston Marshes on April 12th, 1939.

PINTAIL BREEDING IN YORKSHIRE.—In the "Yorkshire Naturalists' Union" Annual Report for 1938 (*Nat.*, 1939, p. 16) there is a brief statement that a Pintail (*Anas a. acuta*) bred at Skipwith in 1938, a duck with young being seen on July 2nd. No other particulars are given but we are informed that the statement is reliable, but it is a pity that an important observation of this kind should not be recorded in a more convincing way, and that it should have been hidden away amongst a mass of ordinary observations.

NEST OF SHAG WITH NINE EGGS.—Mr. Duncan J. Robertson informs us that he recently found a nest of *Phalacrocorax a. aristotelis* on Eynhallow, Orkney, with nine eggs, though one had fallen out of the nest. The maximum clutch of this bird in the British Isles is six, which has been recorded twice, though eight are said to have been met with in nests in Norway and Finland. It seems probable in the present case that the large number was due to two females, while the single egg might have been displaced by fighting.

REVIEWS.

Transactions of the Hertfordshire Natural History Society and Field Club, Vol. XXI, Part I.

THIS contains a very well deserved tribute to Mr. Charles Oldham, signed by a number of naturalist friends and addressed to him on the occasion of his seventieth birthday. The report on the birds of the county for 1937 besides other notes contains as usual a full account of the birds seen at the Tring reservoirs. The chief events were the divers and grebes in the early part of the year (already fully reported in our pages) and the presence of Shags in the early spring and Cormorants in late summer. We note that Mr. M. F. M. Meiklejohn finds Willow-Tits common in winter over the district of Harpenden. An article on gulls in the Colne Valley by Geoffrey McCulloch should prove of considerable value in connexion with other studies of the movements and numbers of gulls in the Greater London area.

Transactions of the Norfolk and Norwich Naturalists' Society, 1938.

NORFOLK ornithologists have suffered a very severe loss by the death of Dr. Sydney Long, an obituary notice of whom appears in this part, and it will be difficult to replace him. The county has sustained another blow during the year by the disastrous sea floods in February, 1938, at Horsey and Hickling. A full account of these and their effect on animal life is given and should be studied by all interested. Partridges and Pheasants seemed unable to escape across the flooded area; the mice and rats being killed, Kestrels and Owls disappeared; many of the Bitterns appear to have dispersed into other areas; ducks nested but failed to rear young; two pairs of Marsh-Harriers hatched only one young; but the Bearded Tits though much disturbed by the altered conditions did passably well. A number of Spotted Crakes appeared in the autumn. Mr. Vincent records a Water-Pipit on March 24th, a Roller (no date given), a Gull-billed Tern on June 14th, and an unusual number of waders in August and September included Spotted Redshank, Ruff, Temminck's Stint and Wood-Sandpiper. A pair each of Arctic and Roseate Terns bred at Scolt Head Island and a single Roseate mated with a Common Tern. A Kentish Plover was satisfactorily identified at Cley on September 24th and a number of other interesting birds were reported.

Annual Report of the Oundle School Natural History Society.

IN a short Report on the birds we note that larger numbers of geese were seen in the winter, 1938-9, at Tichmarsh than at any time since the winter of 1923-4. On January 19th, 150 were counted, of which 143 were White-fronted and the rest Pink-footed, while a flock of about 250 geese were seen on the wing and 170 counted on other days.

Report of the Cambridge Bird Club, 1938.

THE most interesting events recorded in this report are the nesting again of the Black Redstart and the breeding of the Bittern. The Black Redstart's nest with five eggs was deserted, but the birds appear to have nested again, as on August 15th a female with one young one was watched. The Bittern bred at Burwell and it is about a hundred years ago since the last was known to breed in the fens. The Gadwall also bred, this being the second record, or perhaps the first really definite record, and about twelve pairs of Garganey bred. Among other observations we may note that a party of five Dotterel was seen in August and a number of waders, including Grey Plover, Ruff, Sanderling, Temminck's Stint (August 28th) and Wood-Sandpiper, were seen at the sewage farm.

7 JUL 1939
PURCHASED



THE POPULAR SERIES OF
BIRD-LOVERS' MANUALS

MORE SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

BIRD MIGRATION

A. Landsborough Thomson. Illus. Sm.Cr.8vo. 5s. net.

HOW TO KNOW BRITISH BIRDS

Norman H. Joy. Illus. Sm.Cr.8vo. 5s. net.

BIRDS OF THE GREEN BELT

R. M. Lockley. Illus. Sm.Cr.8vo. 5s. net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner. Illus. Sm.Cr.8vo. 5s. net.

H. F. & G. WITHERBY LTD., LONDON

**THE BIRD-LOVERS'
BOOK OF VERSE**

*Collected by Christina Chapin, with over 30 Lino-cuts by
Raphael Nelson, F.R.S.A. Crown 8vo. 6/- net.*

"It is a good book, and a beautiful book, and it should be on the
shelf of every bird-lover."—*The Field*.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement
des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique)

Volume Four
**THE BIRDS OF THE
MALAY PENINSULA**

Birds of the Low Country,
Jungle and Scrub

Vols. I and II by the late HERBERT C.
ROBINSON, F.Z.S., M.B.O.U.

Vols. III, IV and V by F. N. CHASEN,
M.B.O.U.

*Each volume will contain
about 25 coloured plates from drawings
by H. GRONVOLD*

Imperial 8vo. 35s. net or the set of 5 volumes £7 7s. net

- Vol. I : The Commoner Birds
- Vol. II : The Birds of the Hill Stations
- Vol. III : Sporting Birds
- Vol. IV : Birds of the Low Country,
Jungle and Scrub
- Vol. V : Open Country and Ricefield
Birds

H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1

BRITISH BIRDS

4 AUG 1939
PURCHASED

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

AUGUST 1,
1939.

Vol. XXXIII.
No. 3.



MONTHLY 1s 9d YEARLY 20s
326 HIGH HOLBORN LONDON
H. F. & G. WITHERBY LTD.

Volume Three of
**THE HANDBOOK
OF BRITISH BIRDS**

•

The third volume of this recognized standard work on British birds deals with the swans, geese and ducks, diurnal birds of prey, storks and herons. As in previous volumes, there are a great number of coloured plates. The geese have been specially drawn for the work by PETER SCOTT.

•

IN FIVE VOLUMES—

21/- NET PER VOLUME

H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND
NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 3, VOL. XXXIII., AUGUST I, 1939.

	PAGE
Timing the Under-water Activities of Diving Birds. By J. M. Dewar, M.D.	58
Movements of Ringed Birds from Abroad to the British Isles and from the British Isles Abroad. Addenda VI. Omitting records of British-bred birds. By H. F. Witherby and E. P. Leach	62
Obituary : Ernest Urmston Savage	76
Notes :—	
The Return of the Raven as a Nester to Sussex (J. Walpole-Bond)	77
Down-plumage of Nestling and Soft Parts of Juvenile Chough (K. Williamson)... ..	78
Greenfinch Singing at Night (F. H. Lancum)	78
Crossbills breeding in Sussex in 1939 (J. Walpole-Bond) ...	79
Sky-Lark carrying young Bird (G. R. Mountfort)	79
Water-Pipit in Cheshire (A. W. Boyd)	79
Red-backed Shrike as Fosterer of Cuckoo (W. H. Bramwell)	80
Status of Nuthatch in W. Merionethshire (E. H. T. Bible) ...	80
Black Redstart in London in May and June (J. Le C. Sumner)	81
Stones in Gizzard of Nightjar (G. Marples)	81
Short-eared Owls in Surrey (H. Bentham)	82
Storks in Sussex (E. M. Cawkell)	83
Unusual Behaviour of Duck Mallard and Brood (C. F. Tebbutt)	83
Green-winged Teal in Outer Hebrides (Dr. J. W. Campbell) ...	84
Great Crested Grebes' unusual Nest-site (A. W. Boyd)	84
Early Nesting of Great Crested Grebe in Cheshire (A. W. Boyd)	85
Incubation-Periods of Some Waders and Fledging-Period of Lapwing (J. F. Thomas)	85
Lapwing's Nest with Six Eggs (E. E. Paget-Tomlinson)	86
Waders in Somerset (H. Tetley)	86
White-winged Black Tern in Sussex (J. Walpole-Bond)	87
Spotted Crake in Sussex in June (J. Walpole-Bond)	87
Short Notes :—	
Great Spotted Woodpecker Nesting in Bute and Sutherland.	
Barnacle-Geese in Northumberland in June. Sooty Shearwater in Irish Sea. Lapwings Nesting at High Altitude.	
Nesting Lapwing "Freezing" Upside Down. Breeding Season of the Dunlin. Moorhen's Nest Built of Grass	87
Review :—	
<i>Skokholm Bird Observatory. Report for 1938</i>	88

TIMING THE UNDER-WATER ACTIVITIES OF DIVING BIRDS.

BY

J. M. DEWAR, M.D.

ACCORDING to the 20-10 seconds rule the average period of the dive in 6 feet of water is 20 seconds, and it is suggested that of this period, 10 seconds are spent in going up and down and 10 seconds on the bottom in search of food (Dewar, 1924). As a direct approach to the problem of the distribution of the time spent under water is almost impossible owing to the wildness of the birds and the normal turbidity of the water, other means had to be found to test the validity of the suggestion.

When the bird dives at a fairly steep angle by the propulsant action of the feet alone, a column of water is forced up to the surface by the action of the feet, and the place of immersion is marked by a limited area of up-welling water mixed with bubbles of air. The up-welling I call "turmoil." Turmoil begins when the bird is immersed and continues for some time after the bird reaches the bottom. Turmoil ends abruptly and its duration can be timed with a stop-watch. A perfectly calm day is essential for correct timing.

When the bird reaches the bottom the up-welling of water ceases to be produced, since the direction of the foot-stroke becomes more oblique and much less thrust is required to hold the bird on the bottom. Turmoil does not end at the moment the bird reaches the bottom, because the water, which is forced upwards, takes time to reach the surface. Thereafter, nothing comes to the surface except bubbles of air. The air-bubbles record the bird's horizontal travel over the bottom and the final ascent to surface. The difference between the bird's time of descent and the time taken by the turmoil to cease appearing I call "lag."

A floating body moves in one direction at the same rate as its propelling apparatus forces a column of water in the opposite direction, less *slip*. Slip has not been actually measured. Its value varies with the speed of the floating body, and is put at 5 per cent. at 10 knots (Seaton, 1928). At very low speeds, such as are at present being considered, slip is very small and may safely be neglected.

The column of water forced upwards by the bird's feet must slow down as the initial impulse exhausts itself. In shallow water the ebullition at the surface is so lively that it may be assumed that there is no appreciable loss of speed on this account. The assumption is also applicable to the retarding effect of gravity on the up-rising water.

Apart from these disturbing factors which are here assumed to be negligible, but which would need to be taken into account in very accurate work, the result of the analysis is that the duration of the bird's descent to bottom equals the duration of lag. Hence, by dividing the duration of turmoil in seconds by two the approximate duration of descent is obtained, and by dividing the depth in inches by the duration of descent in seconds the speed of descent is got in inches a second.

Ascent to surface by the species investigated is almost invariably by buoyancy alone. If the feet are used there is generally a reason for it, such as avoidance of collision with another bird.

A dead Mallard drake of a domestic variety (*Anas platyrhynchos*) weighed $6\frac{3}{4}$ pounds and had a specific gravity of 0.6. Heinroth (1938) recorded the same figure for this species. As diving birds from their less buoyant appearance on the surface should have a higher specific gravity than the Mallard, it would be interesting to know the specific gravities of these birds. Unfortunately, the only determination, so far traced, is of the Little Grebe (*Podiceps r. ruficollis*) which, at 0.66, has a higher specific gravity than the Mallard (Stubbs, 1910).

The Mallard was found to rise through one foot of water in an average time of 1.2 seconds and through 6 feet of water in 5 seconds, giving a rate of acceleration of 15.8 inches a second. It is possible that the living bird with its air-sacs distended with air has a lower specific gravity and a more rapid rate of acceleration but data for the living bird have not been ascertained. This experiment gives an approximate figure for rate of ascent by buoyancy alone.

The rate of descent and of ascent being known approximately, it is now possible to make a closer analysis of the period of the dive. The material is small in amount, however, and it is not suggested that, at present, the results have more than a limited application.

Three species were studied—Coot (*Fulica a. atra*), Tufted Duck (*Aythya fuligula*) and Pochard Duck (*A. f. ferina*). These species have a marked tendency, useful in the present investigation, to repeat dives at one spot. In 1924 I pointed out that the Coot is peculiar in that it has no bottom-time, and I believed this was a general rule for the species. Since that time I have found that, under certain conditions, the Coot may have bottom-time, but the Coot which provided the material used in the present analysis had no bottom-time.

The observations were made in calm weather, on lakes in

Holyrood Park, Edinburgh. In every case the depth was ascertained by sounding in the position of the dives with the aid of cross-bearings, and I am indebted to H.M. Office of Works for permission to take the necessary soundings. It will be understood that the appropriate combination of all the requisite conditions has seldom occurred. This is the reason why it has not been found possible to collect more than eight cases in nine years of intermittent observation.

Coot : Depth $5\frac{1}{2}$ feet. 10 dives averaging 9.2 secs.

Turmoil lasted 9.2 secs.

lag 4.6 secs.

4.6 secs.

Hence descent lasted 4.6 seconds, equal to 14.4 inches a second ; ascent, by remainder, lasted 4.6 seconds ; equal to 14.4 inches a second, as compared with 14.2 inches a second in experiment with Mallard.

Tufted Duck : Depth 4 feet. 25 dives averaging 16.8 secs.

Turmoil lasted 6.6 secs.

lag 3.3 secs.

3.3 secs.

Hence descent lasted 3.3 seconds, equal to 14.5 inches a second, and as ascent in experiment with Mallard lasted 3.4 seconds, there remains out of 16.8 seconds, the period of the dive, 10.1 seconds, as the duration of bottom-time.

Tufted Duck : Depth 4 feet. 5 dives averaging 18.4 secs.

Turmoil lasted 5.8 secs.

lag 2.9 secs.

2.9 secs.

Hence descent lasted 2.9 seconds, equal to 16.5 inches a second, and as ascent by Mallard lasted 3.4 seconds, there remains out of 18.4 seconds, the period of the dive, 12.1 seconds, as the duration of bottom-time.

Tufted Duck : Depth $4\frac{1}{2}$ feet. 4 dives averaging 17.3 secs.

Turmoil lasted 6.2 secs.

lag 3.1 secs.

3.1 secs.

Hence descent lasted 3.1 seconds, equal to 17.4 inches a second, and as ascent by Mallard lasted 3.86 seconds, there remains out of 17.3 seconds, the period of the dive, 10.4 seconds, as the duration of bottom-time.

Tufted Duck : Depth 6 feet. 5 dives averaging 21.6 secs.
 Turmoil lasted 9.4 secs.
 lag 4.7 secs.
 4.7 secs.

Hence descent lasted 4.7 seconds, equal to 15.3 inches a second, and as ascent by Mallard lasted 5 seconds, there remains out of 21.6 seconds, the period of the dive, 11.9 seconds, as the duration of bottom-time.

Pochard Duck : Depth 3 feet. 5 dives averaging 15.6 secs.
 Turmoil lasted 4.6 secs.
 lag 2.3 secs.
 2.3 secs.

Hence descent lasted 2.3 seconds, equal to 15.3 inches a second, and as ascent by Mallard lasted 2.72 seconds, there remains out of 15.6 seconds, the period of the dive, 10.6 seconds, as duration of bottom-time.

To summarize : In three species of diving birds the speed of descent ranged from 14.4 to 17.4 inches a second and the speed of ascent from 13.4 to 14.4 inches a second according to depth of water within a limit of six feet ; in two species, bottom-time ranged from 10.1 to 12.1 seconds, the average period for 44 dives being 10.6 seconds.

The effect of dense weed in slowing down the rate of descent is well shown by the following observations. Incidentally, it may be noted the presence of dense weed is one reason for the average period of the dive failing to conform to expectation under the 20-10 seconds rule. The rate of ascent by buoyancy in dense weed has not been determined.

Pochard Duck : Depth 6 feet. 46 dives averaging 26 secs.
 Turmoil lasted 10.3 secs.
 lag 5.15 secs.
 5.15 secs.

Hence descent lasted 5.15 seconds, equal to 13.9 inches a second.

Pochard Duck : Depth 6 feet. 7 dives averaging 28.1 secs.
 Turmoil lasted 14.8 secs.
 lag 7.4 secs.
 7.4 secs.

Hence descent lasted 7.4 seconds, equal to 9.7 inches a second.

DEWAR, J. M. (1924) : *The Bird as a Diver*. London.

HEINROTH, O. (1938) : *Aus dem Leben der Vögel*. Berlin.

SEATON, E. A. (1928) : *A Manual of Marine Engineering*. London.

STUBBS, F. J. (1910) : *Zool.* 14, 201. *The Mechanism of the Plumage in Water Birds*.

MOVEMENTS OF RINGED BIRDS FROM ABROAD
TO THE BRITISH ISLES AND FROM THE
BRITISH ISLES ABROAD.

ADDENDA VI.*

Omitting records of British-bred birds.

BY

H. F. WITHERBY AND E. P. LEACH.

HITHERTO in this series of articles we have thought it best to collect together all records of ringed birds, which have moved either from this country to abroad or from abroad to this country. This has meant a certain amount of duplication as the birds ringed here are also included in the lists of recoveries under the British ringing scheme.

As the number of recoveries is constantly increasing it is now necessary to modify this plan and in this instalment we are omitting all records of birds ringed in the British Islands as nestlings or as breeding birds, but we shall continue to include those British-ringed birds which appear to be winter visitors or passage-migrants so as to give, with the records of those ringed abroad and recovered here, as complete an account as possible of the movements of these birds as shown by ringing. In the cases of the Starling and Black-headed and Common Gulls, as in our last instalment, we have summarized the records and omitted the detailed lists. The fresh records of these species are numerous, but do not materially affect the maps and summaries previously published. It should be mentioned that careful records of all unpublished cases are kept for reference in case they should be required. Reverting to the omission of the British-breeding birds it is to be hoped that when sufficient records have been accumulated each species will be fully dealt with as has been recently done in the case of the Heron and the Gannet (*antea*, Vol. XXXII., pp. 242 and 282).

We have once more to express our grateful thanks to many ringing stations as well as to correspondents for notifying recoveries and supplying details.

To the list of Ringing Stations already published three new ones have to be added.

*For previous parts see Vol. XXV., pp. 110-128; pp. 174-192; pp. 245-268; pp. 357-360; Vol. XXVI, pp. 352-361; Vol. XXVIII, pp. 106-112; pp. 133-141; Vol. XXIX, pp. 132-144; Vol. XXXI, pp. 14-24; pp. 42-53.

<i>Abbreviation used.</i>	<i>Inscription on Ring.</i>	<i>Organization.</i>	<i>Director.</i>
<i>P-V</i>	Polonia Varsovia	Zool. Museum, Warsaw.	W. Rydzewski.
<i>Tsch.</i>	Ecke, Tschammendorf, Germania. (No longer operative.)	Orn. Ring-Station, Tschammendorf, Breslau, Silesia.	Hansgeorg Ecke
<i>Ba.</i>	Univ. Bologna Italia.	Laboratorio di Zoologia dell' Universita, Bologna.	Prof. A. Ghigi.

NOTE.—The only cases of Recoveries with Warsaw rings are of Starlings, which do not appear in detail.

HOODED CROW (*Corvus c. cornix*).

RINGED ABROAD, TRANSPORTED TO A DISTANCE AND RELEASED EXPERIMENTALLY.

	<i>Ringed.</i>	<i>Recovered.</i>
<i>R.</i> D56031	East Prussia, released (470 m. W.)	Schleswig, Perth. 12.4.38 3.4.39

ROOK (*Corvus f. frugilegus*).

RINGED ABROAD AS NESTLINGS.

	<i>Ringed.</i>	<i>Recovered.</i>
<i>L.</i> 157804	Overijssel, Holland	17.5.35 Sussex 30.11.35
<i>L.</i> 157870	Ditto	17.5.35 Norfolk 9.12.35
<i>L.</i> 119555	Zuid Holland	14.6.36 Suffolk 23.10.36
<i>R.</i> D56656	Mecklenburg, Germany	13.5.33 Norfolk 26.10.38

RINGED ABROAD AS MIGRANT.

<i>R.</i> D44622	East Prussia	8.4.37 Bedford 5.2.39
------------------	--------------	-----------------------

STARLING (*Sturnus v. vulgaris*).

Altogether 234 records of Starlings have accumulated since our last Addenda. Added to previous records we now have details of some 640 immigrants.

Of the new records eighty were ringed as young or in breeding quarters between the end of April and July (mostly in May and June) in Belgium, Holland, Scandinavia, Germany, Poland, Lithuania, Latvia, W. Russia (one), and S. Finland (two). These were reported from all parts of England, two from S. Wales and two from Ireland, but none from Scotland, mostly between October and February and a few in March. The following are worth noting specially owing to the dates.

	<i>Ringed.</i>	<i>Reported.</i>
Holland	20.6.36	At sea off Flamborough 3.4.37
Latvia	3.6.37	Northumberland —.4.38
Germany	21.5.36	Kent 12.4.39
Germany	21.5.38	Kent 12.5.39
Belgium	—.5.32	Devon "Summer," 36
Holland	26.5.35	Kent 22.7.35
Sweden	8.6.36	Mayo 26.7.37

There are ninety-nine records of full-grown birds ringed in Belgium, Holland, Germany and Memel Territory, some no doubt on migration, but a good many probably at or near their breeding-places. These were reported from all parts of

England, six from Wales, three from Ireland and one from Scotland (Wigtown). Of these we may list the following, the dates of which are rather unusual.

	<i>Ringed.</i>		<i>Recovered.</i>
Holland	18.9.36	Cornwall	14.7.37
Holland	22.10.35	Essex	—.4.36
Rossitten	9.4.32	Bucks	11.4.34
Memel Territory	18.6.34	Somerset	15.5.36
Memel Territory	21.7.33	Yorkshire	23.5.34

A third group of fifty-five birds were ringed in England and one in Fifeshire between October and March and were subsequently reported abroad (Belgium, Holland, Germany, Denmark, Sweden, Norway, Poland, Lithuania, Latvia, Estonia and Finland). Most of these were evidently winter visitors to us but the following records seem to indicate that the same birds do not perhaps reach so far westward every winter.

	<i>Ringed.</i>		<i>Recovered.</i>
Oxford	28.11.33	Belgium	—.11.37
Berkshire	29.12.37	S. Holland	—.11.38
Warwick	22.3.32	N. Holland	21.12.37
Worcester	8.12.37	Belgium	26.12.38
Kent	4.11.37	Belgium	30.12.38

As so few ringed Starlings have been reported from Scotland it may be mentioned that the one ringed in Fifeshire was recovered in N. Norway and the one recovered in Wigtownshire was ringed in Memel Territory. Of previous Scottish records another was derived from Memel, one from Latvia, seven from Norway and two from Denmark.

CHAFFINCH (*Fringilla cœlebs*).

RINGED GREAT BRITAIN AS WINTER VISITOR AND RECOVERED ABROAD PROBABLY IN BREEDING-PLACE.

	<i>Ringed.</i>		<i>Recovered.</i>
Worcester	4.2.35	Norrbotten, Sweden	1936

RINGED GREAT BRITAIN AS MIGRANT.

	<i>Ringed.</i>		<i>Recovered.</i>
I. of May	18.4.37	Stockholm, Sweden	4.5.37 (at sea)

RINGED GREAT BRITAIN. RECOVERED ABROAD.
BREEDING-PLACE UNCERTAIN.

	<i>Ringed.</i>		<i>Recovered.</i>
Worcester, Winter 1934 or 35		Liège, Belgium	13.11.37
Ditto	4.3.38	Ditto	2.11.38
Gloucester	27.1.35	Antwerp, Belgium	15.10.37
Worcester	29.1.38	Ditto	8.11.38
Ditto	8.2.37	Ditto	23.10.38
Ditto	28.12.37	Ditto	16.11.38
Ditto	2.3.38	East Flanders	11.11.38
Gloucester	5.2.37	Ditto	14.10.37
Oxford	8.12.36	Ditto	—.11.38
Worcester	3.2.38	Brussels	24.10.38

RINGED ABROAD. BREEDING-PLACE UNCERTAIN.

		<i>Ringed.</i>	<i>Recovered.</i>		
L.	A29822	Noord Holland	2.4.35	Durham	28.2.36
L.	B6840	Zuid Holland	3.11.34	I. of Arran	14.3.35
L.	B4945	Ditto	12.10.37	Dumfries	—.2.38
L.	B6367	Ditto	24.10.34	Yorkshire	7.2.35
L.	A21254	Ditto	8.10.33	Kent	7.2.36
L.	B16400	Ditto	22.10.35	Ditto	12.5.36
L.	A21340	Ditto	14.10.33	Hampshire	20.2.36
L.	A20988	Ditto	14.10.33	Cornwall	14.12.35
B.	10B2044	Brussels	6.10.36	Dorset	12.3.37

BRAMBLING (*Fringilla montifringilla*).

The first two records indicate different wintering areas in subsequent years.

RINGED GREAT BRITAIN AS WINTER VISITORS.

		<i>Ringed.</i>	<i>Recovered.</i>	
Worcester		14.2.37	Gironde, France	—.12.37
Gloucester		29.12.34	Tarn-et-Garonne, France	5.1.38

RINGED ABROAD. BREEDING-PLACE UNCERTAIN.

		<i>Ringed.</i>	<i>Recovered.</i>		
H.	888340A	Stavanger, Norway	12.3.37	Warwick	24.2.38
L.	A21365	Zuid Holland	14.10.33	Hampshire	10.12.35

MEADOW-PIPIT (*Anthus pratensis*).

RINGED ABROAD AS MIGRANT.

		<i>Ringed.</i>	<i>Recovered.</i>		
B.	6A5181	Antwerp, Belgium	18.10.34	Lancashire	18.4.36

CONTINENTAL GREAT TIT (*Parus m. major*).

This record, which has already been reported (*antea*, Vol. XXXI, p. 352), is a very interesting one. So far the bird has been known chiefly as a migrant in the northern isles and along the east coast of Great Britain though in the large migration of 1910 some reached the Scilly Islands.

RINGED ABROAD AS NESTLING.

		<i>Ringed.</i>	<i>Recovered.</i>		
R.	G463182	Saxony, Germany	20.5.37	Gloucester	4.2.38

BRITISH SONG-THRUSH (*Turdus e. ericetorum*).

RINGED ABROAD AS NESTLINGS.

L.	D4755	Utrecht, Holland	29.4.36	Glamorgan	17.12.37
L.	D15654	Ditto	6.5.37	Kent	2.2.38

RINGED ABROAD AS FULL-GROWN.

B.	3C992	West Flanders, Belgium	1.8.34	Kent	—.2.39
----	-------	------------------------	--------	------	--------

CONTINENTAL SONG-THRUSH (*Turdus e. philomelus*).

RINGED ABROAD AS MIGRANTS.

		<i>Ringed.</i>	<i>Recovered.</i>		
H.	8313618	Heligoland	30.12.36	Leicester	—.3.38
H.	7018764	East Frisian Is.	8.3.38	Lancashire	26.3.38

REDWING (*Turdus m. musicus*).

The two records from Italy indicate that these birds were wintering in a different area to that of previous years.

RINGED GREAT BRITAIN AS WINTER VISITORS
OR MIGRANTS.

	<i>Ringed.</i>		<i>Recovered.</i>
I. of May	30.3.38	East Frisian Is.	14.8.38
Gloucester	10.3.34	Tuscany, Italy	6.11.34
Worcester	2.1.37	Ditto	27.2.38

BLACKBIRD (*Turdus m. merula*).

RINGED ABROAD AS NESTLINGS.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>St.</i> Y5753	Gävleborg, Sweden	18.6.37	Durham 16.12.37.
<i>St.</i> Y3231	Örebro, Sweden	15.6.35	Mayo 24.12.38
<i>G.</i> 1128B	Göteborg, Sweden	8.6.34	Yorks 1.4.38
<i>G.</i> 19711B	Västergötland, Sweden	2.6.37	Orkney 7.11.37
<i>C.</i> T7494	Sjælland, Denmark	21.6.38	Dumfries 8.2.39
<i>L.</i> D3454	Gelderland, Holland	14.5.36	Essex 4.11.36
<i>L.</i> D1215	Zuid Holland	16.6.35	Sussex 18.11.35
<i>B.</i> 5C3228	Antwerp, Belgium	26.4.38	Cavan —.11.38
<i>H.</i> 753120	Hanover, Germany	4.5.35	Suffolk 23.1.36
<i>H.</i> 6064585	Ditto	13.5.37	Dublin —.11.37
<i>H.</i> 794867	Westphalia, Germany	13.5.36	Cornwall 8.1.37

RINGED ABROAD AS MIGRANTS.

<i>H.</i> 7031245	Heligoland	9.10.37	Devon 11.12.37
<i>H.</i> 7069380	Ditto	28.3.38	Cork —.1.39

RINGED GREAT BRITAIN AS WINTER VISITORS
OR MIGRANTS.

	<i>Ringed.</i>		<i>Recovered.</i>
Cheshire	14.2.36	South Norway	26.1.37
I. of May	8.4.37	Ditto	4.11.37
Ditto	5.4.37	Ditto	—.7.38
Yorkshire	26.11.37	Groningen, Holland	20.4.38
Norfolk	30.1.37	Utrecht, Holland	2.7.38

LONG-EARED OWL (*Asio o. otus*).

RINGED ABROAD.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>L.</i> 71752	Noord Holland	4.6.32	Lincoln 18.2.35

PEREGRINE FALCON (*Falco p. peregrinus*).

These are the first ringed Peregrines reported from abroad.

RINGED ABROAD IN BREEDING SEASON.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Stav.</i> 30260	Lofoten Is., Norway, young	1938	Berks 4.11.38
<i>G.</i> 23514D	Västergötland, Sweden, adult	5.6.35	Kent 18.1.37

KESTREL (*Falco t. tinnunculus*).

RINGED ABROAD AS NESTLING.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Tsch.</i> 261E	Silesia, Germany	5.7.36	Yorkshire 14.11.37

SPARROW-HAWK (*Accipiter n. nisus*).

RINGED ABROAD AS MIGRANTS.

		<i>Ringed.</i>	<i>Recovered.</i>	
L.	168809	Zuid Holland	16.10.37	Stafford 5.2.38
L.	173293	Gelderland, Holland	31.10.38	Monaghan 1.1.39

COMMON HERON (*Ardea c. cinerea*).

RINGED ABROAD AS NESTLINGS.

		<i>Ringed.</i>	<i>Recovered.</i>	
O.	04832	Rogaland, Norway	11.6.37	East Lothian 7.10.37
O.	04846	Ditto	11.6.37	Lancs 2.10.37
G.	3977E	Västergötland, Sweden	6.6.36	Orkney 27.3.37
G.	4631E	Halland, Sweden	4.6.37	Sutherland 22.9.37
R.	B48668	Pomerania, Germany	17.5.34	Derby 28.4.35
R.	B47936	Ditto	1934	Jersey 12.11.34
B.	K3527	West Flanders, Belgium	5.5.36	Ditto 13.3.37
B.	K3519	Ditto	5.5.36	Hampshire 20.4.37
V.	O1553	Pas-de-Calais, France	19.5.37	Hampshire 7.4.38
V.	O1560	Ditto	19.5.37	Waterford 6.12.37
V.	B1753	Ditto	9.5.37	Kent 13.11.38
V.	B2138	Ditto	8.5.38	Ditto 14.12.38

GREY LAG-GOOSE (*Anser anser*).

RINGED ABROAD AS YOUNG.

		<i>Ringed.</i>	<i>Recovered.</i>	
RK.	2.330	South Iceland	14.9.37	Angus —.12.37
RK.	2.372	South-east Iceland	10.7.38	Kilkenny —.1.39
SK.	E995	North Iceland	20.6.29	Perths 21.10.29
and E996				

MALLARD (*Anas p. platyrhyncha*).

RINGED GREAT BRITAIN AS ADULTS IN AUTUMN

AND WINTER.

		<i>Ringed.</i>	<i>Recovered.</i>	
Norfolk		11.10.37	East Prussia	5.11.38
Ditto		27.9.37	Pomerania	22.9.38
Wigtown		2.3.38	Skaraborg, Sweden	14.9.38
Norfolk		30.9.37	Jylland, Denmark	15.9.38
Ditto		10.8.37	Friesland, Holland	—.10.38
Ditto		30.1.37	Zuid Holland	24.12.37

RINGED ABROAD AS YOUNG.

		<i>Ringed.</i>	<i>Recovered.</i>	
Ld.	D10342	L. Ilmen, Novgorod, Russia,	21.6.33	Angus 30.8.37
Hs.	H9808	North Finland	23.7.37	Northumberland 15.2.38
Hs.	H6444	Central Finland	4.7.36	Suffolk 16.12.36
Hs.	D7962	South-east Finland	3.7.37	Essex 28.1.38
Hs.	H10767	South-west Finland	7.7.38	Cumberland 2.1.39
		RINGED ABROAD AS FULL-GROWN.		
Hs.	H7093	South-east Finland	21.10.38	Kent 14.1.39

TEAL (*Anas c. crecca*).
RINGED GREAT BRITAIN AS ADULTS IN AUTUMN
AND WINTER.

<i>Ringed.</i>	<i>Recovered.</i>
Pembroke	8.1.38 Indiga River, North Russia 5.6.38
Ditto	20.11.37 Pechora River, North Russia 29.5.38
Ditto	9.11.37 Archangel, North Russia 15.5.38
Ditto	2.11.36 Leningrad, Russia 29.4.37
Ditto	7.11.36 Ditto 29.4.37
Ditto	11.11.37 L. Ilmen, W. Russia 3.5.38
Ditto	21.12.36 North Finland 20.8.37
Ditto	23.1.37 Ditto 21.8.37
Ditto	27.11.36 Central Finland 26.5.37
Ditto	25.12.35 South-East Finland 14.5.37
Ditto	27.12.36 West Finland 23.8.38
Dorset	15.2.38 Ditto 15.8.38
Pembroke	24.11.36 Kurland, Latvia 25.7.37
Ditto	27.11.36 Riga, Latvia 23.4.38
Ditto	7.12.35 Posen Grenzmark, Germany 3.8.37
Ditto	15.1.38 Pomerania 18.9.38
Ditto	2.12.37 Mecklenburg 5.9.38
Ditto	13.2.36 Hamburg 18.11.38
Ditto	2.12.37 Ditto 18.11.38
Dorset	15.2.38 Ditto 11.10.38
Pembroke	29.12.37 Oldenburg 30.9.38
Ditto	23.11.37 Hordaland, Norway 12.10.38
Ditto	15.1.37 Hallingdal, Norway —.9.37
Ditto	18.1.36 Norrbotten, Sweden —.6.36
Ditto	30.1.37 Ditto 1.9.37
Ditto	2.12.37 Ditto 26.8.38
Ditto	16.12.37 Ditto 28.4.38
Wigtown	8.2.38 Ditto 25.5.38
Pembroke	24.9.36 Västerbotten, Sweden 3.5.37
Ditto	30.1.37 Ditto 6.5.37
Ditto	17.1.36 Helsingland, Sweden —.5.38
Wigtown	1.3.37 Ditto 3.7.37
Dorset	13.1.38 Västmanland, Sweden 25.9.38
Pembroke	14.11.36 Södermanland, Sweden 4.8.37
Ditto	19.12.36 Skaraborg, Sweden —.10.38
Ditto	6.1.38 Bohus, Sweden 5.10.38
Ditto	15.2.37 Göteborg, Sweden 19.8.38
Ditto	26.10.35 Jylland, Denmark —.8.38
Ditto	11.2.36 Ditto 26.9.38
Ditto	18.1.38 Ditto 17.8.38
Dorset	15.2.38 Ditto 31.8.38
Pembroke	20.12.35 Sjælland, Denmark —.8.37
Ditto	7.11.37 Ditto 28.8.38
Ditto	10.11.37 Ditto 6.11.38
Ditto	24.11.37 Moen, Denmark —.9.38
Ditto	23.12.35 N. Frisian Is. 19.9.37
Ditto	18.11.37 Ditto 30.9.38
Ditto	2.12.37 Ditto 19.9.38
Ditto	1.2.38 Ditto 10.10.38
Ditto	17.1.36 Schleswig-Holstein 5.8.37
Ditto	17.10.36 Ditto 18.10.37
Dorset	15.2.38 Ditto 22.9.38

*Ringed.**Recovered.*

Pembroke	29.12.35	Holland	—.11.37
Ditto	22.1.36	Ditto	—.11.37
Ditto	2.1.37	Groningen, Holland	3.10.38
Ditto	12.2.36	Friesland, Holland	27.7.38
Ditto, Autumn 1936 [3 birds]		Ditto	—.9.37
Ditto, Autumn 1936 [2 birds]		Ditto	—.9.38
Ditto, Autumn 1937 [4 birds]		Ditto	Autumn, 1938
Ditto	24.10.36	Overyssel, Holland	16.9.37
Dorset	20.1.38	Ditto	27.8.38
Pembroke	26.1.37	Zuid Holland	7.12.38
Ditto	10.11.37	Ditto	23.9.38
Ditto	21.11.37	Ditto	16.1.38
Ditto	4.2.37	North Brabant, Holland	3.9.37
Ditto	14.12.36	Antwerp, Belgium	28.3.37
Ditto	23.12.36	West Flanders	25.2.38
Ditto	9.1.38	Ditto	12.3.38
Ditto	14.10.36	Nord, France	15.8.37
Ditto	27.11.37	Ditto	21.8.38
Ditto	11.1.37	Pas-de-Calais, France	27.9.37
Ditto	27.12.37	Somme, France	14.8.38
Ditto	20.12.38	Manche, France	30.12.38
Ditto	2.1.37	Maine-et-Loire	—.11.37
Ditto	12.1.37	Loire Inf., France	5.1.38
Ditto	27.1.37	Ditto	29.1.38
Ditto	5.11.36	Landes, France	10.9.37
Ditto	21.11.36	Lombardy, Italy	13.2.38
Ditto	28.11.36	Bessarabia, Rumania	22.8.38

RINGED ABROAD FROM DECOY.

*Ringed.**Recovered.*

L.171444	Friesland, Holland	11.9.37	Argyll	16.11.37
L.179518	Ditto	24.9.38	Wigtown	27.12.38
L.171751	Ditto	30.8.37	Yorks	3.3.38
L.179517	Ditto	24.9.38	Lancs	26.12.38
L.179657	Ditto	1.10.38	Lincs	20.11.38
L.172416	Ditto	26.11.37	Cheshire	22.1.38
L.172521	Ditto	2.3.38	Bucks	18.2.39
L.172752	Ditto	30.8.37	Norfolk	24.11.37
L.172375	Ditto	27.10.37	Ditto	21.1.38
L.172542	Ditto	24.8.38	Ditto	8.10.38
L.172319	Ditto	27.9.37	Suffolk	8.12.37
L.172410	Ditto	26.11.37	Ditto	15.11.38
L.172465	Ditto	15.12.37	Ditto	9.2.38
L.182504	Ditto	26.11.38	Ditto	17.2.39
L.171710	Ditto	28.8.37	Essex	6.12.37
L.172309	Ditto	29.9.37	Ditto	12.1.38
L.172435	Ditto	26.11.37	Ditto	17.1.38
L.172436	Ditto	26.11.37	Ditto	1.1.38
L.179576	Ditto	24.9.38	Ditto	15.2.39
L.172323	Ditto	27.9.37	Kent	23.10.37
L.172594	Ditto	24.9.38	Sussex	—.1.39
L.172368	Ditto	27.10.37	Somerset	23.1.38
L.171719	Ditto	28.8.37	Ditto	4.1.38
L.182538	Ditto	6.12.38	Ditto	21.12.38

<i>Ringed.</i>		<i>Recovered.</i>	
L.171470	Friesland, Holland	11.9.37	Dorset 15.2.38
L.171796	Ditto	6.9.37	Cornwall 30.12.37
L.179441	Ditto	24.9.38	Ditto 21.12.38
L.171774	Ditto	30.8.37	Glamorgan 10.2.38
L.172546	Ditto	24.8.38	Pembroke 9.1.39
L.182523	Ditto	26.11.38	Ditto 7.12.38
L.172363	Ditto	27.10.37	Donegal 9.1.38
L.179430	Ditto	24.9.38	Down 28.1.39
L.179588	Ditto	24.9.38	Armagh 19.1.39
L.171461	Ditto	11.9.37	Fermanagh 28.1.38
L.179637	Ditto	1.10.38	Dublin 1.1.39
L.179569	Ditto	24.9.38	Roscommon —.1.39
L.179496	Ditto	24.9.38	Galway 10.2.39
L.172393	Ditto	27.10.37	Wexford —.11.37

GARGANEY (*Anas querquedula*).

RINGED ABROAD FROM DECOY.

<i>Ringed.</i>		<i>Recovered.</i>	
L.171742	Friesland, Holland	2.8.37	Tipperary —.11.37

WIGEON (*Anas penelope*).

RINGED GREAT BRITAIN AS ADULTS IN WINTER.

<i>Ringed.</i>		<i>Recovered.</i>	
Pembroke	1.1.37	Vashka R., North Russia	11.5.37
Suffolk	28.1.38	Memelland, Germany	9.10.38
Ditto	14.1.38	Danzig Free State	22.9.38
Pembroke	29.11.36	N. Frisian Is.	26.10.37
Ditto	10.11.38	Friesland, Holland	18.12.38
Suffolk	14.1.38	Seine Inf., France	18.12.38
Norfolk	28.1.38	Emilia, Italy	15.10.38

RINGED ABROAD AS ADULT.

<i>Ringed.</i>		<i>Recovered.</i>	
Rk. 4.102	North Iceland	24.6.32	Lancs 20.12.38

PINTAIL (*Anas a. acuta*).

RINGED GREAT BRITAIN AS ADULTS IN WINTER.

<i>Ringed.</i>		<i>Recovered.</i>	
Pembroke	26.11.36	Pechora River, N. Russia	6.5.37
Ditto	5.12.37	North Iceland	10.8.38
Ditto	16.12.37	Noord Holland	9.4.38

SHOVELER (*Spatula clypeata*).

RINGED GREAT BRITAIN AS ADULTS IN WINTER.

<i>Ringed.</i>		<i>Recovered.</i>	
Pembroke	11.12.36	Overyssel, Holland	28.8.37
Ditto	4.12.36	Zuid Holland	6.10.37
Ditto	26.1.38	Gelderland, Holland	25.8.38

RINGED ABROAD AS YOUNG.

<i>Ringed.</i>		<i>Recovered.</i>	
L.168521	W. Frisian Is.	17.6.37	Kirkcudbright 6.8.37

TUFTED DUCK (*Aythya fuligula*).

RINGED ABROAD AS YOUNG OR IN THE BREEDING SEASON.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Rk.</i> 4.596	North Iceland	29.6.35	Orkney 17.11.37
<i>Sk.</i> V.9163	Ditto	13.7.36	Aberdeen 4.11.36
<i>Hs.</i> D.4318	Helsingfors, Finland	13.6.33	Yorkshire 25.1.35
<i>Hs.</i> H.3919	West Finland	11.8.35	L. Neagh, Ireland —.11.35
G. 2319E	Gotland, Sweden	29.6.33	Cumberland 8.10.37

RINGED GREAT BRITAIN AS ADULT IN WINTER.

	<i>Ringed.</i>		<i>Recovered.</i>
Pembroke	31.1.38	Pechora River, North Russia	7.6.38

SCAUP-DUCK (*Aythya m. marila*).

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Sk.</i> V.11580	North Iceland	18.8.38	Renfrew 4.12.38
<i>Sk.</i> V.11093	Ditto	27.6.36	Dumfries 5.2.39
<i>Rk.</i> 3.686	Ditto	22.7.35	Galway —.12.38

GOOSANDER (*Mergus m. merganser*).

RINGED GREAT BRITAIN AS WINTER VISITORS.

	<i>Ringed.</i>		<i>Recovered.</i>
Surrey	18.12.37	West Finland	26.9.38
Ditto	28.11.36	Östergötland, Sweden	15.4.37
Ditto	9.2.37	Stockholm	—.4.38
Ditto	19.12.37	Svenska Högar, Baltic	4.4.38

RED-BREASTED MERGANSER (*Mergus serrator*).

RINGED ABROAD AS ADULT.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Sk.</i> VI1004	North Iceland	27.6.36	Ross 27.3.37

SOUTHERN CORMORANT (*Phalacrocorax c. sinensis*).

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>L.</i> 118357	Zuid Holland	4.6.35	Jersey 19.4.36
<i>B.</i> K.3146	West Flanders, Belgium	26.5.37	Kent 25.7.38

OYSTER-CATCHER (*Hæmatopus ostralegus* sub-species?).

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Rk.</i> 4.996	South Iceland	19.6.37	Lancashire —.11.37
<i>Rk.</i> 4.999	Ditto	26.6.37	Ditto 5.10.38

RINGED PLOVER (*Charadrius h. hiaticula*).

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Sk.</i> 55496	Jylland, Denmark	4.6.36	Hampshire 23.9.36

NORTHERN GOLDEN PLOVER (*Charadrius a. altifrons*).

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>		<i>Recovered.</i>
<i>Sk.</i> A.6020	Husavik, Iceland	5.6.33	Dumbarton 4.1.36

LAPWING (*Vanellus vanellus*).

Special attention should be drawn to the case of the bird ringed in Italy and reported here four years later.

RINGED ABROAD AS YOUNG.

		<i>Ringed.</i>		<i>Recovered.</i>	
R.	E98515	Brandenburg, Germany	27.5.34	Hertford	—.4.38
H.	53716	Lübeck, Germany	3.5.25	Dublin	28.1.39
Stav.	6852	Stavanger, Norway	23.5.34	Durham	18.11.37
H.	6075854	Ditto	1.6.37	Yorks	17.11.38
St.	D6425	Östergötland, Sweden	28.5.33	Norfolk	13.10.37
C.	T.2674	Jylland, Denmark	19.5.35	Essex	—.1.36
C.	Z.1574	Moen, Denmark	19.5.33	Nottingham	22.6.38
C.	Z.4632	Sjælland, Denmark	9.5.36	Lincoln	8.12.38
C.	T.4581	Ditto	30.5.36	Norfolk	17.10.38
L.	42950	Friesland, Holland	3.6.32	Lincoln	10.12.35
L.	89862	Noord Holland	28.6.31	Essex	5.2.36
L.	174370	Zuid Holland	20.6.38	Gloucester	10.9.38
L.	134667	Zeeland, Holland	16.6.36	Nottingham	7.11.37
Ba.	A8079	Ancona, Italy	12.3.33	Suffolk	6.1.37

KNOT (*Calidris c. canutus*).

RINGED ABROAD AS MIGRANTS.

		<i>Ringed.</i>		<i>Recovered.</i>	
Stav.	71085	Jæren, Norway	28.9.38	Norfolk	12.12.38
Stav.	71015	Ditto	9.9.38	Wexford	12.1.39

DUNLIN (*Calidris a schinzii*).

RINGED ABROAD AS YOUNG.

		<i>Ringed.</i>		<i>Recovered.</i>	
St.	ZA8942	Öland, Sweden	22.8.37	Suffolk	27.10.37

DUNLIN (*Calidris alpina* sub-species).

RINGED ABROAD AS MIGRANTS.

		<i>Ringed.</i>		<i>Recovered.</i>	
Stav.	82391	Jæren, Norway	29.9.38	Yorkshire	5.11.38
Stav.	82177	Ditto	10.9.38	Lancs	4.2.39
Stav.	82010	Ditto	9.9.38	Antrim	11.11.38

BAR-TAILED GODWIT (*Limosa l. lapponica*).

This is the first ringed Bar-tailed Godwit reported from abroad.

RINGED ABROAD AS MIGRANT.

		<i>Ringed.</i>		<i>Recovered.</i>	
Stav.	60225	Jæren, Norway	4.10.38	Lincs	12.10.38

CURLEW (*Numenius a. arquata*).

RINGED ABROAD AS YOUNG.

		<i>Ringed.</i>		<i>Recovered.</i>	
Hs. C.	22482	South-west Finland	3.6.36	Gloucester	1.11.36
G.	1360D	Öland, Sweden	21.6.25	East Lothian	7.12.36
G.	25779D	Ditto	24.6.36	Essex	1936
G.	5367D	Ditto	26.6.28	Antrim	17.12.37
G.	20176D	Scania, Sweden	26.5.35	Hampshire	6.8.37
L.	154356	Gelderland, Holland	24.6.36	Cornwall	11.9.36
L.	87484	Zuid Holland	16.5.35	Devon	—.8.36

COMMON SNIPE (*Capella g. gallinago*).

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>	<i>Recovered.</i>
St. Y.5404	Skaraborg, Sweden 20.6.37	Ross 6.11.37

FÆROE SNIPE (*Capella g. færoensis*).

RINGED ABROAD IN BREEDING SEASON.

	<i>Ringed.</i>	<i>Recovered.</i>
Rk. 6.2175	South Iceland 16.7.38	Tiree, Scotland 11.11.38
Rk. 5.1020	Ditto, adult 7.7.37	Cork 12.2.39
Rk. 7.875	Myvatn, Iceland 19.6.36	Tyrone 22.12.38

WOODCOCK (*Scolopax r. rusticola*).

RINGED ABROAD AS MIGRANT.

	<i>Ringed.</i>	<i>Recovered.</i>
B. CC.7334	Brabant, Belgium 21.3.36	Waterford 2.12.36

COMMON TERN (*Sterna h. hirundo*).

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>	<i>Recovered.</i>
Hs. A11494	South Finland 9.7.34	Norfolk 2.9.34

LITTLE GULL (*Larus minutus*).

This is the second ringed Little Gull reported.

RINGED ABROAD AS YOUNG.

	<i>Ringed.</i>	<i>Recovered.</i>
St. Y6522	Gotland, Sweden 1.7.37	Lincoln 20.11.37

BLACK-HEADED GULL (*Larus r. ridibundus*).

Since publication of our last instalment of these articles 105 records of Black-headed Gulls have been added to the previous total of 320 and as they do not materially alter the accounts already given it seems unnecessary to give the records in detail.

Ninety-seven of these birds were ringed abroad as young and four as adult, while four were ringed in England in winter and were subsequently recovered in Denmark. The areas of ringing abroad do not differ appreciably from previous records. It may be mentioned that a second bird from Iceland was reported, this being from Antrim.

The dispersal over the British Islands was very much as before: 70 out of 101 being reported from the eastern half of England and 27 from the western half, while only two were reported from Wales (Flint, Pembroke), one from Scotland (Wigtown) and one from Ireland (Antrim). Of the eastern birds 77 per cent. were reported from Norfolk southwards.

The months in which the birds were reported ranged from August to April with the exception of the following all of which were ringed as nestlings.

RINGED ABROAD AS NESTLINGS.

<i>Ringed.</i>		<i>Recovered.</i>	
Finland	27.5.37	Kent	1.5.38
Öland, Sweden	22.6.36	Cambridge	9.5.37
Denmark	12.6.33	Gloucester	18.5.36
Ditto	12.6.33	Cheshire	26.5.35
Öland, Sweden	16.6.35	Middlesex	26.5.38
Sweden	27.6.29	Essex	6.6.37
Denmark	20.7.35	Hampshire	9.7.36
Öland, Sweden	19.6.36	Lancashire	11.7.37
Finland	27.5.37	Essex	—.7.38
Sweden	20.6.35	Kent	—.7.38

COMMON GULL (*Larus c. canus*).

Since our last report 62 records of Common Gulls have come to hand making with previous lists over 260 cases of these birds ringed abroad and recorded as recovered here. As in the case of the Black-headed Gull the new records do not materially affect the summaries previously given and we therefore do not give a detailed list. All the new records are of birds ringed as nestlings. The countries of origin are Germany, Denmark, Norway, Sweden and Finland.

So far as their distribution in this country is concerned about 76 per cent. were reported from the eastern half of England and 24 per cent. from the western half, this being a slightly greater proportion in the west than the previous average (20 per cent.). So far only four recoveries of Common Gulls have been reported from Wales and there is no addition in the present list. A new Irish record is from Galway far to the west, which is remarkable as the only previous record is one from Wexford. There are also two new records from Scotland (E. Lothian and Caithness) making only three in all. Of those reported on the eastern side of England over 30 per cent. were from north of Norfolk against rather over 20 per cent. in the Black-headed Gull; this difference in range pointed out in previous reports being sustained.

The dates on which the birds were recovered were mostly from September to March. Details of those in other months are given below as they have some interest.

RINGED ABROAD AS NESTLINGS.

<i>Ringed.</i>		<i>Recovered.</i>	
Sweden	27.6.33	Kent	15.4.36
Bornholm, Denmark	28.6.36	Norfolk	27.4.37
Sweden	17.6.36	Lincs	18.5.38
Bornholm, Denmark	28.6.36	Gloucester	14.6.37
Öland, Sweden	22.6.34	Lincs	1.7.36
Ditto	25.6.35	Kent	17.7.36
Denmark	23.6.37	Sussex	1.8.38

<i>Ringed.</i>			<i>Recovered.</i>	
Sweden	23.6.35	Lancashire		1.8.37
Denmark	19.6.37	Kent		2.8.37
Ditto	17.6.38	Hants		4.8.38
Ditto	16.6.38	Norfolk		8.8.38
Bornholm, Denmark	28.6.37	Kent		29.8.37

HERRING-GULL (*Larus a. argentatus*).

RINGED ABROAD AS YOUNG.

<i>Ringed.</i>			<i>Recovered.</i>	
L. 138103	West Frisian Is.	5.8.36	Lincoln	6.9.37
L. 138557	Texel, Holland	8.7.34	Essex	10.5.36

GREAT BLACK-BACKED GULL (*Larus marinus*).

RINGED ABROAD AS YOUNG.

<i>Ringed.</i>			<i>Recovered.</i>	
Sk. E9961	Iceland	7.7.36	Outer Hebrides	22.2.37
Stav. 13	West Norway	7.6.36	Durham	4.2.37

SOUTHERN GUILLEMOT (*Uria a. albionis*).

RINGED ABROAD AS YOUNG.

<i>Ringed.</i>			<i>Recovered.</i>	
H.	Heligoland	1935	Durham	28.1.36
H.	Ditto	1928	Kent	—.4.30
H.	Ditto	1930	Ditto	3.3.31
H.	Ditto	1936	Ditto	8.1.37

WATER-RAIL (*Rallus a. aquaticus*).

This is the second ringed Water-Rail reported; both from Heligoland.

RINGED ABROAD AS MIGRANT.

<i>Ringed.</i>			<i>Recovered.</i>	
H. 7004589	Heligoland	22.9.36	Carmarthen	26.11.37

OBITUARY.

ERNEST URMSTON SAVAGE.

(1879-1939.)

LAKELAND ornithology has suffered a severe loss in the death of the Rev. E. U. Savage on June 23rd, 1939, at the age of sixty. Since ill health forced him to retire two years ago, he had lived at Staveley, Westmorland, and before that he held livings at Levens, Barbon and Ings in Westmorland, and Raughton Head in Cumberland, and was domestic chaplain and secretary to the Bishop of Carlisle from 1921 to 1924.

The son of Canon E. B. Savage, his early years on the Isle of Man gave him a love for ships and seafaring folk as well as an interest in birds, and after he was ordained he served as assistant chaplain to the Mersey Mission to Seamen from 1901 to 1914. He married in 1904 Mabel Bertha, daughter of John Edward Cussans, who survives him with one daughter and one son. His holidays were often spent in the Lake District and he came to live there as vicar of Levens in 1914.

In spite of his parochial duties and varied interests—he was an authority on Manx Gaelic which he had spoken from childhood, and in earlier years a keen fisherman—Mr. Savage found time to make a thorough study of ornithology and did much useful work. He was elected a member of the British Ornithologist's Union in 1909. He was a delightful and stimulating companion, loved and respected by people in all walks of life, and, himself an excellent and careful observer, he was always keen to exchange views with other bird students. His lectures on birds and the "Nature Notes" he wrote at one time for a local paper brought him many friends, and like his friend Arthur Astley, he acted as a clearing house for local bird news and was able to save some valuable records from oblivion. He contributed some very interesting notes, chiefly to *British Birds* and the *Field*. In 1936 he edited *The Watcher by the Bridge*, letters on natural history by the late T. B. Wright of Gaisgill, Westmorland.

Latterly, though failing health prevented him from doing active field work he was as ready as ever with help and encouragement for others, and his cheery counsel will be greatly missed. The Carlisle Natural History Society, in the preparation of their forthcoming book on Lakeland birds, has had the benefit not only of his local notes but of his fine scholarship and help on the literary side. The writer of these notes had the happy task of going over the MS. of the book with him, and will not soon forget his unfailing patience in tracking down obscure records or his sense of humour which lightened the most scientific discussions.

M.G.

NOTES

THE RETURN OF THE RAVEN AS A NESTER TO SUSSEX.

EASILY the outstanding ornithological event in Sussex for the year 1939 was the accomplished breeding, for the first time since about 1895, of a pair of Ravens (*Corvus c. corax*) in a sea-cliff some miles removed from the one in which, in 1938, (?) another couple built what was, in my opinion, merely a play-nest. Regarding the expression "(?) another," I now begin to believe that in 1938 there were two pairs of this species in Sussex—that an unattached bird was about, I well knew. My reasons for the above idea are twofold. The first is that in the 1939 nest-cliff (which, not anticipating the possible presence of a second pair, I foolishly omitted to explore in 1938) are two Raven's citadels, neither in my estimation (for very weighty reasons) being a "repeat"; the second, that in July, 1938, Mr. C. E. Palmar and Captain C. Bradley and his son at a certain point of our sea-bastions saw five Ravens together—almost assuredly a brood with their parents. As against the above being a correct view, however, one must never lose sight of the fact that in 1939 the headland occupied in 1938 was deserted, though here, of course, the chances of "accidents" to the once-tenants will have to be considered.

To return to the successful hatch of 1939, on May 15th I fell in with two young Ravens on "falls" beneath the home-cliff, actually, indeed, all but catching one (a Peregrine nearly got it, too), such feeble fliers and, on the whole, so stupid are the young of this species for a while after leaving their birth-place; and I understand that two days earlier three had there been seen by Mr. D. M. Turner-Etlinger. In all likelihood there was an addled egg or so, since a trio constitutes a very poor brood for the Raven.

It gives me pleasure to add that, for the locating of this nest, all credit must go, firstly to Messrs. N. Orr and F. Leng, and then to Mr. J. T. Mayo. They forestalled me.

To the above must be added that in 1939 I met with another pair of Ravens on Sussex cliffs (though these, quite obviously, were non-nesters) and at another place (behind the bastions) a "singleton," so that, altogether, hopes of two nests in 1940 are highly promising.

JOHN WALPOLE-BOND.

DOWN-PLUMAGE OF NESTLING AND SOFT PARTS OF
JUVENILE CHOUGH.

THE following notes on the down-plumage of the nestling Chough (*Pyrrhocorax p. pyrrhocorax*) and the colours of the soft parts of the juvenile bird may be of interest, as the former has not been described and the latter differ somewhat from those given in the *Handbook*.

Three nestlings were examined, one of which was seven days old, the others rather less. The skin was bright pinkish-flesh, but blackish in the region of the down-tracts. The down was greyish-brown and less than an inch in length, covering the inner and outer supraorbital, occipital, spinal, humeral, ulnar and femoral tracts. The skin of the under-side was a deep pinkish. The bill was mauve, but whitish towards the tip and along the cutting edges, with pale yellow flanges. The inside of the mouth was salmon-pink, with small white spurs on the palate, and the tongue-bases yellowish. The legs, toes and claws were flesh-pink, but after death the tarsi become yellow and the claws white.

A fairly well-fledged youngster examined on June 2nd had the bill dark purplish-brown, flesh-colour at the tip and along the cutting-edges, with the gape-flanges yellowish-white. The tarsi were markedly scutellate, and dark purplish-brown relieved by orange-pink rings in the interstices between the scutes. The orange-pink was most noticeable on the toes. The claws were blackish-brown and the mouth as in the nestling.

Subsequently I examined three almost fully-fledged birds, which agreed in description with the last, except in the tarsus. In these more advanced youngsters the frontal-plate was well developed, and the orange-pink rings were only faintly indicated where fusion of the scutes was not quite complete. The rings were still pronounced, however, on the lower tarsus and toes. In all these birds the plumage was suffused with a dull greenish gloss, and the irides were brown.

KENNETH WILLIAMSON.

GREENFINCH SINGING AT NIGHT.

It may be of interest to record that at Roborough, South Devon, I heard a Greenfinch (*Chloris ch. chloris*) in full song between 2 and 2.30 a.m. on June 7th, 1939. During the period stated the bird was singing almost continuously. The night was a fine, warm one, and brilliantly moonlit.

F. HOWARD LANCOM.

CROSSBILLS BREEDING IN SUSSEX IN 1939.

ABOUT midday on January 18th, three Crossbills (*Loxia c. curvirostra*) flew into an apple tree in the very small garden next to mine at Hove—a curious spot wherein to find them. They called, and, making but a short stay, proceeded eastwards, still calling. The nearly regular breeding haunt—unoccupied in 1938—was, this year, tenanted by at least two pairs. Mrs. E. Wolley-Dod, General G. V. Clarke, Mr. P. Boughton-Leigh and I saw the nest of one of these, and to the best of my belief a brood was reared in safety. In addition, General Clarke heard, on good authority, of a nest in Ashdown, where on May 21st Mr. Boughton-Leigh and I met with a pair quite evidently feeding young out of the nest, whilst in a spot not far removed thence two pairs were suspected of breeding (A. G. Kerwin). Moreover, in May there was ample evidence in the garnered cones present of Crossbills being about in Broadwater Forest. Incidentally, the old male has a hoarse, almost menacing “sgr-r-r-r” (the “r’s” being a bit rolled), followed on the instant by several rapid “chicks.” The “sgr-r-r-r” part of this cry (which I cannot recollect ever having seen previously recorded) is rather reminiscent of one cry of the old female Red-backed Shrike.

JOHN WALPOLE-BOND.

SKYLARK CARRYING YOUNG BIRD.

RECENTLY, while photographing a Skylark feeding its almost fledged family, I was astonished to see the hen rise from the nest carrying a young one. After flying a distance of fifteen feet at a height of about eight feet the young bird fell, or was dropped, into the long grass, where, after some searching, I found it quite uninjured and replaced it in the nest. The manœuvre was not repeated and all four young were still in the nest next day. Whether the action was accidental, or a deliberate effort to move the young away from the frightening camera, I can only guess. I was watching from a hut only twenty feet from the nest, and had an uninterrupted view of the incident, and it appeared that the young one was carried, dangling by the neck or a wing, in the parent’s claws.

G. R. MOUNTFORT.

WATER-PIPIT IN CHESHIRE.

ON April 3rd, 1939, several pipits flew up from the margin of Barmere, in south Cheshire, and disappeared across a meadow. One of them turned back and flitted up and down for a time, finally coming to rest near the mere on a wooden fence close to me. It proved to be a Water-Pipit (*Anthus s. spinoletta*)

in full plumage, with grey head, white eye-stripe and a beautiful clear pink breast. When it flew I saw that its outer tail-feathers were white and that its general colour was far greyer than that of a Meadow Pipit. The other pipits also appeared to be of good size and of grey colour and I think that they too were probably of the same species, though I was unable to get more than a passing view of them.

The Water-Pipit has been recognized in Cheshire on only one other occasion (H. G. Alexander, *B.B.*, Vol. XXXI, p. 26).
A. W. BOYD.

RED-BACKED SHRIKE AS FOSTERER OF CUCKOO.

ALTHOUGH I understand that in certain parts of the Continent the Red-backed Shrike (*Lanius c. collurio*) is a fairly common fosterer, it may be sufficient of a rarity in this country to be worth recording. On June 7th, 1939, near Brandon, Suffolk, I found a nest of Red-backed Shrike containing a young Cuckoo which I estimated to be about three days old. The newly hatched Shrikes had been ejected in the usual manner, and one young bird, together with an egg, was lying on some twigs a few inches below the edge of the nest. Mr. Arthur Whitaker of Sheffield visited the spot on June 25th, and informs me that the young Cuckoo was still in the nest, though it was able to fly quite strongly. W. H. BRAMWELL.

STATUS OF NUTHATCH IN W. MERIONETHSHIRE.

IN Vol. I (page 243) of the *Handbook* it is stated that the Nuthatch (*Sitta e. affinis*) is unknown in W. Merioneth!

In the Pennal district (S.W. Merioneth.) I have myself seen birds for some years past, and after making careful inquiries I find that it has been known as a resident for about fifteen years over an area of several miles. Usually six or more nests are found but this year I can only trace four. I have no doubt that the Nuthatch also nests in the Cerris Valley but I cannot say that it is a resident there.

Near Dolgelley it has been a resident at Caerynwch for at least four years, and Mrs. Richards has also known it at Bala for a number of years though she is unable to give me any idea of its numbers.

So far as I know it does not nest in the Aberdovey district and is only a very rare visitor there. E. H. T. BIBLE.

[It is interesting to know that the Nuthatch extends to Pennal and Dolgelley farther west in the county than I was able to discover from published or private sources. Bala is, of course, not in the west.—H.F.W.]

BLACK REDSTART IN LONDON IN MAY AND JUNE. ON May 20th, 1939, I heard a Black Redstart (*Phœnicurus o. gibraltariensis*) singing on the tower of the University of London building in Bloomsbury. The porter told me that the bird had begun singing about a week before. It continued to sing irregularly till June 22nd, being silent for periods up to a week in length; I heard it at most times of the day on different occasions. It would perch on some corner of the tower, sometimes even on the flagpole (270 ft.), or on the King Edward VII wing of the British Museum. On June 17th I saw it fly down from the north-east corner of the British Museum wing, where it had been singing, to the waste excavated area east of the University building, adjoining Montague Place. After a few minutes' activity, apparently in searching for food, it flew back and sang again for about half an hour. It repeated this performance several times, and with Mr. A. Holte Macpherson and others I was able to observe it closely on the ground. It was a one-year-old male, having no white on its wing. Neither then nor at any other time was a female seen, and it was clear then from its behaviour that it was alone. It was not heard or seen after June 22nd.

J. LE C. SUMNER.

STONES IN GIZZARD OF NIGHTJAR.

THE gizzard of the Nightjar (*Caprimulgus e. europæus*) is pear-shaped and 25 mm. in diameter in its widest part; the whole digestive organ, including the pro-ventriculus, is approximately 55 mm. in length. The walls are leathery and thin, quite different from the thick muscular walls of the gizzard of grain-eating birds with which one usually associates swallowed gravel.

In the gizzard of a Nightjar I picked up on the road were two stones, one of them small—5 mm. by 3 mm. by 2 mm. and the other 5 mm. by 4 mm. by 3 mm., weighing together 70 mg. But in the pro-ventriculus, which showed as a swelling of the œsophagus, were fourteen stones, small flints, probably picked up on the gravelled roads of south Hampshire. These stones ranged from the largest which measured 10 mm. by 8 mm. by 4 mm. and weighed 300 mg. to a small one of 4 mm. by 3 mm. by 2 mm. weighing only 5 mg. Seven of the stones were little less than the biggest. The whole sixteen weighed 1 g. 750 mg. which, one would think, must have been a handicap to a small bird relying on swift flight and quick turns to obtain its food. Possibly the weight of the stones may account for the bird being killed as it had been by a motor car.

In addition to the stones in the gizzard were the wing-cases of several beetles, the integuments of three spiders, some wings of the crane fly and much matter which, on microscopical examination, appeared to be entirely vegetable in origin.

GEO. MARPLES.

SHORT-EARED OWLS IN SURREY.

ON February 12th, 1939, I flushed three Short-eared Owls (*Asio f. flammeus*) on Walton Heath, and on the following day when in company with Mr. L. Parmenter and Mr. L. I. Carrington we put up five from beneath a small group of tall gorse bushes. The birds were closely bunched when rising but quickly scattered widely as they gained height, and one soared to an altitude of about 2,000 feet when a mixed flock of Rooks and Gulls made a great commotion as the Owl approached them.

The Owls were seen on various occasions by several observers during February and March, and were always on the same part of the heath, and usually in the immediate vicinity of a small rush-grown pool. Three birds were noticed by Mr. W. D. Park on March 25th, and on the same day Mr. Carrington reported one passing over Chipstead about three miles away. The Owls apparently departed during the closing days of March, when I failed to find any.

I found a few single pellets scattered over the ground near the small pool, but Mr. Park informs me that in this area he found on one occasion eighteen castings and on another ten, beneath one of the lower branches of a gorse bush on which an Owl had been perching. He submitted eighteen pellets to Dr. C. B. Ticehurst, who very kindly undertook to analyze them, and he reports that they did not contain any remains of mammals, but only those of small birds. Mr. Park examined nine other pellets with the same result, except that a few of these contained the jaws of small rodents, and in one case a complete skull.

I may mention that the remains of several Starlings and Blackbirds, and those of a Song-Thrush and Skylark were found on the ground frequented by the Owls, and in view of the composition of the 27 pellets which were analyzed it seems probable that these birds had been killed by the Owls.

The presence of the Short-eared Owls does not appear to have been due to an unusual abundance of small rodents, but may have resulted from the very severe weather towards the end of December.

This species is a rare and very irregular winter visitor to

Surrey, and although some of the earlier records are lacking in precise details, they all appear to relate to the occurrence of solitary birds.

HOWARD BENTHAM.

STORKS IN SUSSEX.

ON April 28th, 1933, from a train between Tangmere and Chichester, I saw two White Storks (*Ciconia ciconia*) in a field beside the line. I had a good view of them. The train clearly scared the birds and they were preparing to leave when they were suddenly blotted from my view. I had omitted to publish this observation and in consequence it does not appear in Mr. Walpole-Bond's *A History of Sussex Birds*. The birds may have been "escapes." E. M. CAWKELL.

UNUSUAL BEHAVIOUR OF DUCK MALLARD AND BROOD.

THE characteristic behaviour of the duck Mallard (*Anas p. platyrhyncha*) in charge of her brood when faced with sudden danger is well known, and it may be of interest to record a modification of this apparently instinctive action in particular circumstances.

On May 13th, 1939, I mounted the bank of a small fen dyke in Bluntisham Fen, Hunts, at exactly the spot where, on the opposite side, a small pool or pond for cattle to drink had been made by digging away the bank of the dyke. This pool was quite bare of vegetation or cover and in it was a duck Mallard and brood of eleven ducklings several weeks old.

Instead of the duck flying and "squatting," and the brood scattering and diving as I had expected, all instantly froze, the duck near the edge of the pool and the ducklings extending in a line out into the middle. The ducklings all had their heads up and turned towards their parent while the duck held hers rather low against the bank.

I stood for some moments watching at 6 to 7 yards range and then threw some crumbs of earth at the ducklings. As these fell beside them several lost station and moved nearer to me and soon all were moving hesitatingly towards me and into the main stream of the dyke. As soon as the brood had all successfully gained the actual dyke the duck at once rose, flew over the intervening neck of land down into the dyke and squatted down in the normal way, followed by the ducklings which at once dived and disappeared.

This incident would seem to me remarkable as showing that in what must be the unusual circumstances of being suddenly surprised and cut off from a line of retreat, immediately an unusual instinctive behaviour was adopted by both duck and

brood. Even after the ducklings had moved and had been obviously discovered the duck remained "frozen" until they, instinctively swimming towards their line of retreat (in spite of having thereby to approach the intruder), were in a position to employ with her help their usual strategy. C. F. TEBBUTT.

GREEN-WINGED TEAL IN OUTER HEBRIDES.

As the American Green-winged Teal (*Anas c. carolinensis*) has been satisfactorily identified only on three or four occasions in England and never previously in Scotland, it will be of interest to give details of an adult male, which, as already noted in *The Handbook of British Birds*, Vol. 3, was shot at Newton, North Uist, on October 24th, 1938. The bird was obtained in a muddy creek near Ard Teilem, to the east of Beinn Mhor (Newton), an area of tortuous channels and sea bays, with banks of soft ooze and tangle-covered skerries exposed at low water, which is a favourite haunt of Teal during the autumn and winter months. This bird which was alone when killed, flew up the creek from seaward whilst my spaniel was retrieving a female Teal which had been shot from a bunch of 30 to 40 Teal. The Green-winged Teal fell in soft ooze and was completely obscured by it when brought to hand, but while carrying the bird to a nearby burn to wash off this ooze, I noticed that the tarsus was a light chocolate-brown, quite unlike the colouring of any Teal I had ever handled. With the removal of the mud, the characteristic features in the plumage of the adult male *Anas c. carolinensis* were disclosed. The web was more dusky than the tarsus; the bill was black and the weight of the bird when the plumage had dried was $13\frac{3}{4}$ ounces. The gullet, œsophagus and proventriculus were empty, but the gizzard contained fine "sandy grit" of the type usually found in Teal from this area, and three small flat seeds which have not yet been satisfactorily identified. However it is hoped by growing them to settle the identification of these seeds which are of a species occurring fairly frequently in "stomachs" of wildfowl killed in Great Britain.

JAMES W. CAMPBELL.

GREAT CRESTED GREBES' UNUSUAL NEST-SITE.

FOR years a pair of Great Crested Grebes (*Podiceps c. cristatus*) has nested at the edge of an island in Witton Flashes, Northwich, Cheshire, attaching their nest to rushes or boughs of an old thorn, which had been submerged by subsidence. Subsidence has continued, and this year, though only a small bare islet remained, the birds still nested there. The nest was built on the solid bare earth, and while one bird was sitting

the other used to waddle across a few feet of the island to add fresh weed to the nest. There were four eggs on April 21st, and one young was hatched on May 18th. A. W. BOYD.

EARLY NESTING OF GREAT CRESTED GREBES IN CHESHIRE.

GREAT CRESTED GREBES (*Podiceps c. cristatus*) in Cheshire usually wait for new growth to begin in the reed-beds before building their nests by the meres. An early nest was recorded last year (Vol. XXXII, p. 85), when young were seen at Cotebrook on April 23rd. This year they were seen even earlier on the same pool. On April 20th I watched two young sitting on one parent's back, and swimming strongly after the other when it brought food. They were obviously a number of days old, so that the eggs must have been laid not later than March 15th.

Another early brood was reared on Tabley Mere. Mr. D. J. Hemming saw two young there, already half-grown, on May 4th. A. W. BOYD.

INCUBATION PERIODS OF SOME WADERS AND FLEDGING PERIOD OF LAPWING.

RINGED PLOVER (*Charadrius hiaticula*), 1939: April 22nd (11 a.m.), 3 eggs; April 23rd (3 p.m.), 4 eggs; May 18th (11 a.m.), 4 eggs; May 19th (11 a.m.), 4 young in nest. Incubation Period, 26 days.

Curlew (*Numenius a. arquata*), 1939: April 26th (noon), 1 egg; April 27th (1 p.m.), 2 eggs; April 28th (noon) and 29th (4 p.m.), 3 eggs; April 30th (3 p.m.), 4 eggs; May 26th (3 p.m.), 4 eggs chipping; May 27th (2 p.m.), 4 young in nest, two with pieces of shell attached to down. Incubation Period, 27-28 days.

In the following nine cases the Lapwing (*Vanellus vanellus*) showed results which differ but little from those published in Vol. XXXII, p. 48. The dates given are those of hatching. April 11th, 27½ days; April 11th, 27; April 12th, 28¼; April 13th, 28¼; May 3rd, 27; May 4th, 27½; May 4th, 27½; May 6th, 26½; June 1st, 26¼.

In the first nest the young were ringed on April 11th; 32 days later (May 13th) one of these ringed birds was picked up within 50 yards of the nest, but it made no attempt to fly when tossed a short distance into the air. On May 14th another of the same brood was seen running, and on being chased it rose about 3 feet in the air and flew a distance of 10 yards; it was then caught and identified. The fledging period in this case seems to be just over 33 days. J. F. THOMAS.

LAPWING'S NEST WITH SIX EGGS.

ON May 14th, 1939, I found a nest of a Lapwing (*Vanellus vanellus*) with 6 eggs. On May 17th 3 were hatched; on the 18th two more and on the 20th I found the shell of the remaining egg. I cannot vouch for all six eggs having been hatched successfully, as I was only able to find four of the young birds. There is a possibility of two females having laid in the same nest. The nest was on low moorland in Lancashire and there were always three old birds circling over me when I went near it. Even so I thought the fact of there being six eggs in a nest is uncommon and is worth noting.

E. E. PAGET-TOMLINSON.

WADERS IN SOMERSET.

THE following occurrences of waders in Somerset at the end of May or beginning of June 1939, are those of species which are either very scarce in this county on spring migration (Ruff, Sanderling, Greenshank) or have not been recorded at any season for many years (Temminck's Stint, Wood-Sandpiper):—

TURNSTONE (*Arenaria i. interpres*). Two, including one adult male, were seen at Barrow Gurney reservoirs on June 4th by Messrs. B. King and H. H. Davis. This is only the second record for these reservoirs.

RUFF (*Philomachus pugnax*). A Ruff and a Reeve were seen at Cheddar reservoir on June 2nd by Messrs. B. King and H. W. Neal.

SANDERLING (*Crocethia alba*). A party of five were seen at Cheddar reservoir on June 7th by Mr. B. King and the writer. Two were adults in full summer plumage and the other three were immature.

TEMMINCK'S STINT (*Calidris temminckii*). Three were seen at Cheddar reservoir on June 4th by Messrs. B. King and H. H. Davis. The last Somerset record is of one on November 14th, 1874. The birds, watched at very close range, strongly resembled miniature Common Sandpipers several of which were also present. The upper parts, however, were less uniformly marked, some feathers having black centre spots. Other details noted were: absence of eye-stripe, greyish-white chin, buffish foreneck and upper-breast with brown streaking forming a well-defined bib over the pure white underparts. Bill blackish and slightly decurved. Legs drab colour. Flight much as Common Sandpiper, and as the birds took wing or alighted the white outer tail-feathers were very noticeable. The *tirr-ick* alarm note was well heard. One bird repeatedly uttered the trilling courtship call. This it did from the ground.

WOOD-SANDPIPER (*Tringa glareola*). One was seen in a marshy pool below Cheddar reservoir on May 31st by Messrs. B. King, and H. H. Davis and the writer. The last record of one in Somerset was at Badgworth on September 7th, 1903. Among other points noted, the wings beneath were light and not dark but were not raised high above the head when in flight as in the Green-Sandpiper. The call was a whistle, usually triple, but sometimes longer, something like a subdued call of a Redshank. When the bird was being watched at close quarters and with the observer in full view, it jerked its body up and down like a Redshank.

GREENSHANK (*Tringa nebularia*). One was seen at Barrow Gurney reservoirs on May 30th by Mr. B. King, and one at Cheddar reservoir on May 31st by Mr. King and the writer.

H. TETLEY.

WHITE-WINGED BLACK TERN IN SUSSEX.

ON May 18th, 1939, I had the extreme good fortune to meet with a White-winged Black Tern (*Chlidonias leucopterus*) on Pevensy Level. It was an adult in full summer plumage, and, of course, quite unmistakable, the white of carpal joint, tail, rump and under tail-covert showing up magnificently against the black of head, neck and body and grey part of the wings. The tail was not much forked. I had excellent views of it at different angles.

JOHN WALPOLE-BOND.

SPOTTED CRAKE IN SUSSEX IN JUNE.

ON June 14th, 1939, near Newhaven, on the fringe of a most unpleasant, quaking morass, I almost trod on a Spotted Crake (*Porzana porzana*). As it rose, and before it plunged into the dense cover near by, it uttered a single, rather loud, shrill and very human-like whistle. Without much doubt it was breeding or had bred there. The spot would be extremely difficult to work, not to say dangerous, unless ropes were used; even on its edge, just after flushing the bird, I speedily found myself embedded up to the hips and only able to get out with difficulty.

JOHN WALPOLE-BOND.

GREAT SPOTTED WOODPECKER NESTING IN BUTE AND SUTHERLAND.—Mr. D. Stuart states (*Scot. Nat.*, 1939, p. 100) that the Great Spotted Woodpecker (*Dryobates m. anglicus*) is now resident in Bute and that he has both seen and heard it frequently this spring (1939). Although fairly common on the neighbouring mainland the bird had not previously been found in Bute. Mr. D. Macdonald (*Field*, I, VII, 39) records that a pair nested in a wood near Dornoch in 1938 and 1939. The bird had been previously recorded as breeding in this neighbourhood in 1930 (*antea*, Vol. XXIV, p. 161).

BARNACLE-GEESE IN NORTHUMBERLAND IN JUNE.—Mr. I. R. English reports a pair of *Branta leucopsis* seen by him and Mr. Russell Goddard off the Farne Islands on June 10th, 1939.

SOOTY SHEARWATER IN IRISH SEA.—Mr. J. A. Gibb informs us that he and Mr. C. A. Norris identified a Sooty Shearwater (*Puffinus griseus*) about eight miles due east of Kingstown, Dublin, in the evening of July 5th, 1939. The bird was flying SSE. and small numbers of Manx Shearwaters were proceeding in the same direction.

LAPWINGS NESTING AT HIGH ALTITUDE.—In connection with Mr. Seton Gordon's note (*antea*, p. 54) on Lapwings (*Vanellus vanellus*) nesting at high altitude in the Highlands,

Mr. R. H. Brown writes that on the fells of the Lake District he has found Lapwings' nests with eggs at an altitude of 2,100 ft., whilst on the Pennine fells nests with eggs have been found at 2,400 ft., and young birds at 2,700 ft.

NESTLING LAPWING "FREEZING" UPSIDE DOWN.—Mr. R. J. Foster describes how on June 16th, 1939, he found a nestling Lapwing (*Vanellus vanellus*) "freezing" on its back in a field near Winchester. The field was strewn with white stones and so the bird's white underparts rendered it very difficult to see. The incident is curious, but it seems more likely that the attitude, in which the young bird was found, was due to accident rather than to design.

BREEDING-SEASON OF THE DUNLIN.—Mr. R. H. Brown points out that in his paper on the "Breeding-Habits of the Dunlin" (*antea*, Vol. XXXI, pp. 362-66) he stated that day-old nestlings of the Dunlin (*Calidris a. schinzii*) had not been found earlier than May 27th. But he now notes that on one of the Solway salt-marshes on May 22nd, 1938, he flushed a Dunlin from a brood of four newly hatched nestlings still in the nest-hollow.

MOORHEN'S NEST BUILT OF GRASS.—Mr. R. O. B. Garnett informs us that a Moorhen (*Gallinula ch. chloropus*) has twice built a nest (the first one having been washed away) in a dyke near Weston-super-Mare of long strands of meadow grass. The second nest was built on a pile of dead sticks in the water and had a number of thin twigs woven into its foundations.

REVIEW.

Skokholm Bird Observatory. Report for 1938.

As this interesting report shows, Mr. R. M. Lockley is gradually building up at Skokholm a bird observatory which is doing valuable work. A large number of people visited the island during the year and helped in the observing and ringing. The latter has reached large proportions and a ringing office has now been built, which has caused a deficit in the funds and it is hoped that those interested in the work being done will remove this. A great attempt has been made to exterminate the rabbits and if this has been accomplished, the ecological results should be very interesting. It has been found by ringing that both Guillemots and Razorbills appear to breed when a year old, whereas Manx Shearwaters apparently do not, but they have been proved to visit the island during late summer a year after hatching. The Skokholm Shearwater homing experiments are now well known, and it is interesting to learn from this Report that the second ringed Shearwater released in Venice in 1937, which did not return that year, was found at its old burrow on March 30th, 1938. Fulmar Petrels haunted the coast as they did in 1937, but were not seen to alight. An Ortolan Bunting is recorded on May 19th and a number of other interesting items are included in the Report.

4 AUG 1939

PURCHASED

THE POPULAR SERIES OF
BIRD-LOVERS' MANUALS

MORE SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

BIRD MIGRATION

A. Landsborough Thomson. Illus. Sm.Cr.8vo. 5s. net.

HOW TO KNOW BRITISH BIRDS

Norman H. Joy. Illus. Sm.Cr.8vo. 5s. net.

BIRDS OF THE GREEN BELT

R. M. Lockley. Illus. Sm.Cr.8vo. 5s. net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner. Illus. Sm.Cr.8vo. 5s. net.

H. F. & G. WITHERBY LTD., LONDON

FOR SALE

Complete set of DRESSER'S "BIRDS OF EUROPE"
Original edition, red half calf, in perfect condition

Write to:

A. J. Pearson, Merevale, Lowdham, Nottingham

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement
des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique)

Volume Four
**THE BIRDS OF THE
MALAY PENINSULA**

Birds of the Low Country
Jungle and Scrub

Vols. I and II by the late HERBERT C.
ROBINSON, F.Z.S., M.B.O.U.

Vols. III, IV and V by F. N. CHASEN

*Each volume will contain
about 25 coloured plates from drawings
by H. GRONVOLD*

Imperial 8vo. 35s. net or the set of 5 volumes £7 7s. net

- Vol. I : The Commoner Birds
- Vol. II : The Birds of the Hill Stations
- Vol. III : Sporting Birds
- Vol. IV : Birds of the Low Country,
Jungle and Scrub
- Vol. V : Open Country and Ricefield
Birds

H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1

S.24.

BRITISH BIRDS

1939
PURCHASE

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

SEPT. 1,
1939.

Vol. XXXIII.
No. 4.



MONTHLY 1s 9d. YEARLY 20s.
326 HIGH HOLBORN LONDON.
H. F. & G. WITHERBY LTD.

Volume Three of
**THE HANDBOOK
OF BRITISH BIRDS**

◊

The third volume of this recognized standard work on British birds deals with the swans, geese and ducks, diurnal birds of prey, storks and herons. As in previous volumes, there are a great number of coloured plates. The geese have been specially drawn for the work by PETER SCOTT.

◊

IN FIVE VOLUMES—

21/- NET PER VOLUME

*H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1*

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND
NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

SEP 1939

PURCHASED

CONTENTS OF NUMBER 4, VOL. XXXIII., SEPTEMBER 1, 1939.

	PAGE
The Destruction of Buds of Trees and Shrubs by Birds. By J. C. F. Fryer	90
Observations on Sand-Martins at the Nest. By R. E. Moreau and W. M. Moreau	95
The Black-tailed Godwit in the British Isles, 1890-1937. By Averil Morley	98
Breeding of the Gannet on the Scar Rocks, Wigtownshire. By Rev. J. M. McWilliam	105
Notes :—	
Evidence for male House-Sparrow selecting Nesting-Site (Rev. C. E. Martin)	108
Two Black Redstarts in London in June (S. P. W. Chave) ...	108
Nesting Association of Swallow and House-Martin (L. C. Lloyd)	109
Mistle-Thrush, Kittiwake and Quail breeding in Scilly Islands (Major A. A. Dorrien-Smith)	110
Food and method of feeding fledged young of Great Spotted Woodpecker (Rev. C. E. Martin)	110
Little Owl taking House-Martin (J. H. Owen)... ..	111
Hobby in Pembrokeshire (H. E. Pounds)	111
Fledging Period of the Golden Eagle (Seton Gordon)... ..	111
Common Pochard breeding in Sussex (J. P. Wilkins)... ..	112
Occurrences of Velvet-Scoters in Somerset (S. Lewis)	112
Incubation Period of the Oystercatcher (W. S. Cowin and E. F. Ladds)	112
Greater Yellowshank seen in Scilly Islands (Major A. A. Dorrien-Smith)	113
Incubation Period of the Avocet and Notes on the Nestling (J. M.-Derscheid)	114
Short Notes :—	
The late Rev. E. U. Savage.— <i>Correction</i> . Broods of two in House-Sparrow. Willow-Warbler taken by Kestrel. Arrival of Marsh-Warbler in Isle of Wight. Great Spotted Woodpecker nesting in Bute.— <i>Correction</i> . Pintail breeding in Yorkshire. Tufted Duck Breeding in Worcestershire. Shag's Nest with seven Eggs. Knot inland in Somerset. Temminck's Stints in Yorkshire	114
Letters :—	
Diurnal Song and its relation to Latitude and Twilight (Dr. J. M. Dewar)	116
Size of Eggs and Incubation Period of Icelandic Mallards (J. M. Derscheid)	117
Lapwings Nesting at High Altitude in Norway (E. J. M. Buxton)	118
Reviews :—	
<i>London Bird Report for 1938</i>	119
<i>Birmingham Bird Club</i>	119
<i>Lancashire and Cheshire Fauna Committee</i>	119
<i>Ornithological Report for Derbyshire for 1938</i>	120
<i>Committee on Bird Sanctuaries in Royal Parks (England)</i>	120
<i>Ornithology of the Isle of Man, 1938</i>	120
<i>Hastings and East Sussex Naturalist, 1938</i>	120

*A PUBLICATION OF THE BRITISH TRUST FOR
ORNITHOLOGY.*

**THE DESTRUCTION OF BUDS OF TREES
AND SHRUBS BY BIRDS.**

BY

J. C. F. FRYER.

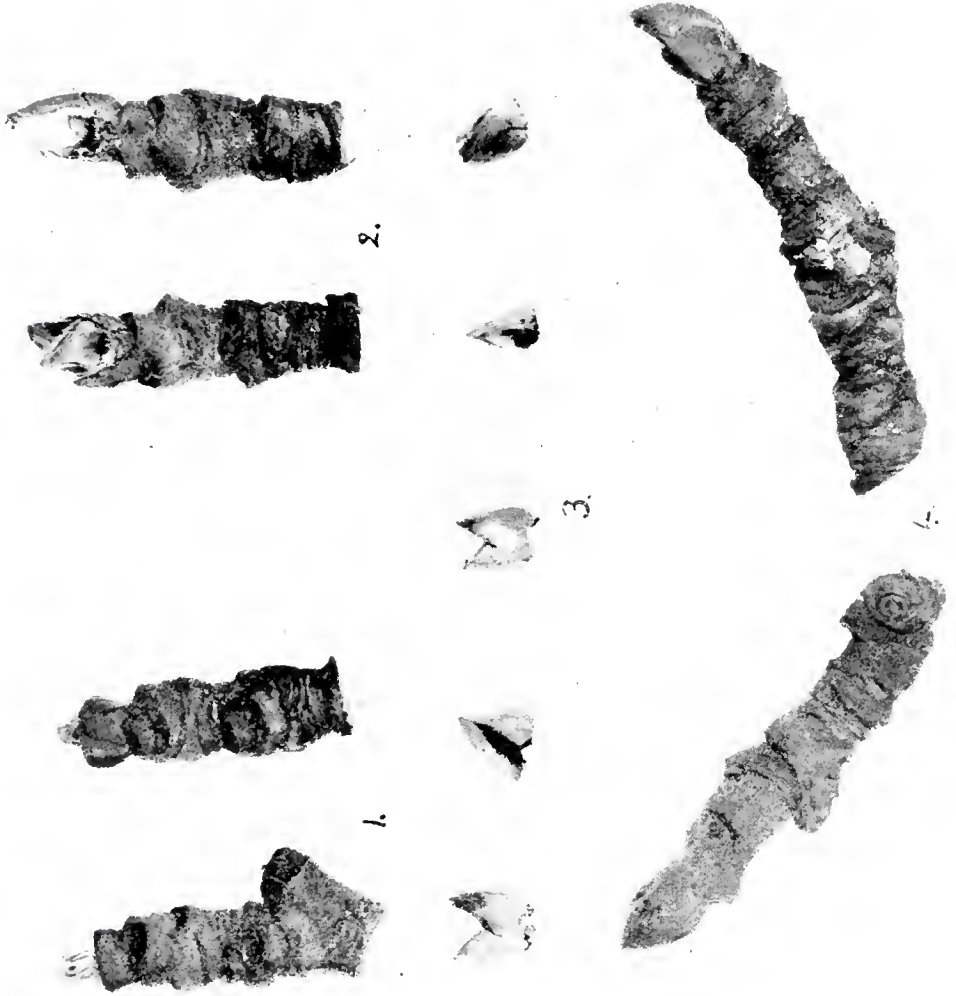
(Plate 2.)

THE destruction of the buds of trees and shrubs by birds during late autumn, winter and spring, is a perennial source of complaint by fruit-growers and gardeners, but it has never received the attention from the ornithological point of view that its economic importance, or, indeed, its scientific interest, would seem to merit. Not only is there uncertainty as to the species of bird responsible for the damage, but also there has been controversy as to the motive for the attack, some arguing that it is merely incidental to the search for insects, and others that the presence or absence of insects in the buds is of no importance. Since the birds under suspicion comprise many common species, the problem seemed to be one that might be widely studied, and in 1935 the British Trust for Ornithology agreed to sponsor an inquiry. The lack of precise information already available on a subject of such general interest suggested, however, that its further elucidation might be found to present some special difficulty, and it was therefore decided to make in the first place a preliminary or "test" inquiry confined to a relatively small number of observers. The present note records the results of this preliminary inquiry.

The method adopted was that of direct observation in the field, the results being recorded on a questionnaire form, and for various reasons which need not be discussed here, no endeavour was made to secure post-mortem examinations of numerous dead birds. The points to which special attention was drawn were the necessity of making absolutely sure that birds frequenting trees showing bud injury were, in fact, responsible for the damage, and the desirability of recording with precision the kinds of trees attacked and the circumstances in which such attack took place. The need for care in the former respect had already become apparent from random observations over a long period, and the curious distribution of the attack in certain places—one tree being denuded of buds and a neighbouring tree of the same species being left—suggested that precise records might throw light on the question of motive. At the same time, a request was made

FLOWER BUDS OF
APPLE SHOWING
DAMAGE BY
BULLFINCH.

1. Buds with scales removed (artificially) to show part eaten.
2. Buds partly damaged to show method of attack.
3. Bud scales rejected by birds (dropped on ground).
4. Undamaged buds.



for samples of twigs from attacked trees, and also of buds pecked off and allowed to fall on the ground.

As a result of the issue of the questionnaires, about 50 reports were received, some referring to a single case in which bud destruction had been observed, and others to several, but the total number is clearly too small to justify any attempt to draw final conclusions. This paucity of results is in part explained by the limitation in the number of observers, but it appears to have been due quite as much to the real difficulty of making the observations. As an instance of this difficulty, a case of damage to sycamore trees may be quoted. The loss of buds was considerable and large numbers were found lying under the trees. Blue Tits were seen apparently pecking at the twigs, and were at first believed to be responsible for the damage, but the manner in which the buds had been sheared off rendered it doubtful whether the injury could be attributed to any species of tit, and by further observations these birds were satisfactorily exonerated. Next Greenfinches, then Chaffinches, Siskins, and Bramblings came under suspicion, but the evidence against them was not satisfactory and in spite of long and careful observation the culprit was never identified. Incidentally, it may be mentioned that the nature of the injury was quite typical of the Bullfinch, a species so scarce in the neighbourhood that it could hardly have been responsible for the large amount of bud damage noted.

A suggested explanation of the difficulty of observation, which seems to have been more or less general, is that extensive bud-eating (as opposed to the desultory picking of an occasional bud) is confined, with the partial exception of the Bullfinch, to daybreak, not only an inconvenient time for most observers, but also a time when observations in the winter are often rendered difficult by poor light conditions.

With this general introduction some reference may be made to the species of birds regarding which some definite information was obtained.

BULLFINCH (*Pyrrhula p. nesa*).

The evidence obtained supports the view (if support is necessary) that the buds of trees and shrubs form an important part of the diet during winter and spring. In most cases the buds concerned were those containing the flowers, and the part actually eaten is confined to the "embryonic" flower, the outer part of the buds (bud scales, etc.) being neatly sheared off, so that the part dropped often looks like a complete bud. The damage continues from the time when

the bud is dormant to when the flower is fully out, and then the base of the flower, the future "fruitlet," alone is eaten, the petals being nipped off and dropped.

Species of plants attacked: Apple, pear, plum, damson, cherry, gooseberry, almond (flowers), *Prunus* vars. (*cerasifera*, etc.), *Pyrus* vars., *Cydonia*, *Syringa*, *Euonymus alatus*, *Forsythia*.

As to varietal susceptibility, there is insufficient information to justify any conclusion, but one or two observers suggest that the buds of the desert, *i.e.*, sweeter varieties of apples, are more attractive than those of the cooking varieties, such as Bramleys. This did not hold throughout, however, and at another centre a variety most attacked in some years will be least attacked in others (*e.g.*, at this centre the apple "Ecklinville" is usually the variety most seriously attacked while "King of the Pippins" escapes, but in 1938-39 winter the former was left untouched and the latter was damaged). It is clear that the birds have marked idiosyncrasies which have not so far been related to any particular feature in the plant, but from the negative point of view there is no evidence whatever to suggest that the presence of insects in or on the buds is in any way concerned.

GREENFINCH (*Chloris ch. chloris*).

One definite case was reported of *Wistaria* flower buds and gooseberry buds being eaten in the same garden.

CHAFFINCH (*Fringilla cœlebs*).

Two cases of damage proved, one to alder and the other to *Prunus*. It would appear that the birds were feeding, but that some factor other than hunger may also have been concerned in the attack (it is suggested that tearing flowers or buds to pieces may be concerned with "display").

BRAMBLING (*Fringilla montifringilla*).

A single but very interesting record from Gloucestershire in 1938, where a flock caused extensive damage to a plum orchard in full bloom. Only the base of the flower (*i.e.*, the future fruitlet) was eaten and the corolla dropped. The fruit-grower had never seen Bramblings before and shot one, which he sent to the British Museum (Natural History) where the parts of the flower eaten were found in the crop.

HOUSE-SPARROW (*Passer d. domesticus*).

The results indicate that the buds of bushes or trees have become a definite part of the diet. The buds eaten are generally but not invariably flower buds, and with the latter

it is chiefly the "embryonic" flower that is taken, but the bird's work is more untidy than that of the Bullfinch and gives the impression that the House-Sparrow is not similarly adapted to a bud diet.

Damage* was recored to : apples, black currant, *Prunus*, *Syringa*, *Berberis*.

TITS.

The results are inconclusive, although suggestive. In one case only is it alleged that fruit buds are eaten, and here it was difficult to make quite sure that Bullfinches may not have been concerned. In other cases the damage seems to be incidental to the search for insects, *e.g.*, a report from Evesham concerns slight injury to plum blossom, the petals being pulled off, often while the bird was "hovering like a fly-catcher." This concerned a party of "Two Great Tits, three Marsh and perhaps five to eight Blue Tits." The insects for which the birds were searching have been identified in one or two instances, *e.g.*, the sycamore aphid (*Periphyllus testudinatus*) on sycamore and plum aphid (*Anuraphis padi*) on plum. In some cases the buds are pecked off, more or less by mistake in the search for insects and a particularly interesting case is one from near Huddersfield in which the flower buds of the wych elm (*Ulmus montana*) were attacked by Blue Tits (*Parus cæruleus*), specimens of pecked buds dropped to the ground being received. A considerable proportion of these buds were found to contain larvæ of a midge, a species of *Contarinia*, probably new to Great Britain, which almost certainly were the object of the attack.

(Reports were also received of tits damaging the flowers of rhododendrons and sweet peas, but they hardly come within the scope of the present inquiry; the motive for the attack was not established with certainty but it is possible that nectar was the attraction.)

CONCLUSION.

Apart from the Bullfinch and House-Sparrow, the part played by the different species of bird in bud destruction is still undecided, and requires further investigation. The subject, however, is not easily dealt with, and the study is not without pitfalls, so that it is hardly appropriate to those who can only give it but casual attention. Intensive observations on the other hand would yield results of much interest, and it is

*There were numerous records of damage by House-Sparrows to the flowers of *Crocus*, *Polyanthus*, and various herbaceous plants, but they are omitted here as being rather outside the scope of the inquiry.

hoped that this preliminary inquiry may incite others to carry out more systematic work.

ACKNOWLEDGMENTS.

Since this note is only a summary, it has not been possible to acknowledge separately the different observations made by each reporter ; sincere thanks must, however, be expressed to the following for the assistance they have given in a somewhat difficult inquiry :

M. H. Babb, Devonshire ; S. Baron, Buckinghamshire ; F. L. Blathwayt, Gloucestershire ; A. W. Boyd, Cheshire ; A. Buxton, Norfolk ; Mrs. W. S. Charles, Buckinghamshire ; J. E. S. Ellis, Yorkshire ; T. B. Hart, Buckinghamshire ; A. J. Harthan, Worcestershire ; C. J. Howlett, Berkshire ; C. Ingram, Kent ; A. E. Jones, Worcestershire ; F. C. R. Jourdain, Hants ; N. B. Kinnear, London ; F. H. Lancum, Kent ; Miss A. Morley, Herefordshire ; E. M. Nicholson, Surrey ; B. Pickard, Lancs. ; Miss F. Pitt, Shropshire ; Miss Ryan, Surrey ; A. H. Spicer, Sussex ; R. S. Stanley, Gloucestershire ; G. Witherby, Hants. ; H. Wormald, Norfolk.

OBSERVATIONS ON SAND-MARTINS AT THE NEST.

BY

R. E. MOREAU AND W. M. MOREAU.

INCUBATION in the Sand-Martin (*Riparia r. riparia*) is said to be "by both sexes but positive data scanty" (F. C. R. Jourdain, 1938)*; males had been found on eggs by Stoner (1936), but the nature of their participation in the brooding was not ascertained.

We had a nest containing eggs under observation for 7 hours on July 1st and 2½ hours on July 2nd, in fine weather. The most usual thing was for the birds to make what appeared to be instantaneous change-overs, one bird entering and the other emerging at once. On one occasion the exit took place first, the sitting bird probably having seen its mate pass. (During its spell in the nest the sitter occasionally came to the entrance.) The spells we recorded between "change-overs" lasted 9, 13, 16, 20, 21, 28, 29, 30, 35, 46 and 47 minutes. In addition, two spells exceeded 70 and 77 minutes. Once two birds were inside together for 11 minutes. During the 2½ hours on July 2nd there was always a bird in the hole; during the 7 hours on July 1st the hole was unoccupied for intervals of 9, 15 and 16 minutes.

It appears that in this species the parent-birds share the incubation more or less equally and sit assiduously.

Nests containing young were watched also at Farnham, Surrey, as follows:—

A with 4 young and B with 3 young (all frequently at the entrance and nearly ready to fly) for 7 hours concurrently on July 1st and for 3 hours concurrently on July 2nd.

C with 3 young, estimated to be 14 days old, for 2 hours (concurrently with nests A and B) on July 2nd.

D, with 3 young, estimated to be 13 days old, for 2 hours on June 30th.

The weather throughout was fair or fine. As would be expected from the ages of the young birds, they were not brooded (*cf.* Moreau, in Press, for evidence that in African Hirundinidae brooding ceases about halfway through the fledging period.) The fact that the families consisted of only 3 and 4 young suggests that they were second broods (*cf.* Stoner, 1936); the date is early for a second brood, but

*The statement in *The Handbook* was based on observations at the nest by J. Walpole-Bond, D. Nethersole-Thompson and F. C. R. Jourdain, but the approximate share of the sexes was not determined.—
EDS.

there is evidence that many first clutches had been destroyed in the working of the sandpit.

The total number of visits made at each nest by both parents* in each observed hour is shown in Table I. It may be taken that food was brought to one young on practically all visits, a presumption that could be verified at those nests where the young were old enough to sit at the entrance.

TABLE I.
NUMBER OF FEEDS BROUGHT TO SAND-MARTINS' NESTS.

Nest.		Number of feeds during Hour Ended.							
		11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00
A.	July 1st	43	38	12	—	47	37	34	30
B.	"	43	42	26	—	29	32	35	15
A.	July 2nd	37	33	36	—	—	—	—	—
B.	"	28	31	28	—	—	—	—	—
C.	"	—	39	49	—	—	—	—	—
D.	June 30th	—	—	—	31	25	—	—	—

It will be seen that in 24 separate hours, distributed between the 4 nests, the number of feeds brought was nearly always between 25 and 43. The only 2 exceptions are for one mid-day hour at nest A and one early evening hour at nest B. The feeding rate was thus on the whole surprisingly regular and also much higher than the only other feeding rate recorded for this species, which, over one whole day, was an average of 8 an hour divided between 2 young (Beyer, 1938). It compares also with a feeding-rate of only 5 for 2 young in very long series of observations on the African Saw-wing Bank-Martin (*Psaldiprocne holomelæna massaica*) (Moreau, in Press).

The regularity in feeding by these Martins is further emphasized by analyzing the intervals between the feeds. Our data for the 726 feeds show that more than half of the intervals lasted less than 2 minutes; only about 10 per cent. (78) lasted more than 3 minutes and only 19 more than 5. The six longest intervals were 11, 13, 16, 18, 26 and 32 minutes. The last two were at nests A and B respectively during the hours (ended 13.00 and 18.00) when it is already apparent from Table I that the parent birds slackened their efforts.

It will be seen that the brood of 4 young did not receive proportionately more food than that of 3. This has also been found with African species on much more extensive data (Moreau, in Press).

*An adult at another nest had the tail entirely white except for the central pair, a peculiarity that would have enabled the share of the parents in either incubation or feeding to be determined, but unfortunately the hole was inaccessible and therefore its contents could not be examined.

SUMMARY.

At a nest of *Riparia r. riparia* with eggs the parent birds changed over instantaneously as a rule and the eggs were covered over 90 per cent. of the time. At 2 nests with 3 young about 14 days old and 2 nests with 3 and 4 young nearly ready to fly the number of feeds brought per hour varied between 25 and 43. In 726 feeds only 19 of the intervals exceeded 5 minutes.

REFERENCES.

- BEYER, L. K., 1938. Nest life of the Bank Swallow. *Wilson Bull.*, 50, 122-37.
JOURDAIN, F. C. R., 1938, in *The Handbook of British Birds*, Vol. II. London.
MOREAU, R. E., in Press. Numerical data on African birds' behaviour at the nest. *Proc. Zool. Soc., London and Ibis*.
STONER, D., 1936. Studies on the Bank-Swallow, *Riparia r. riparia*. *Roosevelt Wild Life Annals*, 4 (2), 126-233.

THE BLACK-TAILED GODWIT IN THE BRITISH ISLES, 1890-1937.

BY

AVERIL MORLEY.

It has been known for some years that the Black-tailed Godwit (*Limosa limosa*) was occurring in the British Isles more often and in larger parties than formerly. At the suggestion of Dr. N. F. Ticehurst, and with his constant help, an attempt has been made to show the manner of this increase. Literature from 1830 was searched for records, but for this paper it has not been thought necessary to give any earlier than 1890 as it is evident that for some years before and after that date the status of the species was fairly stable.

It must be emphasized that the figures obtained from the records make no pretence to be complete, which would be impossible, but are only approximate, their value lying merely in their relativity. The degree of approximation for each year in the period is probably about the same; for, though there are more observers nowadays, in the beginning of the period ornithologists did tend to record the ones and twos; whereas now the bird has become commoner, ornithologists in districts which it regularly visits do not always record, or give details of, small numbers. Thus, the difference in numbers is probably, if anything, greater than the records disclose.

About 1829 began the nadir and lowest ebb of the Black-tailed Godwit, when from being a breeding species it sank to the status of a rare bird. Since its last supposed attempt, in Lincolnshire in 1885, breeding has at least twice been suspected in the British Isles, 1914 in the Moray area and 1934 in Norfolk, the evidence for the latter being strong (B.B., Vol. XXVIII, p. 363).

But one swallow does not make a summer, and, unless supported by other facts, isolated and erratic nesting of solitary pairs (isolated and solitary, that is, in time) will not bring a species back as a regular breeder. More satisfactory, at present, is the evidence that this Godwit is occurring not only in greater numbers but appearing more and more often all the year round, and from being mainly a passage migrant at spring and fall is now cropping up in every month of the year, with a tendency, in Great Britain, to winter with us. (Wintering in Ireland is no new thing.)

The table shows this increase clearly. Here we see that August and September have, since 1890, produced the

heaviest batch of records. Consistently, however, solitary birds or pairs have been recorded in May. Leading up to these two peaks are occurrences in the remaining months of the year, first beginning as a slender and interrupted trickle of figures, latterly thickening, especially during the spring migration time.

The slump after the August-September peak has never been so heavy as that after May (as one would, of course, expect from the nearness of the breeding-season to the latter, and less heavy influx) and lately has greatly decreased before it, *i.e.*, in July. This leaves June as a gap. The other noticeable empty space is January-February, which is less wide than it seems as the spring migration has not yet begun and wintering birds have already been recorded earlier and so do not appear in the table.

The big increase seems largely due to the appearance of large parties which is quite obviously a new feature in the Black-tailed Godwit's status and not the result of the present plenitude of observers. This tendency shows no lessening up to 1938, and the rough total for Sussex in 1937—a record one—was in 1938 eclipsed by a single flock in the county of 150 birds. It should be noted that the 1923 peak shown in the graph is caused by a Lancashire record of over 100 birds. It does not appear whether this was an unusual influx or a normal figure that by chance got recorded for that one year.

REGIONAL DISTRIBUTION.

The increase appears to be by far the greatest along the south coast of England from Devon to Kent. For the period 1930-37 Devon, Dorset, Hants, Sussex and Kent provided approximately two-thirds of the total numbers in the British Isles. In many of the seventy-six counties and islands for which there are figures no remarkable increase is perceptible. Indeed, it seems in Scotland, except in the east, there has been a falling off since the 1900-15 boom years there, when more birds were reported than from England, though with two less occurrences. For the next 15 years, to 1930, with the notable exception of the Tay area, I could find only six places where the bird was reported, the rest complete silence, now being broken from the far northern islands. In the east of Scotland the wintering numbers of 1936-7 should be noted.

South-east Ireland appears to have shared in the Scottish boom, either of birds or observers; but there has been a latter-day paucity of records, 1914-37, so that it is hard to

tell whether this represents a true decrease or a scarcity of the human element unfortunately necessary for observation. The latter seems the most likely.

Since 1890 Sussex-Kent and Suffolk-Norfolk have been Black-tailed Godwit haunts. The first of these areas is one of the chief places for the 1930-37 leap. Less striking is Norfolk-Suffolk where actually the 1917 approximate total has not been exceeded in the records, but where for the last twenty-one years, 1917-1937, for every year but one (1918) occurrences are recorded. Cheshire-Lancashire apparently began to get a steady flow about 1909. On the fringes of these areas Essex, between the first and second, Cumberland to the north of the third, show an unchanged tradition, regular irregularity. Perhaps both suffer from lack of observers and detail in recording, such as in the Humber district where "up to about 20 years ago the Bar-tailed was the prevailing type on the Yorkshire estuary with the Blacktail in the proportion of one in 20. Nowadays the Blacktail has increased to a point where it is almost as common as the Bar-tail. Never in my time have they been sufficiently scarce to be worth recording" (Mr. C. F. Proctor, *in litt.*), or as at Tees-mouth where the *Vasculum* (1937) tells us, every year "now" in May small parties are seen.

Coincidentally with the Sussex-Kent increase the neighbouring south-coast counties of Devon, Dorset and Hants, show a remarkable increase, in Dorset and Devon apparently reaching a peak in 1935. To the north of this area Somerset as a fringe county has shared less strikingly in the increase, and the records are mainly at inland reservoirs, which is interesting. At one of these, Blagdon, occurred in 1934 the peak figure of 23 in September, staying in dwindling numbers to November. The Somerset occurrences bring the species to the Severn Channel region, otherwise scanty of records, especially before the 1930-37 period, though its muddy estuaries, sandbanks and marshy coastal ground look good Godwit places. The exception to this bleakness is Carmarthen which in the winters of 1932-33, 1936-37, had a large flock staying, *c.* 30 birds and *c.* 48 birds respectively.

Mention of the Somerset reservoir occurrences brings us to the 1930-37 increase in inland counties, which in nearly all cases comes from reservoirs and sewage farms, *e.g.*, Surrey, Berks, Bucks, Cambridge, Worcs, Warwicks and Staffs. Taking into consideration the fact that these man-made habitats are not recent and also that the reservoir and sewage-farm gazing so popular with field-naturalists has

been flourishing for at least eighteen years, one feels that this sprinkled increase is real and like the spray thrown inland from a wave. However, all spatial inferences must be tentative.

Obviously there might be a close connexion between the variations of numbers of visitors to the British Isles and the population variations on the breeding grounds. Thus, an effort was made to find out if there had been any noticeable and marked increase in the population of the species' chief breeding ground, Holland. Mr. J. H. Savory kindly got in touch with H. Drijver, Secretary of the Nederlandsche Vereeniging tot Bescherming van Vogels, who wrote that it was hard to say if the species has increased during the last 10 or 20 years in the Netherlands; old breeding places have been lost by cultivation, but through protection there are far more young birds early in the year than formerly. I feel this point is certainly suggestive though it could not explain the tendency to winter with us, etc.

Dr. G. C. A. Junge of The Rijksmuseum, Leiden, kindly told me that both he and other people whom he asked do not think there has been much increase in the population in Holland, though this is an opinion only as there are no figures to prove it. However, he adds that if there had been a large increase the fact would have been striking enough to attract attention.

As over a hundred publications were consulted it would take up too much space to give a detailed list. This is composed of all the county faunas, articles in the Victorian County Histories, etc., and the following journals, and reports of Societies: *Zoologist*, *British Birds*, *B.O.C. Migration Reports*, Devon Bird-Watching and Preservation Society, Somerset Arch. and Nat. Hist. Society, Dorset Nat. Hist. and Antiq. Field Club, Hants. Field Club and Arch. Society, Bournemouth Nat. Sci. Society, *Hastings and East Sussex Nat.*, *Southeastern Bird Reports*, Essex Field Club, Herts. Nat. Hist. Society, *London Nat.*, Oxford Orn. Society, Norfolk and Norwich Nat. Society, Wild Bird Prot. Com. of Norf. Nat. Trust, Cambridge Bird Club, Bristol Nat. Soc., Birmingham Bird Club, Cardiff Nat. Society, Caradoc and Severn Valley Field Club, Lancs. and Cheshire Fauna Committee, Yorkshire Nat. Society, Northumberland, Durham and Newcastle-on-Tyne Nat. Hist. Society, *Annals of Scott. Nat. History*, *Scottish Naturalist*, *Irish Naturalist*, *Irish Nat. Journal*.

This literature was obtained from the libraries of Dr. N. F. Ticehurst, Mr. B. W. Tucker, Rev. F. L. Blathwayt, Capt. H. Morrey Salmon, British Trust for Ornithology, Bureau of

Animal Population and the Radcliffe Library, all of whom I would like to thank either for giving me access to literature or for sending me the information contained therein. I thank also Messrs. G. H. Caton Haigh, J. A. Cox and B. H. Pye for kindly giving me Lincolnshire records.

The writer wishes to emphasize that her work is only subsidiary to the original observations of others.

SUMMARY.

1. The Black-tailed Godwit is increasingly occurring in the British Isles (*a*) at all times of the year, (*b*) in flocks.
2. The increase is greatest on the south coast of England with pockets elsewhere.
3. Present knowledge does not show whether the increase has its cause in the breeding population of the Netherlands.

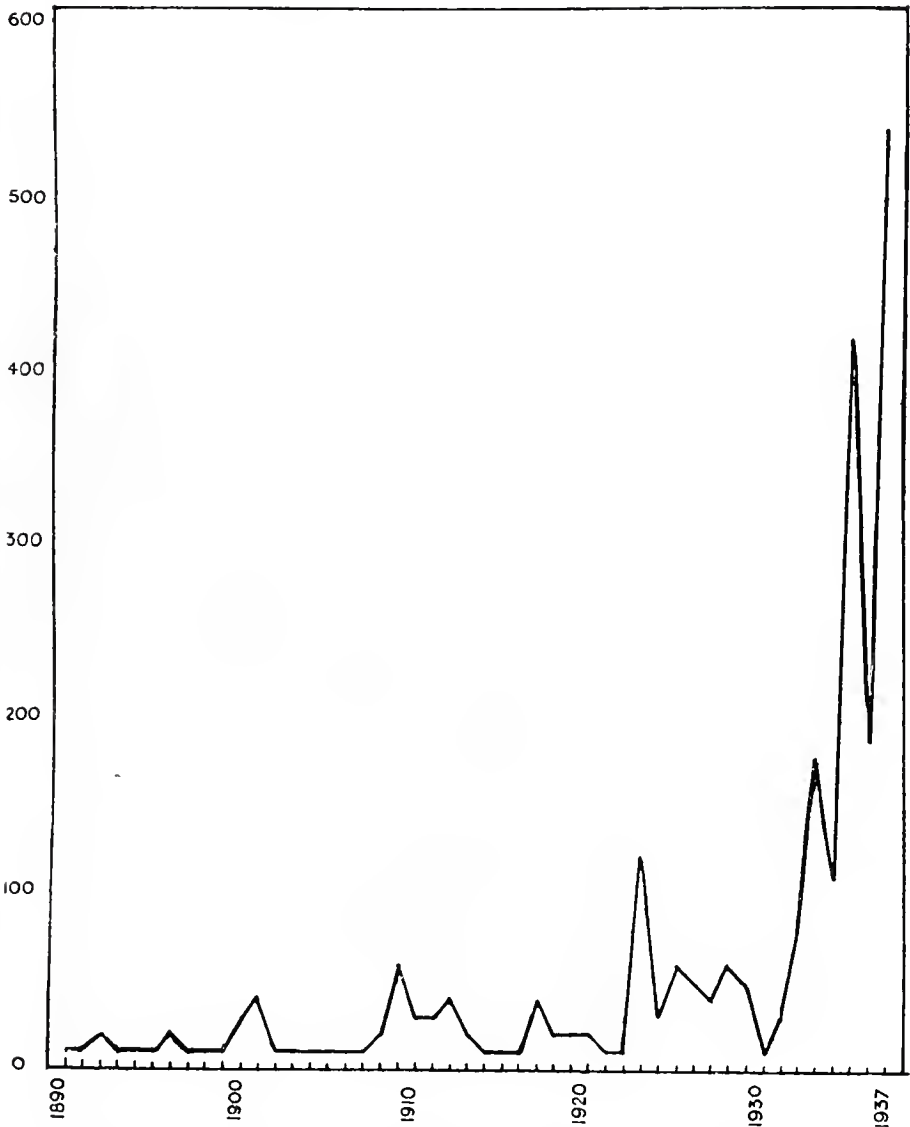
METHODS.

All occurrences were obtained from printed sources and no effort was made to supplement these by private communication except to fill the obstinate gap of Humber-Lincs. All printed information was disregarded to which no year-date was attached.

When the estimation of a flock ranged between two figures the greater was taken. It is clear in some cases the figures represent counts of a party made at different times. When Godwits are mixed with other waders, especially, it is perhaps easier to miss outlying birds than to imagine birds, so the larger estimate was probably the truer. From the evidence of plumage a bird seen on a certain spot one day may *not* be the same bird seen there the next day even in places where the species does not habitually occur. This might happen more often than one thinks when the plumage gives no clue. Whenever the observer has thought it was the same bird seen on different days, I have treated it as such. Unless it was made clear to the contrary, where a bird has been recorded in the same place in a week it also is assumed to be one and the same. In the case of flocks, diminishing numbers seen within a week, or, if large, for much longer periods, were assumed to be remnants of the original number, therefore not counted. If the flock increased the largest number was taken and earlier counts disregarded. The big wintering flocks of late years have provided rather a problem as, though they arrive in one year, they also form part of the total of the next. However, they have only been reckoned for this paper in the year when first seen.

Where a large flock appeared and dwindled and then later another number of much the same magnitude reappeared, this has been treated as the same flock returned from another feeding ground, e.g., Eden, Fife: Nov. 1, 30 birds (Nov. 27, 5 birds; Dec. 28, c. 30 birds, records that were disregarded).

The result of these methods is undoubtedly that a good many birds have been counted twice and a good many not counted at all!



Approximate Annual Numbers of Black-tailed Godwit, to the Nearest Ten.

RECORDED MONTHLY TOTALS.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	?	
1890	...	1	-	-	2	1	-	3	-	1	1	-	-	-
1891	...	-	-	-	-	-	-	-	-	-	-	-	-	1
1892	...	-	-	-	-	-	-	8	6	-	-	-	-	2
1893	...	-	-	-	-	1	-	1	1*	3	-	-	-	*
1894	...	-	-	-	-	-	-	-	2	-	-	-	-	-
1895	...	-	-	-	-	3	-	-	1	2	-	-	-	2
1896	...	-	-	-	-	2	-	-	2*	11*	-	-	-	1
1897	...	-	-	-	-	-	-	-	2	-	1	-	-	-
1898	...	-	-	-	-	1	-	-	2	-	1	-	-	*
1899	...	-	-	-	-	2	-	-	-	2	-	-	-	1
1900	...	1	-	-	-	4	-	-	3	10*	3	-	1	1
1901	...	*	-	-	-	-	-	-	32*	2	-	-	-	-
1902	...	-	-	-	-	1	-	-	4	2	1	1	-	-
1903	...	-	-	-	1	-	-	-	5*	2	1	-	-	-
1904	...	-	-	-	-	-	-	-	2	1	-	-	-	-
1905	...	1	-	-	-	-	-	-	1	1	-	-	-	-
1906	...	-	-	-	1*	1	-	-	-	2	-	-	-	-
1907	...	-	-	-	1	3	1	-	-	1	-	1	1	-
1908	...	-	-	-	-	1	-	-	-	1	-	-	10	1
1909	...	-	-	-	5	2	-	-	8	18	19	1	-	1
1910	...	-	11	1	-	-	1	-	-	8	-	-	-	-
1911	...	-	-	-	1	-	-	-	8*	17*	-	-	1	1
1912	...	4	2	-	-	1	2	-	7	9*	3	-	2	1
1913	...	1	-	-	-	-	-	1	7	-	1	-	-	1
1914	...	-	-	-	2	3	-	-	1	2	-	-	-	-
1915	...	-	-	-	-	-	-	-	2	-	-	-	-	-
1916	...	-	-	-	-	-	-	-	3	3	-	1	-	-
1917	...	-	-	10	-	1	-	8	2	1	-	2	-	10*
1918	...	20	-	-	-	-	-	-	-	-	-	-	-	-
1919	...	-	-	*	-	-	-	-	1	6*	1	2	-	*
1920	...	-	-	-	1	-	9	-	2	4	-	1	3	-
1921	...	-	-	-	-	-	-	-	1	1	1	-	-	*
1922	...	-	-	*	*	-	1	-	-	4	-	-	-	*
1923	...	-	-	1	21	1	1	7	3	3	-	-	-	80*
1924	...	-	2	-	6	9	1	-	3	5	-	1	-	1*
1925	...	-	-	-	1	-	-	11	36	3	-	3	-	-
1926	...	-	-	1	21	-	2	10	3	4	1	-	-	*
1927	...	-	-	-	-	8	-	2	1	21	5	-	-	*
1928	...	1	2	3	5*	4	-	-	3*	16*	13	-	-	*
1929	...	-	-	5	6	2	2	-	18	7	3	1	-	*
1930	...	-	-	-	-	-	1	2	2	1	-	-	-	*
1931	...	-	1	1	2	1	-	2	9	8	-	1	-	*
1932	...	2	6	1	4	7	6	-	13	7	-	1	32	1
1933	...	-	-	38	17	41	2	*	36	28	10	-	-	*
1934	...	-	2	15	10	4	-	2*	19	46	6	1	-	-
1935	...	-	20	5	6	12*	17	42	179	86	34	4	77	*
1936	...	2	-	3	19*	12*	7	15	14*	11*	21	30	49	-
1937	...	17	2	7	25	17*	16	24	189	42	1	113	82	*

* = Number not stated in records.

Figures in final column are those of indefinitely dated records.

BREEDING OF THE GANNET ON THE SCAR ROCKS, WIGTOWNSHIRE.

BY

REV. J. M. McWILLIAM.

ON July 5th, 1939, Lord David Stuart and I visited the Scar Rocks in Luce Bay, Wigtownshire. As we came near the island we saw three or four Gannets (*Sula bassana*) apparently resting on one of the higher points. We naturally spoke of the possibility of the birds nesting, but thought it most



The Scar Rocks from the West.
(Photographed by J. M. McWilliam.)

unlikely. We spent an hour and a half ringing or photographing the rock birds, and then had to leave rather suddenly as the wind was rising. We both walked over the place where the Gannets were seen, but if we saw the nest with the Gannet's egg we took it for granted that it belonged to a Cormorant or Shag.

On August 1st we re-visited the Scar Rocks and again there were a few Gannets at the same spot. Lord David was

ringing Kittiwakes on another part of the rock when I found a nest with a young Gannet. Shortly afterwards when I was some distance away he came independently on the nest. The photograph which I then took shows the species quite clearly.

The parent birds showed no sign of anxiety and did not come close to the rock while we were on it, though as we were leaving one of them came fairly close to us.



Young Gannet in nest on the Scar Rocks, August 1st, 1939.
(*Photographed by J. M. McWilliam.*)

We searched carefully for other nests but saw none, though on account of the extreme roughness of the ground it is not impossible that there may have been another nest somewhere near.

In view of the recent increase of Gannets in certain other places it is quite possible that this may represent the beginning of a new Gannet colony. The Scar Rocks are roughly

a hundred yards in length and about fifty feet high with a good colony of the ordinary rock birds. They are not very easily visited as they are in fairly open sea and from their small size they give little shelter for landing. Though of no great size they are in places very precipitous and if Gannets were to nest on the Stack at the south-east end they could probably do so in complete safety, but this nest was on the main part of the rock where it was easily approached.

NOTES

EVIDENCE FOR MALE HOUSE-SPARROW SELECTING NESTING-SITE.

PROOF of the sex of the bird choosing the nesting-site is generally so difficult to obtain that it seems worth while to record some evidence in the case of a House-Sparrow (*Passer d. domesticus*) in my garden in the spring of 1939. Early in March I noticed for several days a male Sparrow sitting on the top of a nesting-box or in a tree within a foot or two of it and chirping continuously about a dozen notes in succession. He was always alone. A few days later a hen accompanied him in the neighbourhood of the box. After she appeared he ceased his regular song. He frequently entered the box, but the hen's attempts to do so always failed. I noticed that the male put in one shoulder first and so squeezed into the small hole, but the female tried to go in straight and never succeeded. On March 16th the male stood for a moment on the hen's back. From the 19th to 23rd, he spent the early part of each day on or just near the box, but there was no sign of the female. On the 24th, both defended the box against Blue Tits. After a cold spell, he again appeared near the box on April 1st and 2nd, but alone, and the last I saw of either bird was the male attacking Blue Tits at the box on April 14th. Eventually the Tits reared a family there.

The abandonment of the site by the Sparrows appeared due to the hen's inability to enter the hole, although I saw her trying again and again, a feat which the male had no difficulty in performing. The incident seems to produce good evidence that in this case it was the male House-Sparrow that selected the nesting-site and that the choice later proved impossible.

CYRIL E. MARTIN.

TWO BLACK REDSTARTS IN LONDON IN JUNE.

WITH reference to the Black Redstart (*Phoenicurus o. gibraltariensis*) reported from Bloomsbury (*antea*, p. 81,) I saw the bird at intervals from May 22nd. On June 14th I was watching it singing on the north-east corner of the British Museum, when it flew off the building and was joined by a second bird. With binoculars I was able to see the orange-red tails of both birds. They flew together quite low over Montague Place in an involved flight as though engaged in battle, the tails being expanded fanwise. After a short time both birds disappeared over the University

building. Later in the day one bird was singing from the British Museum, when it flew above the roof and was joined by the second bird. They then flew off over the Museum.

After that, I saw only one bird, the last occasion being on June 19th.

S. P. W. CHAVE.

NESTING ASSOCIATION OF SWALLOW AND HOUSE-MARTIN.

UNDER the eaves of a gable of my house on the outskirts of Shrewsbury, a pair of Swallows (*Hirundo r. rustica*) and a pair of House-Martins (*Delichon u. urbica*) have built their nests in exactly similar situations, about a foot apart, one each side of the apex of the gable. This, I believe, is sufficiently unusual to be worth putting on record. Owing to their inaccessibility the nests cannot be inspected closely, and the darkness of their situation makes it impossible to see clearly how they are constructed, even with field-glasses. My impression is that the Swallows have dispensed with the usual bottom support for their nest, but they may have taken advantage of what appears to be a narrow ridge, perhaps three-quarters of an inch wide, in the boarding.

The Swallows were first noticed taking an interest in the site on May 27th, but the House-Martins were the first to take definite possession, and were first seen building on June 1st. The Swallows continued to frequent the site and for a period of about ten days there was a good deal of friction between the two pairs of birds. The Martins had completed building by June 17th, and two days later the Swallows had made some progress with the construction of their nest. At the date of writing (July 15th) both nests contain young.

The nesting site above described is, of course, quite normal for the House-Martin. It is rare for the Swallow to adopt such a site; the *Handbook of British Birds* (Vol. II, p. 227) says that it "has been known to build on sides of wall under eaves, like House-Martin, but nest open above." What seems to me the most remarkable feature of the case is the association in close propinquity of the two species—the Swallow a decidedly non-social nesting species, though several pairs may frequently be met with breeding in one long cowshed.

L. C. LLOYD.

[A similar case to that recorded above came under my notice in Derbyshire, where a pair of Swallows placed their nest on the outside wall of an outbuilding, under the eaves, and within a few feet of nests of the House-Martin in exactly similar situations.—F.C.R.J.]

In July, 1939, while waiting at a station in the Rhone Valley, Switzerland, I noticed many Swallows and House-Martins going to nests built near the top of the wall at the back of the platform. A board had been fixed under the nests (probably to keep the platform clean) and the Swallows had taken advantage of this as a support. The nests of the two species were often nearly touching each other. I saw no signs of friction between the birds.—H.F.W.]

MISTLE-THRUSH, KITTIWAKE AND QUAIL BREEDING IN SCILLY ISLANDS.

A PAIR of Mistle-Thrushes (*Turdus v. viscivorus*) nested in the Tresco Abbey gardens this year (1939). The bird is by no means a regular visitor to the islands but this is apparently not the first record of its breeding.

Kittiwakes (*Rissa t. tridactyla*) ceased to breed here about 1900. In 1937 I had suspicions that some were breeding again as there were birds about. In 1938 there were 28-30 pairs nesting and this year (1939) there appear to be quite double that number.

A young Quail (*Coturnix c. coturnix*) unable to fly was caught and released by the keeper in his rearing field this summer (1939). He did not see the old birds.

ARTHUR A. DORRIEN-SMITH.

FOOD AND METHOD OF FEEDING FLEDGED YOUNG OF GREAT SPOTTED WOODPECKER.

ON July 8th, 1939, a male Great Spotted Woodpecker (*Dryobates m. anglicus*), which had previously on occasions in April visited my bird-table in Buckinghamshire and eaten coconut, appeared accompanied by a juvenile. After eating on the coconut for at least two minutes, the parent bird went to the young one and fed it, the bill of the young being inserted into the parent's bill and their necks moving rapidly backwards and forwards. I have watched this process several times since, though the young bird also at times ate direct from the coconut on the table and has learnt to cling upside down on a suspended coconut.

Although I could detect no gulping movements the birds remained some time with their bills interlocked suggesting that the food was being augmented by regurgitation, a method recorded in the case of the Green Woodpecker (*Picus v. pluvius*), though not so far as I know in that of the Great Spotted.

CYRIL E. MARTIN.

[The unnatural nature of the food and the difference between this and living insects must be considered. That this was a case of true regurgitation is not definitely shown and the coconut may have become soft and filled the mouth and taken time to extract. But that feeding methods may be different before and after fledging was shown by some Green Woodpeckers which I watched at the end of July. These were an old male and two young birds feeding on the grass close to my windows. Although the young were full grown and perfectly able to feed themselves one or other went up to the old bird every now and then and received direct from his bill some food which he had just picked up.
H.F.W.]

LITTLE OWL TAKING HOUSE-MARTIN.

MR. Royle of Perry Moor Farm, near Whittington, Salop, informed me that he saw a Little Owl (*Athene n. vidalii*) take a House-Martin (*Delichon u. urbica*) in his drift-house about one p.m. (S.T.) on July 20th, 1939. There are at least a dozen occupied nests of House-Martins in the roof of the drift-house, which is a covered way to bring a load under for shelter from storms. I may add that the Little Owl is very abundant in many places near Oswestry at present.
J. H. OWEN.

HOBBY IN PEMBROKESHIRE.

As the Hobby (*Falco s. subbuteo*) has rarely been recorded in Pembrokeshire it would seem of interest to note that on May 30th, 1939, at 4.45 p.m. (B.S.T.), while I was on Ramsey Island, a Hobby passed close to me flying at a height of about twenty feet and pursuing a northerly course. A few minutes later it was followed by another which likewise passed from sight towards the northern end of the island. Weather conditions at the time were perfect, brilliant sunshine, blue sky, and a light north-easterly breeze. HUBERT E. POUNDS.

FLEDGING PERIOD OF THE GOLDEN EAGLE.

ON May 3rd, 1939, my wife and I visited the eyrie of a Golden Eagle (*Aquila ch. chrysaëtus*) in a cliff, and could see one small eaglet moving about. The nest is inaccessible and we were unable to see both eaglets at that early stage. On July 19th, exactly eleven weeks later, we were watching the eyrie again. There were two full grown eaglets in the nest, and we were fortunate enough to see one of the eaglets take

its first flight. We were some distance off, and watching through a glass, and so our presence had nothing to do with the fact that the Eagle chose this time for making its first flight. We saw that the bird was very restless, looking out over the edge of the nest repeatedly, and then suddenly it sprang into the air, opened its wings, and flew unsteadily to a buttress of rock, where it made a heavy, but safe landing.

From the active movements of the eaglet we watched on May 3rd it was certainly several days old at the time, and the fledging period in this instance must have been nearer twelve than eleven weeks.

SETON GORDON.

COMMON POCHARD BREEDING IN SUSSEX.

As Mr. J. Walpole-Bond includes only a few definite cases of breeding of the Common Pochard (*Aythya f. ferina*) in his *History of Sussex Birds*, it is worth while recording that a pair bred in the south-west of the county in 1939. I first saw one bird on April 21st, and on May 7th there were a pair and a single bird. The pair remained and I first saw a brood of six quite small young ones on June 22nd. Although I approached the birds within about 10 yards they did not dive nor did the parent bird take flight, which struck me as curious. These young were also seen by Mr. H. Beeston.

Mr. Beeston found a Pochard's nest at Stanstead in 1906 as reported in Mr. Walpole-Bond's book, but he allows me to add that he also saw a duck and seven young at Aldsworth Pond in the same vicinity on May 1st 1921, a record which is not included by Mr. Walpole-Bond.

J. P. WILKINS.

OCCURRENCES OF VELVET-SCOTERS IN SOMERSET.

SINCE the year 1906 given by Mr. H. Tetley (*antea*, p. 26) as the year of the last records of this species in Somerset, I can add three definite subsequent records. January 4th, 1925, adult male consorting with nine of the common species near Brean Down; January 19th, 1926, two birds, adult male and female, on No. 1 Reservoir, Barrow Gurney.

STANLEY LEWIS.

INCUBATION-PERIOD OF THE OYSTER-CATCHER.

ON May 18th, 1939, we found a nest of the Oyster-catcher (*Hæmatopus o. occidentalis*) containing two eggs on Langness Peninsula, Isle of Man. On our next visit the nest held three eggs. The eggs were chipped on the evening of June 16th, and presuming they were hatched the next day (the young

had left the nest on the 18th) the incubation period would be 29 days.

W. S. COWIN.

E. F. LADDS.

IN the above note it is presumed that the third egg was laid on the 19th but this is not necessarily the case. Incubation may begin before the clutch is complete and hatching may extend from one to three days, but as the young had left by the 18th, it is a fair deduction that in this case incubation began with the last egg. From the data given I should estimate the period as "about 28-29 days." 28 days is a fairly common period, but when a bird has been frequently disturbed it may be exceeded considerably. The period of 21-24 days given in the *Practical Handbook* is now known to be incorrect; F. G. Paynter's record of an egg hatched out in an incubator in 21 days is evidently a case of a partly incubated egg and 24 days is apparently the minimum.

F. C. R. JOURDAIN.

GREATER YELLOWSHANK SEEN IN SCILLY ISLANDS.

ON May 7th, 1939, at about 7 p.m., when in the garden at Tresco Abbey close to the Little Pool, I heard the piercing notes of a Yellowshank which had apparently been flushed by some people approaching the gardens. The bird came close over my head and I distinctly noticed the orange-coloured legs and that the bird was nearly as big as a Bartailed Godwit. The loud piercing note "chew-chew-chew, chew-chewk, chew-chew-chewk" with the orange legs and the large size of the bird convinced me that it was a Greater Yellowshank (*Tringa melanoleuca*).

The bird circled again overhead, but this time too high up for me to see it distinctly, and then it flew away in a westerly direction.

It is well to state that I shot a bird of this species here on September 16th, 1906, and watched one, which was very tame, in 1927, the bird being first seen on August 23rd and last on the 28th. (The date given in *The Ibis*, 1927, p. 781, is incorrect).

I should also like to take this opportunity of correcting the date of the Yellowshank (*T. flavipes*) recorded by the late Dr. H. Langton as having been shot at Tresco on September 2nd, 1920 (*Bull. B.O.C.*, XLI, pp. 26-7). This bird was first observed on September 7th, 1920, and was shot on the same date.

ARTHUR A. DORRIEN-SMITH.

INCUBATION PERIOD OF THE AVOCET AND NOTES ON THE NESTLING.

ON June 14th, 1939, I visited a marshy spot near the River Scheld and rescued there a chick of an Avocet (*Recurvirostra avosetta*). This was two or three weeks old and still entirely in down. I hand-reared the bird with a young Lapwing as companion and it proved from the beginning quite easy to feed. It is now (July 7th) fully grown and completely feathered. This gives an approximate fledging period of five to six weeks.

On the same date, June 14th, the keeper showed me three nests of Avocets which he had found two days before with fresh eggs. When we approached the place we saw two Carrion-Crows there and only one egg had escaped their attention. This I took and put under a bantam on the following day, June 15th, at 2 p.m. This egg, which on being tested by a strong light in my laboratory showed no sign of having been incubated, hatched on July 7th exactly at 12 noon, giving a period of 21 days and 22 hours.

Not much has been written about the length of incubation in this species, the old German ornithologist Naumann having estimated it 17 to 18 days, while on the other hand R. I. Pocock gave approximately 24 days from observation on the behaviour of a captive pair breeding in the London Zoo.

Another point on which there are discrepancies among the published accounts is the shape of the bill in the newly born Avocet. As I had transferred the chipped egg from the bantam's nest to one of my incubators (run at 105° Fahr.) in order to make accurate notes on the hatching, I was able to examine and measure the beak of the little Avocet a few minutes after it was born, in fact well before the chick was dry. I have satisfied myself that the bill is at that stage absolutely straight although the culmen seems to be slightly concave, this being due to the fact that the tip of the bill is noticeably swollen, an appearance still emphasized by the persisting egg-tooth. The latter instead of being roundish is conspicuously elongated along the culmen. Measurement of the bill along culmen 14.7 mm.; tomium 18.1 mm.; tarso metatarsus (2 hours after hatching) 33.5 mm. The shape of the bill at that age shows practically no difference from that of newly hatched Redshanks. J. M. DERSCHIED.

[Heinroth gives the incubation period as 23 days—F.C.R.J.]

THE LATE REV. E. U. SAVAGE.—*Correction*.—We regret that in the obituary notice (*antea*, p. 76) Mr. Savage's second name Urmson was wrongly spelt Urmston.

BROODS OF TWO IN HOUSE-SPARROW.—Mr. R. H. Higgins reports nests of House-Sparrow (*Passer d. domesticus*) seen by him on July 10th, 1939, in Sussex with two fully fledged young in one case and two eggs in another. When revisited the two young had flown and the two eggs had hatched. It is possible that one or more of the chicks had fallen out of the nest and the two eggs may have been laid by a bird whose nest had been destroyed while laying, but the sets are unusually small.

WILLOW-WARBLER TAKEN BY KESTREL.—Mr. R. H. Brown informs us that in a nest of a Kestrel (*Falco t. tinnunculus*) in Cumberland in 1938 he found amongst other food remains a Willow-Warbler (*Phylloscopus t. trochilus*) a species which is not recorded in the *Handbook*.

ARRIVAL OF MARSH-WARBLER IN ISLE OF WIGHT.—Mr. H. Whistler informs us that he received a Marsh-Warbler (*Acrocephalus palustris*) which was killed at the St. Catherine's Lighthouse with several other common warblers on May 19th, 1939. As most first-arrival dates recorded are at breeding-places and rather later this record has interest.

GREAT SPOTTED WOODPECKER NESTING IN BUTE.—*Correction*.—The recorder's name given in this note (*antea* p. 87) as Mr. D. Stuart should have been Lord David Stuart.

PINTAIL BREEDING IN YORKSHIRE.—With reference to the note on the Pintail (*Anas a. acuta*) breeding at Skipwith in 1938 (*antea*, p. 55) Mr. R. F. Butler informs us that on June 21st, 1931, he watched a Pintail with two young at the same place. He saw a pair there in 1930 and again in 1932, but has only seen young in 1931, and has not found a nest. Mr. Butler has watched Pintail on Loch Leven. He writes that he had withheld the information for the benefit of the birds.

TUFTED DUCK BREEDING IN WORCESTERSHIRE.—Mr. G. M. King has recorded (*Birmingham Bird Club Rep.*, 1938) that in 1936 a pair of Tufted Duck (*Aythya f. fuligula*) bred at Blakedown in north Worcestershire, three young being seen, and he now informs us that a pair bred again in 1939 when one duckling was seen. These appear to be the only definite records of breeding for the county.

SHAG'S NEST WITH SEVEN EGGS.—Mr. K. Williamson informs us that a nest of Shag (*Phalacrocorax a. aristotelis*) was found on the Calf of Man on June 1st, 1939, with 7 eggs. Out of large numbers of nests examined here during the

past two years only one contained more than 4 eggs so that it seems probable that this was a case of two hens laying in the same nest.

KNOT INLAND IN SOMERSET.—Mr. S. Lewis informs us that he observed two juvenile Knots (*Calidris c. canutus*) at the Cheddar reservoir on August 10th, 1939. The birds were tired and he was able to approach within four yards of them.

TEMMINCK'S STINTS IN YORKSHIRE.—Mr. G. Edwards, who discovered the Temminck's Stint (*Calidris temminckii*) breeding in Scotland, states (*Nat.*, 1939, p. 197) that he and others clearly identified a party of seven of these birds at Ringstone Edge Reservoir, Halifax, on June 1st and 2nd, 1939.

LETTERS.

DIURNAL SONG AND ITS RELATION TO LATITUDE AND TWILIGHT.

To the Editors of BRITISH BIRDS.

SIRS,—In "Some Notes on the Diurnal Song of Birds" (*antea*, p. 4) Mr. Marples states that on the average the Blackbird, at Inverness, begins to sing in the morning $7\frac{1}{2}$ minutes earlier than Blackbirds do in Hampshire, that is, after correction for effect of difference of latitude on time of sunrise. Since twilight lasts longer in the north than in the south, it is to be expected that song starts earlier in the north, and it is interesting, perhaps for the first time, to have expectation confirmed by observation.

Inverness is approximately in 3° long. west of the longitude of Hampshire, and at Inverness the sun rises 12 minutes later than in Hampshire, after correction for latitude. Birds at Inverness ought, therefore, to start singing 12 minutes later than in Hampshire. Actually, as noted by Mr. Marples, the Blackbird starts $7\frac{1}{2}$ minutes earlier. The duration of twilight is always greater at Inverness than in Hampshire, and the greatest difference is reached at midsummer day. Twilight lasts throughout the year for $9\frac{1}{2}$ minutes longer at Inverness than in Hampshire; in June or July, the monthly average difference is $18\frac{1}{2}$ minutes. Thus, in June or July, at Inverness, the Blackbird ought to start singing in the morning $6\frac{1}{2}$ minutes earlier than in Hampshire. The result is arrived at in the following way. After correction for latitude, the Blackbird, at Inverness, gains $18\frac{1}{2}$ minutes due to the greater length of twilight, and loses 12 minutes due to the difference of longitude, the net figure being $6\frac{1}{2}$ minutes early. This figure compares very closely with Mr. Marples's observed time of $7\frac{1}{2}$ minutes. If there is a difference of altitude between the stations in Hampshire and at Inverness, a correction would also need to be applied for altitude since the light lasts longer at high than at low levels.

The importance of making these corrections of crude observations lies in the necessity of reducing all station records to a common denominator just as all barometric observations are reduced to sea-level and a standard temperature. Only then can true comparisons be made of station records of diurnal song periods.

J. M. DEWAR.

EDINBURGH.

SIZE OF EGGS AND INCUBATION PERIOD OF ICELANDIC MALLARDS.

To the Editors of BRITISH BIRDS.

SIRS,—In *British Birds* (*antea*, Vol. XXXII, p. 151) appeared a few observations which I made last year on half a dozen Mallard eggs received from Iceland for hatching purposes.

In the beginning of June, 1939, I received some more Icelandic Mallard eggs, and I took care to make accurate measurements of these before entrusting them to bantams for incubation. I got in all twenty-four eggs; 12 of these proved to be clear or addled, and I have kept the shells. The measurements of these twelve eggs are as follows:

Average length	56.75,	width	40.74 (in mm.)
Minimum	„ 54.9	„	40.0
Maximum	„ 60.8	„	41.5

The other 12 eggs duly developed, although one duckling died in the shell. The measurements of these eggs (which could not be preserved, but which are perhaps more interesting as there is no doubt about the specific identity of the egg) were as follows:

Average length	55.17,	width	40.86 (in mm.)
Minimum	„ 53.1	„	40.1
Maximum	„ 57.5	„	41.3

Total measurements on the 24 eggs:—

Average length	55.96,	width	40.80 (in mm.)
Minimum	„ 53.1	„	40.0
Maximum	„ 60.8	„	41.5

This is rather in accordance with the average (of 36) given by the Rev. F. C. R. Jourdain for Icelandic eggs, working out at 55.66 by 41.77 mm. The new measurements emphasize the fact that the breadth of the Icelandic eggs is not above the average width of British eggs of Mallard; in a general way, the Icelandic eggs appear to be slightly but decidedly smaller than British eggs, especially in bulk.

The two dozen eggs received by me are said to have been collected in northern Iceland, probably in the Laxa valley or near Lake Myvatn. They were remarkably uniform in colour, being all of a very pale bluish-green grey, certainly much paler than most of the Mallards' eggs laid in this country.

I have also made an accurate note on the incubation period of the eleven eggs which duly hatched; average time 24 days 16 hours 40 minutes; minimum 23 days 20 hours; maximum 25 days 3 hours; this confirms entirely my 1938 observation based only on two eggs, hatched in about 25 days.

I may perhaps be forgiven if I add a few words to explain my opinion about the validity of *Anas platyrhynchos subboschas*, as an Icelandic distinct sub-species of the Mallard. In spite of the difference in size of eggs, incubation period and some minor and inconstant details of coloration, I believe that the Icelandic sub-species is not valid (and perhaps the Greenland one is no better).

Since Roman times, Mallards have been domesticated and extensively kept in confinement all over western Europe, and this was continued during the middle ages, especially around the monasteries, for utility purposes. It has resulted in gradually evolving a number of strains of domestic Mallards of larger size, laying as a rule larger eggs. For centuries, thousands and tens of thousands of these domestic ducks

have been kept and bred in semi-liberty in France, Belgium, England, Germany, etc., but above all in the Netherlands and it is beyond doubt that a large contingent of these domestic ducks have and are still reverting to the wild every year, joining the wild Mallards, especially at the time of migration, and crossing with these in subsequent years, thus spoiling the wild strain. One consequence of this fact is that the so-called wild Mallard of Holland, Belgium and France at least, is nearly always a half-domestic mongrel and French ornithologists, as well as water-fowl painters have already called attention on the heavy clumsy look of most of their "*Canards sauvages.*"

Pure-strain wild Mallards may be known at once by their alert, slim appearance, quite similar to the alertness of the other members of the subgenus *Anas* which we import from foreign countries. In fact, my friend D. G. Schuyf, who knows as much or probably more about water-fowl than anybody else in Holland, says that to get pure-strain Mallards, one has to import them from Hungary or from British India, two countries where they are not spoiled by domestic blood. I can supply confirmatory evidence of this: In 1936 and 1937 I kept on my waters quite a number of wild-caught Mallards, netted in the duck decoys of Holland and western Belgium. Out of some 800 eggs laid for me, about 90 had a perfectly white shell, which is unknown in the wild bird, and is evidently a proof of intermixture of domestic blood. I must take it for granted that at least the stock of Mallards visiting our countries are abnormally large birds, laying large eggs (often white shelled) and belonging to a strain mixed with domestic blood. My experience is that everything else being equal, a larger egg of a certain species of bird takes more time to hatch than a smaller one. This explains why our Mallards (mixed with domestic blood) have an average incubation period of 28 days or more, when their near cousins, the American Dusky Duck, Indian and Japanese Spotbills, Meller Duck, Australian Duck, etc., hatch after 26 or 27 days; this supplies us also with a satisfactory explanation of the great variation in the incubation period of Mallard eggs, given as from 22 to 30 days.

My conclusion is that we have probably in the Icelandic Mallard a remnant of the completely unspoiled stock of wild duck of the Palearctic region, and that observations based on Mallards from India and central Asia would probably prove these birds to be more or less identical with the Iceland and perhaps Greenland Mallards.

J. M. DERSCHIED.

LAPWINGS NESTING AT HIGH ALTITUDE IN NORWAY.

To the Editors of BRITISH BIRDS.

SIRS,—In June, 1938, at Fokstummyren in the Dovrefjeld, Norway, I found four pairs of Lapwings (*Vanellus vanellus*) breeding. I found the nests of three pairs. It is remarkable that the Lapwing, a widely distributed but local bird in Norway, had not previously been recorded from this well-known district. The nests were on cultivated land at 3,200 feet, and when the eggs were laid the snow could not have been more than 100 feet vertically, and perhaps a quarter of a mile horizontally, from them. Possibly the vertical extension of breeding range in the Highlands suggested in Mr. Seton Gordon's note (*antea*, p. 54) is thus paralleled in Norway.

E. J. M. BUXTON.

[This must be a comparatively recent extension of breeding range. There were certainly no Lapwings in that region in 1896. N.F.T.]

London Bird Report for 1938. Compiled by R. C. Homes, 1s. 6d. (London Nat. Hist. Soc.).

BESIDES the classified notes this issue contains an interesting account of the effects on birds of the severe weather in December, 1938 as observed in the area and an article by Mr. W. E. Glegg on changes of bird-life in relation to the increase of London. The most striking effect of the cold spell was a great movement of Sky-Larks and their appearance in numbers in London and its suburbs. At the reservoirs eight Brent Geese appeared at Molesey on December, 17th and eleven Pink-footed at Beddington Sewage Farm on the 22nd, while there was a great increase of ducks of various species at different reservoirs, and single birds of the three scarce Grebes and also Red-throated Divers appeared, as well as a party of nine Knots (Barn Elms) and an unusual number of Dunlins.

In his article Mr. Glegg has collected together some interesting facts regarding the presence and status of certain birds in London in the past, and although the species about which information is to be found are comparatively few one can get some sort of idea when one realizes that a London bird observer a hundred years ago could watch Ravens in Hyde Park, Harriers in Deptford and Dartford, and Reed-Warblers at Wandsworth. On the other hand it would surprise that observer to see all the Wood-Pigeons, ducks and gulls of the present day.

Many interesting appearances are recorded in the classified list. In the case of rarities difficult to identify the excellent plan has been introduced of giving a summary of the observer's notes, and we hope that other reports will adopt this idea. Such notes appended to records of a Water-Pipit seen at Walthamstow Reservoir on March 30th and a pair of Firecrests on Ruislip Common on December 31st make these acceptable. Other records which may be mentioned are: Gadwalls breeding at Barn Elms and Beddington (perhaps the result of the rearing of full-winged birds in St. James's Park), Common Pochard breeding at Osterley, and occurrences of Long-tailed Ducks, Common Scoters, Red-breasted Mergansers, Shags and several unusual waders.

Birmingham Bird Club. Report for 1938.

THIS issue contains an account of the Bittell Reservoirs and the birds which have been noted there by H. G. Alexander, an account of the movements of birds ringed in Warwickshire and Worcestershire, notes on first and last days, dates of arrival and departure of migrants and classified notes. Among occurrences of note not already published in our pages we may mention the following: Water-Pipits were seen at Bittell, Worcester, in November and December and at Bellfields (S. Staffs) in October, Shags and Common Scoters also visited Bittell and Scaups were seen in several places in Warwickshire, while there are records of Grey Plover, Spotted Redshanks, Black-tailed Godwits and other interesting waders.

Lancashire and Cheshire Fauna Committee. Report on birds for 1937, by A. W. Boyd.

THERE are several items in this report which call for special mention. A flock of about forty Redpolls at Antrobus (Cheshire) on April 11th appeared to Mr. Boyd to be all or mostly Mealy Redpolls. A male (with a female) Wagtail seen by Mr. and Mrs. F. W. Holder at Southport on May 24th, 1934, was a blue-headed bird without an eyestripe and with dark ear-coverts and is considered referable to the Grey-headed form (*M. f. thunbergi*). The Little Owl is stated to be well distributed throughout N. Lancs., but the localities mentioned are south of the

River Ribble and this is surely a mistake for S. Lancs. There are several inland records in both counties of Scaup and Scoter. A Black-headed Gull nested in a fir tree twelve feet up at Oakmere where two pairs nested in a similar site in 1934 (*cf. antea*, Vol. XXVIII, pp. 115-17). Special reports are given of the distribution of the Red-backed Shrike, Magpie and Coot.

Ornithological Record for Derbyshire for 1938. By Rev. F. C. R. Jourdain. THIS short Report gives notes on arrival dates of migrants and some dates of songs. In the classified list there are a number of items of local interest. The breeding of the Shoveler for the second time, the presence of a Black-throated Diver in February and March, a Green Sandpiper on February 26th and Quails heard calling in two localities in June are noteworthy.

Committee on Bird Sanctuaries in Royal Parks (England). Report for 1938. (H. M. Stationery Office) 9d.

THESE reports are carefully drawn up and make very interesting reading. The chief events of the year in Inner London have already been reported in our pages by Mr. A. Holte Macpherson. The fact that introduced Gadwall, Wigeon and Common Pochards breed and increase and fly about freely should be noted in case of future breeding records elsewhere. At Bushy and Hampton Court Parks the Reed-Bunting was added as a breeding bird, and Tree-Sparrows bred and a Great Grey Shrike was reported as seen on September 10th, an early date. To the list of visitors to Richmond Park four species were added—a Short-eared Owl, a Curlew-Sandpiper, a Golden Plover and several Great Black-backed Gulls. Two Wood-larks were heard singing and a family party was later seen, and the breeding birds numbering fifty-six species seem to have had a successful season on the whole.

Ornithology of the Isle of Man, 1938. Compiled by F. A. Craine (Manx Museum) 3d.

THIS is a very useful Report and appears to be carefully and critically compiled. We are glad to see that Choughs are holding their own—a flock of over fifty having been observed in September. Notes on the breeding of Lesser Redpoll and Long-tailed Tit as not frequent should be mentioned, also a Wood-Warbler singing in June and the breeding of a Lesser Whitethroat. A Pink-footed Goose shot in November and a Garganey seen in April are also noteworthy. A number of Fulmars were seen and some appeared to be settled but no case of definite breeding is given.

Hastings and East Sussex Naturalist, 1938.

ONE of the chief events here recorded is the big westward weather-movement of birds which began on December 18th with many species of ducks and geese and was continuous until the 21st. The movement of smaller birds began with the snow on the 20th and involved large numbers of many species, Sky-Larks, Lapwings and Starlings being conspicuously numerous. A number of Coot were observed on the sea at this time and Common Snipe were seen coasting in flocks. The usual classified list contains a large number of records. A Serin on April 22nd appears to have been satisfactorily identified, several Barnacle-Geese were also seen and one shot, and two Iceland Redshanks in December, a Spotted Redshank on December 4th and a Greenshank on the 26th may be mentioned. The Common Gulls nesting in the Dungeness area increased to twenty-one and the Lesser Black-backed to twenty-six pairs.

6 SEP 1939

PURCHASED

THE POPULAR SERIES OF
BIRD-LOVERS' MANUALS

MORE SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

BIRD MIGRATION

A. Landsborough Thomson. Illus. Sm.Cr.8vo. 5s. net.

HOW TO KNOW BRITISH BIRDS

Norman H. Joy. Illus. Sm.Cr.8vo. 5s. net.

BIRDS OF THE GREEN BELT

R. M. Lockley. Illus. Sm.Cr.8vo. 5s. net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner. Illus. Sm.Cr.8vo. 5s. net.

H. F. & G. WITHERBY LTD., LONDON

FOR SALE

Complete set of DRESSER'S "BIRDS OF EUROPE"
Original edition, red half calf, in perfect condition

Write to:

A. J. Pearson, Merevale, Lowdham, Nottingham

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (*Fondée en 1911*)

La seule publication scientifique belge traitant des oiseaux, spécialement
des oiseaux de la Belgique

Abonnement 25 francs ' 'ges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique)

Volume Four
**THE BIRDS OF THE
MALAY PENINSULA**

Birds of the Low Country
Jungle and Scrub

Vols. I and II by the late HERBERT C.
ROBINSON, F.Z.S., M.B.O.U.

Vols. III, IV and V by F. N. CHASEN

*Each volume will contain
about 25 coloured plates from drawings
by H. GRONVOLD*

Imperial 8vo. 35s. net or the set of 5 volumes £7 7s. net

- Vol. I : The Commoner Birds
- Vol. II : The Birds of the Hill Stations
- Vol. III : Sporting Birds
- Vol. IV : Birds of the Low Country,
Jungle and Scrub
- Vol. V : Open Country and Ricefield
Birds

H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1

BRITISH BIRDS

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

OCT. 2,
1939.

Vol. XXXIII.
No. 5.

6 OCT 1939
PURCHASED



MONTHLY 1s 9d YEARLY 20s
326 HIGH HOLBORN LONDON
H. F. & G. WITHERBY LTD.

Volume Three of
**THE HANDBOOK
OF BRITISH BIRDS**



The third volume of this recognized standard work on British birds deals with the swans, geese and ducks, diurnal birds of prey, storks and herons. As in previous volumes, there are a great number of coloured plates. The geese have been specially drawn for the work by PETER SCOTT.



IN FIVE VOLUMES—

21/- NET PER VOLUME

H. F. & G. WITHERBY LTD.
326 High Holborn, London, W.C.1

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND

NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 5, VOL. XXXIII., OCTOBER 2, 1939.

	PAGE
Mrs. C. L. E. Perrott's <i>Selection of British Birds</i> . By Hugh S. Gladstone	122
Recovery of Marked Birds. By Miss E. P. Leach	127
Notes :—	
Unusual Nesting Sites and Food of Grey Wagtail (Mrs. H. Rait Kerr)	137
Cliff-Breeding in the House-Martin (Rev. F. C. R. Jourdain, H. F. Witherby)	137
Scaup-Ducks in Bedfordshire (A. R. Jenkins)	138
Nestling Wood-Pigeon with Undigested Food in Crop (G. Marples)	138
Long-tailed Duck in Sutherland in June (Rev. Dr. C. E. Raven)	139
Stock-Doves flocking in May in Wiltshire (B. J. Ringrose) ...	140
Turtle-Dove breeding in Ireland (E. O'Mahony)	140
Black Guillemots breeding in Holes in Harbour Walls in Wigtownshire and Co. Down (H. F. Witherby)	141
Short Notes :—	
Status of Nuthatch in West Merionethshire. Flamingos in Yorkshire and Lincolnshire. Breeding of the Gannet on the Scar Rocks, Wigtownshire. Curlew attacking Rabbit. Black Guillemot breeding in Yorkshire	141
Reviews :—	
<i>South-Eastern Bird Report, 1938</i>	143
<i>Ornithological Report for Hampshire, 1938</i>	143
<i>Eleventh Report of the Devon Bird-Watching and Preservation Society, 1938</i>	144
Letter :—	
Possible occurrence of the Færoe Rock-Pipit in the British Isles (L. S. V. Venables)	144

MRS. C. L. E. PERROTT'S
SELECTION OF BRITISH BIRDS.

BY

HUGH S. GLADSTONE.

(Plate 3.)

IN Messrs. Mullens and Kirke Swann's *Bibliography of British Ornithology*, 1917, mention is made (pp. 469-70) of a book—or part of a book—by Mrs. C. L. E. Perrott which they had never seen.

As it has recently been my good fortune to handle a copy of this work it seems desirable that I should give a description of it and, at the same time, amplify and correct the account of the authoress given by Messrs. Mullens and Kirke Swann.

Mrs. Charlotte Louisa Emily Perrott's maiden name was Yates and she married (1808) George Wiggley Perrott, Captain in the King's Dragoon Guards, of Craycombe House, Worcestershire, who was the son of George Perrott of Fladbury, Worcestershire. Her father was Joseph Yates of Peel Hall, Lancaster, who married (March 31st, 1787) the Honourable Charlotte St. John, daughter of John, 11th Baron St. John.*

Mrs. Perrott—who must have married at an early age—was predeceased by her husband (May 9th, 1831); after his death she lived at The Chantry, Fladbury, and she died, at Worcester, August 21st, 1836, leaving three sons and one daughter.†

There is evidence that she was not only the possessor of a museum containing considerable collections, both zoological and geological, but also an ardent ornithologist and an artist of no mean skill. She was elected an honorary corresponding member of the Worcestershire Natural History Society in December, 1833.‡ She supplied a considerable amount of information which is given in Sir Charles Hastings' *Natural History of Worcestershire*: 1834§ (her name being repeatedly

*The obituary notice of Mrs. Perrott in the *Worcestershire Guardian*, August 27th, 1836, states that she was the "grand daughter of the late Right Honourable St. Andrew Lord St. John", an error which is repeated by E. L. Barnwell (*Perrot Notes*: 1867; p. 109), and which is reiterated by Messrs. Mullens and Kirke Swann (*Bibliography of British Ornithology*: 1917; p. 469) where this author is referred to as E. L. Burnwell.

†*Worcestershire Guardian*, August 27th, 1836.

‡MS. Minute Book of Worcestershire Natural History Society, p. 21.

§I have already pointed out (*British Birds*, Vol. XII, pp. 247-8) that the ornithological portion, at least, of Sir Charles Hastings' book was actually by Edwin Lees.



mentioned with gratitude)* and she was a donor to the Society of ornithological, geological and mineralogical specimens, as well as a contributor of papers on these subjects which were often illustrated by her drawings,† her most important papers being those on "The Fish of the Avon" and "A list of Worcs. Birds."

The last mentioned contribution only exists in the manuscript minute-book of the Worcestershire Natural History Society (which covers the period April 3rd, 1833 to May 24th, 1837) where, on pp. 27-40, is written a paper, read on December 31st, 1833, entitled "List of Birds" in which 148 species are recorded as occurring in Worcestershire or on the borders of the adjoining counties and it may be noted that in these minutes there are several other papers, many of them on birds,‡ by Mrs. Perrott.

I do not know the extent of Mrs. Perrott's contributions to the ornithological publications of her day but in *The Analyst*, Vol. I, 1834, there is a paper (pp. 248-9) entitled "Memorandum respecting the nidification of the Common Wren" signed C.L.E.P.; and it is probable that an article (pp. 171-7), "A few general observations on Natural History," but signed "G.L.E.P.," is also attributable to her. I doubt whether some unsigned notes (pp. 98-109) are by her, but in *The Analyst*, Vol. II, 1835, there is a curious contribution (pp. 22-6) entitled "Quizzing," which deals with such heterogeneous subjects as staring, flirting, etc., signed C.L.E.P.

I now come to the description of Mrs. Perrott's book which was only known to Messrs. Mullens and Kirke Swann by the critique in Neville Wood's *Ornithologist's Text-book*,§ and by notices, or reviews, in *The Analyst*|| and in Loudon's *Magazine of Natural History*.¶

The book—or "Part I" of the book—has been described as an "elephant folio"*** and is contained in brown paper

*Sir Charles Hastings' *Natural History of Worcestershire*, 1834; pp. 62, 65, 68, 70, 71, 72, 134.

†Streeten, Robert J. N. *The Address of the Council of the Worcestershire Natural History Society, delivered at their first anniversary meeting, on Friday, May 16th, 1834, by . . .*: Worcester; 1834; pp. 5, 7, 10, 20, 24.

‡P. 22, *Larus tridactylus* or young of the Kittiwake; pp. 61-3, Common Wren; pp. 64-6, Crossbill; pp. 90-1, Kingfisher; pp. 92-8, General Observations of Natural History [many references to birds]; pp. 99-100, ash tree and Nuthatch.

§Neville Wood: *The Ornithologist's Text-book*: 1836; pp. 96, 200.

||*The Analyst*: 1835. Vol. II, p. 442; Vol. III, pp. 97-8, 280.

¶J. C. Loudon: *The Magazine of Natural History*: 1835. Vol. VIII, pp. 248, 523-4. 1836: Vol. IX, p. 52.

****Op. cit.* Vol. VIII, p. 523.

covers [now somewhat dilapidated] which are inscribed:—

*Part I | A Selection of | British Birds, | From Drawings
by | C. L. E. Perrott, | Honorary corresponding Member of
the Worcestershire Natural History Society | And Dedicated by
permission to | Her Royal Highness | The Landgravine of
Hesse Homburg. | Engraved by Robt. Havell, | Engraver, &c.
of the Birds of America. | Each part contains Five Plates with
descriptive Letterpress 14s. plain 11. 1s. Coloured. | London. |
Pubd. by Robt. Havell Zoological Gallery 77. Oxford St. | Mr.
Evans, Honorary Secretary, Broad Street, Worcester. | Mr.
Lees, Honorary Curator, . . . do . . . do | Mr. Dighton,
Bookseller . . . do | Mr. Wheeler . . . do |*

There is no title page and within the covers are five single sheets (measuring 19 in. by 11½ in.) unnumbered, of text:—

[1] Preface: 55 lines of text: verso blank.

[2] Common Fowl: 53 lines of text, with 51 lines of text on verso.

[3] Ring Dove: 44 lines of text: verso blank.

[4] Raven: 54 lines of text: verso blank.

[5] Whin Chat: 24 lines of text: verso blank.

There are five, numbered, coloured plates (varying from 15¾ in. to 16¾ in. by 11½ in.):—

1, Cock. 2, Ring Dove. 3, Raven, 4, Whin Chat. 5, Blue Titmouse.

and it will be noticed that there is no text to accompany plate 5 of the Blue Titmouse.

The whole is stitched together with three Svo leaves (9¼ in. by 5½ in.)—inserted at end—advertising E. Donovan's *An Epitome of the Natural History of the Insects of India*; ditto of *China*; and R. Havell's "Zoological Gallery, 77, Oxford Street," where collectors may be facilitated "in forming and completing Ornithological Collections, both British and Foreign" and "Beasts and Birds Stuffed and preserved in the highest perfection at his establishment."

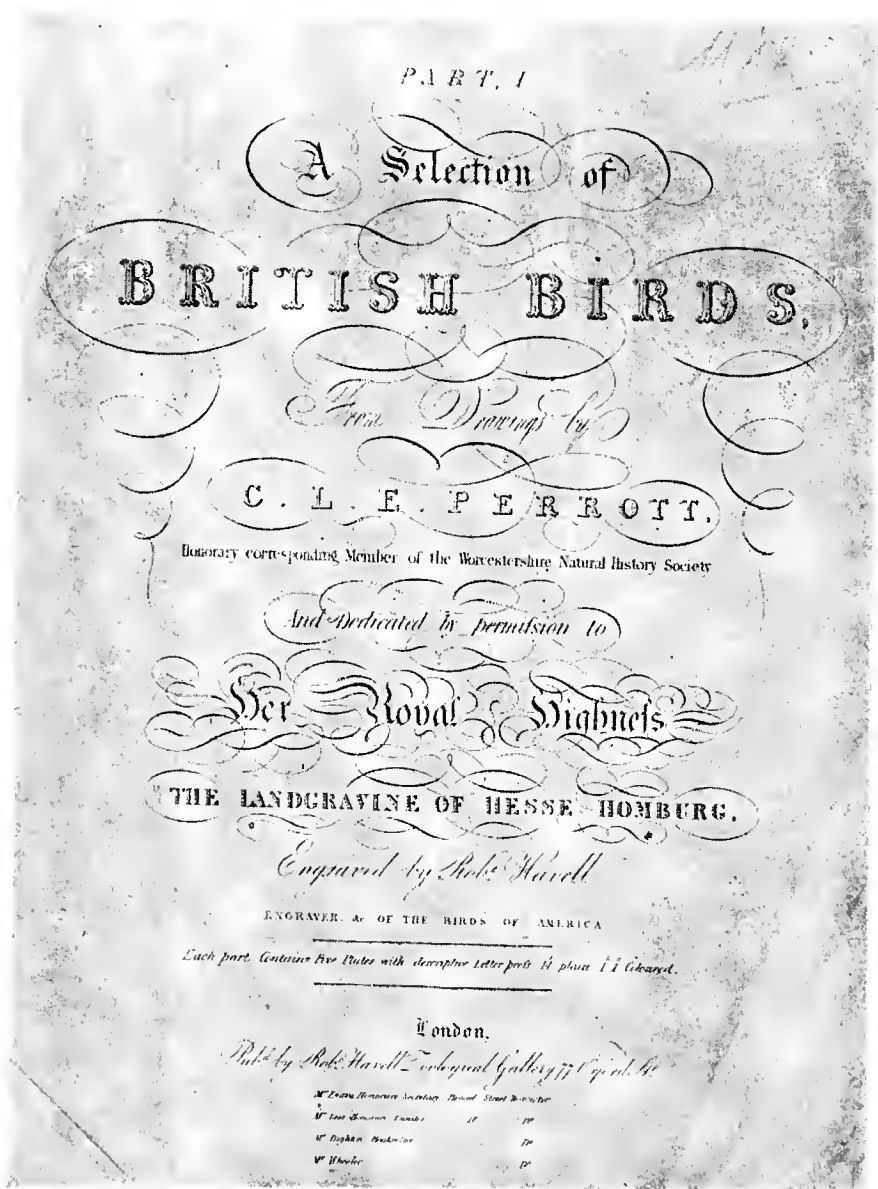
Neither the major publication nor these advertisements bear date of publication but plate 4 is watermarked "Whatman, Turkey Mill 1835" and, since the second review of the book in "*The Analyst*" is dated "12 Sept. 1835," it may be surmised that this Part I was published in the first half of 1835.

It is, I think, certain that no other parts were published: in my copy of Sir Charles Hastings' *Illustrations of the Natural History of Worcester* there is a manuscript note by Edwin Lees (p. 134) regarding Mrs. C. L. E. Perrott:—

"She was an ardent intelligent woman and had drawn a great number of British Birds in water-colours. These she

intended to have engraved and published, but only one number in folio ever came out."

and it is known that she died on August 21st, 1836.



As far as I know the copy in the "Hastings" Museum, Worcester, is the only one now extant and it is difficult to speculate as to how and why such a pretentious publication can have so thoroughly disappeared. It is true that Neville Wood wrote:—

“ We neither subscribe to this work, nor intend to do so ”* and “ the work is beneath criticism, and we have never taken the needless trouble of inquiring whether a second part of it ever dared to show its face,” etc.†

Reviewing the work—at a distance of a hundred years—I cannot agree with Neville Wood’s damning criticism ; there have been plenty of books published both before, and since, 1835 which were (?) embellished with less meritorious illustrations and if her letterpress shows signs of mere compilation and lack of originality this was at the time (and still is) surely no egregious fault. As regards the superfluity of Mrs. Perrott’s projected book I can feel no doubt and it is possible that she too may have realized this and that this is the reason why only Part I of her *Selection of British Birds* was ever published.

I am, however, unable to think of any reason why it should have disappeared (by suppression or otherwise) to such an extent that the copy of “ Part I,” in the “ Hastings ” Museum, Worcester, should now have to be regarded as unique.

The illustrations which accompany this paper are of the cover and plate 5 of Mrs. Perrott’s book ; the original of the former measures 17 in. by 11½ in. and the engraved (coloured) surface of the latter 9 in. by 6¾ in.

I have had a photostatic facsimile made of the book and have given copies of this to the libraries of the Zoological Society of London and the British Museum.

Mr. W. J. Else, curator of the “ Hastings ” Museum, has informed me that he cannot find any of the pictures, or specimens, of birds which were presented to the Museum by Mrs. C. L. E. Perrott and I must thank him for all the help he has given me in the compilation of this paper and also Messrs. W. A. Marsden, A. I. Ellis, A. C. Townsend (all of the British Museum Library) and the Lady Forester for their welcome assistance.

*Neville Wood : *The Ornithologist’s Text-book* . 1836 ; p. 96.

†*Op. cit.*, p. 200.

RECOVERY OF MARKED BIRDS.

COMMUNICATED BY

E. P. LEACH.

Hon. Sec. Bird-Ringing Committee, British Trust for Ornithology.

OWING to the increasing number of recoveries, the Committee has decided to omit from the published lists, all those within ten miles of the place of ringing, in the case of those species which are already omitted when recovered where ringed. These species (as set out in Vol. XXIX, p. 277) are: Starling, Greenfinch, Chaffinch, Yellow Bunting, Song-Thrush, Blackbird, Robin and Hedge-Sparrow.

Although they are excluded from the printed lists it is still of great importance that all such recoveries shall be notified as before, in order that full records may be kept for the purpose of special studies. In the case of other species, recovered where ringed, records will not be published when the recovery occurs at an earlier time than the second quarter of the year of ringing, at a shorter distance than ten miles.

Further restrictions may be made from time to time as circumstances render these necessary.

The distance and direction of a bird's movement within Great Britain will in future be given.

No.	<i>Ringed.</i>	<i>Recovered.</i>
Rook (<i>Corvus f. frugilegus</i>).		
RS.1955	Evesham (Worcs), 25.4.34, ad., by A. J. Harthan.	Where ringed, 24.3.39.
CA.1380	Whipsnade (Beds), 22.8.37, juv., by Zool. Soc.	Ditto, 21.11.38.
305479	Ringdufferin (Down), 11.5.38, young, by C. D. Deane.	Ditto, —.6.39.
Jackdaw (<i>Corvus m. spermologus</i>).		
RINGED AS NESTLINGS.		
RX.2488	Whipsnade (Beds), 31.7.36, by Zool. Soc.	Where ringed, 18.11.38.
RINGED AS FULL-GROWN.		
CA.1247	Whipsnade (Beds), 7.3.37, by Zool. Soc.	Grafton Regis (Northants), 28.4.39 [24 m. NW.].
RECOVERED WHERE RINGED.		
RW.6441	Kilbarchan (Renfrew), 21.9.38, by F. J. Ramsay.	—.6.39.
RV.7412	Malvern (Worcs), 17.7.37, by P. Morshead.	30.6.38.
RV.7438	Ditto 21.6.38.	—.6.39.
CA.1132	Whipsnade (Beds), 19.12.36, by Zool. Soc.	18.12.38.
CA.1216	Ditto 18.2.37.	18.12.38.
CA.1316	Ditto 23.3.37.	9.3.39.
CA.1152	Ditto 7.1.37.	16.5.39.
CA.1406	Ditto 11.11.37.	23.12.38.
Jay (<i>Garrulus g. rufitergum</i>).		
RS.1072	Styal (Ches), 3.6.38, young, by T. Perrin.	Rostherne (Ches), —.7.39 [7 m. W.].
Starling (<i>Sturnus v. vulgaris</i>).		
RINGED AS NESTLING.		
FA.925	Penrith (Cumb), —.5.33, by H. J. Moon.	Where ringed, 11.2.39.

<i>No.</i>	<i>Ringed.</i>	<i>Recovered.</i>
Starling (continued).		
RINGED AS FULL-GROWN.		
YJ.586	Ullswater (Westmor), 13.12.37, by Moon & Cooper.	Tinglev, (Slesvig), Denmark, 15.3.39.
WA.843	Arnside (Westmor), 30.10.38, by J. Barnes.	Rudskoga, (Värmland), Sweden, 4.4.39.
YD.622	Thornton Dale (Yorks), 14.12.37, by R. M. Garnett.	Köge (Sjælland), Denmark, 10.6.39.
OA.677	York, 10.3.36, by Bootham School.	Rochdale (Lancs), 18.6.39 [45 m. SW.].
OS.672	Ditto	24.2.38. Flint, 20.2.39 [95 m. SW.].
XM.943	Ditto	4.2.39. Vologda, Russia, 3.6.39.
XM.979	Ditto	11.2.39. Nagusöcken, S.W. Finland, 20.5.39.
OS.750	Ditto	12.12.37. Hamburg, Germany, —.4.39.
XM.710	Ditto	17.2.39. Husby Lyhundra (Stock- holm), Sweden, 8.6.39.
OJ.456	Ditto	9.12.37. Heligoland, 23.3.39, [ringed Heligoland 7088989].
YN.1	Wilmslow (Ches), 22.11.37, by J. Buxton.	Dore (Derby), 5.5.39, [29 m. E.].
XA.845	Ditto, 23.11.37, by E. Cohen.	Longton (Staffs), 5.5.39, [24 m. SE.].
GT.328	Gt. Budworth (Ches), by A. W. Boyd, 9.11.35.	Gainford (Durham), 24.2.39, [90 m. NE.].
WB.128	Ditto	7.1.39. Scunthorpe (Lincs), 16.4.39 [82 m. NE.].
ZF.491	Ditto	21.12.35. Prestbury (Ches), 14.4.39 [16 m. E.].
ZF.349	Ditto	19.12.35. Whitchurch (Salop), 18.4.39 [25 m. S.].
ZV.923	Ditto	23.11.37. Siauliai, Lithuania, 7.5.39.
ZV.827	Ditto	24.10.37. Kammin, Pomerania, Ger- many, 23.7.39.
ZW.97	Ditto	8.12.37. Aurich (East Friesland), Germany, 20.3.39.
ZF.399	Ditto	20.12.35. Sandshamn (Sünnmör), Nor- way, 1.4.39.
ZV.398	Ditto	23.11.36. Mögeltönder (Slesvig), Den- mark, 14.7.39.
R.7385	Llandyrnog (Denbigh), 12.12.37, by W. M. Congreve.	Stralsund, Pomerania, Ger- many, 23.7.39.
YW.636	Hagley (Worcs), 23.12.38, by G. M. King.	Flatow, West Prussia, 11.3.39.
FL.793	Evesham (Worcs), 6.1.34, by A. J. Harthan.	Boddington (Glos), 16.4.39 [17 m. SW.].
WL.745	Ditto	3.2.39. Stade (Hanover), Germany, 2.7.39.
NM.230	Ditto	20.12.38. Plön, Schleswig-Holstein, —.4.39.
ZA.39	Malvern (Worcs), 16.11.35, by P. Morshead.	Culmington (Salop), 24.7.39 [28 m. NW.].
OX.695	Ditto	29.11.36. Tiegenort, Danzig Free State, 24.3.39.

No.	Ringed.	Recovered.
Starling (<i>continued</i>).		
OX.792	Malvern (Worcs), 10.12.36, by P. Morshead.	Schiedam, Zuid Holland, 9.3.39.
WR.63	Ettington (Warwick), 10.3.39, by C. A. Norris.	Gumbinnen, East Prussia, 4.5.39.
WR.40	Ditto 10.3.39.	Hamburg, Germany, 15.7.39.
OR.380	Moreton - in - Marsh (Glos), 9.1.37, by G. Charteris.	Kalmar, S. Sweden, 27.6.38.
WD.387	Charlbury (Oxon), 15.1.39, by Oxford Orn. Soc.	Stotfold (Beds), —.3.39 [56 m. N.E.].
ZR.677	Oxford, 24.12.35, by Oxford Orn. Soc.	West Hagbourne (Berks), —.6.39 [12 m. S.].
YE.61	Ditto 4.3.37.	Labes, Pomerania, Germany, —.3.39.
AR.9795	Ditto 1.12.35.	Zwischenahn, Oldenburg, Germany, —.2.39.
OW.772	Whipsnade (Beds), 22.10.36, by Zool. Soc.	Amersham (Bucks), —.5.39 [14 m. S.].
OB.320	St. Neot's (Hunts), 17.12.37, by C. F. Tebbutt.	Rushden (Northants), 16.5.39 [15 m. N.W.].
WD.165	Ditto 22.12.38.	Egham (Surrey), 19.4.39 [55 m. S.].
OT.496	Holt (Norfolk), 29.10.36, by E. L. Arnold.	Evesham (Worcs), 25.12.38 [135 m. S.W.].
YE.922	Harrow (Middx.), 24.12.37, by C. Owen.	Astwick (Beds), 21.5.39 [32 m. N.].
U.7458	Mitcham (Surrey), 26.12.38, by Lond. N.H.S.	Lyck, East Prussia, —.5.39.
WA.905	Rochester (Kent), 27.11.38, by Rochester N.H.S.	Smallfield (Surrey), 1.7.39 [30 m. S.W.].
214594	Dungeness (Kent), 15.3.39, by N. H. Joy.	Lehrte (Hanover), Germany, 6.5.39.
WA.244	Figcheldean (Wilts), 22.12.38, by A. G. B. Wainwright.	Zarasai, Eastern Lithuania, 4.5.39.
OS.63	Winchester (Hants), 23.11.36, by Winchester Coll.	Zwischenahn (Oldenburg), Germany, —.3.39.
YV.969	Taunton (Som), 18.1.38, by H. R. Mole.	Halmstad (Halland), Sweden —.6.39.
WJ.452	Branscombe (Devon), 14.1.39, by P. Morshead.	Leeuwarden (Friesland), Holland, 4.5.39.

RECOVERED WHERE RINGED AFTER 5 YEARS AND OVER.

EF.654	Kilbarchan (Renfrew), 14.5.34, by F. J. Ramsay.	2.6.39.
FH.358	Wilmslow (Ches), 17.12.33, by E. Cohen.	7.5.39.
XF.624	Oxford, 17.11.33, by O.O.S. (cinnamon bird).	—.5.39.
AP.1944	Ditto 1.1.34.	7.5.39.
AP.9813	Ditto 29.3.34.	10.5.39.
TF.996	Medmenham (Bucks), 30.11.32, by H. Pease.	4.2.39.
FK.543	Barnet, London, 9.12.33, by L.N.H.S.	14.4.39.

Greenfinch (*Chloris ch. chloris*).

RINGED AS FULL-GROWN.

XD.386	Gt. Budworth (Ches), 23.4.38, by A. W. Boyd.	Stockport (Ches), 4.1.39 [17 m. N.E.].
YL.436	Redditch (Worcs), 29.1.38, by G. Charteris.	Chesterfield (Derby), 15.6.39 [68 m. N.E.].

No.	Ringed.	Recovered.
Greenfinch (<i>continued</i>).		
WK.3	Evesham (Wores), 31.12.38, by A. J. Harthan.	Droitwich (Wores), 18.6.39 [12 m. NW.].
WB.072	Epsom (Surrey), 24.2.39, by Lond.N.H.S.	Blackheath (Kent), 25.3.39 [15 m. NE.].

Linnet (*Carduelis c. cannabina*).

RINGED AS FULL-GROWN.

RECOVERED WHERE RINGED.

JC.485	Ascott-u-Wychwood (Oxon), 22.9.36 by O.O.S.	—.9.38.
JC.495	Ditto	28.9.36. 4.10.37.

Bullfinch (*Pyrrhula p. nesa*).

NM.15	Dereham (Norfolk), 4.6.38, Where ringed, young, by S. Marchant.	—.1.39.
-------	--	---------

Chaffinch (*Fringilla cœlebs*).

RINGED AS FULL-GROWN.

KJ.893	Thornton Dale (Yorks), 6.10.37, by R. M. Garnett.	Scarborough (Yorks), 31.5.39; 1.7.39 [14 m. E.].
EW.278	Enville (Staffs), 14.3.39, by G. M. King.	Karlshamn, S. Sweden, 16.5.39.
JS.836	Redditch (Wores), 6.2.37, by G. Charteris.	Where ringed, 15.4.39 (in Tawny Owl's pellet).
YC.555	Malvern (Wores), 23.3.37, by P. Morshead.	Portlaw (Waterford), 29.1.39.

Brambling (*Fringilla montifringilla*).

HV.214	Redditch (Wores), 29.1.38, ad., by G. Charteris.	Yarmouth (Norfolk), 19.12.38 [150 m. E.].
--------	--	--

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

JJ.967	Malvern (Wores), 14.7.37, juv., by P. Morshead.	Where ringed, 25.2.38.
--------	---	------------------------

Yellow Bunting (*Emberiza c. citrinella*).

MP.604	Evesham (Wores), 7.4.34, ad., by A. J. Harthan.	Where ringed, 1.1.39.
--------	---	-----------------------

Reed-Bunting (*Emberiza s. schœniclus*).

KH.650	Oxford, 25.3.36, ad., by Oxford Orn. Soc.	Where ringed, 5.2.38.
JN.483	Ditto	15.2.37. Ditto, 9.3.38.

Sky-Lark (*Alauda a. arvensis*).

RINGED AS FULL-GROWN.

HD.483	Dungeness (Kent), 4.11.37, by N. H. Joy.	Chatellerault (Vienne), France, 27.1.39.
--------	--	---

No.	<i>Ringed.</i>	<i>Recovered.</i>
Sky-Lark (<i>continued</i>).		
RECOVERED WHERE RINGED.		
ZX.486	Malvern (Worcs), 1.6.36, by P. Morshead.	10.6.38.
OX.851	Ditto 13.12.36.	26.3.38; 19.12.38.
YT.552	Ditto 18.12.37.	21.12.38.

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

L.3784	Penrith (Cumb), —.6.31, young, Portugal, winter, 1937-38. by H. J. Moon.
--------	---

Meadow-Pipit (*Anthus pratensis*).

RINGED AS YOUNG.

KJ.716	Salthouse (Norfolk), 1.9.36, by R. M. Garnett.	Where ringed, —.5.39.
--------	--	-----------------------

RINGED AS FULL-GROWN.

RECOVERED WHERE RINGED.

NN.172	Malvern (Worcs), 27.3.33, by P. Morshead.	15.2.38.
LE.903	Ditto 28.11.34.	5.3.38.
HM.591	Ditto 1.11.37.	25.10.38.
HM.834	Ditto 14.2.38.	30.11.38.

Pied Wagtail (*Motacilla a. yarrellii*).

RINGED AS FULL-GROWN.

HN.876	I. of May Bird Obs., 23.4.38.	Cardiff (Glam.), 2.3.39 [320 m. S.].
HW.841	Malvern (Worcs), 15.7.38, by P. Morshead.	Cheltenham (Glos), —.4.39 [17 m. SE.].

RECOVERED WHERE RINGED.

HM.679	Malvern (Worcs), 16.12.37, by P. Morshead.	3.7.38.
HM.681	Ditto 16.12.37.	21.11.38.
HM.815	Ditto 24.1.38.	3.12.38.

Great Tit (*Parus m. newtoni*).

HT.953	Winchester (Hants), 24.2.38, ad., by Winchester Coll.	Liphook (Hants), 30.3.39 [23 m. E.].
--------	---	--------------------------------------

Blue Tit (*Parus c. obscurus*).

JR.247	Exeter (Devon), 30.1.37, by L. A. Harvey.	Tiverton (Devon), 12.3.39 [13 m. N.].
--------	---	---------------------------------------

Pied Flycatcher (*Muscicapa h. hypoleuca*).

EM.151	Ullswater (Westmor), 13.6.38, young, by Moon & Cooper.	Where ringed, 7.5.39.
--------	--	-----------------------

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

KL.460	Ascott-u-Wychwood (Oxon), 4.6.36, ad., by Oxford Orn. Soc.	Where ringed, 29.5.38.
--------	--	------------------------

Mistle-Thrush (*Turdus v. viscivorus*).

AS.3154	Holyhead, N. Wales, 25.4.37, by St. Edmund's Sch.	Where ringed, —.7.39.
---------	---	-----------------------

- | <i>No.</i> | <i>Ringed.</i> | <i>Recovered.</i> |
|---|--|--|
| Song-Thrush (<i>Turdus e. ericetorum</i>). | | |
| RINGED AS NESTLINGS. | | |
| GP.243 | Perth, 6.6.36, by Perth N.H.S. | Dromore West (Sligo),
—1.39. |
| NW.470 | Pooley Bridge (Cumb), 11.6.38,
by Moon & Cooper. | Egremont (Cumb), —5.39
[32 m. SW.]. |
| GH.784 | Water Eaton (Oxon), 13.6.37,
by E. M. Nicholson. | Olney (Bucks), 30.6.39 [35 m.
NE.]. |
| NK.311 | Winchester (Hants), 4.6.38, by
Winchester Coll. | Beaulieu (Hants), 11.6.39
[18 m. S.]. |
| RINGED AS FULL-GROWN. | | |
| YN.849 | Arnside (Westmor), 14.12.37,
by J. Barnes. | Sedgefield (Durham), 22.4.39
[64 m. NE.]. |
| XB.955 | Whipsnade (Beds), 5.1.39, by
Zool. Soc. | S. Norwood, London, 18.6.39
[36 m. SE.]. |
| WA.607 | Oxford, 30.10.38, by Oxford
Orn. Soc. | Biarritz (Basses Pyrénées),
France, 4.1.39. |
| Redwing (<i>Turdus m. musicus</i>). | | |
| GW.323 | Redditch (Worcs), 2.2.35, ad.,
by G. Charteris. | Nienburg (Hanover), Ger-
many, 1.4.39. |
| Blackbird (<i>Turdus m. merula</i>). | | |
| RINGED AS NESTLINGS. | | |
| ZH.983 | Duddingston (Midlothian),
9.5.35, by Serle & Bryson. | Polmont (Stirling), 15.7.39
[23 m. W.]. |
| XV.765 | Pooley Bridge (Cumb), 5.6.38,
by Moon & Cooper. | Kells (Meath), —2.39. |
| OS.360 | Tirril (Westmor), 28.6.36, by
Moon & Cooper. | Rossmore (Cork), 25.1.39. |
| XV.747 | Ditto 5.6.38. | Clough (Antrim), 17.1.39. |
| RINGED AS FULL-GROWN. | | |
| OV.712 | N. Ronaldshay, Orkney,
30.10.37, by Skokholm
Bird Obs. | Hardanger, Norway, —7.39. |
| OD.280 | I. of May Bird Obs., 6.4.37. | Carlton (Notts), 23.1.39
[225 m. S.]. |
| YD.688 | Thornton Dale (Yorks), 5.1.38,
by R. M. Garnett. | York, 21.12.38 [23 m. SW.]. |
| GK.858 | Taynton (Glos), 25.7.34, by
M. Philips Price. | Where ringed, 7.7.39. |
| XB.828 | Charlbury (Oxon), 29.11.37, by
Oxford Orn. Soc. | Southsea (Hants), 10.2.39
[80 m. S.]. |
| XB.760 | Radley (Berks), 22.2.38, by
Oxford Orn. Soc. | Chumleigh (Devon), 5.2.39
[130 m. SW.]. |
| YB.335 | Cambridge, 30.1.37, by
Marchant. | S. Wantage (Berks), 14.4.39
[76 m. SW.]. |
| Robin (<i>Erithacus r. melophilus</i>). | | |
| RINGED AS NESTLING. | | |
| EJ.278 | Banbury (Oxon), 15.5.38, by
A. Darlington. | Rugby (Warwick), Spring,
1939 [22 m. N.]. |

No. Ringed. Recovered.

Robin (*continued*)

RINGED AS FULL-GROWN.

EA.431	Kilnsea (Yorks), 1.10.38, by "Wippletree."	Thorner (Yorks), 7.6.39 [66 m. NW.].
HW.860	Malvern (Worcs), 25.7.38, by P. Morshead.	Mitcheldean (Glos), 30.4.39 [19 m. SW.].
MK.12	Cambridge, 6.2.34, by Sanc- tuary Club.	Where ringed, 22.6.39.

Dipper (*Cinclus c. gularis*).

AS.3061	Edale (Derby), 18.6.36, young, by T. Kirkwood.	Castleton (Derby), 23.2.39 [4 m. SE.].
---------	---	---

Swallow (*Hirundo r. rustica*).

RINGED AS NESTLINGS.

EA.16	Carperby (Yorks), 23.6.38, by "Wippletree."	Barningham (Yorks), 3.6.39 [14 m. NE.].
-------	--	--

RECOVERED WHERE RINGED.

EJ.931	Dalston (Cumb), 25.6.38, by R. H. Brown.	6.5.39.
NG.613	Gt. Budworth (Ches), 4.8.32, by A. W. Boyd.	27.5.34 ; 22.6.35.
MK.658	Ditto	4.8.34. 12.9.35.
EP.574	Wilmslow (Ches), 10.8.38, by E. Cohen.	20.5.39.
HB.863	Handforth (Ches), 21.7.38, by E. Cohen.	—7.39.
HJ.235	Over Alderley (Ches), 20.6.38, by E. Cohen.	4.6.39.

RINGED AS FULL-GROWN.

RECOVERED WHERE RINGED.

HE.527	Ravenglass (Cumb), 11.8.37, by S. Marchant.	9.9.38.
NG.563	Gt. Budworth (Ches), 21.7.32, by A. W. Boyd.	20.6.35.
MK.889	Ditto	23.8.34. 19.6.35.
LE.513	Ditto	19.6.35. 9.7.36.
LS.878	Ditto	15.8.35. 2.9.36.
JD.111	Ditto	9.7.36. 13.8.38.
JM.379	Ascott-u-Wychwood (Oxon), 22.5.37, by O.O.S.	6.8.38.

Martin (*Delichon u. urbica*).

JC.424	Ascott-u-Wychwood (Oxon), 1.8.36, young, by Oxford Orn. Soc.	Where ringed, 30.7.38.
8 birds	Ditto, 1937, ad.	1938.

Swift (*Apus a. apus*).

RINGED AS FULL-GROWN.

RECOVERED WHERE RINGED.

JM.410 [ZW.531]	Charlbury (Oxon), 24.6.36, by O.O.S.	24.6.37 ; 29.5.38.
JM.393	Ditto	28.5.37. 29.5.38.
JM.392	Ditto	28.5.37. 29.5.38.

Little Owl (*Athene n. vidalii*).

306081	Blean (Kent), 6.6.38, young, by St. Edmund's Sch.	Staple (Kent), 6.2.39 [10 m. SE.].
RS.5149	High Hoyland (Yorks), 28.5.36, ad., by J. Ellis.	Bretton (Yorks), 14.7.39 [9 m. NW.].
RS.2009	Gt. Budworth (Ches), 17.5.34, ad., by A. W. Boyd.	Where ringed, 1.6.35.
RV.9011	Ditto	4.6.36. Ditto 17.6.37 ; 9.6.38.

Barn-Owl (*Tyto a. alba*).

- AG.601 Gt. Budworth (Ches), 17.7.37, Holmes Chapel (Ches),
young, by A. W. Boyd. 19.9.37 [12 m. E.].
AC.4897 Capel (Surrey), 21.7.38, young, Merstham (Surrey), 20.2.39
by W. A. Cadman. [11 m. NE.].
AG.442 Antrobus (Ches), 26.6.33, ad., Where ringed, 27.8.34.
by A. W. Boyd.

Kestrel (*Falco t. tinnunculus*).

- RW.6171 St. Mark's, I. of Man, 10.7.38, Eecloo, East Flanders,
young, by W. S. Cowin. 15.10.38.
305710 Rugby (Warwick), 4.7.38, Lakenheath (Suffolk), 29.1.39
young, by Rugby Sch. [75 m. E.].
RX.5581 Waxham (Norfolk), 30.5.37, Where ringed, 22.3.39.
ad., by Oxford Orn. Soc.

Sparrow-Hawk (*Accipiter n. nisus*).

RINGED AS NESTLINGS.

- 305825 Southwaite (Cumb), 25.6.38, by Edenhall (Cumb), 5.6.39
E. Blezard. [11 m. SE.].
305827 Ditto (same brood), 25.6.38. Longtown (Cumb), 28.6.39
[16 m. N.].
305810 Dalston (Cumb), 30.6.38, by Calderbridge (Cumb), 21.6.39
R. H. Brown. [30 m. SW.].
305811 Ditto (same brood), 30.6.38. Armathwaite (Cumb), 2.6.39
[10 m. SE.].
305812 Ditto (same brood), 30.6.38. Where ringed, 25.3.39.
305300 Rochester (Kent), 9.7.38, by Farnborough (Kent), 14.7.39
P. Rayfield. [20 m. SW.].
305291 Ditto 2.7.38. Where ringed, —.7.39.

Heron (*Ardea c. cinerea*).

RINGED AS NESTLINGS.

- 106600 Uldale (Cumb), 4.5.30, by Armathwaite (Cumb), —.1.35
R. H. Brown. [18 m. NE.].
113096 Holker (Lancs), 7.5.38, by River Ehen (Cumb), —.2.39
J. Barnes. [31 m. NW.].
113144 Henley-on-Thames, 5.5.34, by Marton (Lincs), —.4.39
Oxford Orn. Soc. [125 m. N.].
113171 Ditto 5.5.34. Weston Zoyland (Som),
—.2.39 [100 m. SW.].
3 Birds Ely (Cambs), Spring, 1938, by Where ringed, —.2.39.
C. S. Clarke.
121097 Eaton Socon (Beds), 19.4.38, Peakirk (Northants), 27.2.39
by C. S. Clarke. [30 m. N.].
121098 Ditto (same brood), 19.4.38. Aldwinckle (Northants) 20.2.39
[18 m. NW.].
121125 Ditto 5.5.38. Grendon (Northants), 24.1.39
[18 m. W.].
121105 Ditto 19.4.38. Biggleswade (Beds), 12.2.39
[9 m. S.].
121101 Ditto 19.4.38. Southoe (Hunts), 22.1.39
[4 m. N.].

No.	Ringed.	Recovered.
Mallard (<i>Anas p. platyrhyncha</i>).		
RINGED AS FULL-GROWN.		
401660	Leswalt (Wigtown), 25.1.38, by J. Law.	Somerleyton (Suffolk), 2.2.39 [320 m. SE.].
401693	Ditto	8.2.38. Stargard, Pomerania, Germany, —.12.38.
402795	Ludham (Norfolk), 2.8.37, by M. Boardman.	Cumwhitton (Cumb), —.2.39 [235 m. NW.].
402944	Ditto	24.9.37. River Fal (Cornwall), 5.1.39 [330 m. SW.].

RECOVERED WHERE RINGED.

401643	Leswalt (Wigtown), 28.2.36, by J. Law.	—.11.38.
401659	Ditto	25.1.38. 21.10.38.
401679	Ditto	27.1.38. 16.3.39.
401627	Ditto	8.2.38. 21.10.38.
401630	Ditto	1.3.38. 15.2.39.
3 Birds	Ludham (Norfolk), —.10.37, by M. Boardman.	—.8.38.
402963	Ditto	6.10.37. 21.1.39.
402964	Ditto	7.10.37. 26.11.38.
Or. 1117	Pembroke, 12.10.36, by S. Greenslade.	28.2.39.

Teal (*Anas c. crecca*).

RINGED AS FULL-GROWN.

RW.8724	Leswalt (Wigtown), 1.3.37, by J. Law.	Where ringed,	21.10.38.
RT.9899	Ditto	8.2.38. Ditto	30.1.39.
RW.8707	Ditto	25.2.36. Myvatn, Iceland;	27.5.39.
RINGS ISSUED TO WILDFOWL INQUIRY COMMITTEE.			
900467	Dilham, (Norfolk), 22.11.38.	River Schelde, Belgium,	
901989	Pembroke,	28.12.38. Bryngwran, Anglesey,	7.2.39 [110 m. N.].
901468	Ditto	5.12.38. Tregaron (Cards),	7.2.39 [60 m. NE.].
901840	Ditto	19.12.38. Daventry (Northants),	30.1.39 [165 m. NE.].
901672	Ditto	12.12.38. Northampton,	23.2.39 [180 m. NE.].
901789	Ditto	19.12.38. Newark (Notts),	21.2.39 [200 m. NE.].
901764	Ditto	19.12.38. Clevedon (Som),	13.2.39 [90 m. E.].
901997	Ditto	28.12.38. Lakenheath (Suffolk),	16.1.39 [250 m. E.].
901499	Ditto	6.12.38. River Fal (Cornwall),	6.2.39 [95 m. S.].
901778	Ditto	19.12.38. Upper L. Erne (Fermanagh),	9.2.39.
901259	Ditto	8.11.38. Ballintober (Roscommon),	26.2.39.
901351	Ditto	18.11.38. Fuerty (Roscommon),	27.2.39
901666	Ditto	12.12.38. Enniscorthy (Wexford),	30.1.39.
901878	Ditto	20.12.38. Rosslare (Wexford),	28.2.39.
901355	Ditto	18.11.38. Gortalea (Kerry),	8.2.39.

No.	Ringed.	Recovered.
Teal (continued).		
901683	Pembroke,	13.12.38. Tralee (Kerry), 6.1.39.
901330	Ditto	15.11.38. Feakle (Clare), 28.1.39.
902046	Ditto	1.1.39. Ennis (Clare), 28.2.39.
901978	Ditto	27.12.38. Kovrov, Russia, 17.4.39 [56°28'N., 41°30'E.].
901214	Ditto	29.10.38. Viipuri, S.E. Finland, 24.4.39.
901771	Ditto	19.12.38. Valkeamaki, S.W. Finland, 28.5.39.
901707	Ditto	16.12.38. Hammerdal (Jämtland), Sweden, 8.5.39.
901270	Ditto	10.11.38. Bjerringbro (Jylland), Den- mark, 9.4.39.
901475	Ditto	5.12.38. Moerdyk, Zuid Holland, 24.2.39.
902216	Ditto	17.1.39. Zillebeke, West Flanders, 14.3.39.
901319	Ditto	14.11.38. Arcachon (Gironde), France, 23.12.38.
900376	Abbotsbury (Dorset),	16.2.38. Where ringed, 28.1.39.
RINGS OF THE ORIELTON DECOY, PEMBROKE.		
835	16.1.36.	Bryngwran, Anglesey, 28.2.39 [110 m. N.].
810	3.1.36.	Northampton, —.11.38 [180 m. NE.].
2928	19.12.37.	Brampton (Lincs), 4.2.39 [220 m. NE.].
595	20.12.35.	River Kennet (Berks), 24.1.39 [155 m. E.].
2421	18.11.37.	Wallingford (Berks), 22.2.39 [160 m. E.].
2174	28.10.37.	Burnham (Som), 26.12.38 [85 m. SE.].
2627	25.11.37.	Cheddar (Som), 8.2.39 [95 m. SE.].
3030	31.12.37.	Sherborne (Dorset), 28.1.39 [115 m. E.].
2597	23.11.37.	Roscommon, 14.1.39.
2483	19.11.37.	Wexford, —.1.39.
2951	23.12.37.	Ungurmuiza, East Latvia, 20.7.38.
2419	18.11.37.	Hamburg, Germany, 24.9.38.
2229	6.11.37.	Arjeplog, (Norrbotten), Sweden, —.7.38.
1785	18.12.36.	Mullholm (Norrbotten), Sweden, 15.5.38.
3015	30.12.37.	Tipperne (Jylland), Den- mark, 10.10.38.
681	25.12.35.	Tournai (Hainaut), Belgium 19.2.39.
3156	9.1.38.	St. Laurent (Landes), France, 20.12.38.
2 Birds	Winter, 1936-7.	Where ringed, —.2.39.
13 Birds	Winter, 1937-8.	Ditto, Winter, 1938-9.

(To be continued.)

NOTES

UNUSUAL NESTING SITES AND FOOD OF GREY WAGTAIL.

FOR some years a pair of Grey Wagtails (*Motacilla c. cinerea*) have nested in and round a house in Ireland choosing as sites the window ledges of upstairs windows or the thick stems of a Virginian creeper, the nest being either built along a branch or in a fork.

There is no water in the garden, but the house lies near water, about a quarter of a mile off on one side and only a few hundred yards on the other where the overflow of a pond comes down in a small stream; although this last gave very suitable sites for the birds to nest they never made any attempt to do so but preferred the house walls.

One pair of Grey Wagtails became so tame that the parents and later the young birds, came to the tea table in the garden and took crumbs of cake and biscuits both for themselves and to feed the young.

H. RAIT KERR.

[Nests away from water have been recorded previously (*cf.*, *e.g.*, *Brit. Birds*, Vol. V, pp. 133 and 165). A ledge of a building is not a very uncommon site.—EDS.]

CLIFF-BREEDING IN THE HOUSE-MARTIN.

SUPPLEMENTARY NOTES.

THE following additional notes have been received since the publication of the paper on this subject (*antea*, pp. 16-24).

ENGLAND AND WALES.

DEVON (p. 18). L. A. Harvey, in July, 1939, saw two groups of nests at Ladram Bay, west of Sidmouth, probably not containing more than half a dozen nests in all, so that this colony is certainly not extinct as thought possible.

NORFOLK (p. 19). Only one nest at Hunstanton was recorded and that as far back as 1866, but H. B. Booth noted 2 or 3 nests on the cliff at Old Hunstanton in 1890, 1891 and 1892.

YORKSHIRE (p. 21). Some further information has been supplied by H. B. Booth. Both Malham Cove and Kilnsey Crag are huge blocks of mountain limestone. On June 18th, 1936, the number of breeding pairs at Kilnsey was estimated at about 40, a considerable reduction. The note by L. S. V. Venables "near Grassington" undoubtedly refers to Kilnsey Crag, which is only 3 miles from the village.

ISLE OF MAN (p. 22). At Port Soderick, near Douglas, there were 8 or 10 pairs breeding on June 25th, 1939; three in the roof of a cave (H. B. Booth).

SCOTLAND.

SOLWAY. KIRKCUDBRIGHT (p. 22). The site near Douglas Hall was visited in 1939, and four nests (possibly more) were located on Cow Snout (G. M. King).

CLYDE. AYR (p. 22). In addition to the Currarie colony, there is also a large one on the coast at Dunure, some five miles south of Ayr (W. F. B. Pollok Morris).

IRELAND.

MUNSTER. CO. CORK (p. 23). C. J. Evans reports House-Martins in 1930 on the cliffs at Ballyandreen, two miles west of Ballycottin Pt. and Wilson Strangman states that there are colonies there and that they nest sporadically all along this stretch of coast.

ULSTER. CO. ANTRIM (p. 24). M. N. and D. H. Rankin report two nests, $\frac{3}{4}$ mile S. of Portmuck, Islandmagee; six on an overhanging limestone cliff N. of Portmuck, two of them in a horizontal crack; and twenty-one on limestone cliffs of Larrybane Bay (E. of Ballintoy), mostly under overhanging rock, but a few in large cracks. About 8 were among stalactites, resembling the nests in size and shape. No occupied nests at Ballintoy harbour and eastward, but traces of old nests seen. Eleven nests at Portbraddan and one unoccupied.

Also nine on face of limestone quarry at the Whiterocks, Portrush, under slight overhangs. At Rathlin Is. in 1937 and July, 1939, no nests found, but many birds seen and breeding strongly suspected on cliffs in several parts of island. There are no houses suitable for nesting on the island.

CO. LONDONDERRY (p. 24). Sixteen nests under small overhangs on basalt cliff at Downhill; also two disused nests on small limestone cliff west of the other colony (M. N. and D. H. Rankin).

F. C. R. JOURDAIN,
H. F. WITHERBY.

SCAUP-DUCKS IN BEDFORDSHIRE.

DURING very severe weather on December 30th, 1938, I observed nine Scaup-Duck (*Aythya marila*) (5 adult males and 4 adult females) at the Arlesey Pit, Bedfordshire, some 70 miles from the nearest salt water. There were six birds left on January 2nd, 1939, two on the 6th and one female stayed until February 5th.

The Scaup is an extremely rare bird in this district and definite records are few and far between. A. REAVLEY JENKINS.

NESTLING WOOD-PIGEON WITH UNDIGESTED FOOD IN CROP.

SQUAB pigeons are commonly said to be fed on "re-gurgitated" food, using the term in Pycraft's sense of "food which has been completely changed by digestion."

That this is not always the case is exemplified by a young Wood-Pigeon (*Columba p. palumbus*) which fell from its nest on to my lawn at Sway, Hants, for its crop instead of containing "pigeon milk" was hard and distended and crammed with seeds. These seeds consisted of two oats (*Avena fatua*), a few others resembling cooked rice which I could not identify, and sufficient seeds of the bulbous

crowfoot (*Ranunculus bulbosus*) to fill a cup. The crowfoot seeds were quite fresh and green as though just gathered, being not digested at all.

In the gizzard, in addition to two small white flints were a number of crowfoot seeds slightly trituated.

The young bird was, I should judge, about a week old. It was about 5 in. to 6 in. long and was covered with down and very small pin feathers were showing in its wings only. Whether its diet had killed it and in consequence it had been thrown from the nest or whether it had fallen out I do not know but as it was quite fresh, I think it must have fallen accidentally.

GEORGE MARPLES.

LONG-TAILED DUCK IN SUTHERLAND IN JUNE.

ON a visit to Sutherlandshire in June of this year (1939) my friend the Rev. E. C. Sherwood and I observed a male Long-tailed Duck (*Clangula hyemalis*) in full breeding plumage in



one of the bays opposite Handa Island. The bird was there on the afternoon of June 11th and all day on the 12th, and the boatman declared that it had been in the neighbourhood for some time. It was very tame and allowed us to get close enough to see clearly the salmon-pink band on the beak and to take several photographs. I suspect that in

this plumage the Long-tailed Duck has not previously been photographed in British waters. CHARLES E. RAVEN.

STOCK-DOVES FLOCKING IN MAY IN WILTSHIRE.

ON May 30th, 1939, my wife and I saw about 100 Stock-Doves (*Columba ænas*) and 10 or 12 Turtle-Doves (*Streptopelia turtur*) near Rockbourne, Wiltshire, on a newly harrowed and sown field. It is surely very unusual for such a large number of these not very common birds in this neighbourhood to get together at that time of the year. B. J. RINGROSE.

TURTLE-DOVE BREEDING IN IRELAND.

ON May 20th, 1939, I heard a pair of Turtle-Doves (*Streptopelia t. turtur*) calling in the woods of "St. Annes," Clontarf, Co. Dublin, a large well-wooded estate to the north-east of the city.

I was informed by two of the gardeners, James Doherty and Thomas McDonnell, that they had heard the birds for "the last two or three days." At my request they watched and reported to me anything they noticed regarding the behaviour of the doves.

Father P. G. Kennedy, S.J., Mr. P. Dunn and I searched for the nest on various days, and I personally climbed many trees to examine nests, but we were unsuccessful, though we saw the birds many times, and as I live quite close and have permission to collect on the estate, I did a lot of searching on my own with the same result.

The birds were heard calling every day and were often seen in the gardens till June 14th when they became silent, only being heard calling twice, in the mornings, till June 25th, when the two gardeners told me they had seen the birds on the ground and that they must "surely be breeding as the cock was chasing the hen and flirting with her." From this date they were heard calling two or three times up to August 25th, when McDonnell and Doherty reported that they had seen the two old birds accompanied by two young on a tree behind the gardens and the same afternoon I saw the parents and one of the young fly across from one plantation to another. The young bird appeared browner than the adults.

About the time these birds were first seen, Father Kennedy told me that a party of ten had been reported from the Co. Wexford.

I wish to thank James Doherty and Thomas McDonnell for their help in looking after the birds and Lt.-Col. Jones for permission to bring Father Kennedy and Mr. Dunn into "St. Annes." EUGENE O'MAHONY.

BLACK GUILLEMOTS BREEDING IN HOLES IN HARBOUR WALLS IN WIGTOWNSHIRE AND CO. DOWN.

SOME years ago the late J. G. Gordon informed me that Black Guillemots (*Uria g. grylle*) bred in holes in the harbour wall of Portpatrick, Wigtownshire. He assured me that he had already published this observation, but as we have been unable to trace the reference and as the fact has been again reported by Mr. E. Richmond Paton who saw five or six pairs flying in and out in 1938, and by Mr. H. W. Robinson in 1939, it is advisable to put it on record.

Mr. D. Nethersole-Thompson also informs us that he saw Black Guillemots nesting in holes in the sea wall at Port Halbert in 1932 and Mr. C. V. Stoney states that they nest regularly there, and in a similar site at Ballywalter they had nested long before 1921 when he first saw them. Both these localities are in Co. Down.

H. F. WITHERBY.

STATUS OF NUTHATCH IN W. MERIONETHSHIRE.—With reference to the note on this subject (*antea*, p. 80), Mr. A. H. V. Smith informs us that on August 6th, 1938, he observed six Nuthatches (*Sitta e. affinis*) at Cymmer Abbey, on the bank of the Mawddach, a little to the north-west of Dolgelly.

FLAMINGOS IN YORKSHIRE AND LINCOLNSHIRE.—Mr. G. R. Edwards informs us that a Flamingo (*Phaenicopterus r. roseus*) arrived at sewage works two miles from Halifax on August 14th, 1939. The first day it was wild, but later it became tame and could be approached. It was found dead on September 12th. In plumage it was like an adult, but the legs were dull greyish. When the bird flew it could be seen that some of the inner primaries were short and made a gap. Evidently this bird had escaped from captivity.

Mr. F. J. F. Barrington, F.R.C.S., and Col. A. E. Hamerton write that on August 16th at 8 p.m. they observed a Flamingo flying along the shore in a north-westerly direction between Boston and Wainfleet on the Wash. The bird appeared to be in good plumage and was a rich pink with pink legs and not faded as is usual in captive birds. Also none of the wing-quills appeared to be ragged or missing. The bird continued to fly strongly in a north-westerly direction until out of sight.

Col. Hamerton remarks that most captive Flamingos when imported by dealers have one wing clipped and not pinioned. If the wing is not subsequently pinioned these birds, of course, regain the power of flight after they have moulted, but often some of the cut feathers are not dropped. If subsequently

handled and carefully examined, escaped birds would probably show some other signs of captivity, but we have known of cases where a Flamingo, subsequently proved to have escaped from captivity, has been as unapproachable as a genuine wild bird and has looked like one. It seems therefore probable that both these birds were escapes from captivity.

BREEDING OF THE GANNET ON THE SCAR ROCKS, WIGTOWNSHIRE.—With reference to Mr. McWilliam's article on this subject (*antea*, pp. 105-7) it is as well to state that the Rev. F. C. R. Jourdain, who was away when Mr. McWilliam's article came in, visited the Scar Rocks in company with the Rev. C. J. Pring on June 6th, 1939. Five or six adult Gannets were sitting on the highest part of the Great Scar and one remained until approached within a few yards. A careful search disclosed no egg or nest though Shags' nests were all around. The egg from which the young Gannet was hatched must have been laid within about a week of this visit.

CURLEW ATTACKING RABBIT.—Mr. G. M. King writes that he watched a Curlew (*Numenius a. arquata*) attacking a rabbit in Kirkcudbrightshire in June, 1939. The first attack merely surprised the rabbit and the second and third were not pressed hard, but the fourth was fierce and drove the rabbit away. Probably the bird had young near at hand, but Mr. King could not find them. Curlews have been seen to fly up repeatedly at the face of a sheep grazing in the direction of its eggs.

BLACK GUILLEMOT BREEDING IN YORKSHIRE.—We have hitherto overlooked a remarkable record, which is hidden away in a mass of matter in the Yorkshire Naturalists' Union Report for 1938 (*Nat.*, 1939, p. 15), that Mr. V. G. F. Zimmerman reports that early in July he saw a Black Guillemot (*Uria g. grylle*) on several occasions on Bempton Cliffs. On the 24th he watched a pair of these birds feeding two young ones. We much regret to learn that Mr. Zimmerman died some months ago and no more details are available as no one else appears to have seen the birds. Pennant visiting Flamborough cliffs in July, 1769, observed a few Black Guillemots and about 1814 A. Strickland shot one there in the breeding season but could not say if they were nesting. An egg from Charles Waterton's collection was stated to be of this species by Newton and Nelson, but it was labelled "Razorbill, Flamborough, 1834," by Waterton, who evidently had no knowledge of the Black Guillemot breeding there and there are dwarf eggs of Razorbill which could be mistaken for those of the Black Guillemot.

South-Eastern Bird Report, 1938. Edited by Ralph Whitlock. (R. Whitlock, Pitton, Salisbury.) 3s. 6d.

THIS Report is now published under the auspices of the South-Eastern Union of Scientific Societies and a committee of management under the chairmanship of Dr. J. M. Harrison has been formed. The position of Hampshire is different to the other counties covered by the report, as it already has a report of its own under the auspices of the Hampshire Field Club and this has a prior claim. To avoid duplication and other difficulties, we understand that special arrangements are being made with regard to this county. The committee for the South-Eastern Report promises certain regulations, especially with regard to doubtful or important records and we think that this is a very wise move, as such reports cannot be too critical and a number of very questionable items have appeared in previous issues of this Report.

In our view it is much better to leave a record unpublished rather than to publish a doubtful one. Such records once published merely add unnecessary burdens to an already over-burdened literature and are a constant source of worry to conscientious compilers. The most expert observers sometimes see birds that they cannot identify with any certainty owing to various circumstances and most are content to leave such records in their notebooks and that should be the rule of all. A publication rule which is more than ever necessary at the present day when there are so many observers with varied qualifications, is that in the case of a rarity the observations made at the time by the observer should be submitted to the editor, and if publication results, the points bearing on the identification should be printed. The more experienced an observer is the more meticulous we find he is in doing this. Others so often appear to think that all they have to do to convince others is to state that they have convinced themselves! A compiler has either to rule out such records as unproven or endeavour to obtain the evidence, but this is usually impossible after the lapse of years.

Besides the classified list the Report includes tables and notes on migration and song and a useful account of Sussex heronries by E. M. Cawkell from which it would appear that the breeding population has increased somewhat since the census of 1928. The classified notes contain many items of interest, among which we may notice that Crossbills are said to have nested in Surrey, an Iceland Redwing struck Dungeness Light on November 16th, a pair of Montagu's Harriers nested in Sussex but failed to hatch, several Kentish Plovers are reported from E. Kent and a bird claimed to have been a Marsh-Sandpiper was seen in E. Kent on July 8th. We can gather that the bird was grey but otherwise we are given no idea how such a rare bird, which very few British observers have ever seen, came to be identified. As it stands this is a very good case of an unacceptable record because it is quite unsupported by any details to show how the bird was identified.

Ornithological Report for Hampshire, 1938. By the Rev. F. C. R. Jourdain. (*Proc. Hampshire Field Club and Arch. Soc.*, Vol. XIV, part 2.)

BESIDES the notes in the classified list this Report contains dates for departure of summer migrants and their latest heard songs and the earliest dates of songs of residents. In the first list there is no indication as to which dates refer to song. The early date of August 17th is given

for the appearance of about thirty Fieldfares near Longparish, which is interesting in connection with the arrivals in Cornwall in the same month (*antea*, Vol. XXXII, pp. 200 and 279). It is denied that the Raven has established itself in the New Forest as was stated in the *S.E. Report* for 1937. The large westward movement of Sky-Larks in December was very marked, especially along the coast, and where cabbages were exposed above the snow they concentrated and destroyed the leaves. A Great Grey Shrike was seen from July 4th to 16th, a very late date, and others in May and June. The Dartford Warbler appears to have had a setback owing to fires, but this has led to some spreading to new localities. A male Blackbird was observed to bring material and work it into the nest. Spoonbills were seen in Christchurch Harbour in March and September. An Oyster-catcher nested and this seems the first record for the Hampshire mainland (excluding the Isle of Wight). There are other notes of interest and it is hoped that more observers will contribute in future.

Eleventh Report of the Devon Bird-Watching and Preservation Society, 1938.

THERE are a number of interesting items in this Report, but some of the records are very unsatisfactory as no details of identification are given. An Alpine Swift is reported at Lymptone on October 2nd but without a word of description. Another record is of a "large hawk probably a Goshawk." A "Black Woodpecker" flew past a member of a shoot. We are taken to task for not admitting this species to the *Handbook*, but a record of this kind certainly provides no inducement for revision. A Nutcracker seen at Budleigh Salterton on December 27th is better authenticated though whether it was of the slender-billed form or not is, of course, quite uncertain. A Hooded Crow was noted at Dunster in December; a pair of Chaffinches brought off two successive broods at Porlock; Montagu's Harrier bred in one locality; an Eider Duck is recorded from Ilfracombe in April; large numbers of Black-tailed Godwits were seen (Exe, forty-four, November 17th; Tamar, seventy at the end of January and varying numbers at other dates) and a Black Guillemot was noted at Dawlish in February.

LETTER.

POSSIBLE OCCURRENCE OF THE FÆROE ROCK-PIPIT IN THE BRITISH ISLES.

To the Editors of BRITISH BIRDS.

SIRS,—Some time during the evening of August 30th, 1939, a Rock-Pipit flew aboard the steam trawler "Southcoates" as she was lying in Thorshavn (Færoe) harbour and roosted there. We sailed at dawn the next morning and I frequently saw the bird pecking about on the deck and among the nets. Judging by the dark upper-parts and, more especially, by the locality it would appear pretty certain that this was the Færoe Rock-Pipit (*Anthus spinoletta kleinschmidti*).

On September 2nd, as we were passing within 2 miles of North Ronaldsay (Orkney) in beautiful calm, sunny weather, the bird, after much disturbance owing to deck-washing, took off and flew straight towards the land until it was out of sight. Owing to the excellent weather conditions, it seems quite possible that it reached there safely.

It has frequently occurred to me that these Passerine insular sub-species might quite often get carried from island to island by boat and I merely publish this note to show a case in which it quite possibly actually happened.

L. S. V. VENABLES.

1939
PURCHASED

THE POPULAR SERIES OF
BIRD-LOVERS' MANUALS

MORE SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

SONGS OF WILD BIRDS

E. M. Nicholson and L. Koch. Illustrated. 15s. net boxed.
With gramophone records of bird-song.

BIRD MIGRATION

A. Landsborough Thomson. Illus. Sm.Cr.8vo. 5s. net.

HOW TO KNOW BRITISH BIRDS

Norman H. Joy. Illus. Sm.Cr.8vo. 5s. net.

BIRDS OF THE GREEN BELT

R. M. Lockley. Illus. Sm.Cr.8vo. 5s. net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner. Illus. Sm.Cr.8vo. 5s. net.

H. F. & G. WITHERBY LTD., LONDON

FOR SALE

Complete set of DRESSER'S "BIRDS OF EUROPE"
Original edition, red half calf, in perfect condition

Write to:

A. J. Pearson, Merevale, Lowdham, Nottingham

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (*Fondée en 1911*)

La seule publication scientifique belge traitant des oiseaux, spécialement
des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique)

Volume Four
**THE BIRDS OF THE
MALAY PENINSULA**

Birds of the Low Country
Jungle and Scrub

Vols. I and II by the late HERBERT C.
ROBINSON, F.Z.S., M.B.O.U.

Vols. III, IV and V by F. N. CHASEN

*Each volume will contain
about 25 coloured plates from drawings
by H. GRONVOLD*

Imperial 8vo. 35s. net or the set of 5 volumes £7 7s. net

Vol. I: The Commoner Birds

Vol. II: The Birds of the Hill Stations

Vol. III: Sporting Birds

Vol. IV: Birds of the Low Country,
Jungle and Scrub

Vol. V: Open Country and Ricefield
Birds

H. F. & G. WITHERBY LTD.

326 High Holborn, London, W.C.1

BRITISH BIRDS

NOV 1939
PURCHASED

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

NOV. 1,
1939.

Vol. XXXIII.
No. 6.



MONTHLY 1s 9d. YEARLY 20s.
326 HIGH HOLBORN LONDON
H. F. & G. WITHERBY LTD.

THE HISTORY OF THE ENGLISH NOVEL

Complete in 10 volumes

By ERNEST A. BAKER, D.Lit., M.A.

Demy 8vo. 16s. net each volume. £8 8s. net the set.

VOL.

- I. The age of Romance: from the beginnings to the Renaissance.
- II. The Elizabethan age and after.
- III. The later Romances and the establishment of Realism.
- IV. Intellectual Realism — from Richardson to Sterne.
- V. The Novel of Sentiment and Gothic Romance.
- VI. The Beginnings of the Nineteenth Century.
- VII. The Age of Dickens and Thackeray.
- VIII. From the Brontes to Meredith.
- IX. The Day before Yesterday.
- X. Yesterday.

H. F. & G. WITHERBY LTD.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique)

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND
NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 6, VOL. XXXIII., NOVEMBER I, 1939.

	PAGE
Observations on Swallows and House-Martins at the Nest. By R. E. Moreau and W. M. Moreau	146
Birds seen on an autumn and a spring Atlantic Crossing. By L. S. V. Venables	152
Recovery of Marked Birds. By Miss E. P. Leach	155
NOTES :—	
Same pair of Chaffinches mating three times (E. W. Hendy)	162
Fecundity of Blue Tits in relation to Age (Hon. G. Charteris)	162
Song-Thrush nesting in its First Year (E. W. Hendy) ...	162
Grey Lag-Goose with pink Bill (T. C. Gregory)	163
Nesting of the Black-necked Grebe in Cheshire (A. W. Boyd)	163
Fulmar Petrels in Carnarvonshire (R. W. Jones)	164
Stock-Doves flocking in May in Hertfordshire (B. Lloyd) ...	165
Ruff and Black-tailed Godwit in the Isle of Man (K. Williamson)... ..	165
Wood-Sandpipers in Surrey (P. A. D. Hollom)	166
Great Snipe in Lincolnshire (Dr. J. M. Harrison)	166
Short Notes :—	
Late Breeding of Bullfinch. Spoonbills in Hampshire. Red- necked Grebe in Somerset. Late Breeding of Storm-Petrel. Kildeer Plovers in Ireland. Grey Plover in Hertfordshire. Knot in Hertfordshire. Red-necked Phalarope in Yorkshire. Black Guillemots breeding in Holes in Harbour Walls in Co. Down	166
Reviews :—	
<i>Report of Marlborough College Natural History Society, 1938</i> ...	168
<i>Annual Report of Gresham's School Natural History Society,</i> 1938-9	168
Letter :—	
Lapwings Nesting at High Altitude in Norway (E. J. M. Buxton)	168

OBSERVATIONS ON SWALLOWS AND HOUSE- MARTINS AT THE NEST.

BY

R. E. MOREAU AND W. M. MOREAU.

RECENT studies of the parental care by African Hirundinidæ and Swifts have suggested that, in addition to specific differences in the share taken by the sexes, certain rhythms of the behaviour may be specific, especially the favourite duration of the individual spell on the eggs, the duration of the intervals when the eggs are left uncovered and the frequency with which food is brought to the young (Moreau, 1939 (*a*), and in Press). During our leave in this country we hoped to make for comparison some preliminary observations on the British Hirundinidæ. Owing to bad weather and other circumstances beyond our control we have been able to do much less than we had hoped; but so little has been published on the numerical aspect of these birds' behaviour that it seems worth while to put some of our information on record. Some notes on the Sand-Martin have already appeared (Moreau, 1939 (*b*)). Taken in conjunction with the African data, those on the British species certainly suggest the possibility of specific differences that would repay further investigation.

Our observations were made near Farnham, Surrey. Especially in connection with those on the House-Martins we have to thank Mr. W. F. Rankine for facilities and co-operation.

INCUBATION.

SWALLOW (*Hirundo r. rustica*).

The information in *The Handbook of British Birds* is that incubation is "apparently by female only or share of male is small." On eleventh and twelfth days of incubation (July 21st and 22nd) we watched a Swallow's nest from 4 p.m. to 6.50 p.m. and 2.15 p.m. to 5.15 p.m. respectively. On the first day the eggs were brooded 9 times by the female, 4 times by the male; on the second day 6 times by each bird. Individual spells on the eggs lasted from 5 to 16 minutes (with no obvious sexual difference); and of the 21 complete spells recorded, 11 were of durations of 8 to 12 minutes.

No instantaneous change-overs took place. The eggs were left uncovered for intervals of 2 to 9 minutes, more than half of the intervals lasting 5 to 6 minutes. There was no regular alternation between male and female; and on one occasion both returned at once, the male settling on the eggs. (As a

rule the male alighted for a short time—up to 2 minutes—on a neighbouring beam before going on the nest, while the female regularly flew straight to the nest from outside the building.)

Both afternoons were cool, the shade temperatures not exceeding 18° C. (65° F.); the eggs were, however, covered for only 64 per cent. and 65 per cent. of the observed time.

HOUSE-MARTIN (*Delichon u. urbica*).

Thirty yards away from the Swallow's nest just referred to, two House-Martins' nests, a foot apart, were under observation :—

Nest A : June 24th, 2 p.m. to 6 p.m. ; 25th, 10 a.m. to 1 p.m. (About the eighth and ninth days of incubation.)

Nest B : July 10th, 3.40 to 7 p.m. (About the seventh day of incubation.)

Apparently an important characteristic of the House-Martin's incubation is the instantaneous change-over by the parents. As a rule what the observer saw was a bird entering the nest and after a short interval (up to 45 seconds) a bird emerging. It was (and would be at most nests) usually impossible to be certain that the emergent bird was not the one that had entered just before ; but on a few occasions we were able to exclude this possibility and to see with certainty that the sitting bird came off and was not merely visited by its mate. Provisionally, then, we conclude that each entrance followed by an exit at nests A and B represented a change-over on the eggs.

At nest A 21 of the 28 spells "on", that we recorded, were terminated by this sort of change-over, and at nest B all the recorded spells. None of the intervals when the eggs in nest A were uncovered exceeded 4 minutes ; so that in the two nests the eggs were covered 95 to 100 per cent. of the observed time.

At the two nests together 41 complete spells "on" were recorded, varying in duration from 4 to 24 minutes, with a strong preference for durations 7 to 15.

FEEDING OF YOUNG.

SWALLOW.

Four nests, A, B, C, D, each with 3 young (an abnormally small number), on rafters immediately under the slates of a timber shed, were under observation at various dates in July. Another nest, E, with 4 young, on a beam in a cowshed, was watched on July 10th.

Owing to the striking effect of rain on feeding (see below) the following data on feeding-rates relate to rain-free periods

only. The ages given for the young are estimated on the assumption that on the dates they flew (which are known) they were 21 days old, the usual fledging age according to *The Handbook of British Birds*.

Nests B and C were observed concurrently.

TABLE I.

<i>Nest.</i>	<i>No. of Young.</i>	<i>Estimated Age in days.</i>	<i>No. of feeds brought in separate complete rain-free hours.</i>
A	3	3	24, 20, 24, 27
		4	23
		20	21, 25
B	3	11	16, 19
C	3	15	13, 14
E	4	18	38, 39, 38 (see below)

The consistent nature of the feeding during rain-free periods is shown by the fact that of the 340 intervals between feeds recorded, only 32 exceeded 5 minutes and only 5 exceeded 9 minutes. These lasted 11, 11, 12, 13 and 14 minutes.

Owing to the dimly lit situations of the nests and the rapidity of the visits with food it was difficult to assess the shares of male and female. At nest E, where it was least difficult, it appeared that rather less than half the visits were made by the male and that a second female was visiting the nest, at least occasionally. More than once a bird (? sex) approaching the nest before the food-bringer had departed was chased away by the latter. Subsequently the male, making a visit to the nest, was followed by a female, which he drove away before feeding the young. While he was still busy two birds (? sex) flew in and out chasing each other past the nest. Six minutes later two apparently adult females arrived at the nest together and both fed the young.* The feeding-rate at this nest was relatively high, even allowing for the fact that it contained one more young bird than the others; and this might to some extent be accounted for by the participation of the third "parent." (The date being July 10th it is impossible that this could have been a member of an earlier 1939 brood.)

The effects of rain are shown by the following details:—

On July 4th heavy rain fell 10.13 to 11.10 a.m. At nest A, with young 4 days old, the parents remained active and visited the nest 19 times during the 57 minutes—nearly as often as in the rain-free hours (Table I). At 10.29 a.m. one

*Emmet (1939) has observed that "Swallows other than the parents paid visits to the nest." He has recorded 48 feeds brought to 4 young in a single hour.

bird brought a fair-sized moth, but did not try to give it to the young ; and after sitting near the nest with it for a few minutes it carried it out of the building again.

On July 6th light rain began at 2.1 p.m. and from 2.18 onwards continued more or less heavily until the end of the watch at 4 p.m.

At nest A, with young 6 days old, 9 feeds were brought up till 2.46 p.m., and only 2 more (at 3 p.m. and 3.46 p.m.) during the remaining 74 minutes. (But the young birds were brooded more than during the rain-free periods.)*

At nest B (observed concurrently with A), with young 11 days old, 14 feeds were brought 2.1 p.m. to 2.36 p.m., none 2.36 p.m. to 3.36 p.m. and four 3.36 p.m. to 4 p.m.

At nest C (observed concurrently with B and A), with young 15 days old, 13 feeds were brought 2.1 p.m. to 2.37 p.m., none 2.37 p.m. to 3.18 p.m. and five 3.18 p.m. to 4 p.m.

On July 20th very heavy rain fell 10.55 a.m. to 11.18 a.m. At nest A, where the young were now about 20 days old, feeding, which both before and after was at over twenty times an hour, stopped entirely 10.56 a.m. to 11.27 a.m.

From the foregoing examples it appears that heavy rain practically stops the feeding of the young. On July 6th there was a lag of about 15 minutes after heavy rain began before feeding was seriously affected, but then feeding stopped—at nests B and C almost simultaneously. Except at nest A on July 20th we had no evidence that parents with grown young came in to shelter near the nest.

The amount of attention given to the young at nest D was in striking contrast to that at the other four Swallows' nests. Nest D was watched from 1.25 p.m. to 5.15 p.m. on July 3rd, and, concurrently with nest A, from 9.32 a.m. to 12.26 p.m. and July 4th. On the 5th, or early on the 6th, the young left the nest.

The parents at the other four nests fed their young very regularly and practically never approached the nest without giving food. The parents at nest D entered the building fairly often, either singly or together, but as a rule either settled near the nest or fluttered for a few seconds a short distance from the clamouring young. During these "feints" the old birds sang a good deal ; and several times after a "feint" or

*We formed the opinion that only the female actually brooded, though the male often sat for a few minutes on the edge of the nest. This is what happens with *Hirundo smithii*. But nest A could not be seen clearly enough for our observations to be as precise as we should wish.

an actual feed the parents sat for a short time on a beam near the nest and then "feinted" again. On July 31d there were 13 visits 1.25 p.m. to 3.16 p.m., 8 of them certainly feints, followed by 10 feeds 3.17 p.m. to 3.34 p.m., 6 feints 3.35 p.m. to 4.24 p.m., 21 feeds and 4 feints 4.25 p.m. to 5.2 p.m. On the 4th, during the period 9.32 a.m. to 11.25 a.m., which included the rainy spell 10.13 a.m. to 11.10 a.m. (not inhibiting activity at nest A), the parents at D made only 5 visits, all feints, and no visits at all 12.3 p.m. to 12.26 p.m., but brought 25 feeds in the 37 minutes 11.26 a.m. to 12.3 p.m. The young birds between them dropped at least four fæcal pellets during the "hungry spell" 9.32 a.m. and 11.25 a.m., so they had evidently had a number of feeds early in the morning before observation started.

Since these young birds were practically ready to fly we take it that the parents' behaviour may have been intended to hurry them out of the nest, partly by positive persuasion and partly by making the food-supply irregular. We have some evidence of similar procedure, but not so marked, at African nests of some *Hirundinidæ*. It is to be noted that the behaviour of the parents at nest A when the young appeared to be practically fledged, did not resemble that at D.

HOUSE-MARTIN.

To a nest with three young about ten or eleven days old 46, 39, 42 and 36 feeds were brought in 4 separate complete rain-free hours observed. The feeding was very regular; only three intervals exceeded 4 minutes and those lasted 5, 7 and 8 minutes. The young first left the nest on the morning of July 21st, when they were all out on surrounding roofs. In the afternoon there was much movement in and out of the nest, but most of the time two were in and one was out on a roof, all receiving frequent feeds. The following morning they mostly spent out again, according to Mr. Rankine's information, but all three passed practically the whole afternoon and evening in the nest, where in complete hours they received 31 and 32 feeds. Incidentally this is a good example of how easily a deceptive fledging period might be obtained for a nest.

SUMMARY.

Data are derived from about 45 and 20 hours' observations on Swallows' and on House-Martins' nests respectively. At a Swallow's nest incubation was shared fairly equally by the parents, with a preference for individual durations "on" of 8 to 12 minutes and "off" of 5 to 6. House-Martins' eggs at

two nests were covered much more consistently, the sitter very rarely coming off until relieved. The usual spell "on" lasted 7 to 14 minutes. In the Swallow three broods of three received on the average 21 feeds an hour when no rain fell, compared with over 30 at a House-Martin's and at Sand-Martins' nests, all with three young. A brood of four Swallows averaged 38 feeds an hour, but apparently a third adult (a female) was helping. One brood of Swallows nearly ready to fly was fed very irregularly and most visits were "feints," apparently to coax them out. Except at this nest food was brought most regularly during rain-free periods, hardly any intervals exceeding 5 minutes. Heavy rain usually stopped feeding after a lag (15 to 20 minutes).

REFERENCES.

- EMMET, H. J. 1939. "A diary of Swallows." *Bird Notes and News*, 18, 145-8.
- MOREAU, R. E. (1939) (a). "Parental care by some African Swallows and Swifts." *Bull. Brit. Orn. Club*, 59, 145-9.
- MOREAU, R. E., in Press. "Numerical data on African Birds' behaviour at the nest." I. *Hirundo smithii*. II. *Psalidoprocne holome-læna*. *Proc. Zool. Soc. London and Ibis*.
- MOREAU, R. E. and MOREAU, W. M. (1939) (b). "Observations on Sand-Martins at the nest." *Brit. Birds*, XXXII, 95-7.

BIRDS SEEN ON AN AUTUMN AND A SPRING ATLANTIC CROSSING.

BY

L. S. V. VENABLES.

IN the autumn of 1938 and the spring of 1939 I made voyages across the Atlantic. The first one was in the "Europa" from Cherbourg to New York and the second in the "Columbie" from Guadeloupe in the Leeward Isles to Plymouth. Several hours counting of birds were undertaken every day at sea and the visibility was usually very good, but both transects were remarkable for the small numbers of birds seen.

Details of the counts are given below arranged as follows. First, the date; then the noonday position; next the wind direction and force followed by the number of hours during which I counted and finally the birds seen.

October 1st (sailed Cherbourg 8.30 a.m.); 49°49'N., 3°54'W.; SW. 4-6; 1½ hours (from 4.30 to 6 p.m., *i.e.*, well past Bishop Rock); sixteen (2 immature) Gannets (*Sula bassana*).

October 2nd; 49°38'N., 2°44'W.; W. 7; 3 hours; no birds.

October 3rd; 47°11'N., 36°40'W.; NW. 7-5 to NNE. 2; 3 hours. Seven North Atlantic Shearwaters (*Puffinus kuhlii* ? *borealis*); a single Shearwater probably of the same species; one Leach's Fork-tailed Petrel (*Oceanodroma leucorhoa*).

October 4th; 42°59'N., 51°04'W.; ENE. 3, SW. 5; 2 hours; party of about forty Terns (*sp.* ?).

October 5th; 41°24'N., 65°38'W.; W. 3-4; 3 hours; three Fulmars (*Fulmarus glacialis*); one North Atlantic Shearwater; two Pomatorhine Skuas (*Stercorarius pomarinus*).

October 6th; passed Ambrose Light at 1.24 a.m.

Unusually few birds were seen compared with other recorded observations on this crossing. Not much is available, however, at a similar time of year. The most numerous bird I saw was *Puffinus kuhlii* and these were mostly around 47°W., while Mayr (1938) in early August found them mostly around 49°W. Wynne-Edwards (1935) shows that the majority of these birds are farther south. He states that *Puffinus kuhlii* "reaches its northern limit at about the 50th parallel in late August and September . . . and in October the majority work south once more. Out to sea it is tolerably common west to 30°W. from late July to October, but by December all except the odd stragglers have moved south of the area."

The large Shearwater usually most numerous on this crossing is the Great Shearwater (*Puffinus gravis*) but on this October voyage none was seen. Owing to the fact that both

these birds fly low over the water the conspicuous white base to the tail and the white neck (giving a "capped" effect) of *P. gravis* can easily be seen. Both these features are lacking in *P. kuhlii* though there is a little whitish at the base of the tail. Wynne-Edwards (1935, Plate 3) gives an admirable picture of the diagnostic characteristics and Mayr (1935, p. 56) discusses differences in flight actions and other features. Rooke (1935) in September, 1934, found *P. gravis* "numerous between . . . 47°30' and 8°50'W." and in September, 1935, (Rooke, (1936)), "not uncommon between 47° and 12°30'W." Wynne-Edwards (1935) in September, 1933, found them mostly between 10° and 40°W.

Kittiwakes (*Rissa tridactyla*), the most numerous birds on January and March crossings (Venables, 1938) were completely absent on the above October transect.

* * *

April 26th, sailed from Guadeloupe (Leeward Isles) at 3.30 p.m. Almost dark when we lost sight of the Isle of Désirade.

April 27th ; 19°39'N., 58°07'W. ; E. 4 ; 3 hours ; one Wilson's Petrel (*Oceanites oceanicus*) ; one Sooty Shearwater (*Puffinus griseus*).

April 28th ; 24°13'N., 53°48'W. ; SE. 4 ; 3 hours ; three Wilson's Petrels ; one White-tailed Tropic bird (*Phaeton lepturus*). Sargasso weed very common all day.

April 29th ; 28°45'N., 48°57'W. ; S. 2-3 ; 3 hours ; two Wilson's Petrels ; four Terns (*sp. ?*). Sargasso weed becoming uncommon by evening.

April 30th ; 33°03'N., 43°27'W. ; SSW. 3 ; 3 hours ; one Pomatorhine Skua ; last flying fish seen.

May 1st ; 37°04'N., 37°30'W. ; NNE. 1 ; 3 hours ; two Wilson's Petrels ; one Sooty Shearwater ; one Red-necked Phalarope (*Phalaropus lobatus*).

May 2nd ; 40°55'N., 30°53'W. ; NNW. 3 ; 3 hours ; nineteen *Puffinus kuhlii* ; eight Red-necked Phalaropes.

May 3rd ; 44°19'N., 23°55'W. ; SSW. 3 ; 3 hours ; four Wilson's Petrels ; four Storm-Petrels (*sp. ?*) ; three Pomatorhine Skuas ; three *Puffinus kuhlii*.

May 4th ; 47°22'N., 15°36'W. ; W. 6 ; 4 hours ; ten Wilson's Petrels ; three Manx Shearwaters (*Puffinus puffinus*) (others seen during the day) ; two Pomatorhine Skuas ; two Skuas (*? sp.*) ; one Kittiwake ; three Terns (*sp. ?*) ; two Puffins (*Fratercula arctica*). All the latter three species in the evening.

May 5th ; 49°32'N., 6°51'W. ; SW. 4 ; 2 hours (between 9 a.m. and 11 a.m.) ; six Wilson's Petrels ; thirty-two

Kittiwakes; fifteen Gannets and one Arctic Skua (*Stercorarius parasiticus*). Herring-Gulls (*Larus argentatus*) and Lesser Black-backed Gulls (*L. fuscus*) began to appear just before noon. The Longships Light was abeam at 2.30 p.m.

Of the deep sea birds the most obvious facts of their distribution stand out as follows: *Puffinus kuhlii* were almost all around 40°N., 30°W.; Manx Shearwaters were seen only around 47°N., 15°W.; Wilson's Petrels were most numerous between 44°N., 23°W. and 49°N., 6°W., and with Pomatorhine Skuas a few were seen between 33°N., 43°W. and 47°N., 15°W.

The only records of this particular transect to which I am able to refer are the three voyages by the Nicholsons (1931), but these were made in late summer and winter; seasons too different from my spring transect for comparison. They show, as with my figures, however, "The existence between the Azores and Barbados of a vast almost birdless area, confirming the experience of previous observers."

REFERENCES.

MAYR, ERNST (1938). "Birds on an Atlantic Crossing." *Proceedings of the Linnaean Society of New York*. No. 49.

NICHOLSON, E. M. AND B. D. (1931). "An Ornithological Transect of the North Atlantic." *British Birds*, XXIV.

ROOKE, K. B. (1935). "Birds seen in the North Atlantic, August and September, 1934." *British Birds*, XXVIII.

ROOKE, K. B. (1936). "Birds seen in the North Atlantic, August and September, 1935." *British Birds*, XXIX.

VENABLES, L. S. V. (1938). "Birds seen in Two Winter Transects of the North Atlantic." *British Birds*, XXXI.

WYNNE-EDWARDS, V. C. (1935). "On the Habits and Distribution of Birds on the North Atlantic." *Proceedings of the Boston Society of Natural History*. Vol. XL, No. 4.

RECOVERY OF MARKED BIRDS.

COMMUNICATED BY

E. P. LEACH.

Hon. Sec. Bird-Ringing Committee, British Trust for Ornithology.

(Concluded from page 136.)

No.	Ringed.	Recovered.
Wigeon (<i>Anas penelope</i>).		
RINGED AS FULL-GROWN.		
RW.8720	Leswalt (Wigtown), 28.2.37, by J. Law.	Castlerca (Roscommon), 1.2.39.
2 Birds	Ditto, Winter, 1937-8.	Where ringed, Winter, 1938-9
RINGS ISSUED TO WILDFOWL INQUIRY COMMITTEE.		
900106	Dereham (Norfolk), 8.2.38.	Oundle (Northants), 12.1.39 [62 m. W.].
900259	Ditto, 28.1.38.	Great Ouse Estuary (Nor- folk), 21.1.39 [25 m. W.].
900230	Ditto, 28.1.38.	Saltmills (Wexford), 5.2.39.
900234	Ditto, 8.2.38.	Kalinin, West Russia, 15.9.38 [56°52'N., 36°E.].
900152	Somerleyton (Suffolk), 14.1.38.	Mouth of R. Welland (Lincs), 24.12.38 [76 m. NW.].
RINGS OF THE ORIELTON DECOY, PEMBROKE.		
1490	26.11.36.	Saltash (Cornwall), 12.1.39 [90 m. S.].
3558	3.11.38.	Williamstown (Galway), 4.1.39.
1383	21.11.36.	River Vychegda, Russia, 2.5.39 [61°30'N., 53°40'E.].
3733	20.12.38.	Samara, S.E. Russia, 22.4.39.
741	27.12.35.	Riga, Latvia, 1938.
3495	23.10.38.	Gouda, Zuid Holland, 13.2.39.
3529	31.10.38.	Setubal (Estremadura), Por- tugal, 12.1.39.
Pintail (<i>Anas a. acuta</i>).		
Or.3571	Pembroke, 7.11.38, ad., by S. Greenslade.	R. Elbe, Schleswig-Holstein, 16.7.39.
Shoveler (<i>Spatula clypeata</i>).		
RINGED AS FULL-GROWN.		
RINGS OF THE ORIELTON DECOY, PEMBROKE.		
3760	21.12.38.	Moscow, Russia, 1.5.39.
3908	19.1.39.	Kalinin, West Russia, Spring, 1939.
3280	19.1.38.	Where ringed, 4.2.39.
Pochard (<i>Aythya f. ferina</i>).		
900183	Somerleyton (Suffolk), 23.1.38, ad., for Wildfowl Inquiry Committee.	Where ringed, 10.2.39.

No.	Ringed.	Recovered.
Tufted Duck (<i>Aythya fuligula</i>).		
Or.3050	Pembroke, 2.1.38, ad.	Where ringed, 17.1.39.
Eider (<i>Somateria m. mollissima</i>).		
113345	Collieston (Aberdeen), 27.5.34, ad., by M. Portal.	Peterhead (Aberdeen), 7.3.39 [12 m. N.].
Goosander (<i>Mergus m. merganser</i>).		
AB.8572	Molesey (Surrey), 19.12.37, by P. Hollom.	Slough (Bucks), 20.1.39 [11 m. NW.].
Cormorant (<i>Phalacrocorax c. carbo</i>).		
RINGED AS NESTLINGS.		
114203	Mochrum (Wigtown), 3.8.34, by Lord Dumfries.	Troon (Ayr), 1.7.39 [47 m. N.].
114028	Ditto	3.7.35 Dormont (Dumfries), 11.4.39 [53 m. E.].
113979	Ditto	30.6.35 Annan (Dumfries), —.7.39 [55 m. E.].
119703	Ditto	15.7.37. Ditto 10.2.39.
120353	Ditto, 15.7.36, by Lord David Stuart.	Dittisham (Devon), 27.3.39 [310 m. S.].
122031	Northumberland, 27.7.38, by Bootham Sch.	Berwick-on-Tweed, —.2.39.
107695	Puffin I., N. Wales, 16.6.38, by T. Tallis.	Machynlleth (Merioneth), —.3.39 [52 m. S.].
122082	Ditto	24.7.38. Exeter (Devon), 23.2.39 [190 m. S.].
121411	S. Pembroke, 16.6.38, by Skokholm Bird Obs.	Calstock (Cornwall), —.3.39.
3 Birds	Ditto	16.6.38. Brittany, Dec.-April, 1938-9.
121364	Ditto	16.6.38. Ancenis (Loire Inf.), France, —.11.38.
121359	Kilmeena (Mayo), 23.6.38, by S. Marchant.	Ballina (Mayo), —.2.39 [25 m. NE.].
3 Birds	Roundstone (Galway), 24.6.38, by S. Marchant.	Galway, Jan.-April, 1939.
122566	Ditto	24.6.38. Ministric (Ille-et-Vilaine), France, 4.12.38.
Shag (<i>Phalacrocorax a. aristotelis</i>).		
RINGED AS NESTLINGS.		
112873	Tonga, N. Shetland, 23.7.38, by T. Kerr.	Hoganes, S. Shetland, —.4.39 [46 m. S.].
120377	Badbea (Caithness), 11.7.38, by E. Cohen.	Pennan (Aberdeen), 23.7.39 [59 m. SE.].
121269	Bass Rock, 2.7.38, by Midlothian O.C.	Redcar (Yorks), —.1.39 [125 m. S.].
121308	Ditto	2.7.38. Whitstable (Kent), 6.2.39 [360 m. S.].
121995	Calf of Man, 26.6.38, by Manx Field Club.	Point of Ayre, I. of Man 30.4.39 [30 m. N.].
122585	Cleggan (Galway), 26.6.38, by S. Marchant.	Where ringed, 26.3.39.

No.	Ringed.	Recovered.
Gannet (<i>Sula bassana</i>).		
RINGED AS NESTLINGS.		
112780	Bass Rock, 2.6.38, by Midlothian O.C.	Bay of Biscay, 19.11.38 [46°20'N., 3°40'W.].
124554	Ditto, 28.7.38, by Bootham School.	R. Moulouya, Eastern Morocco, 14.6.39.
125082	Ailsa Craig, 18.8.38, by A. Darlington.	Melilla, Spanish Morocco, —.1.39.
125177	Ditto	24.8.38. Llanbedr (Merioneth), 19.7.39 [180 m. S.].
116635	Grassholm, 9.6.36, by Skokholm Bird Obs.	80 m. N.W. of St. Anne's Hd. (Pem), 20.5.39.
115609	Ditto	17.7.34. Cape Cornwall, 21.1.39.
117773	Ditto	1.8.37. Off Fastnet (Cork), —.5.39.
117672	Ditto	1.8.37. Off Scarborough (Yorks), 21.7.39.
117822	Ditto	29.6.35. Henqueville (Calvados), France, 1.5.39.
121561	Ditto	16.7.38. Montmartin (Manche), France, —.7.39.
123933	Ditto	16.7.38. Camber Sands (Sussex), 20.7.39 [270 m. SE.].
116851	Ditto	4.8.35. Kerlouan (Finistère), France, —.3.39.
122997	Ditto	31.8.38. Oporto, Portugal, —.6.39.
116612	Ditto	9.6.36. Mouth of Tagus, Portugal, —.1.39.
124247	Ditto	31.8.38. Faro (Algarve), Portugal, 8.12.38.
RINGED AS FULL-GROWN.		
AV.393	Grassholm, 31.5.39, by Skokholm Bird Obs.	At sea, 70 m. S., 24.6.39.
123677	Ditto	16.7.38. Off Mine Hd. (Waterford), 17.4.39.
123377	Ditto	16.7.38. Ballycotton Bay (Cork), 9.5.39.
Manx Shearwater (<i>Puffinus p. puffinus</i>).		
RINGED AS FULL-GROWN.		
304609	Skokholm Bird Obs., 20.6.38.	Harlyn Bay (Cornwall), 4.6.39 [80 m. S.].
316100	Ditto	7.7.39. Hartland Point (Devon), 13.7.39 [53 m. SE.].
SAT.407	Ditto	13.5.37. Biarritz (Basses Pyrénées), France, 28.2.39.
300280	Ditto	4.8.37. St. Jean de Luz (Basses Pyrénées), 6.5.39.
AT.234	Ditto	7.5.39. Lequeitio (Vizcaya), Spain, 14.5.39.
303401	Ditto, 11.4.38, by Leighton Park Sch.	Ditto, 25.5.39.
301262	Ditto, 17.8.37, by N.H.S.	London Penmarch (Finistère), France, 21.4.39.
305525	Ditto	18.7.38. Biarritz (Basses Pyrénées), France, 12.5.39.
306709	Ditto, 24.7.38, by S. Marchant.	Ditto, 10.6.39.

No. Ringed. Recovered.

Wood-Pigeon (*Columba p. palumbus*).

- 309706 Blankney (Lincs), 9.8.38, Where ringed, 10.5.39.
young, by J. Barnes.
307701 Gog Magog Hills (Cambs), Ditto 25.7.39.
young, by P. Maclaren. 17.7.38.

Stock-Dove (*Columba oenas*).

RINGED AS FULL-GROWN.

RECOVERED WHERE RINGED.

- RV.9021 Gt. Budworth (Ches), 7.7.35, by A. W. Boyd. 28.6.37.
RV.9026 Ditto 12.7.35. 29.7.37; 4.8.38.
RV.9031 Ditto 31.7.35. 7.3.37; 4.6.38.
RV.9019 Ditto 13.6.36. 28.6.37.
RV.9018 Ditto 10.6.36. 6.7.38.
RV.9064 Ditto 8.7.37. 19.6.38.
RV.9066 Ditto 18.7.37. 4.8.38.
RW.7294 Romney Marsh (Kent), 25.4.37, 10.4.38; 14.5.39.
by Brooker and Cawkell.

Turtle-Dove (*Streptopelia t. turtur*).

RINGED AS NESTLING.

- RX.9641 Gt. Shelford (Cambs), 24.7.37, St. Jean de Luz (Basses
By C. F. Tebbutt. Pyrénées), France, 13.5.39.

RINGED AS FULL-GROWN.

RECOVERED WHERE RINGED.

- RR.4573 Gt. Budworth (Ches), 10.6.32, by A. W. Boyd. 10.5.37.
RS.2095 Ditto 28.6.35. 4.8.36; 10.7.38.
RV.9016 Ditto 30.5.36. 11.6.38.
RV.9017 Ditto 2.6.36. 4.7.37; 16.6.38.
2 Birds Ditto —.7.36. —.6.37.
2 Birds Ditto —.7.36. Summer, 1937; 1938.
5 Birds Ditto, Summer, 1937. Summer, 1938.

Oyster-Catcher (*Hæmatopus o. occidentalis*).

- 306231 Eynhallow, Orkney, 15.6.38, Dingle (Kerry), 9.1.39.
young, by D. Robertson.

Lapwing (*Vanellus vanellus*).

RINGED AS NESTLINGS.

- 220076 Sanday, Orkney, 6.7.38, by Andreas, I. of Man, 21.2.39
E. L. Arnold. [370 m. S.].
217464 Newburgh (Aberdeen), 11.6.38, Clonmel (Tipperary), 29.1.39.
by J. Garden.
S.7839 Perth, 10.6.31, by Lord Millstreet (Cork), 26.1.39.
Mansfield.
213328 Glenorchard (Stirling), 13.5.38, Talence (Gironde), France,
by J. Bartholomew. 3.3.39.
219965 Ditto 15.7.38. Pointe de Grave (Gironde),
France, 13.3.39.

No.	Ringed.	Recovered.
Lapwing (<i>continued</i>).		
217120	Penrith (Cumb), 18.5.38, by Moon and Cooper.	Corral de Calatrava (Ciudad Real), Spain, —.2.39.
217586	Ditto 18.6.38.	Meknes, Western Morocco, 12.1.39.
206047	Kirkby Lonsdale (Westmor), 13.7.37, by H. S. Greg.	Clitheroe (Lancs), 1.2.39 [25 m. S.].
AP.4505	Barnard Castle (Durham), 24.5.33, by Barnard Cas.Sch.	St. Helen Auckland (Durham), 30.5.39 [11 m. NE.].
AR.6410	Alderley (Ches), 9.6.34, by E. Cohen.	Vic Fezensac (Gers), France, 24.12.38.
AS.5635	Mobberley (Ches), 11.5.36, by E. Cohen.	Andoain (Guipuzcoa), Spain, 24.12.38.
AR.6315	Cassington (Oxon), 4.5.36, by Oxford Orn. Soc.	Levignac (Landes), France, 20.12.38.
AS.7902	Wytham (Berks), 5.5.36, by Oxford Orn. Soc.	Vejer (Cadiz), Spain, 12.1.39.
AS.1814	Newbury (Berks), 28.5.35, by G. Brown.	Bilbao (Vizcaya), Spain, 26.12.38.
AP.2547	Felsham (Suffolk), 2.6.34, by London N.H.S.	Icklingham (Suffolk), 8.5.39 [15 m. NW.].
217283	Mildenhall (Suffolk), 6.6.38, by P. Maclaren.	Bordeaux (Gironde), France, —.2.39.

RECOVERED WHERE RINGED.

Z.5732	Kilmacolm (Renfrew), 29.5.29, by R. O. Blyth.	—.4.39.
AR.1334	Clapham (Yorks), 4.5.34, by H. J. Moon.	—.4.39.
AS.2350	Ditto —.5.35.	—.5.39.

Redshank (*Totanus t. britannica*).

OF.602	Settle (Yorks), 17.5.36, young by H. J. Moon.	Newport (Mon), —.3.39 [175 m. S.].
--------	---	------------------------------------

Curlew (*Numenius a. arquata*).

RINGED AS NESTLINGS.

RX.1417	Glen Loth (Suth), 6.7.38, by E. Cohen.	Clyne Milton (Suth), —.3.39 [4 m. S.].
AB.3194	Greystoke (Cumb), 19.6.36, by H. J. Moon.	High Head Castle (Cumb), 13.4.39 (9 m. N.).
25881	Shap (Westmor), —.6.28, by H. J. Moon.	Ringaskiddy (Cork), 26.2.39.
RV.2651	Staveley (Westmor), 8.6.36, by the late E. U. Savage.	Foulshaw Moss (Westmor), 11.12.38 [10 m. S.].

Woodcock (*Scolopax r. rusticola*).

RINGED AS NESTLINGS.

207128	Abbeystead (Lancs), —.6.37, by H. W. Robinson.	Llanwrda (Carms), 2.2.39 [150 m. S.].
G. Cong	Cong (Mayo), 1935.	Filey (Yorks), —.1.39.
<i>(Private Ring)</i>		

RECOVERED WHERE RINGED.

AR.9244	Bridge of Allan (Stirling), 12.5.35, by J. Bartholomew.	1937.
AS.8193	Botley (Hants), 10.6.38, by O. W. Cornwallis.	10.1.39.

No.	Ringed.	Recovered.
-----	---------	------------

Woodcock (*continued*).

RINGS ISSUED FOR WOODCOCK INQUIRY, 1934-35.

- | | | |
|--------|-----------------------------|---|
| 202773 | Brechin (Angus), 12.6.38. | Where ringed, 28.1.39. |
| 200404 | Glen (Peebles), 26.4.38. | Walkerburn (Peebles) 13.5.39
[5 m. NE.]. |
| 202246 | Lissadell (Sligo), 23.4.35. | Where ringed, 30.12.38. |

Sandwich Tern (*Sterna s. sandvicensis*).

RINGED AS NESTLINGS.

- | | | |
|---------|---|--|
| 213540 | Firth of Forth, 16.6.38, by Mrs. Greenlees. | Mossamedes, Angola, 6.12.38. |
| 215728 | Ravenglass (Cumb), 18.6.38, by S. Marchant. | Cape Coast, Gold Coast, 14.1.39. |
| 219518 | Farne Is. (Northumb), 27.6.38, by Mrs. Hodgkin. | Dakar, Sénégal, 25.2.39. |
| 218897 | Scolt Head (Norfolk), 22.6.38, by J. Ferrier. | Ditto, —.2.39. |
| 2 Birds | Salthouse (Norfolk), 12.6.38, by J. Ferrier. | Accra, Gold Coast, 7.1.39;
20.2.39. |
| 212890 | Ditto, 12.6.38, by E. Cohen. | Ditto, 20.2.39. |

Little Tern (*Sterna a. albifrons*).

- | | | |
|--------|--|---|
| LB.382 | Pagham (Sussex), 20.7.35, young, by P. Hollom. | Eastbourne (Sussex), 15.6.39
[47 m. E.]. |
|--------|--|---|

Black-headed Gull (*Larus r. ridibundus*).

- | | | |
|---------|---|--|
| RV.2505 | Littleton (Middx.), 27.12.34, by P. Hollom. | Acton, London, 28.2.39
[10 m. NE.]. |
|---------|---|--|

Common Gull (*Larus c. canus*).

RINGED AS NESTLINGS.

- | | | |
|--------|---|--|
| 306208 | Eynhallow, Orkney, 22.6.38, by D. Robertson. | Kilmarnock (Ayr), 5.4.39
[245 m. S.]. |
| 306185 | Ditto | 26.6.38. Durisdeer (Dumfries), 18.5.39
[250 m. S.]. |
| 305263 | Aldourie (Inverness), 8.6.38, by A. Wainwright. | Bunchrew (Inverness), 25.6.39
[6 m. N.]. |

Lesser Black-backed Gull (*Larus f. graellsii*).

RINGED AS NESTLINGS.

- | | | |
|---------|---|---|
| AB.2107 | Walney I. (Lancs), 9.6.35, by H. W. Robinson. | Where ringed, 4.6.39. |
| AB.5559 | Ditto | 16.6.36. At sea, off I. of Man, 23.3.39
[30 m. NW.]. |
| AB.5697 | Ditto | 26.6.37. Stanbury Moor (Yorks), 4.6.39 [53 m. SE.]. |

Kittiwake (*Rissa t. tridactyla*).

- | | | |
|---------|--|-------------------------------------|
| 306904 | Bull Rock (Cork), 8.7.38, young, by S. Marchant. | Wesleyville, Newfoundland, 28.5.39. |
| RX.5382 | Farne Is. (Northumb), 20.6.37, ad., by "Wippletree." | Where ringed, —.6.39. |
| 2 Birds | Ditto, 26.6.38, by Mrs. Hodgkin. | Ditto, —.6.39. |

<i>No.</i>	<i>Ringed.</i>	<i>Recovered.</i>
Razorbill (<i>Alca t. britannica</i>).		
RINGED AS NESTLINGS.		
TSA.395	Skokholm Bird Obs., 4.7.37.	Walberswick (Suffolk), 7.3.39 [520 m. by coast].
TSA.334	Ditto	2.7.37. Genoa, Italy, 21.12.38.
AC.1809	Ditto	30.6.38. Ditto, 11.12.38.
AC.5168	Ditto	4.7.38. Ditto, 4.2.39.
RINGED AS FULL-GROWN.		
AC.5005	Skokholm Bird Obs., 1.7.38.	Sunderland (Durham), 2.4.39.
Moor-Hen (<i>Gallinula ch. chloropus</i>).		
RINGED AS FULL-GROWN.		
AC.1905	Wilmslow (Ches), 29.7.38, by J. Buxton.	Where ringed, 6.5.39.
AB.6497	Winchester (Hants), 1.11.37, by Winchester Coll.	Leckford (Hants), 19.1.39 [9 m. NW.].
Coot (<i>Fulica a. atra</i>).		
Or.3889	Pembroke, 14.1.39, ad., by S. Greenslade.	Whitland (Carms), 17.1.39 [20 m. NE.].

NOTES

SAME PAIR OF CHAFFINCHES MATING THREE TIMES.

FOR some seven years I have marked Chaffinches (*Fringilla c. gentleri*) frequenting my garden with coloured rings for identification. One pair so marked mated and fed young in a copse opposite my gate in June, 1937. In the spring of 1938 the same pair nested in a holly just outside my garden and brought off their brood. In June of that year the same pair again mated and nested in the wisteria on my house; only two eggs were laid and two young were reared. The pair remained together until November 9th when the hen disappeared. She was not seen again until February 5th, 1939, when she was constantly in company with the same cock till the end of that month. Unfortunately on March 5th I found her dead with a fractured skull and other injuries which were almost certainly caused in a fight. The cock, too, was accidentally killed in a trap on April 29th. As the pair remained together in February, 1939, it seems likely that they would have mated for a fourth time.

E. W. HENDY.

FECUNDITY OF BLUE TITS IN RELATION TO AGE.

THE following examples of the fecundity of Blue Tits (*Parus c. obscurus*) in relation to age, discovered by marking may be of interest. One of a brood of twelve ringed as nestlings at Stanway, Gloucestershire, on May 16th, 1938, laid in May, 1939, fifteen eggs and hatched thirteen young. Another ringed as an adult in January, 1935, reared in 1939 eleven young from twelve eggs.

It will be seen that one bird attained its maximum fecundity in its first breeding season, whilst the other maintained it in its fifth (at least) breeding season.

GUY CHARTERIS.

SONG-THRUSH NESTING IN ITS FIRST YEAR.

A FLEDGLING Song-Thrush (*Turdus e. ericetorum*), ringed by me in my garden in July, 1933, was not seen again till May 1st, 1934, when it returned and built a typical nest in a macrocarpa hedge in my garden and reared a brood which flew June 2nd, 1934.

E. W. HENDY.

[So far as is known, the thrushes breed in their first year, but Mr. Hendy's case is interesting as it was ringed as late as

July as a fledgling. Miss E. P. Leach informs us that there is only one definite case of a Song-Thrush recorded under the ringing scheme—a nestling ringed in Anglesey on April 17th, 1935, having been found dead at a nest in the same place on April 24th, 1936. Probably there are other cases where coloured rings have been used.—EDS.]

GREY LAG-GOOSE WITH PINK BILL.

A FOOTNOTE on page 185 of Vol. III of *The Handbook of British Birds* states that "several ornithologists intimately acquainted with geese state that they have never seen a British-taken Grey Lag with a pink bill." It may, therefore, be interesting to record that I shot a Grey Lag (*Anser anser*) in east Kent during the past winter, the bill of which was predominantly pink in colour. The bird was one of a skein of six and has been set up. T. C. GREGORY.

NESTING OF THE BLACK-NECKED GREBE IN CHESHIRE.

WHEN T. A. Coward's *Fauna of Cheshire* was published in 1910 the Black-necked Grebe (*Podiceps n. nigricollis*) was regarded as a rare winter visitor to the estuaries; four only had been recorded, two each from the estuaries of Dee and Mersey, and of these three were known to have been killed in September, November and December.

Since 1912, however, when on February 18th I first saw two on Rostherne Mere, there have been at least forty occurrences. They have appeared in every month of the year, and more than once in every month, but most frequently in April (in breeding plumage), in July, and in September and October. They have been found on the meres at Rostherne, Tatton, Marbury near Northwich, Pettypool and Oakmere; on the Flashes at Witton, near Northwich; on the reservoirs at Bosley and Hurleston; at the Altrincham Sewage Farm; on the marine lake at West Kirby and in the estuary of the Mersey. No doubt they also occur at times on most or all of the other meres, which have been less under observation.

The appearance of birds in breeding plumage in April gave hope that they would eventually remain to breed, but usually their stay in April was short. It was not until September 13th, 1928, that a bird of the year was seen when Mr. J. Moore watched one at Marbury. It had a striped head and neck, and followed an adult and uttered the "hunger cry"; it was not fully the size of the older bird, but there was

no certainty that it had been reared in the county. In July, 1937, for three weeks a bird or birds in full plumage lived in or near a reed bed, but there was no sign of young.

In 1938 I watched a pair from April 10th to June 10th or 12th on a little-frequented mere; on June 10th only one could be seen, patrolling outside a bed of reeds and it seemed probable that the other was sitting, but once again no young ones appeared. In 1939, however, a pair reached this same mere on April 22nd and eventually brought off two young. It took them two months to decide on a nesting-site, a reed-bed in shallow water. After they had settled down, one bird continually patrolled in the neighbourhood and was occasionally joined by the other when it was disturbed by my approach, or by cattle, which ate much of the reeds they had occupied. Though the patrolling bird usually fed by diving, it spent much of its time on June 29th catching insects on the surface of the water and in the air; it would shoot its neck out at right angles and snap them in the air, or point its bill perpendicularly in the air and catch them with a little leap. In the middle of July they seemed to become more secretive and, owing to the absence of the observer, it was not until August 13th that they were seen with two youngsters, then almost half grown. Each adult was accompanied by one young bird, and each couple kept well apart. Adult and youngster used to dive simultaneously, but it was noticeable that the latter always came to the surface first and was frequently fed with some very small object as it followed its parent with a "whit-whit-whit" or "fit-fit-fit"—a thinner and less robust cry than that of a young Great Crested Grebe.

A. W. BOYD.

FULMAR PETRELS IN CARNARVONSHIRE.

As the Fulmar (*Fulmarus g. glacialis*) has not been recorded from Carnarvonshire it may be of interest to note that on April 17th, 1937, I saw two of these birds glide to and fro right up against the Great Orme cliffs. On May 28th in the same year I saw a single individual flying in front of the same cliffs. In the following year—on April 20th, 1938—a single individual, which I watched, all but alighted on the same stretch of cliffs. Again, on April 22nd, 1939, the same cliffs were visited by a Fulmar.

I watched the cliffs almost daily throughout the months of April and May, 1937, 1938 and 1939, and am confident that no Fulmars bred on the rock shelves. RICHARD W. JONES.

STOCK-DOVES FLOCKING IN MAY IN HERTFORDSHIRE.

THE note by Mr. B. J. Ringrose on a flock of Stock-Doves (*Columba oenas*) on May 30th in Wiltshire (*antea*, p. 140) is very interesting; but the occurrence though unusual, is at any rate not unique. I can evidence similar, though somewhat smaller flocks in recent years in Hertfordshire (where, I think, none had previously been recorded) at dates when nesting is at its height.

During May and early June, 1933, a dozen were seen feeding daily with a flock of Wood-Pigeons near Elstree, Herts, at a spot where the former are virtually unknown as nesters.

In 1934 I again saw a flock of about 35 Stock-Doves and a few Wood-Pigeons on May 3rd at the same spot. This party haunted the neighbouring fields for some weeks, for I saw them on May 6th and June 7th, but by July they had left.

On May 3rd, 1936, I watched a flock of 40 Stock-Doves near Bushey, only about three miles distant from Elstree. Such little summer flocks I assumed to be made up of nomad non-breeding birds.

These occurrences were recorded in the relevant ornithological Reports in the *Transactions of the Hertfordshire Nat. Hist. Society*, Vol. 20.

BERTRAM LLOYD.

RUFF AND BLACK-TAILED GODWIT IN THE ISLE OF MAN.

ON September 29th, 1938, Messrs. R. Wagstaffe, E. F. Ladds and myself were fortunate enough to meet with a juvenile Ruff (*Philomachus pugnax*) associating with half a dozen Bar-tailed Godwits (*Limosa l. lapponica*) on a sandy shore at Langness, Isle of Man.

On September 17th, 1939, Mr. George Gill and I came across an adult Black-tailed Godwit (*Limosa l. limosa*) at the very same spot, the bird also associating for a few minutes with the Bar-tailed, which are regular frequenters of this shore in the autumn and winter months. It was a much darker brown and noticeably longer in the leg than its congeners, and in flight the legs projected beyond the tail and the bird could be distinguished at once by the white bar on the coverts. Judging by the amount of reddish-brown on the under-parts it did not appear to be very far advanced in moult.

There is only one previous record of the Ruff in Man, a bird in winter plumage seen by the late Col. H. W. Madoc on

August 25th, 1929 (*North-Western Naturalist*, Vol. V, p. 12), whilst the Black-tailed Godwit has two records, for November 18th, 1931 (*t.c.*, Vol. VII, p. 306) and early October, 1932 (*t.c.*, Vol. VIII, p. 311). KENNETH WILLIAMSON.

WOOD-SANDPIPERS IN SURREY.

I OBSERVED a Wood-Sandpiper (*Tringa glareola*) at close quarters at Guildford sewage farm on August 7th, 1939. Three were seen together on the 12th, on which date fifteen or sixteen Green-Sandpipers (*T. ochropus*) were also present, and one Wood-Sandpiper remained on August 13th. The Wood-Sandpiper is seldom observed in Surrey.

P. A. D. HOLLOM.

GREAT SNIPE IN LINCOLNSHIRE.

ON September 20th, 1939, a Great Snipe (*Capella media*) was shot at Tetney. On sexing the bird proved to be a male. The bill shows an old, healed, gunshot wound of the maxilla at the junction of middle and distal thirds. The bird, which was solitary, was otherwise in good condition and was moderately fat.

JAMES M. HARRISON.

LATE BREEDING OF BULLFINCH.—Lt.-Col. W. A. Payn writes that a Bullfinch (*Pyrrhula p. nesa*) was sitting on eggs at Andover, Hants, on September 24th, 1939, and young were still being fed at the nest on October 4th. Nests with young, which flew between September 6th and 12th and eggs (September 3rd) were recorded from Burnham Beeches in 1920.

SPOONBILLS IN HAMPSHIRE.—Mr. H. J. de S. Disney writes that he and Dr. C. Suffern observed three Spoonbills (*Platalea l. leucorodia*) on the R. Meon on August 30th and 31st, 1939. These birds have been seen at intervals from May 26th or 27th by several observers, the latest record being dated September 30th (C. Suffern).

RED-NECKED GREBE IN SOMERSET.—Mr. J. M. Simister sends us particulars of a Red-necked Grebe (*Podiceps griseigena*) mostly in summer plumage, which he watched at close quarters on October 5th, 1939, on Barrow Gurney Reservoir. The bird is rarely seen in Somerset.

LATE BREEDING OF STORM-PETREL.—Mr. Seton Gordon informs us that he and Mrs. Gordon found a Storm-Petrel

(*Hydrobates pelagicus*) brooding an egg, which was near to hatching, in a Hebridean island on September 20th, 1939. Mr. R. M. Lockley has given the shortest fledging period as fifty-four days and the longest as sixty-eight, so that if the bird hatched on the 21st, it would not fly until between November 15th and 29th. W. Eagle Clarke has recorded young just hatched on September 4th, 1908, (Fair Isle), and young just able to fly on October 2nd, 1907, also young still in down on October 3rd at the Flannans.

KILLDEER PLOVERS IN IRELAND.—Two examples of the Killdeer Plover (*Charadrius vociferus*) are reported in *The Irish Naturalist's Journal*. The first was shot in a field at Carrigengoure, near Crookhaven, Co. Cork, on November 30th, 1938 (*I. Nat. J.*, 1939, p. 144). It was stated that what was thought to be another Killdeer Plover was seen in the same locality on December 11th and may have been a companion of the other. This was probably the bird, which was picked up dead on March 19th, 1939, at Crookhaven, having apparently struck a telegraph wire (*op. cit.*, p. 188). Both birds are now in the National Museum at Dublin. It will be remembered that one was recorded in our pages (*antea*, Vol. XXXII., p. 372) as having been found in Smithfield Market in January, 1939, and was traced to N. Devon where it had been for about a month previously. It seems possible that all three birds may have crossed the Atlantic at about the same time.

GREY PLOVER IN HERTFORDSHIRE.—Mr. R. Harkness informs us that he watched two Grey Plovers (*Squatarola squatarola*) at Wilstone Reservoir, Tring, on October 6th, 1939. The birds were not seen on the 7th, but one appeared on the 8th and one was seen by Mr. C. Oldham on the 10th. There are few recorded occurrences of the species in the county.

KNOT IN HERTFORDSHIRE.—The Rev. C. E. Martin informs us that he saw a Knot (*Calidris c. canutus*) at Tring reservoirs on August 30th, 1938, and another on February 1st, 1939.

RED-NECKED PHALAROPE IN YORKSHIRE.—Messrs. L. Smith and H. O. Bunce state (*Nat.*, 1939, p. 236) that they watched a Red-necked Phalarope (*Phalaropus lobatus*) at Kilnsea, E. Yorkshire on July 16th, 1939. The bird was in summer plumage. This is an extraordinary date for the species to appear on migration.

BLACK GUILLEMOTS BREEDING IN HOLES IN HARBOUR WALLS IN CO. DOWN.—Mr. J. A. S. Stendall informs us that Black Guillemots (*Uria g. grylle*) have bred for several years in holes in the stonework of Bangor pier, co. Down. It will be remembered that two other similar sites in co. Down were recorded in our last number (*antea*, p. 141).

REVIEWS.

Report of Marlborough College Natural History Society, 1938.

THE number of bird-observers this year is low, but we may hope that this is only a temporary fluctuation. A very late Willow-Warbler is recorded for November 9th, a Greenshank was seen in September and Quail are reported from three localities.

Annual Report of Gresham's School Natural History Society, 1938-9.

BIRDS figure largely in this Report as may be expected owing to the number of interesting species which can be seen in the neighbourhood. A Bittern was booming on Salthouse in May 1939, and was thought to have nested. The influx of Bewick's Swans in January and February was well observed, Spoonbills, Avocets and Bar-tailed Godwits were seen in May and June, 1938, and many other interesting species were watched.

LETTER.

LAPWINGS NESTING AT HIGH ALTITUDE IN NORWAY.

To the Editors of BRITISH BIRDS.

SIRS,—The extension of the breeding range of the Lapwing (*Vanellus vanellus*) to Fokstummyren referred to in my previous letter (*antea*, p. 118) is certainly recent. Neither H. Tho. L. Schaanning in 1917 nor H. L. Lövenskiöld in 1929 and 1930 found the bird there. Possibly it first came there in 1933, for in the hotel I found a pencilled note (in an unknown Norwegian hand) recording it for that year. When it first bred I do not know.

My friend, Mr. H. N. Southern, who was at Fokstummyren this year (1939), tells me that he saw none. It appears that 1938 was an exceptionally favourable year in the area for many birds.

E. J. M. BUXTON.

7 " 1939
PURCHASED

A HISTORY OF THE BIRDS OF ESSEX

William E. Glegg, F.Z.S., M.B.O.U.

Numerous Photographs and a Map. Demy 8vo. 25/-.

**A HISTORY OF THE
BIRDS OF MIDDLESEX**

William E. Glegg, F.Z.S., M.B.O.U.

6 Plates and Map. Demy 8vo. 18/-.

**A HISTORY OF THE
BIRDS OF NORFOLK**

B. B. Riviere, F.R.C.S., F.Z.S., M.B.O.U.

16 Plates and Map. Demy 8vo. 25/-.

**THE BIRDS OF THE
FALKLAND ISLANDS**

Arthur F. Cobb.

Numerous Photographs. Demy 8vo. 7/6.

THE BIRDS OF THE FIRTH OF CLYDE

Including Ayrshire, Dumbartonshire, Renfrewshire,
Buteshire and South Argyllshire

J. M. McWilliam.

Plates and Map. Demy 8vo. 12/6.

THE BIRDS OF THE ISLAND OF BUTE

J. M. McWilliam, B.A. (DUBLIN), F.R.P.S. (EDINBURGH)

Photographs and a Map. Demy 8vo. 8/6.

BIRD-LIFE IN THE ISLE OF MAN

Colonel H. W. Madoc, C.B.E., M.V.O.

Photographs. Crown 8vo. 6/-.

THE BIRDS OF MIDLOTHIAN

The late J. Kirke Nash, L.D.S., R.C.S.E.

Plates and Map. Demy 8vo. 21/-.

THE BIRDS OF SOUTH-EAST DEVON

L. R. W. Loyd, F.Z.S., M.B.O.U.

6 Plates and Maps. Demy 8vo. 10/6.

THE HANDBOOK OF BRITISH BIRDS

By H. F. WITHERBY (Editor), F. C. R. JOURDAIN,
NORMAN F. TICEHURST and B. W. TUCKER.

To be completed in five volumes.

*Illustrated by 500 paintings reproduced in full colour depicting about
1,800 birds.*

“The readiness with which the authors have been willing to go well outside the confines of the British Isles to include results of recent intensive investigations by ornithologists of the neighbouring countries, makes the handbook far more than a local treatise and places it in the front rank as a work of general reference on the birds of Western Europe.”—*The Auk*.

£5 5s. the set complete. Vols. I, II and III have been published.

A HISTORY OF SUSSEX BIRDS

By JOHN WALPOLE-BOND.

*In three volumes published simultaneously and illustrated with
53 coloured plates*

By PHILIP RICKMAN.

“It would be difficult to say too much of the accuracy of personal observation and the thoroughness of research. The three volumes are likely to remain as a standard example of such literature.”—
SIR WILLIAM BEACH THOMAS in the *Observer*.

£5 5s. the set.

SONGS OF WILD BIRDS

Third Impression.

By E. M. NICHOLSON and LUDWIG KOCH.

Introduction by JULIAN HUXLEY.

With two double-sided 10-inch gramophone records featuring the Nightingale, Cuckoo, Blackbird, Song Thrush, Pied Woodpecker, Green Woodpecker, Robin, Wren, Hedge-Sparrow, Turtle-Dove, Wood-Pigeon, Chaffinch, Willow Warbler, Whitethroat and Great Tit.

By the same authors

MORE SONGS OF WILD BIRDS

With three double-sided 10-inch gramophone records featuring the Skylark, Woodlark, Curlew, Tree Pipit, Wood-Wren, Blackcap, Garden Warbler, Rook, Carrion Crow, Jackdaw, Magpie, Jay, Little Owl, Redstart, Chiffchaff, Mistle-Thrush, Heron, Stock-Dove, Nightjar and Blue Tit.

Each 15s. net boxed.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

DEC. 1,
1939.

Vol. XXXIII.
No. 7.

7 DEC 1939
PURCHASED



MONTHLY 1s 9d YEARLY 20s
326 HIGH HOLBORN LONDON
H.F & G. WITHERBY LTD.

Books for Christmas Presents

NUGGER NONSENSE

BY CATHERINE SCALES

6s. net
Postage 6d. extra

A splendid sequel to *Gay Company* (2nd Impression, 6s. net), which was chosen by the CHILDREN'S BOOK CLUB, recommended by the JUNIOR BOOK CLUB and a TIME AND TIDE Children's Choice.

*Illustrated with 40 plates, 8 in full colour
by MOUBRAY LEIGH.*

**THE COMPLETE BOOK OF
CARD GAMES**

BY HUBERT PHILLIPS AND B. C. WESTALL

7s. 6d. net
Postage 6d. extra

This book, which is the latest addition to THE SPORTS AND PASTIMES LIBRARY, is, without question, the most comprehensive work of its kind ever published, and will make a very popular present for people of all ages.

Illustrated with numerous diagrams and specimen hands.

H. F. & G. WITHERBY LTD.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique)

BRITISH BIRDS

7 DEC 1939

PURCHASE

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND

NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 7, VOL. XXXIII., DECEMBER 1, 1939.

	PAGE
Courtship and Display of the Slavonian Grebe. By Eric J. Hosking, F.R.P.S., M.B.O.U.	170
Notes on the Percentage of Bridled Guillemots. By Julian S. Huxley, F.R.S.	174
The Breeding of the Oyster-catcher. By E. J. M. Buxton ...	184
Notes :—	
Interbreeding of a Hooded and a Carrion-Crow in Co. Dublin (Rev. P. G. Kennedy, S.J.)	194
Jackdaw nesting in its First Year (C. Wontner-Smith) ...	194
Fecundity of Blue Tit and Tawny Owl in Relation to Age (J. A. G. Barnes)	195
Common Buzzard in Shetland (Rev. C. J. Pring)	195
Association of Drake Mallard with alarmed Call Duck and Brood (G. K. McCulloch)	195
Summer Plumage of Female Red-breasted Merganser (J. G. Williams)	196
Stock-Dove flocks in the Breeding Season (L. S. V. Venables)	196
Nuptial Song of Little Stint (T. C. Gregory)	197
Purple Sandpiper and other birds in Middlesex (A. H. Macpherson, W. E. Glegg, Dr. G. C. Low)	197
Sooty Tern in Stirlingshire (J. Ritchie)... ..	197
Incubation Period of Capercaillie and Precocity of Chicks (E. J. Hosking)	198
Short Notes :—	
Sky-Lark nesting in October in Lancashire. Black Kites released in London. Honey-Buzzard in Yorkshire recorded as Goshawk. Garganey in Pembrokeshire	198
Review :—	
<i>The Birds of Staffordshire.</i> By T. Smith	199
Letter :—	
Notes on the Swallow (A. W. Boyd)	200

COURTSHIP AND DISPLAY OF THE SLAVONIAN GREBE.

BY

ERIC J. HOSKING, F.R.P.S., M.B.O.U.

(Plates 4 and 5.)

DURING the nesting season of 1939 I was staying in Scotland and had the opportunity of witnessing a unique courtship and display of the Slavonian Grebe (*Podiceps auritus*). I am indebted for this experience to the Rev. H. M. Stone, of Worcester, who escorted me to a loch where these Grebes have been known to nest for many years and several nests were found. One was selected giving the best surroundings and position for photography and a photographic hide was erected some distance away. This was on June 7th, and the nest then contained three eggs which were fresh. On revisiting the site the following day with a view to moving the hide nearer to the nest, we found that one egg was missing. On June 15th there was only one egg remaining in the nest, and, as the Grebes were still incubating this egg and appeared to be quite tame, it was decided to bring the hide within working distance. The reason for the disappearance of two eggs was puzzling, but was eventually attributed to a nearby colony of Black-headed Gulls which were continually foraging round the loch. It was noticed on this day that the egg was not being covered by the parent bird when leaving, and it was found uncovered on subsequent occasions.

One of the pair, which when mating occurred proved to be the hen, was in very unusual plumage. The golden ear-tufts of the normal bird in summer plumage were absent and there were in their place stripes of pale chestnut, the feathers of which were of the length of ordinary feathers. The black feathers of the sides of the head and neck were also of ordinary length so that there was no appearance of a "tippet." The black of these parts and of the crown was not so glossy as in the other bird. Mr. Witherby, to whom I have submitted colour photographs thinks that the bird may have been in its first summer as he has examined skins of birds in similar plumage. Mr. Witherby adds that this plumage is little known and as such birds appear to be scarce it seems probable that only certain individuals acquire this undeveloped plumage.

On June 18th I arrived at the hide at 2.45 p.m. Nothing of an unusual nature took place until 4.10 p.m., when I noticed the hen swimming towards the nest carrying a small quantity



DISPLAY OF SLAVONIAN GREBE

UPPER: The cock displays his golden-yellow tufts as he bows his head in front of the hen.

LOWER: The cock displays to the hen by swimming round her and raising his tufts and moving his head from side to side and up and down.

(Photographed by Eric J. Hosking.)



of material. This she placed on the edge of the nest, and carefully arranged. Then she leaped from the water on to the nest, and lowered herself as though to brood, but instead fell into the water again and swam from sight. Very shortly afterwards the cock followed exactly the same procedure. He had only just gone from sight when the hen reappeared



“The cock leaned right forward and watched every movement made by the hen. The ear-tufts were not raised but only slightly spread.”

with more nesting material. After this had been placed into position the hen paddled backwards for a short distance, then, paddling rapidly forward, she leapt on to the side of the nest. Her next action is worthy of note, for she went through the motions of removing non-existent nesting material from the top of the single egg. There appears, therefore, to be a firmly implanted instinct both to cover and remove, which in this instance had functioned in the latter case, but not in the former. The hen then settled to brood.

At 4.25 p.m. the hen, still brooding, began to call very excitedly and a moment later the cock emerged from the reeds just behind the nest. He also called excitedly, and it was noticed that on this occasion he did not carry any nesting material. The excitement became intense. The hen solicited by stretching out her head and neck, curving the latter in a snake-like manner, while the chin almost rested upon the surface of the water. Both called excitedly. The cock swam rapidly and jerkily round the nest, spreading and displaying the gorgeous golden-yellow ear-tufts. His head was jerked from side to side and bowed up and down. He stopped in front of the hen and bowed until his bill rested on the water, the ear-tufts being brought right forward so that their vivid colouring showed to best advantage. For some moments the cock remained like this, while the hen was motionless, looking straight at the cock as though hypnotized. Next the cock swam round the nest twice, then hesitated whilst at the rear of the hen. He proceeded to paddle backwards, then very rapidly forwards, and leaping out of the water jumped on the hen's back. With his large, white-lobed feet he smacked the shoulders of the hen alternately and very rapidly, after which coition took place. The hen remained prone all the time and the cock left immediately afterwards. She then readjusted the feathers along her back and continued to brood. I waited until 6.15 p.m. when the hen was still brooding and no further incident had taken place.

On the following day, June 19th, I spent another period of observation in the hide, and again witnessed the courtship, display and mating, which was similar in every respect to that already described. There was, however, an interesting preliminary. I was left in the hide at 12.30 p.m. and before my wife was out of sight the two Slavonian Grebes swam towards the nest, calling excitedly. Both carried nesting material. Several journeys were made and I noticed that the rotting vegetation used in the construction of the nest was collected from just beneath the surface of the water. In the middle of these operations, and while the hen was in the near vicinity of the nest, the cock stopped and displayed. He swam alongside the nest, but remained in the water, stretched out his neck, raised the golden-yellow ear-tufts and called. He remained in this attitude for some seconds before he continued to add nesting material. The hen took no notice of this display and had, in fact, continued building through it all. Shortly afterwards the hen came on to brood and the cock swam out on the loch.



DISPLAY OF SLAVONIAN GREBE

UPPER: The cock swam round the nest twice, then hesitated when behind the hen.

LOWER: The cock stretched his neck upwards at an angle of about 45° from the body and the car-tufts were fully raised.

(Photographed by Eric J. Hosking.)



At 1.25 p.m. the hen left the nest and stayed away until 2.20 p.m., when she returned bringing a further supply of building material. She brooded until 2.45 p.m., when the cock swam into view. The display and mating then took place as already mentioned. At 3.10 p.m. a change over took place. As the cock approached the nest, the hen slipped off and swam into the reeds. The cock, instead of coming on to brood, stopped just behind the nest and remained there for over half an hour. He then collected further material which was piled on the side of the nest and at 3.50 p.m. came on to brood. Fourteen minutes later he left and set about nest-building once again. In five minutes he was back brooding again and remained so until 4.12 p.m. At this time he began to call and display while brooding the egg. His neck was stretched not downwards as formerly but upwards at an angle of about 45 degrees from the body and the ear-tufts were fully raised. During the display the hen arrived and swam rapidly backwards and forwards while collecting nesting material. She took little notice of the cock's behaviour, though the cock watched every movement she made with intense interest. The hen swam towards the hide and came within a foot of where I was sitting. The cock leaned right forward, still watching every movement but the ear-tufts were not raised, only slightly spread. The hen made for the reeds where she whinnied, and a few moments later the cock left the nest and joined her, at 4.20 p.m.

It was not possible to keep a continual watch on this nest, but on June 21st I noticed that a second egg was laid, while on the 25th there were three fresh eggs. Needless to say, by this time, the courtship and display had been discontinued, and it was interesting to note that since the laying of the second egg, the nest was covered whenever left. The original egg was left in the nest, and it was with regret that we had to leave the neighbourhood before witnessing the completion of the brooding and hatching.

It is to be presumed that this particular pair of birds were unique in not recommencing the breeding cycle on being interrupted by the theft of most of their first clutch and in continuing to incubate the single egg during the courtship period. Although all Grebes add nesting material during the whole of the stages of incubation, this pair brought much more than normal, so that it would seem that they went through a partial phase of nest building concurrently with that of courtship and display, but the fact remains that the single egg held them to the original nest.

A PUBLICATION OF THE BRITISH TRUST FOR
ORNITHOLOGY.

NOTES ON THE PERCENTAGE OF
BRIDLED GUILLEMOTS.

BY

JULIAN S. HUXLEY, F.R.S.

UNDER the auspices of the British Trust for Ornithology, Mr. H. N. Southern has organized an inquiry into the quantitative distribution of the bridled or spectacled form of the common Guillemot (*Uria aalge*). The results of the first year's work have been published (Southern, 1939) and the investigation is still being continued. The general conclusions are of considerable interest, and may be briefly summarized here. The bridled variety (var. *ringvia*) is a mutant form apparently dependent on a single Mendelian gene-difference, though it cannot yet be said whether it is dominant or recessive to the non-bridled type. Bridled birds are present in all colonies so far investigated, but their proportions vary enormously. In the south of England, the percentage is very low, apparently 0.5 per cent. or less. The percentage increases in a graded way, until in certain regions, such as southern Iceland, Bear Island, etc., the bridled birds out-number the "normal."

The slope of the gradient is not uniform, but alters its steepness at certain points. The most marked discontinuity is on the west coast of Britain, though, as is pointed out later, many more observations are necessary before we have a proper picture of the situation in this part of the world. There is again marked discontinuity between Fair Isle and Shetland (Southern, 1938), the proportions rising from 10 or 13 per cent. to 24 per cent. Finally, in the region of rapid change off the Northumberland and Berwick coasts there is even a reversal of the slope at St. Abb's Head and the Farnes. This region appears to coincide with the boundary between two subspecies, *U. a. aalge* and *U. a. albionis*. Such gradual alterations in the proportion of two alternative types constitute a particular instance of character-gradients in general, which appear to be commoner in nature than is generally supposed and for which the word *cline* has been suggested as a convenient technical term (Huxley, 1938, 1939). The particular interest of a cline such as that in percentage of bridled birds lies in the fact that, as R. A. Fisher has demonstrated (see discussion in Ford, 1939), two sharply contrasted types such as this cannot exist in equilibrium within a species unless there is some balance of selective advantage between them—

e.g., if the hybrid (heterozygote) between the two is more viable or vigorous than either pure (homozygote) type. If this were the case here, then we would have to suppose further that the ringed type enjoyed a greater advantage in more northerly latitudes and *vice versa*. As an alternative, the two types may not be in equilibrium, but one may be in process of replacing the other (see discussion later). Either condition would obviously repay further analysis.

While visiting the northern Scottish coast and islands this spring, opportunity was taken to count the percentage of ringed Guillemots wherever possible. Assistance in counting was kindly given by the other members of the party, C. P. Blacker, James Fisher and E. M. Nicholson. It appears worth while to record the data, partly because they modify those given by Southern (1939) in certain particulars, partly to draw the attention of ornithologists to the need for further counts and to certain statistical and methodological points arising.

Counts were made at the following localities: Noss (Shetland); Handa Island (Sutherland); Loch Erriboll (Sutherland); St. Kilda. The table gives the total number of birds counted at each, with the percentage of bridled specimens.

The chief points of interest are as follows:—

(1) *St. Kilda* percentage. The figure of 10 per cent. bridled birds given by Southern must be corrected. However, as this was based on a count of only 30 birds (Harrison and Lack, 1934), it was clearly inadequate. The present figure of 16.5 per cent. has a standard error of ± 1.256 . This high figure indicates an E-W. gradient as well as a S-N. one, and Mr. Southern tells me that unpublished data from Ireland and the Hebrides confirm this.

(2) *St. Kilda*, differences in different islands. If the figures are grouped, they give the following results: Dun and S. of Hirta, 18.2 per cent. (450 birds); Soay and N. of Hirta, 15.9 per cent. (151 birds); Boreray (including the Stacks) 14 per cent. (272 birds). This suggests a gradient, the percentage of bridled decreasing from S. to N. within the archipelago; but the differences are not statistically significant. Further data are needed to settle this interesting point. Boreray is 4 miles distant from the nearest point of Hirta, but the other islands are almost contiguous.

(3) *Loch Erriboll*. No previous counts are recorded from here. The birds presumably came from Whiten Head or Clomore Cliffs. Although the numbers are too small for

certainty, the standard error being ± 3.50 , it seems clear that the percentage will prove to be nearer the 13 of N. Rona than the 10 of Handa.

(4) *Noss and Handa.* The counts tally extremely well with those previously recorded.

(5) *General aspects of the cline in ratio of bridled birds.* The high value for St. Kilda does not fit into the general cline on the west of Scotland as hitherto recorded. It will be extremely interesting to obtain counts from other parts of the Outer Hebrides. Meanwhile it looks as if St. Kilda had affinities with the Faeroes and Iceland. In this connexion it is interesting to note that Southern finds that the Westmann islands on the south of Iceland have the highest bridling percentage recorded, higher than that on the north of Iceland or in any of the more northerly stations (unpublished data).

Prof. R. A. Fisher has drawn my attention to the fact that the general shape of the cline as recorded by Southern (1939) could be interpreted as part of the wave of advance of an advantageous mutation (Fisher, 1937). If this is so, it may perhaps be that the mutation originated in southern Iceland. Mr. Southern tells me that unpublished data from northern Iceland show a much lower percentage than in the south, which would go to strengthen this suggestion. In any case, it is clear that the gradient is not a simple S-N. one.

Previous data show that the gradient may show slight local reversals; *e.g.*, at St. Abb's Head, Troup Head and Hoy, presumably due to accidental deviations from the normal owing to isolation of colonies. If the high figure for Erriboll is substantiated by further counts, this will provide a further case of the same sort.

(6) *Local Variation within Colonies.* On Handa, which represents the largest single count on one colony yet recorded, we were struck by what appeared evidence of local variation. The counts at separate stations, all of over 170 birds, showing a range of 5.5 in percentage on a mean of 10 per cent. That this was not due to low numbers is shown, *e.g.*, by stations 1 and 2, with counts of 578 and 965 respectively, which differed by 3.7 in percentage.

Direct observation showed clearly that a considerable degree of "assortment" might take place. I estimate that at least 20 per cent. of the bridled birds on Handa were standing together in couples (which does not necessarily mean mated pairs). This was checked on the 471 birds from stations counted by myself. These showed 39 bridled

specimens, of which 12, *i.e.*, 30 per cent., were in couples. Not only this, but one ledge counted by Nicholson on station 2 gave 14 bridled out of 73, or 19.2 per cent., and another counted by me gave 9 out of 40, or 22.5 per cent., indicating very high concentration. A count of 233 here by Fisher gave just over 14 per cent. and one of 116 by Blacker just under 14 per cent.

At Noss we were not struck by any marked difference between stations, and the counts by stations, all involving 200 or more birds, showed a range of only 2.4 in percentage on a mean of 26.3 per cent.

Prof. R. A. Fisher, F.R.S., and Dr. W. R. Stevens, of the Galton Laboratory, have kindly advised on the statistical aspects of the results.*

The χ^2 test (Fisher, 1938) applied to the figures from Noss gives chi^2 with the low value of 0.4013, which means that the variation in percentage of the 4 stations is well within the error to be expected on random sampling.

On the figures from Handa, on the other hand, $\chi^2=12.727$, which for 9 degrees of freedom is to be expected once in between 5 and 10 trials. The standard deviation of the percentage for the total count at Handa is ± 0.5185 , showing that the true value is likely to lie between 9 and 11.

The standard deviations have also been calculated for stations 1 and 6; the figures are as follows: station 1, 7.99% ± 1.128 ; station 6, 13.00 ± 2.378 . The figure for station 6 is thus well within the range of sampling error, while that for station 1, in spite of the much larger number counted, is just within the range of sampling error.

It was then suggested that assortment, if present, was more likely to be detected on small samples. I therefore broke up the data for stations into the records for single counts within each station, and submitted these, for analysis. The results turn out to be interesting.

*For the benefit of non-mathematical readers, it may be mentioned that the χ^2 test is a method elaborated by statisticians for estimating the probability whether a set of samples involving a proportion of two or more classes conforms to the theoretically calculated proportion, or whether some other factor is upsetting this theoretical proportion. In this case we want to know whether the deviation of the percentage found in single sample counts at any one locality from the percentage calculated on the total for the locality, is no more than what is to be expected on chance (sampling error), or whether it is so great as only to be accounted for by a tendency for ringed birds to occur together in small groups in comparatively high percentages.

The standard deviation (σ) can be described most simply in geometrical terms. If the percentage for a locality is calculated from a lot of samples, these samples can be arranged in a frequency polygon, according to the groupings into which their own individual percentages fall. Such a frequency polygon will be found often to fall along what is called a normal curve. *Sigma* is the distance (in the proper units), on either side of the centre, of the steepest points (or points of inflexion) of that curve. Statisticians generally hold a deviation which exceeds twice the standard deviation to be a significant one; this premiss is only likely to be wrong once in 22 times.

At Noss the 8 counts above 50 showed no evidence of heterogeneity,* confirming the results for whole stations. On the other hand, counts of 50 or less (18 in all) show a degree of heterogeneity (assortment of bridled birds) such as would arise by chance only once in ten times if there were in reality no assortment. This may be taken as a strong indication but by no means a proof that assortment does occur. It is interesting that the 7 counts of 25 or less, taken alone, showed no evidence of assortment.

When the data from Handa were treated in a similar way, the 32 counts of 50 or less showed a degree of heterogeneity that would arise by chance about once in 5 times—again an indication of assortment, but less strong than for Noss.

The situation, however, differs from Noss in another way, for the 21 counts of over 50 showed a slight degree of heterogeneity, such as is to be expected about 3 times in 10. Thus it may be that our original suspicion will prove to be correct, namely that assortment at Handa leads to heterogeneity in considerable-sized sections of the colony.

In any case, it is clear that further data must be collected if this important question is to be definitely settled, and that the best method of doing this will be to record the birds counted in samples of 50 or less. Any counts sent in to Mr. Southern should therefore be tabulated under 3 headings—(i) colony; (ii) station within the colony; (iii) separate counts of 50 or less (but preferably close to 50) within the station. Counts of billing pairs, noting the number in which neither, one, or both birds were bridled, will also be valuable, as showing whether assortative mating occurs; such counts should only be undertaken where the bridled percentage is high, as otherwise an unduly large number will be required.

It is clear that single counts of 200 birds, which have hitherto been considered adequate for bridled percentages of 5 per cent. and over (Southern, 1939) are not really so. Even much larger single counts may not be satisfactory, *e.g.*, the deviation of 2 in the bridled percentage of the nearly 600 birds on station 1.

I have consulted with Prof. R. A. Fisher as to the best method of sampling for this purpose. It is clear that a large number of separate counts will be much preferable to a single count of the same number of birds at one station. A minimum of 4 or 5 counts at different stations is desirable, if possible of 200 birds or more each. On the other hand, 100 at each station will be useful, and even if only a few birds can be counted at particular stations, such counts should be made in preference to counting the same additional number of

*That is, statistically significant differences between the percentages of one sample and another within the whole colony.

birds at other stations. Of course, for calculating percentages for a given colony, the larger the total numbers the better, as the standard error will remain appreciable until one or more thousands have been counted; but even so the total should be made up of counts from as many separate stations as possible. The count at each station, as suggested above, should be made up of separately recorded counts of 50 or less, to test for heterogeneity (assortment).

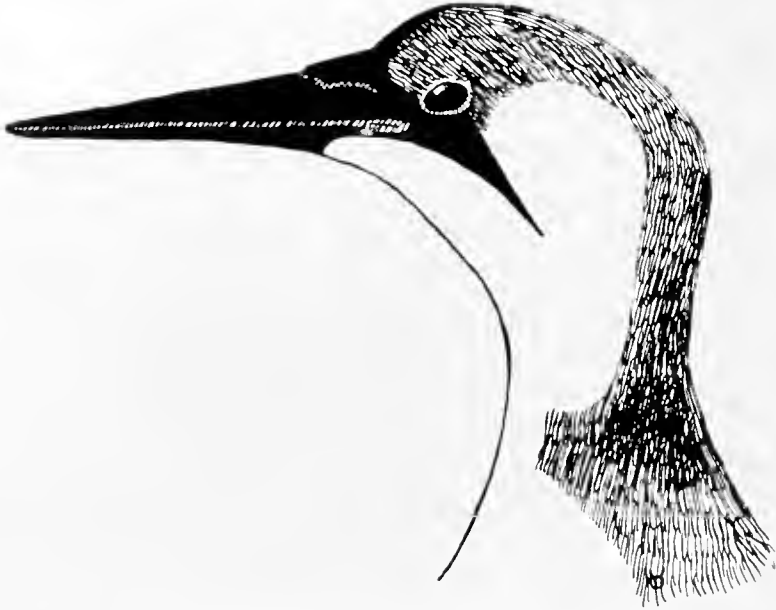
(7) *Assortment*. Further evidence for assortment was seen in other areas, couples of two bridled birds being always commoner than to be expected on pure chance, and some ledges containing up to double or more the usual percentage. In some cases this assortment represents assortative mating, as shown by Blacker's observation of two bridled birds billing on Handa. The underlying cause, however, is probably a tendency of old birds to return to the same ledges to breed, and of young birds to return to the neighbourhood of where they were hatched. A local fisherman at Handa informed us that he had photographed one ledge in three successive years, and that in each year a bridled bird was in the same position on the ledge.

It is just possible that in addition the bridle may play a part in mutual display, which itself may tend to be assortative; this does not, however, appear to be likely.

(8) *Abnormal Variety*. On Handa, a peculiar anomaly was seen by Fisher on cliff 13. The white of the belly extended ventrally through a broken collar of black, and then expanded to cover the chin, throat, malar region, ear-coverts and side of neck, with the exception of a band of black reaching backwards and a little downward from the eye and ending within the white space in a point. This abnormal variety thus clearly had a winter plumage pattern, though the *colour* of its plumage and soft parts had changed to its summer state. (See figure overleaf.)

(9) *Suggestions for future work*. (i) Very few records are available on the N. and NW. of Scotland between Duncansby Head and Canna, and one of them, that from Handa, does not seem to fit into a smooth gradient. Thus, observations from this region will be important, notably from the Cape Wrath-Erriboll district, and from the Shiants and Barra Head, O.H., which are half-way from the mainland to St. Kilda. Counts on Sule Stack and Sula Sgeir would also be valuable. (ii) Apart from the accurate mapping of the existing gradient, it will be very interesting to ascertain if this is in

process of change. Such change may be either secular and progressive, or cyclical and periodic. Evidence for secular change in the ratio between dimorphic types is known from direct evidence in the colour-phases of the Hamster (*Cricetus cricetus*) (Timofeeff-Ressovsky, 1939) and from indirect evidence in the colour-phases of the Tasmanian Opossum



Abnormally marked bird seen on Handa.

(Drawn by G. Salter from a sketch on the spot by J. Fisher.)

(*Trichosurus vulpecula*), and the tooth varieties of the vole (*Microtus arvensis*) (Pearson, 1938; Zimmermann, 1935; see discussion in Huxley, 1939). Similar changes are known to have occurred in the replacement of normal by melanic forms of moths in industrial areas, etc. There is some evidence that the dimorphratio cline involving the percentages of white and blue colour-phases in the Arctic Fox (*Alopex lagopus*) varies periodically with the animal's cycle of abundance (Elton, 1930). To detect and study such changes, repeated counts in especially favourable situations are needed. For these, after consultation with Mr. H. N. Southern and other ornithologists, I suggest Noss, Handa, Fair Isle, Barra Head, Bass Rock, the Farnes, and any suitable north-western Irish colonies (unpublished data having shown the bridled percentage here to be between 4 and 10). Counts on regions of low percentage are not likely to be useful for this purpose. Counts of at least 1,000 birds, in each case from at least 4 stations within the colony, should be made. If it is not desired to publish the counts immediately, they should be sent to

Mr. H. N. Southern, c/o Edward Grey Institute of Field Ornithology, 39, Museum Road, Oxford.

A secular change is not likely to be detected in less than 10 years (see Fisher, 1937), but periodic changes should be detectable in from 5 to 10 years.

On one further problem it would be useful to have additional information. If any observers, or groups of such, are in a position to spend some hours watching a ledge, it would be possible to establish the absolute numbers of the two phases present on the ledge. When eggs are present, the activity of any mated pairs will centre round the small territories of which their egg is the centre, and some hours of careful watching, combined with a chart of all the territories on the ledge, could establish the identity of all the relevant individuals. The greeting ceremony of "scissoring" so often evoked when a bird lands by its mate will be found to be a great aid in the identification of mated pairs.

The value of such information would increase geometrically if observations were repeated in successive years.

I wish to record special thanks to Mr. D. Robertson, who put his yacht at the service of the party, and so made the work possible.

A.	Locality and Station.	Total counted.	Bridled.	Per cent. bridled.
	Noss.			
1.	Bottom of highest part, from below	306	80	26.1
2.	Halfway down S. side, from top	214	53	24.8
3.	Above Holm, from top	328	87	26.5
4.	On and opposite Holm, from top	301	82	27.2
	Total ...	1,149	302	26.3
B. HANDA.				
1.	E. side Stack and cliffs opposite	578	46	8.0
2.	W. side Stack and cliffs opposite	965	113	11.7
3.	Cliff 5*	227	17	7.5
4.	Cliff 6	227	27	11.9
5.	Cliff 8, East part	293	26	8.9
6.	Cliff 8, West part	200	26	13.0
7.	Cliffs 11 and 12	174	14	8.0
8.	Cliff 13	236	25	10.6
9.	Cliff 16	191	15	7.9
10.	Cliff 17	248	24	9.7
	Total ...	3,339	333	10.0 (9.97)
C. LOCH ERIBOLL.				
	Counted on water from yacht ...	111	18	16.2

*The numbers refer to stations westwards from the Stack.

<i>Locality and Station.</i>		<i>Total</i>		<i>Per cent.</i>
D. ST. KILDA.		<i>counted.</i>	<i>Bridled.</i>	<i>bridled.</i>
1.	Dun on ledges from land ...	398	72	18.1
2.	Dun and S. of Hirta from sea ...	52	10	19.2
3.	Soay on sea from yacht ...	42	7	16.6
4.	N. of Hirta on sea from yacht...	109	17	15.6
5.	Boreray group, on ledges from yacht	272	38	14.0
Total ...		873	144	16.5

Standard error (*sigma*)
Per cent. bridled birds (total)

Noss	...	...	...	26.28	± 1.128
Handa	...	...	...	9.97	± 0.5185
Loch Erriboll	...	...	...	16.22	± 3.50
St. Kilda group	...	...	...	16.5	± 1.256

SUMMARY.

(1) Counts of the proportion of bridled specimens of Guillemot have (a) confirmed previously recorded percentages for Noss (26 per cent.) and Handa (10 per cent.); (b) corrected the previous record for St. Kilda (16.5 per cent. instead of 10 per cent.) and (c) recorded a figure for a new locality, Loch Erriboll—about 16 per cent. (d) It is possible that a gradient in bridling percentage occurs within the St. Kilda group, with lower values to the N., but more data are required to confirm this.

(2) Evidence is given to show that some degree of assortment of bridled birds probably occurs. The assortment seems to be mainly in small local groups of 50 birds or less.

(3) This makes it desirable to count several (if possible 4 or more) stations in each locality, with a reasonable number (if possible, 200) birds at each station. For a given number of birds, several stations are much more likely to give a correct percentage for the whole colony than one station.

(4) In order to detect the extent to which non-random assortment of bridled birds occurs, counting at each station should be done by groups of 50 or less, and the figures for the separate groups recorded for future statistical analysis.

(5) Counts of bridled Guillemots are required from certain regions, notably the Outer Hebrides, the Cape Wrath area and other regions of N. and NW. Scotland, Sule Stack and Sula Sgeir, and northern Ireland. More extensive counts from all parts of the St. Kilda group are also needed.

(6) In order to detect whether periodic or secular variation is occurring in the bridled ratio, large counts should be

repeated at intervals at favourable localities, such as Noss, Handa, Fair Isle, Barra Head, the Farnes and Bass Rock.

(7) Counts which it is not desired to publish separately should be sent to H. N. Southern, c/o Edward Grey Institute of Field Ornithology, 39, Museum Road, Oxford, who will analyse them and incorporate them in a final report.

REFERENCES.

- ELTON, C. S. (1930). *Ecology and Evolution*. Oxford (p. 30).
- FISHER, R. A. (1937). The Wave of Advance of Advantageous Genes. *Ann. Eugen.*, 7, 355.
- FISHER, R. A. (1938). *Statistical Methods for Research Workers*. 7th ed. Edinburgh and London.
- FORD, E. B. (1939). Polymorphism and Taxonomy, in *The New Systematics*, ed. J. S. Huxley, Oxford.
- HARRISSON, T. H., AND LACK, D. (1937). The Breeding birds of St. Kilda. *Scot. Nat.*, 1934, 59-61.
- HUXLEY, J. S. (1938). Clines, an auxiliary taxonomic principle. *Nature*, 142, 219.
- HUXLEY, J. S. (1939). Clines, an auxiliary method in taxonomy. *Bijd. Dierk.*, 27, 491.
- PEARSON, J. (1938). The Tasmanian Brush Opossum, etc. *Pap. Proc. R. Soc. Tasmania* for 1937, 21.
- SOUTHERN, H. N. (1938). Distribution of the Bridled Form of the Common Guillemot (*Uria aalge*). *Nature*, 142, 951.
- SOUTHERN, H. N. (1939). The Status and Problem of the Bridled Guillemot. *Proc. Zool. Soc. (A)*, 109, 31.
- TIMOFEEFF-RESSOVSKY, N. W. (1939). Mutations and Geographical Variations, in *The New Systematics*, ed. J. S. Huxley, Oxford.
- ZIMMERMANN, K. (1935). Zur Rassenanalyse der mitteleuropäische Feldmäuse. *Arch. Naturgesch. (N.F.)*, 4, 258.

THE BREEDING OF THE OYSTER-CATCHER.

BY

E. J. M. LUNTON.

DURING the summer of 1929 I was fortunate enough to spend three months on the island of Skokholm, Pembrokeshire, and the following account of the breeding of the Oyster-catcher (*Hæmatopus o. occidentalis*) is almost entirely drawn from notes made there during that period. The piping ceremony, to which Selous [1], [2] called attention, was carefully studied by Huxley and Montague [3], but their observations were made before the laying of the eggs. Selous observed piping so late as July but he did not make a detailed study of this species, as he did of the Ruff (*Philomachus pugnax*) and other species. I have not been able to find any study of the Oyster-catcher during the period between egg-laying and the fledging of the young.

For the sake of convenience I have divided the paper into two parts, the first concerned with the physical factors and the second with the mental and psychological. I have further grouped my observations under several heads for the sake of easy cross-reference.

PART I.

A. NATURE OF TERRAIN.

Skokholm is an island lying about $3\frac{1}{2}$ miles south of the south-west coast of Pembrokeshire. The area is about 240 acres. There are no beaches of shingle or sand, but the coast consists of cliffs of red sandstone of varying height up to about 120 feet, and of different degrees of steepness. On top, the island, whose highest point is 165 feet above sea level, is covered with a turf of grass, sorrel, thrift, etc., with considerable patches of heather and bracken. There is a number of rocky outcrops also. At the time of egg-laying the bracken is, of course, very low, but later and before the eggs have hatched it attains a height of 2 to 3 feet.

B. SITING OF NESTS.

Nests were found on the cliffs, in thrift, heather, sorrel, and (especially) in bracken. Some were within 20 feet of high-water mark, and others at 100 feet or higher. There were no nests at all in an area liable to be boggy, although during May it was, in fact, quite firm and dry. In all, 35 pairs were located, but I have not notes on all these nests. One of these nests, No. 2, will be treated separately and no account is taken of it except where stated.

C. EGGS LAID AND CHICKS HATCHED.

In 6 nests situated on the coast of the island 15 eggs were laid, of which 13 hatched. In 14 inland nests 36 eggs were laid, of which 32 hatched. Thus, the average number of eggs to the clutch was the same in both classes, about $2\frac{1}{2}$, but a slightly larger percentage hatched in the inland nests. In 7 nests in the centre of the island 20 eggs were laid, of which 18 hatched. These figures are only for those nests where hatching was under observation. The figures for all clutches will be found under Section G.

D. TEMPERATURE AND WEATHER.

The temperature was recorded for most of the period of egg-laying. It was cold at first, but about the time of the completion of the latest clutches a sharp rise began. There were only two days of strong wind, and rain fell on only four days.

E. NEST MATERIALS.

As by many related birds, several scrapes are made. Sometimes the nest is an almost bare depression, but usually some "lining" or "decoration" is added. (I do not wish by these words to imply that the bird intends to make the nest more comfortable or attractive.) The lining was always of the material nearest to hand. On the cliffs small flat chips of sandstone were used. Elsewhere, according to the site of the nest, dead bracken stalks, twigs of heather, and rabbit "pellets" (one nest was entirely lined with these) were used. I never saw any piece of fresh vegetation in any nest, although I saw the brooding bird nibble at bracken within reach. (See under M.) I think that the lining of the nest was added to after the eggs had been laid, but I cannot be certain of this.

Besides this lining certain "decorative" objects were brought to the nest from time to time, and these were certainly not all present when egg-laying began. At several nests small bones of rabbit or fish were found, and sometimes even quite large bones. In one nest I found a ring that had been put on a juvenile Rock-Pipit (*Anthus s. petrosus*) on the island in 1935. These objects are certainly brought from some distance, and are not, like the lining, within reach of the sitting bird. Perhaps the two different types of material, here referred to as "lining" and "decoration," are brought to the nest by quite different means. If the lining is the accidental result of the sitting bird's nibbling, the decoration may be brought by the bird after it has been pecking at the

ground, as they often do in moments of excitement. (This habit of pecking was noted by Huxley and Montague [3].) The birds certainly at times bring food to the nest and then rather absent-mindedly swallow it. (See under M.)

Without exception nests were near to some slight eminence, a large tuft of thrift, a stone, rock or wall, which was used as a look-out post for the bird that was not occupied in brooding. Sometimes this was within a foot or two, at others at 15-20 yards distance.

F. INCUBATION PERIODS.

The first eggs were laid about May 6th or 7th. The last clutch to hatch hatched on July 5th.

The following table gives a sample of 4 nests.

<i>Nest</i>	<i>1st Egg</i>	<i>2nd Egg</i>	<i>3rd Egg</i>	<i>1st Chick</i>	<i>Last Chick</i>	<i>Remarks</i>
1.	—	—	May 10th	June 4th	June 5th	One chick died in egg.
3.	May 14 or 15	May 16	May 18	June 13	June 14	1st egg hatched first; 2nd infertile.
5.	May 16	May 18	—	Night of 13-14	June	2nd egg hatched first.
6.	—	May 17	May 18	June 13	June 14	1st egg hatched first.*

In nest 2 an egg was laid on May 14th and taken the same day by a gull. On May 25th a second egg was laid in the same place and again taken the same day by a gull. On May 29th or May 30th another egg was laid in a scrape about 10 yards away from the first in a site more sheltered by bracken. Another egg was laid there by 31st May. One chick hatched on June 24th and the other egg was addled and removed by the bird to a distance of about four feet.

The incubation periods for these five nests are therefore

<i>Nest</i>	<i>Period</i>
1.	25 days
2.	25 „
3.	26 „
5.	26½ „
6.	26 „

*One egg taken by gull about May 26th.

This is a rather longer period than that given in the *Practical Handbook*, but not so long as that recently estimated by the Rev. F. C. R. Jourdain (*antea*, p. 113).

G. FERTILITY.

In 25 nests 63 eggs were laid, an average of 2.52 to each clutch. There were 13 clutches of 3 and 12 of two. None of 4 was seen. Out of 51 observed at hatching, 45 chicks were hatched. Therefore, 88.24 per cent. of the eggs laid hatched; 3, possibly 4, of these eggs were infertile; 1 was taken by a gull; 1 chick died in the egg, in the first clutch to hatch.

It is unfortunately impossible to make any estimate of the percentage of chicks that are reared.

H. ENEMIES.

The chief enemies of the Oyster-catcher on the island are the Gulls, Greater Black-backed (*Larus marinus*), British Lesser Black-backed (*Larus f. graellsii*), and Herring-Gull (*Larus a. argentatus*), and especially the two last in their capacity of egg-thieves. There were several nests of Oyster-catchers quite close to nests of each of these species, and only one of these had an egg stolen. Ravens (*Corvus c. corax*) and Carrion-Crows (*Corvus c. cornix*) are also regarded as enemies. The Oyster-catcher is very bold in defence of its nest and for this reason, no doubt, suffers little. It is besides an exceptionally swift and agile flyer, and trespassing birds are attacked and struck until driven away. One young Raven had a tail-feather knocked out, and gulls were often struck. I never observed anything resembling "injury -- feigning."

Nest 2 may have lost two eggs because, being very near the house, the Oyster-catchers were often disturbed by someone walking about, and a watching gull may have been able to seize the opportunity thus given. Apart from this, man's influence is not prejudicial to the birds; and there is no other predatory mammal on the island.

J. BROODING.

Brooding is certainly by both sexes, but the cock seemed always the more nervous, and he also brooded for much shorter periods than the hen. It is obviously impossible to determine how far this nervousness was due to the presence of an unfamiliar object, *viz.*, the hide, near the nest.

Towards the end of incubation the birds were much less nervous, and at one or two nests the birds would return within ten seconds of my entering the hide. (It, therefore, seems probable that the greater nervousness of the cock was

not merely due to the presence of the hide.) There was very great individual difference between different pairs, and some nests could not be watched at all from a hide.

K. FEEDING OF CHICKS.

The chicks were first fed as soon as they were dry. It was impossible to identify most of the food brought, but apart from molluscs, leatherjackets seemed to be a favourite food. To one nest I saw two moths brought, possibly silver y moths (*Plusia gamma*). The wings were torn off and the body broken up and dropped in front of the chicks. Food was never transferred direct from the beak of the adult to the beak of the chick.

So far as my observations went, at coastal nests terrestrial animals (leatherjackets, moths, etc.) were brought chiefly when the tide was in, and not when marine animals were obtainable. However, there is no doubt that some Oystercatchers do feed on land even when the tide is out ; and some pairs probably have no access to the sea. (See under L.)

PART II.

L. TERRITORY.

As has been stated above (C) the nests were less sparse in some areas than in others ; therefore, the size of territory varied considerably.

Certain territories included a strip of sea-shore. From the behaviour of the birds (N) it appeared that not only rocks, etc., visible at high tide, but also those uncovered only for an hour or two, were regarded as part of the territory. (The latter would, of course, be far more valuable as feeding-grounds.) "Piping parties" of three, four or five birds were sometimes seen flying over the sea together, close inshore, even at high tide.

Other territories had no access to the sea, unless the birds crossed their neighbours' territories. I do not know whether or not they did this, but am strongly of the opinion that they did not. I certainly did not once observe a bird from such a territory going to the shore to feed, nor leaving its territory at all. The foraging bird always remained within call of the brooding bird so far as I was able to observe, and this would have been impossible in some territories if the shore had been visited. There was no inland pair without a water supply in its own territory.

There were, however, certain "neutral" areas, notably in the meadow between the house and the well where there was too much human activity for any pair to nest. Here several

birds might be seen at times together, showing no sign of excitement or jealousy. Selous, it may be noted, "lays great stress on the frequency with which one may, in the pairing season, see three birds of a species flying together in apparent friendliness." At other times, in the same area, three or four birds would be seen flying together and piping; but I have no record of piping on the ground here. I, therefore, prefer to regard this as a neutral area into which excited birds might well stray from their territories during piping.

One rock was used as a resting-place by two pairs without any signs of mutual interference. It was not a very large rock, in the edge of the sea, and was, I suppose, the most convenient look-out and resting-place for the two pairs. One pair when disturbed would almost always fly to this rock, which was about eighty yards from its nest.

Later, when some of the young birds were already on the wing, certain rocks were used by twelve or more birds; but such congregations are the first sign of winter flocking and the abandonment of territory. These were all old birds, and I never saw young and old birds together except in family parties.

After the chicks had left the nest, between 12 and 48 hours after hatching, it was found that territories changed, and even changed from day to day according to the movements of the chicks. Thus, if I approached a certain nest and even stood where the nest had been, no Oyster-catcher showed any alarm; but in other areas, where before I could walk without disturbing them, my presence now caused much alarm. I was fortunate in getting some positive evidence on this. On July 2nd I found a chick, which had been hatched on June 18th in a coastal nest, in a patch of bracken 300 yards inland from the nest. When I went to the nest the parents took no notice of me, but showed the usual alarm when I was near the chick. On July 7th the birds in another territory were very noisy though for the previous few days they had not been near their nest, presumably because the chicks had wandered off and had later returned near to the nest.

On the same day I found a ringed chick, 316017, then about three weeks old, in the territory formerly held by the owners of nest 2. This was not their chick. For an experiment I removed this chick to a neighbouring territory (R) where the birds were very noisy and presumably had chicks of their own. The parents of 316017 followed me some way, but turned back at a wall which was used by the owners of (R)

as a look-out post. I put a low wire fence round the chick, at some distance, to prevent its escape. "I then went back to the territory of its parents, who made much noise, and then flew off in chasing flight* into the (R) territory past the chick and round again, without calling while in (R) and without protest from the owners of (R), who were on the wall." This was the only occasion on which the chick's parents invaded (R), the territory to which I had removed it. Probably they had another chick or chicks in their territory, and they remained there and were very noisy on two occasions on which there was a human invasion of their territory in the next hour. But it is interesting to note that they made no sound during their excited flight into (R), and that although they flew close past the owners of (R) there was no protest from them.

The owners of this territory, R♂ and R♀, started calling as soon as the chick, which had been crouching, began to move. They gradually came closer, flying low over the chick and alighting near, but always outside, the fence. The chick was mostly silent. My impression was that the two adults were trying either to drive the chick off or to entice it away, neither of which was possible owing to the fence. One bird began piping briefly, which I suppose may suggest that they were trying to drive the chick away. Pecking at the ground, a form of "sexual" behaviour referred to by Huxley and Montague [3], was also noted. But for the most part the adult birds either flew low over the chick, or ran along near it in the hunched-up attitude of piping, but with the beak held out instead of down, and calling kee-kee-kee, etc. Once the chick tried to climb over the fence and was caught for a moment. It freed itself and called two or three times, and R♂ and R♀ then became very excited.

After about an hour I let the chick out of its pen, and it ran off at once, waving its wings in the manner described by Brooks [4], p. 453. The adults were very noisy, but I was no doubt as much responsible for this as the chick. I made the chick squat and returned to the hide. After seven minutes it raised its head and ran off "stopping frequently and bobbing" like a Common Sandpiper (*Tringa hypoleucos*). (This performance is sometimes seen in adults, Huxley and Montague [3], p. 873.) It ran towards the adults R♂ and R♀, which were on the wall. One of them flew down on to the ground and started pecking. Neither adult approached the chick nor called and they seemed to take no further notice

*Described by Huxley and Montague [3], pp. 886-887.

of it. I therefore returned it to the territory from which I had taken it. As soon as it was in its own territory, it called three times, in my hand, and its parents called softly, not the alarm call, from another wall bounding their territory. I put the chick down but the parents did not go to it so long as I was in sight.

M. BEHAVIOUR AT THE NEST.

There is little to record of the brooding birds. At one or two nests I was able to distinguish the sexes without difficulty, by the longer bill of the hen bird, which also has a proportionately larger patch of yellow at the distal end. (I do not know if this is constant.) There was some difference between the sexes in behaviour, apart from the greater nervousness of the cock, which I have already mentioned (J). There was certainly a difference in the calls used, but in writing of a bird with so very large a vocabulary as the Oyster-catcher I hesitate to try to transcribe many of the notes. I recorded in my notes every sound uttered by the birds during many hours of watching, but I suppose that my transcriptions would mean as little to others as others' transcriptions mean to me. But in particular I noted that the hen used a soft, almost clucking note, which the cock never uttered. This note was used only after the chicks had hatched, and apparently it called them to their mother. Piping was never observed close to the nest, though the cock piped sometimes from his look-out if another Oyster-catcher flew near. The presence of other, harmless birds, Rock-Pipit, Meadow-Pipit (*Anthus pratensis*), Wheatear (*Ænanthe æ. ænanthe*) and Puffin (*Fratercula a. grabæ*) was ignored.

When a foraging bird returned with food neither called, and the brooding bird must have become aware of its approach by sight, or at least not by any sound audible to human ears. Sometimes the bird returning with food would eat the food itself after approaching the nest, perhaps after waiting nervously (?) for a short time. Probably this was due to some distraction. Pecking and nibbling, as already mentioned (E), (L), are not infrequent signs of excitement or nervousness, and I suppose on these occasions it happened that the nibbling action took place when the beak contained food, with the result that the food was swallowed. I only once saw the brooding bird eat, and then she picked up a morsel of food that the chicks had left. The foraging bird also helped to finish up the "scraps." The chicks were always fed outside the nest, and were called out by the bird that had been

foraging. I think that only the cock forages, and that the hen's spells off the nest are merely for the purpose of feeding herself.

One rather comic interchange was observed. The cock had relieved the hen on the nest, but kept walking off the nest and back to the look-out rock, where the hen was standing. A Lesser Black-backed Gull flew over and caused some excitement; when it had gone the hen nibbled at the cock's tail-feathers. He then returned to the nest, and she walked out of sight, only to reappear almost at once and peck at the ground.

Once, before the bird returned to the nest after being put off by me, I heard a call which I noted down as "puk-puk-pikkuk—very soft." This was not heard again.

Sometimes the brooding bird would nibble at the grass or bracken within reach. (See under E.) Once the hen nibbled at a chick that was straying away from the nest.

Coition was only once observed, and then not near to the nest, and, as noted by Huxley and Montague [3], p. 888, without any preliminary courtship.

N. PIPING.

I have little to add to the thorough study by Huxley and Montague [3], and there is no reason to describe again here what they and Selous [2] have already so well described.

Mr. R. M. Lockley informs me that he first hears the birds at Skokholm piping in January, chiefly at night, long before they are spending all their time in their territory. The last date on which I heard them was July 27th.

I noted that when the piping is given in flight a peculiar form of flight is used; the flapping is swift but the forward progress is slow. As noted above (L) this piping was observed over the sea and rocks uncovered by the tide. Piping was heard at almost all hours of the day and night, and in any weather except very strong wind.

As for the piping ceremony, as I should prefer to call it, which is one of the most interesting and complicated patterns of behaviour in a British species, several considerations occur. First, I agree with Huxley and Montague [3], p. 890, that "it may be used in very various situations." But so may most patterns of behaviour. In man, weeping is the response to a very large variety of situations: grief, excessive joy or mirth, anger, sentimentality, pity, not to mention the taste of lemons, the smell of onions, or the feel of cold winds. The use of one pattern of behaviour in various situations is usual.

It seems to me that this "display" is not "directed at another bird,"* and I am doubtful if any display is so directed. It is, in my opinion, an expression of an emotional or physiological state, like tears, in the performing bird. Hence I prefer the word "ceremony" or "dance," but the latter connotes, perhaps rightly, an aesthetic appreciation or purpose. Selous [2] noted the curiously absent-minded appearance of the piping birds, which seem quite absorbed in their performance. I may perhaps refer to my note on the display of the Green Sandpiper (*Tringa ochropus*) [5] in which I noted that at times the "displaying" bird must be invisible to its companion. I have frequently observed the same thing in the ceremonies of the Moorhen (*Gallinula ch. chloropus*).

Usually, in my observations, the piping ceremony occurred after the intrusion of a third bird into the territory of a mated pair. However, where larger parties are concerned, some less simple explanation than jealousy or a sense of property should probably be looked for. There is no doubt that both sexes pipe (Huxley and Montague [3], p. 882), but I think the cock pipes more frequently, as would be expected.

I have, I hope, raised a few problems which others might find it worth while to examine, either by a study of this most interesting and beautiful species, or by observations on other birds. I had hoped to make this paper more complete by further observations; but in the present uncertain circumstances I have thought it best to publish it now.

Finally, I have to thank Mr. G. R. Duval, who kindly put at my disposal his notes on one of the pairs which I watched, and Mr. R. M. Lockley for his assistance with information, and for reading through this paper.

REFERENCES.

- [1] Selous, E. (1901): *Bird-Watching*.
 [2] Selous, E. (1927): *Realities of Bird-Life*.
 [3] Huxley, J. S., and Montague, F. A. (1925): "Studies on the Courtship and Sexual Life of Birds." V. The Oyster-catcher. *Ibis*, October, 1925. With useful bibliography.
 [4] Brooks, A. (1939): "The downy young of some Nearctic Limicolines." *Ibis*, July, 1939.
 [5] Buxton, E. J. M. (1938): "Display of Green Sandpiper." *British Birds*, Vol. XXXII, pp. 119-20.

*Huxley and Montague [3], p. 890.

NOTES

INTERBREEDING OF A HOODED AND A CARRION-CROW IN Co. DUBLIN.

IN 1939 in the south of Co. Dublin a Hooded Crow (*Corvus c. cornix*) and a Carrion-Crow (*C. c. corone*) nested and successfully reared their young. I am aware of only two other Irish records of the inter-breeding of these birds, namely at Ballywalter Park, Co. Down, c. 1908 (*Brit. B.*, Vol. XXIX, p. 127) and at the north side of Dublin Bay in 1935 (*l.c.*, p. 238), and in neither case has there been evidence that young reached maturity. In both occurrences the Carrion-Crow was the male.

In the south Dublin instance the Carrion-Crow would appear to have been the female. When the nest was discovered, on April 21st, by Lt.-Col. Charles Scroope, the Carrion-Crow was sitting. On April 24th Mr. P. E. Dunn and I put her off the nest and saw that she was soon joined by a Hooded Crow. Later we watched her returning with the Hoodie in attendance.

On May 6th the young called in the nest when we tapped the tree, but on all subsequent visits, until they flew on May 28th, they remained quite silent.

It was unfortunate that the young were not examined before they left the nest. From various observations, however, which were made afterwards in the vicinity, it was concluded that there were four young in all and that in colour one was like a Carrion, two were of hybrid plumage showing more of the Carrion than of the Hooded Crow and the fourth was either of hybrid plumage like the other two or, more probably, like a Hoodie.

P. G. KENNEDY.

JACKDAW NESTING IN ITS FIRST YEAR.

A JACKDAW (*Corvus m. spermologus*) ringed as a nestling in June, 1935, hatched four young in May, 1936, thus attaining almost its maximum fecundity in its first year, as broods of five do not appear to be frequent. A case is also recorded of a Jackdaw rearing one, three, five and four in successive years so that its maximum fecundity was maintained until what must have been at least its fourth breeding season.

Though, no doubt, most of the Passeres breed in their first year, the case of a Jackdaw having done so is mentioned on account of its near relationship to the Rook (*Corvus f. frugilegus*) which is supposed not to breed until its second year.

C. WONTNER-SMITH.

FECUNDITY OF BLUE TIT AND TAWNY OWL IN RELATION TO AGE.

THE following observations might supplement Mr. Charteris's note (*antea*, p. 162) on fecundity in relation to age of birds.

A Blue Tit (*Parus c. obscurus*) ringed in December, 1930, brought off a brood in 1938, though its sex and number of young are unknown as the nest was inaccessible.

A pair of Tawny Owls (*Strix a. sylvatica*) have nested in the same tree in a half-wooded seven-acre garden annually since 1917, or earlier. I have no definite proof that they are the same birds, but as a pair has been continuously resident, no dead bird has been found, and there is no danger of shooting in the neighbourhood, it seems likely. In 1937 the bird was sitting for at least 4 weeks—its head is visible from the ground—but was found to be incubating only a tennis ball, lost in the fork of the tree from a court below. In 1938 two eggs were laid: one hatched and the young one died when about a fortnight old; the other was infertile. In 1939 the bird sat for about three weeks on an empty nest-hollow. In previous years the nest was not regularly visited, though the bird was seen sitting each year and young birds were frequently seen after fledging. In 1924 four young were brought off, and two in 1926. This may be a case of infertility due to old age.

J. A. G. BARNES.

COMMON BUZZARD IN SHETLAND.

The Handbook of British Birds (Vol. III, p. 53) says of the Common Buzzard (*Buteo b. buteo*): "Occurrence at any time in Shetlands doubtful, except Fair Is., where occasional." In view of this statement, it may be of interest to know that I had an excellent view of a Buzzard being mobbed by a Herring-Gull near Uyeasound, on the Island of Unst, on June 16th, 1936. I was with a local Shetland lad at the time, and only the day previously he had shown me an eyrie, where he said Buzzards had nested for several years. The remains of the nest were plainly visible on an inaccessible ledge on a high sea-cliff; it was raining heavily at the time and I could see no sign of life in the nest, but could not look directly into it. The bird seen at Uyeasound on June 16th was the only one I saw during a fortnight's stay on the island, so that I can give no proof of breeding in that year.

C. J. PRING.

ASSOCIATION OF DRAKE MALLARD WITH ALARMED CALL DUCK AND BROOD.

ON April 9th, 1939, at Poole Park, Dorset, a white "call" duck with a brood was suddenly alarmed by a dog which

splashed into the water near the ducklings. The duck quacked loudly and manœuvred the brood away. Immediately the duck quacked, a wild drake Mallard (*Anas p. platyrhyncha*) detached itself from a group of drakes and swam to the duck with the brood. It remained with them and swam close to the duck, which continued to quack, though the drake showed no signs of alarm.

Although the Mallard on this pond do not live in a perfectly wild state, the drake in question was undoubtedly a true Mallard, and this instance seems to support Mr. B. Lloyd's contention (*antea*, Vol. XXX., p. 336) that occasional association of the Mallard drake with a duck and brood is a real one and not merely fortuitous. G. K. McCULLOCH.

SUMMER PLUMAGE OF FEMALE RED-BREASTED MERGANSER.

DURING a visit to the Varanger peninsula, East Finmark, in June and July, 1939, I made special efforts to investigate the breeding plumage of the female Red-breasted Merganser (*Mergus serrator*). It is stated in *The Handbook* (Vol. III, p. 372) that in those examined the black area round the eye was lacking, but that more material is required.

I was able to handle several birds, and besides examined over twenty individuals at close quarters with powerful binoculars. In every case the black area round the eyes was missing.

An adult breeding female (near Storelve, July 2nd, 1939, soft egg in oviduct) had moulted most of the head and throat, but not the elongated occipital feathers. The new plumage was as in winter/spring, but the black patch round the eyes was replaced by reddish brown feathers, and there was no indication of any black spotting on the throat. A few flank feathers, dark ash-brown, narrowly tipped buff-brown, had been renewed. The rest of the plumage was as winter but abraded. The bill was deep pink-brown, culmen and nail black; lower mandible paler; legs and feet deep vermilion, webs dusky; iris: rich red-brown.

JOHN G. WILLIAMS.

STOCK-DOVE FLOCKS IN THE BREEDING SEASON.

WITH reference to the recent notes on the above subject (*antea*, pp. 140, 165) I can state that both in the conifer and (the deciduous woods of south-west Surrey) flocks of Stock-Doves (*Columba œnas*) are quite regular right through the year.

During the spring and summer these flocks rarely contain more than 20 birds but in the autumn and winter many more can be seen, though by then they are usually joined up with Wood-Pigeons.

L. S. V. VENABLES.

NUPTIAL SONG OF LITTLE STINT.

OF recent years in Kent I have seen a number of Little Stints (*Calidris minuta*) on spring passage.

It may be interesting to record that small parties of these birds in spring occasionally indulge in bursts of nuptial song. The basis of this song, a trill which may last for several minutes, appears to consist of a series of notes—"dree, de-dree dee, dirr"—variously repeated and rolled together, being uttered something like the buzzing of a bee, but the song rises and falls in a most tuneful manner sometimes sounding near, sometimes far away.

The song has always been uttered when the birds were standing on the mud, often at only a few yards distance from me.

T. C. GREGORY.

PURPLE SANDPIPER AND OTHER BIRDS IN MIDDLESEX.

ON November 5th, 1939, we saw a Purple Sandpiper (*Calidris m. maritima*) at Staines Reservoir, the second record for Middlesex, a Black Tern (*Chlidonias n. niger*), the latest autumn record for Middlesex, and a Slavonian Grebe (*Podiceps auritus*).

A. HOLTE MACPHERSON.

WILLIAM E. GLEGG.

G. CARMICHAEL LOW.

SOOTY TERN IN STIRLINGSHIRE.

A DEAD bird was found about the end of May, 1939, by Mr. Duncan, the fox hunter for Stirlingshire, on Myatt Hill, three miles from Denny, and was brought in the flesh to me by Master James Stirton of Perth, grandson of the finder.

Examination showed it to be about three or four days dead and suspecting it to be a Sooty Tern, I sent it, when set up, to Mr. H. F. Witherby, who confirmed my diagnosis and, after comparison with other specimens, sent me the following note :

"The bird is in full moult, most of the feathers being new, but the two outer functional primaries are old and the next is a new one sprouting, the rest being newly grown. The tail-feathers are mostly new, but the outermost are old. There are a few old and very worn brown feathers on the upper-parts and wings amongst the new black feathers.

I consider the old outer tail-feathers are of the juvenile plumage and that the bird was hatched last year and is moulting into its second winter plumage. The under-parts are white without any of the brown feathers of the juvenile plumage.

The bird agrees in general with others of the typical form *Sterna fuscata fuscata* from the West Indies and Florida."

This specimen has been deposited in the collection of The Royal Scottish Museum, Edinburgh. JOHN RITCHIE.
MUSEUM, PERTH.

INCUBATION PERIOD OF CAPERCAILLIE AND PRECOCITY OF CHICKS.

DURING the spring of 1939 I was able to observe in Scotland the nest of a Capercaillie (*Tetrao u. urogallus*) from the start of incubation to hatching and I thought the following might be of interest:—

April 30th: Nest found in Scots pine wood containing six eggs.

May 1st: Same nest contained seven eggs—bird flushed from nest.

May 28th: Three eggs show first sign of chipping—3 p.m.

May 29th: Two chicks have beaks just penetrating through shells, remaining five eggs chipped—3 p.m.

May 30th: All seven chicks hatched by 10 a.m.

During the morning of May 30th while watching and photographing from a hide, two Capercaillie chicks climbed up the tall heather behind the nest, reaching a height of approximately two feet above ground. Having attained this height they fell down—one on the back of the adult hen—and shortly after two chicks again climbed up the heather. As I have not seen this referred to in any accounts of the Capercaillie and as it is a rather extraordinary feat for chicks only a few hours old I thought it might be of interest.

ERIC J. HOSKING.

SKY-LARK NESTING IN OCTOBER IN LANCASHIRE.—Mr. Eric Hardy informs us that a Sky-Lark (*Alauda a. arvensis*) was flushed from a nest with 3 eggs by a farm-worker at Simonswood on October 17th, 1939, and reported to him. Mr. Hardy was able to photograph the nest on the 22nd and show it to others of the Merseyside Naturalists' Association. The bird was still sitting in the fourth week of the month.

BLACK KITES RELEASED IN LONDON.—Mr. Percy W. Horn of the Stepney Museum informed us that he twice saw a Kite, which appeared to be a Black Kite, flying over Stratford on October 24th, 1939. We have since learned that several

Black Kites (*Milvus migrans*) have recently been given their liberty at the Zoological Gardens, Regent's Park, and no doubt this was one of them.

HONEY-BUZZARD IN YORKSHIRE RECORDED AS GOSHAWK.—A bird captured by a gamekeeper near Pontefract on June 6th, 1927, and recorded at the time as a Goshawk, which was said to have been attacking Partridges and even perhaps lambs! (*Nat.*, 1927, p. 236) proves on examination by Mr. H. B. Booth (*op. c.*, 1939, p. 288) to be a Honey-Buzzard (*Pernis apivorus*).

GARGANEY IN PEMBROKESHIRE.—Mr. H. A. Gilbert informs us that a Garganey (*Anas querquedula*) was caught at Orierton on October 24th, 1939.

REVIEWS.

The Birds of Staffordshire. By T. Smith. Issued as *Appendices 1-9* to the *Transactions and Annual Report of the North Staffordshire Field Club*, Vol. LXIV, 1930, to Vol. LXXII, 1938.

THE nine annual supplements to the North Staffordshire Field Club *Transactions* have now been separately published in a book of nearly 300 pages.

A great deal of labour has obviously been spent in amassing the information contained here, and Mr. Smith must be congratulated on the completion of his work. It must be regretfully stated, however, that the result is disappointing in many respects.

First, there is no map. This is an indispensable accompaniment of every county avifauna. Unhappily, too, the author does not give any clear indication of the method by which he covers the county in the treating of each species. No uniform geographical sequence is followed, and often under the same species reference to localities quite near one another are separated by other accounts referring to places far away. The chronology is equally confusing and wanting in any plan. Another unsatisfactory feature is the method of recording rarities. Full particulars of the original source of information are given—very often an early number of the *Transactions*, sometimes the *Zoologist* or *British Birds* or somewhere else; but the essential details are usually denied us. The author expresses no opinion of his own. He seems to accept every published record quite uncritically at any rate if the bird was shot. Any reader who wishes to verify the records of the Rose-coloured Starling, Shore-Lark, Roller and many other rarities will have to investigate the original records in back numbers of old periodicals. Nor is it adequate to be told of the Mealy Redpoll (for instance) that "the only definite record is of three which were taken by bird-catchers near Longton in December, 1913" (p. 87). The details given in the "Appendix" of my own Water-Pipit record in 1935 is equally unsatisfactory as it stands (p. 273). A mistake in the date makes it appear that Mr. A. W. Boyd saw a Little Stint and Mr. F. R. Barlow and the present writer a Temminck's Stint on the same day in 1935 (p. 274). The account of Gannets seen flying over seems likely to be mis-identification of Lesser Black-backed Gulls.

F. Coburn's records are given without any question. His account of the status of certain species, such as the Sheld-Duck, Grey Plover, Great Black-backed Gull and Kittiwake, is so contrary to probability and to recent evidence that some discussion of their reliability seems to be called for.

Mr. Smith does not seem to realize that "a reservoir at Brewood" is the same as Bellfields or that if Dippers are common near Weston-under-Lizard, they will probably be mostly in Shropshire.

The information about the status of the Black Grouse, though published in 1935, does not seem to extend beyond 1925; the present status of the Red Grouse on Cannock Chase is left quite vague and the account of the status of both Corncrake and Wryneck is quite out of date. It is doubtful if many of the former or any of the latter can be found breeding in Staffordshire to-day; on the other hand the Wood-Lark, happily, is rather more firmly established in the extreme south-west than Mr. Smith seems to recognize. Some of the records for this area—the Stour valley—probably apply to Worcestershire rather than Staffordshire. The classification is said to follow the *Practical Handbook*, but the waders follow the passerines, the Wood-Sandpiper is out of place, and there are other surprises.

Words are often used loosely—"universally" for "widely" and a number of vague and nebulous expressions.

It is not pleasant to feel obliged to make so many criticisms which are, in fact, by no means exhaustive. The sum of it is that Mr. Smith has not really mastered and sifted his material. What he has done is to bring together a mass of information, and he has thereby rendered great assistance to some future author who undertakes a real county avifauna.

H.G.A.

LETTER.

NOTES ON THE SWALLOW.

To the Editors of BRITISH BIRDS.

SIRS,—In his interesting note on Swallows and Martins (*antea*, p. 109) Mr. L. C. Lloyd refers to the rarity of a Swallow's adopting a site for its nest such as that used by a House-Martin.

On one house I have found several pairs that nested in this way; the nests were built at the end of two gables and so close to the eaves that very little room was left between the eaves and the rim of the nests and to remove the young for ringing was quite a difficulty.

Mr. Lloyd also mentioned that the Swallow was decidedly non-social. Only once among some thousands have I known occupied nests side by side. Two pairs built on a wooden shelf about a foot long, which had been fixed to a pig-cote wall to provide a nesting-site; the sitting birds were within six inches of one another.

I was witness of an extreme example of the failure of a Swallow to feed its young during heavy rain, to which Mr. and Mrs. Moreau refer in their article (*antea*, pp. 146-51). June 3rd, 1936, was a day of almost continuous rain and bitterly cold. I visited a farm to ring an early brood of Swallows in a shed and found them almost cold. The farmer told me that the old birds had not been seen during the day, but his daughter then wrapped the young ones in flannel and kept them by the kitchen fire till they revived. The old birds did not return till 9 p.m., when their young were put back in the nest. Three out of five actually survived and flew.

A. W. BOYD.

FRANDLEY HOUSE,
NEAR NORTHWICH.

7 L 1939

PURCHASED

To be published in January

BIRD RESERVES

BY

E. C. ARNOLD

*Illustrated with 9 plates in
colour and 12 in black-and-white
by the author*

Medium 4to 15s. net

Readers will surely agree with the author, after reading his delightful book, that the £100 he paid for a pond proved a thoroughly successful and sound investment. The author tells of his adaptation of the pond to attract bird life and chronicles the activities of the various species that visited the pond at different seasons of the year.

H. F. & G. WITHERBY LTD.

THE HANDBOOK OF BRITISH BIRDS

By H. F. WITHERBY (Editor), F. C. R. JOURDAIN,
NORMAN F. TICEHURST and B. W. TUCKER.

To be completed in five volumes.

*Illustrated by 500 paintings reproduced in full colour depicting about
1,800 birds.*

“The readiness with which the authors have been willing to go well outside the confines of the British Isles to include results of recent intensive investigations by ornithologists of the neighbouring countries, makes the handbook far more than a local treatise and places it in the front rank as a work of general reference on the birds of Western Europe.”—*The Auk*.

£5 5s. the set complete. Vols. I, II and III have been published.

A HISTORY OF SUSSEX BIRDS

By JOHN WALPOLE-BOND.

*In three volumes published simultaneously and illustrated with
53 coloured plates*

By PHILIP RICKMAN.

“It would be difficult to say too much of the accuracy of personal observation and the thoroughness of research. The three volumes are likely to remain as a standard example of such literature.”—
SIR WILLIAM BEACH THOMAS in the *Observer*.

£5 5s. the set.

SONGS OF WILD BIRDS

Third Impression.

By E. M. NICHOLSON and LUDWIG KOCH.

Introduction by JULIAN HUXLEY.

With two double-sided 10-inch gramophone records featuring the Nightingale, Cuckoo, Blackbird, Song Thrush, Pied Woodpecker, Green Woodpecker, Robin, Wren, Hedge-Sparrow, Turtle-Dove, Wood-Pigeon, Chaffinch, Willow Warbler, Whitethroat and Great Tit.

By the same authors

MORE SONGS OF WILD BIRDS

With three double-sided 10-inch gramophone records featuring the Skylark, Woodlark, Curlew, Tree Pipit, Wood-Wren, Blackcap, Garden Warbler, Rook, Carrion Crow, Jackdaw, Magpie, Jay, Little Owl, Redstart, Chiffchaff, Mistle-Thrush, Heron, Stock-Dove, Nightjar and Blue Tit.

Each 15s. net boxed.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

JAN. 1,
1940.

Vol. XXXIII.
No. 8.



MONTHLY 1s 9d. YEARLY 20s.
326 HIGH HOLBORN LONDON
H. F. & G. WITHERBY LTD.

To be published in February

BIRD RESERVES

BY

E. C. ARNOLD

*Illustrated with 9 plates in
colour and 12 in black-and-white
by the author*

Medium 4to 15s. net
Postage 9d.

Readers will surely agree with the author, after reading his delightful book, that the £100 he paid for a pond proved a thoroughly successful and sound investment. The author tells of his adaptation of the pond to attract bird life and chronicles the activities of the various species that visited the pond at different seasons of the year.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND

NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 8, VOL. XXXIII., JANUARY 1, 1940.

	PAGE
Report on the 1938 Survey of Black-headed Gull Colonies. By P. A. D. Hollom	202
The Display and Song of the Turtle-Dove. By M. K. Colquhoun	222
The Continental Redshank as a British Bird. I. Direct Evidence (H. F. Witherby). II. Migrational Evidence (N. F. Ticehurst)	225
Notes :—	
Two Cuckoo's Eggs in Deserted Nests in the Same Bush (J. H. Symes)	228
Common Eiders in Cheshire (W. Wilson)	228
Short Notes :—	
Common Redstart in Isle of Wight in November. Black Redstart in Co. Kilkenny. Red-necked Phalarope in Kent in August	228

22 JAN 1940
PURCHASED

A PUBLICATION OF THE BRITISH TRUST FOR
ORNITHOLOGY.

REPORT ON THE 1938 SURVEY OF BLACK-HEADED
GULL COLONIES.

BY

P. A. D. HOLLOM.

THE report on the colonies of the Black-headed Gull (*Larus r. ridibundus*) in the British Isles is based principally on the response to inquiry schedules sent out in the spring of 1938 on behalf of the British Trust for Ornithology with which the full data of the inquiry have been deposited. The information asked for was the locality of all colonies occupied at any time during the past 25 years, the date of colonization, and date of desertion if now deserted. Observers were also invited to estimate the size of the colonies.

About 160 people sent information, as is gratefully acknowledged in the lists under each country, but particular mention should be made of the following who undertook to report on complete counties or large portions of them.

ENGLAND AND WALES: Rev. F. L. Blathwayt, E. Blezard, A. W. Boyd, R. Chislett, Maj. W. M. Congreve, H. A. Gilbert, C. S. Graham, S. B. Hewitt, R. C. Homes, T. C. E. Hughes, P. A. Humble, Rev. F. C. R. Jourdain, T. Kerr, Mrs. M. Richards, H. W. Robinson; A. Roebuck, Miss E. L. Turner, Natural History Society of Northumberland, Durham and Newcastle-on-Tyne.

SCOTLAND: Miss E. V. Baxter and Miss L. J. Rintoul, H. Boase, Dr. J. W. Campbell, P. A. Clancey, F. G. S. Graham, Miss D. Hamilton, D. I. Molteno, J. Peterson, Midlothian Ornithological Club.

Several lists, local and national, have been made in the past of Black-headed Gulleries, the most notable being R. Gurney's "Breeding Stations of the Black-headed Gull in the British Isles" published in the *Transactions of the Norfolk and Norwich Naturalists' Society*, 1918-19, and these and the county faunas have, of course, been of considerable assistance in compiling the present lists.

SCOPE OF THE INQUIRY.

The whole of England and Wales was well covered and very few colonies can have been missed; in most cases the schedules contained information on the strength and age of the colonies.

Reports from Scotland were rather patchy and generally less detailed than those from England and Wales. Up-to-date

information was received on nearly all occupied colonies in some parts such as the Forth area, most of Perthshire and the Outer Hebrides, but practically nothing was forthcoming from other areas such as Dumfries, Kirkcudbright and Orkney.

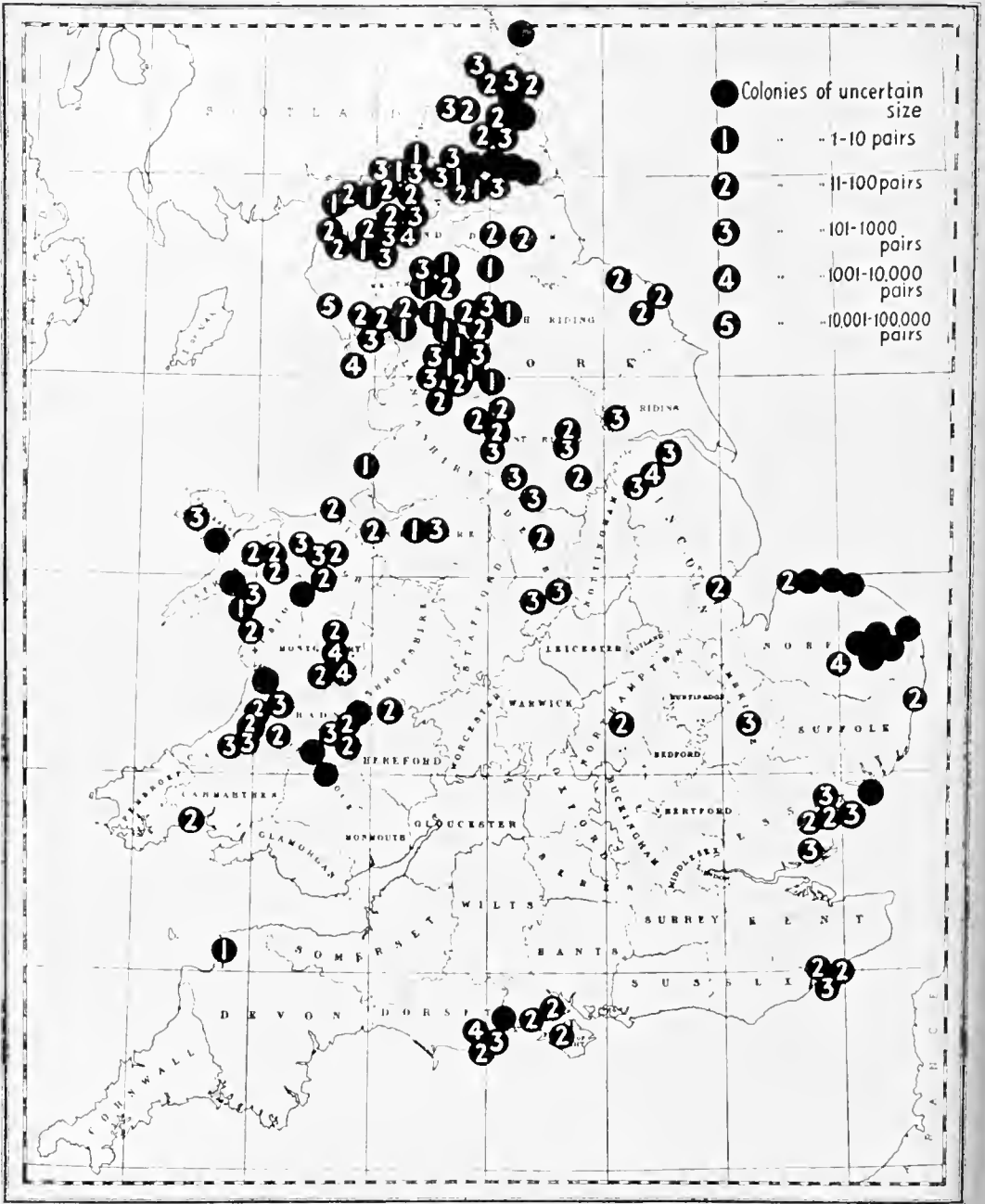
A good number of reports came from Northern Ireland, but over much of the rest of Ireland the most recent detailed information is that contained in Gurney's twenty-year-old paper, although speaking of the country generally G. R. Humphreys in his 1937 *List of Irish Birds* says it "breeds in vast assemblages on some midland bogs and has colonies large and small except in the south and most parts of the east. Resident and increasing."

LOCATION OF COLONIES.

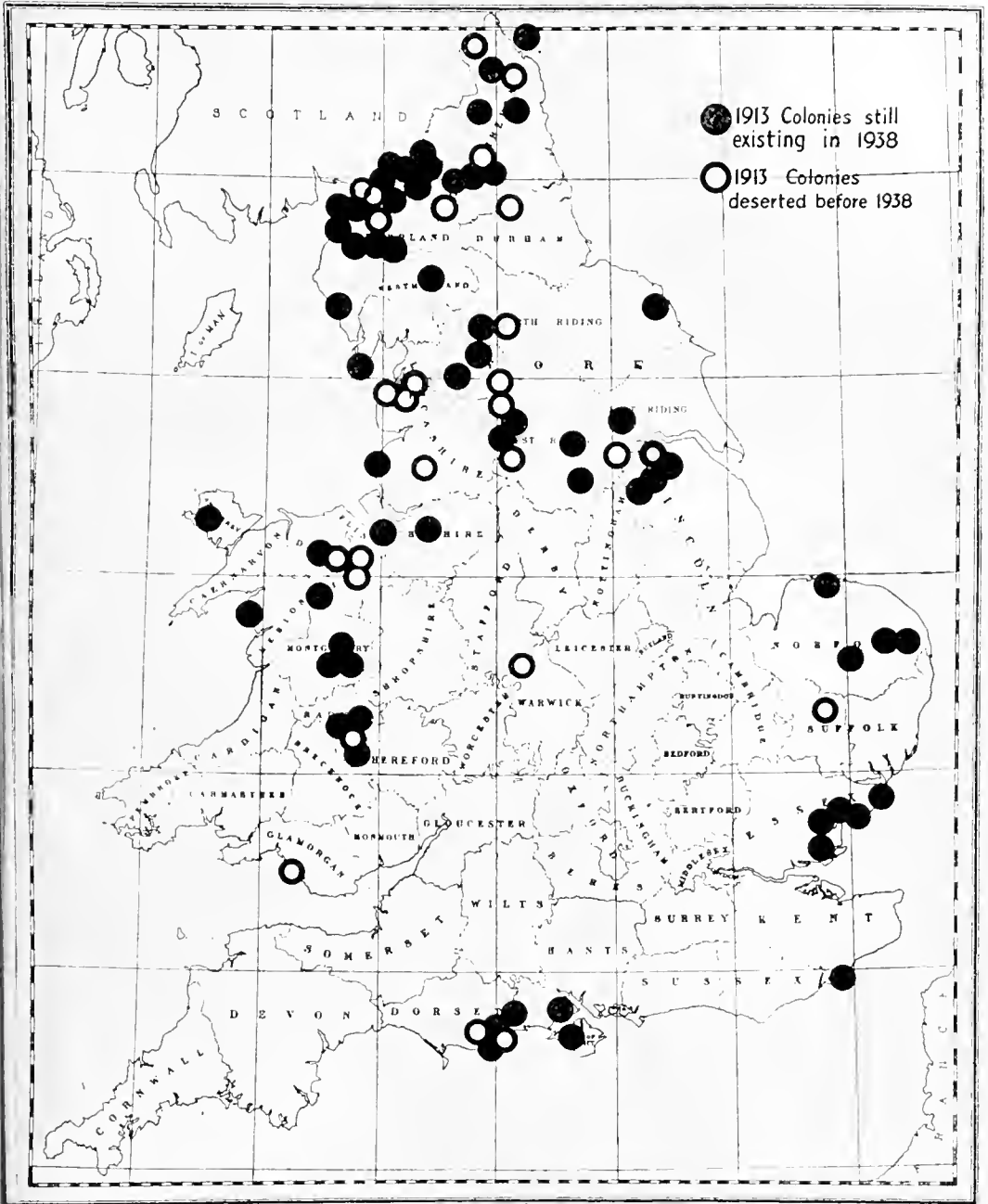
In 1938 124 colonies were reported as occupied in England, 34 in Wales, 145 in Scotland and 39 in Ireland. There were also in the four countries respectively 9, 7, 92 and 38 sites which I have classed as doubtful, as they had been previously occupied but were not definitely reported as either occupied or deserted in 1938. These occupied and doubtful colonies together give a total of 488 colonies in the British Isles, but as pointed out in the preceding paragraph there are undoubtedly a considerable number of Scottish and Irish colonies not included in the above figures.

Occupied colonies exist in all Welsh counties except Pembrokeshire and Glamorgan, and in all English coastal counties except Monmouth, Gloucester, Somerset, Cornwall and Sussex. It is noticeable that all these counties except Sussex border on the Bristol Channel. The remaining two counties on the Bristol Channel, Devon and Carmarthen, have only one colony each. There are single colonies also in Flint and Suffolk, but all the other coastal counties contain several substantial colonies. None breed in the Isle of Man. Inland in England the bird breeds in Cambridge, Northampton, Hereford, Derby and the West Riding of Yorkshire.

But relatively few colonies are actually on the coast or on coastal marsh, and about 60 English and Welsh sites, or nearly forty per cent. of the total, are 20 miles or more inland. A point brought out by the map is a certain broad correspondence between the distribution of inland sites and that of moorland. There are, of course, some notable exceptions to this, as in Lincoln and Norfolk. On moorland, breeding may occur at a considerable elevation, the highest in England being on Greensett Moss, Yorks, at about 1925 feet, where



BLACK-HEADED GULL COLONIES IN ENGLAND AND WALES IN 1938.



BLACK-HEADED GULL COLONIES IN ENGLAND AND WALES IN 1913.

there is a flourishing colony of about 250 pairs. Similarly in Wales there are only 7 coastal colonies; the remaining 27 are chiefly on moorland or moorland pools and average over 1,000 feet above sea level.

Most of England's Black-headed Gulls are concentrated in the north, Northumberland, Cumberland and Yorkshire, having a total of 70 colonies, which, thanks principally to Ravenglass, account for about 75 per cent. of the country's breeding stock.

The bird is more evenly spread throughout Scotland, probably owing to the greater extent of moors and mosses, but there appear to be no colonies in East Lothian, Clackmannan, Kincardine or Banff. Here as in the north of England it is sometimes difficult to decide what is to be considered a colony, as on some grouse moors the birds are harried and break up into small scattered groups, while from season to season colonies may shift according to the varying state of pools and mosses. An extreme example of this was reported from Northumberland in 1938: Hallington East Reservoir normally surrounds a large grassy island where Gulls have bred for many years. On May 7th there were 200 birds and six or seven nests on this island. The water retreated, the island was joined to the mainland, the nests were robbed and the colony was deserted. Later in the year, however, the water still further retreated and in Hallington West Reservoir an island appeared which had never been laid bare before. From 400 to 500 birds were attracted to it and several nests were made and young reared.

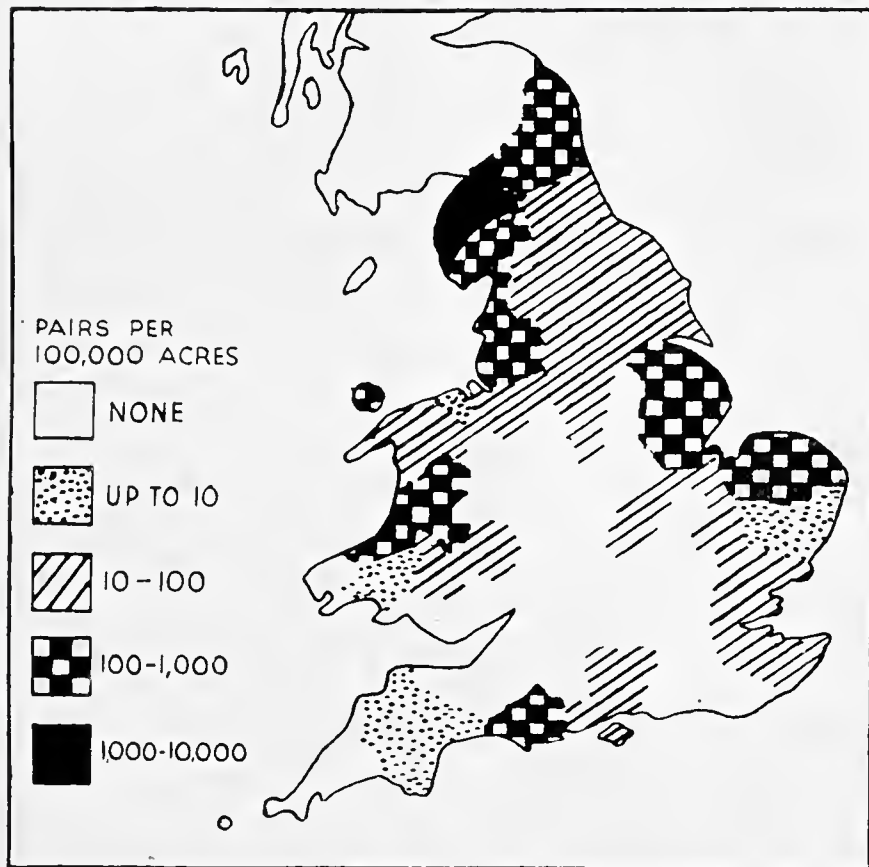
In Northern Ireland there are a number of colonies, particularly round Lough Neagh, and the bird breeds on several marine islands off the coast of Antrim and Co. Down.

SIZE OF COLONIES.

The number of pairs in nearly all English and Welsh colonies was estimated in 1938 and total about 70,000 pairs in England with an allowance of a few thousand pairs each way, and about 6,000 pairs in Wales. Northumberland was the most difficult county to assess as the numbers of birds at several colonies fluctuated violently during the season, chiefly owing to disturbance through drought. The data are inadequate to suggest a total figure for Scotland or Ireland.

By far the greatest colony in the Kingdom is Ravenglass, Cumberland, with nearly 50,000 pairs. This is over five times the size of its nearest rival and amounts to two-thirds of the total population of England. Eleven other colonies of over

1,000 pairs each were reported, five in England (Cumb, Lancs, Lincs, Norfolk, Dorset), two in Wales (Montgomery), three in Scotland (Dumbarton, Fife, Perth) and one in Ireland on Lough Neagh, but several other colonies in Scotland and Ireland were reported as "vast" or "huge."



BLACK-HEADED GULL.

County breeding densities in England and Wales in 1938.

The colonies whose sizes were reported may be divided into the groups 1 to 10 pairs, 11 to 100 pairs, 101 to 1,000 pairs and so on, this grouping having been adopted to conform with that used by Mr. J. Fisher in his Report on the Fulmar Petrel (in Press).

	1-10	11-100	101-1,000	1,001-10,000	10,001-100,000	100,001-pairs
	(1)	(2)	(3)	(4)	(5)	
England ...	19	50	33	4	1	
Wales ...	2	18	8	2	—	
Scotland ...	11	32	20	3	—	
Ireland ...	4	10	9	1	—	
Totals ...	36	110	70	10	1	

It appears that throughout the British Isles colonies are most numerous in the 11-100 pairs group; next comes the 101-1,000 pairs group; then the colonies of 10 pairs or less, and finally those over 1,000 pairs. It is interesting that this should apply to all four countries and suggests that the size of colonies is substantially the same in each. The fact that the group 1-10 pairs only takes third place stresses that the Black-headed Gull is essentially colonial in its breeding.

On the map the sizes of the 1938 colonies are indicated by the figures 1 to 5, according to the size group into which the colony falls. Thus, the figure 1 shows that the number of pairs in a colony does not exceed 10; 2 that the number is between 11 and 100; 3 a colony of up to 1,000 and so on.

One of the objects of the inquiry was to collect information on the recent spread of the species. Just over fifty years ago, in 1884, Harting summarized the colonies known to him and came to the opinion that the bird was on the road to extinction as a breeding species. That seems to have been about the turning point, and new colonization was proceeding in earnest by the beginning of this century.

The following table gives the number of English and Welsh sites newly occupied during the past forty years. Where the exact date of colonization is not known it is assumed to have occurred during the five-year period in which the colony was first reported as occupied.

Number of sites colonized, or first reported as occupied (England and Wales only).

<i>Five-year Period.</i>		<i>Five-year Period.</i>	
1899-1903	... 12	1919-1923	... 24
1904-1908	... 7	1924-1928	... 16
1909-1913	... 27	1929-1933	... 24
1914-1918	... 22	1934-1938	... 43*

The table totals 175 colonies and includes all those which have been newly formed during the period, whether they are now occupied or deserted. During the same period about 70 colonies have been deserted.

It has been suggested that wholesale disturbance of colonies during the Great War of 1914-18 by the taking of eggs for food caused the birds to disperse widely and was an important factor in the spread of the species. But it is evident that

*The high figure for the last five-year period is due largely to the recording in 1938 for the first time of colonies whose histories are not known.

the spread had started some years before the beginning of the Great War, and its steady continuation since then makes it seem dangerous to connect too closely war-time disturbance and the formation of new colonies.

The maps showing the sites occupied in 1938 and 1913 give a good idea of the increase in the number of colonies since that date. Unfortunately, in only a very few cases is the size of colonies in 1913 known, even within such wide limits as the five size-groups into which the 1938 colonies are divided, and so sites only have been shown in the earlier map, but a distinctive sign has been used for those 1913 colonies which were deserted by 1938. These total 27.

Comparing the two maps it appears that the present distribution was already sketched in broad outline 25 years ago, and that little completely new ground has been broken except in the middle of England. What has occurred has chiefly been consolidation within and expansion in the neighbourhood of areas already occupied. It is significant that though some gulleries have been deserted, practically no districts have been deserted by breeding birds.

The number of recorded occupied colonies in England and Wales has risen from 90 in 1913 to 158 in 1938, but no doubt the 1913 figure would have been increased if a special inquiry had been held in that year as in 1938. It is, however, not certain that the total number of birds is still increasing, at any rate in the north. Ravenglass is said to be appreciably smaller than in 1913, and a definite decrease has been reported during the last 15 years in the neighbourhood of Alnwick.

Over the border H. S. Gladstone found that Gulls in Dumfries decreased steadily from about 5,200 pairs in 1910 to about 2,600 pairs in 1921; there appears to have been some recovery in 1938, but unfortunately little information about the present-day position was forthcoming. On the other hand Miss Rintoul found the species more numerous than ever in Roxburgh in 1938.

Colonization dates were given for 61 of the occupied Scottish colonies, and 39 of these or well over fifty per cent, were 1900 or earlier. This is a much higher proportion of old colonies than in England and Wales, where only about twenty-five per cent. of the colonies now occupied were colonized by 1900. The Scottish figures are too small for definite conclusions to be drawn, but this indication of greater stability suggests that the large increase in English colonies during the present century has not been equalled in Scotland.

Records for one Irish colony go back over 85 years. In

Scotland there are eighteenth-century records of colonies at Loch Leven and in Midlothian; and in the seventeenth century colonies existed in Sussex, Essex, Cheshire, Pembroke and at Aqualate in Staffordshire where 1,200 young were taken annually for food. Moreover, old records show that about a hundred or more years ago many more pairs were breeding in Kent, Essex, Yorkshire and elsewhere than now, and so it is probable that in former times the Black-headed Gull was at least as numerous and widespread as it is to-day.

SUMMARY.

1. About 160 observers assisted in the 1938 Survey of Black-headed Gull colonies, covering the whole of England and Wales, and a large part of Scotland and Northern Ireland.

2. 634 sites (342 occupied, 146 doubtful and 146 deserted) in England, Wales, Scotland and Ireland, are listed under counties. Some details of the history of each colony are given where known.

3. The sites of occupied colonies in England and Wales in 1913 and 1938 are shown on maps, the size of the 1938 colonies being indicated within broad limits. A third map shows the density of breeding pairs in the counties of England and Wales.

4. It is estimated that there were about 75,000 to 80,000 pairs in England and Wales in 1938, the bulk of which were concentrated in the north.

5. Nearly 40 per cent. of the English and Welsh colonies were 20 miles or more from the sea. Inland distribution tends to coincide with moorland, where there are colonies up to 1,925 feet.

6. Over the whole of the British Isles 48 per cent. of the colonies fall within the size-range 11-100 pairs; 31 per cent. in the group 101-1,000 pairs; 16 per cent. in the group 1-10 pairs; and 5 per cent. in that of over 1,000 pairs.

7. Old records show that the species was probably widespread in England and Scotland in the seventeenth and eighteenth centuries, but that in at least some areas it was more numerous 100 years ago than it is to-day.

8. A great decrease occurred during the nineteenth century, but recolonization had begun by the end of the century. In England and Wales between 1899 and 1938 about 175 sites have been recorded as colonized, and about 70 deserted. There are others whose dates are not known.

9. There appears to be a higher proportion of nineteenth-century colonies in Scotland than in England.

ENGLAND.											
<i>Colonies.</i>					<i>Colonies.</i>						
	Occupied	Doubtful	Deserted		Occupied	Doubtful	Deserted				
Scillies ...	—	—	1	Warwick ...	—	—	1				
Devon ...	1	—	—	Stafford ...	—	—	1				
Dorset ...	3	1	3	Lincoln ...	4	—	4				
Hants ...	4	—	—	Derby ...	3	—	4				
Sussex ...	—	—	3	Cheshire ...	3	—	2				
Kent ...	3	—	4	Lancashire ...	5	2	11				
Essex ...	6	—	3	Yorkshire ...	29	1	15				
Oxford ...	—	—	1	Durham ...	2	1	3				
Suffolk ...	1	—	3	Northumberland	22	4	6				
Norfolk ...	10	—	15	Westmorland ...	6	—	2				
Cambridge ...	1	—	—	Cumberland ...	19	—	10				
Northampton ...	1	—	—								
Hereford ...	1	—	—		124	9	92				
				WALES.							
Glamorgan ...	—	—	1	Merioneth ...	5	1	1				
Brecon ...	3	—	1	Carnarvon ...	4	1	3				
Radnor ...	4	—	4	Denbigh ...	3	1	3				
Carmarthen ...	1	—	—	Flint ...	1	—	1				
Pembroke ...	—	—	1	Anglesey ...	2	1	—				
Cardigan ...	7	3	—								
Montgomery ...	4	—	—		34	7	15				
				SCOTLAND.							
Dumfries ...	2	18	6	Perth ...	25	7	3				
Kirkcudbright ...	1	8	—	Angus ...	2	2	—				
Wigtown ...	1	4	—	Aberdeen... ..	11	1	2				
Ayr ...	7	—	—	Moray ...	3	3	—				
Renfrew ...	5	1	2	Nairn ...	1	3	—				
Lanark ...	3	—	1	Inverness ...	8	2	—				
Peebles ...	—	—	1	Argyll ...	2	4	—				
Selkirk ...	3	—	—	Dumbarton ...	1	13	—				
Roxburgh ...	4	1	1	Bute ...	—	—	1				
Berwick ...	4	—	5	Ross ...	1	4	1				
East Lothian ...	—	—	1	Sutherland ...	7	6	—				
Midlothian ...	7	—	2	Caithness... ..	3	3	—				
West Lothian ...	1	—	1	Outer Hebrides	21	4	—				
Fife ...	1	—	6	Orkney ...	1	4	—				
Kinross ...	1	—	—	Shetland ...	16	2	1				
Stirling ...	3	2	2		145	92	36				
				IRELAND.							
Kerry ...	—	3	—	Sligo ...	—	3	—				
Cork ...	1	—	—	Leitrim ...	—	1	—				
Tipperary ...	—	1	—	Cavan ...	—	1	—				
Limerick ...	—	1	—	Donegal ...	—	6	—				
Clare ...	—	2	—	Fermanagh ...	5	—	—				
Queen's (Leix) ...	1	—	—	Tyrone ...	5	—	1				
Galway ...	3	5	—	Armagh ...	3	—	—				
King's (Offaly) ...	—	2	—	Down ...	3	—	—				
Westmeath ...	—	3	—	Antrim ...	12	—	1				
Roscommon ...	—	4	—	Londonderry ...	1	—	—				
Mayo ...	5	6	1		39	38	3				

ENGLAND.

SCILLY ISLES.

DESERTED "COLONY." A nest was found in 1925 (*Brit. B.*, Vol. XIX, p. 134). 2 nests found on St. Mary's in 1841, and believed to have bred in 1845.

DEVON.

OCCUPIED COLONIES.

1. Horsey Island, near Braunton. Colonized in 1915 or earlier. Average of 6 or 7 nests, never more than a dozen. Numbers have always been about the same since 1915. In 1938 there were 16 adult birds and 4 nests.

In wet years 3 or 4 pairs nest on a marshy pool a mile away from the main colony, but none were there in 1938.

DORSET.

OCCUPIED COLONIES.

1. Rempstone Heath Decoy Pond, about $2\frac{1}{2}$ miles NE. of Corfe Castle. Colonized about 1877. Perhaps 1,000 pairs in 1894, became much smaller after a big heath fire in 1916. Only *c.* 30 pairs 1919; 70-100 pairs 1933; *c.* 20 pairs in 1938.

2. West end of Poole Harbour, about $2\frac{1}{2}$ miles NE. of Wareham, a large colony in 2 main divisions in patches of rice grass. Moved to this part of the harbour from farther SE. about 1920. In 1938 probably over 1,000 pairs.

3. East side of Arne Peninsula, Poole Harbour. A scattered and shifting colony, in 1938 chiefly off SE. of Grip Heath; 3 miles NNE. of Corfe Castle. Colonized about 1917, probably after Rempstone Heath dwindled. Large numbers in 1919, but far fewer in 1938 when there were a few hundred pairs.

The Poole population is a shifting one and a few odd pairs nest around the Harbour in spots which cannot be regarded as colonies.

DOUBTFUL COLONIES. 4. Abbotsbury Swannery, W. Dorset. A pair or two have nested on occasions.

DESERTED COLONIES. 5. Littlesea, Studland. Founded about 1877, deserted from 1888 or earlier to about 1913. A strong colony in 1917, *c.* 60 pairs 1919, and dwindled to nil by 1938. 6. Old Decoy Pond, Morden Heath, $2\frac{1}{2}$ miles NNW. of Wareham. Colonized about 1908. Numbers very variable. *c.* 800 pairs in 1921; 40 pairs 1929. 7. Near Uddens, $2\frac{1}{2}$ miles NE. of Wimborne. Colonized about 1936 by *c.* 20 pairs, but the spot was burnt out in 1938.

HAMPSHIRE.

OCCUPIED COLONIES.

1. East Parley Common. Colonized about 1900, has at times reached a considerable size.

2. Needs Ore, Beaulieu. Founded 1909. 16 pairs 1910 nesting just inside the sea bank; later moved about $\frac{1}{2}$ mile farther inland for 2 years; then became established at present site on the saltings. *c.* 75 pairs in 1938.

3. Keyhaven. *c.* 30 pairs 1931. 50 or more nests in 1938.

4. East side of Newtown Estuary, Isle of Wight. In existence in the 'eighties. There were 35-40 pairs in 1918 and 45-50 in 1938.

SUSSEX.

DESERTED COLONIES. 1. The Wicks, near Dungeness (Kent). A single pair nested in 1932 only. 2. Winchelsea. A considerable colony in the seventeenth century. 3. Between Eastbourne and Pevensey. A considerable colony in the seventeenth century.

KENT.

OCCUPIED COLONIES.

1. Hoppen Pits, Dungeness. Immemorial. In 1847 they were there in thousands; 100-150 pairs in 1896; 60 pairs 1903; 300-400 pairs 1908; 250-300 pairs 1937; *c.* 100 pairs 1938.

2. Dungeness Ternery, about 2 miles SW. of (1) and is an offshoot from it, probably caused by disturbance through war-time egg-collecting. The number of birds vary between the two colonies year by year. In 1919 a number nested on the Holmstone a few miles farther west, and the birds settled at the present site about 1929 or 1930. *c.* 200 pairs in 1938.

3. Near Lydd Water Tower. Probably colonized in 1937 when 6 pairs nested. 60 pairs in 1938.

DESERTED COLONIES. 4. Woolpack Fleet, Romney Marsh. An old colony deserted a year or two before 1908. 5. Fairfield Brack, Romney Marsh. Deserted 1901 after being used at intervals for a great number of years. 6. Cheyne Court Fleet, Romney Marsh. A few pairs nested in 1919 only. 7. Dungeness, just west of Galloways. One or two pairs have made several unsuccessful attempts at breeding in the last few years. 8. Dungeness, east of Denge Marsh Ditch. *c.* 7 pairs in 1936 only.

ESSEX.

OCCUPIED COLONIES.

1. Hamford Water. There is evidence to show that this site was already occupied in 1662, and it presumably has been ever since. In 1927 there were *c.* 150 pairs on the saltings of Horsey Island and 10-15 pairs on the saltings near Stone Point.

2. Lee Wick. Broad Fleet, on the marsh inside the sea-wall, colonized prior to 1884; not less than 1,000 pairs 1886 to 1888. The saltings outside the sea wall colonized (3 nests) in 1884, and reached 50 pairs in 1899 in which year the Fleet was abandoned; *c.* 60 pairs back on to Fleet in 1912, but in 1920 there were 100 pairs on the saltings only, as in 1926 and 1927. Probably rather more in 1938.

3. Rat Island, River Colne. In 1938 several hundred pairs as usual.

4. Geeton Saltings, on west bank of river Colne. First recorded 35 nests in 1909. *c.* 100 pairs in 1926 and 1927. 15 pairs in 1938.

5. Pennyhole Fleet, Old Hall marshes, Tollesbury. Occupied from time immemorial, in numbers varying between 100 or more, and 20 pairs. In 1888 40 pairs, and *c.* 50 in 1899. About 1901 the colony shifted temporarily on to Wick Salting. 80-100 pairs on the Fleet in 1927 and *c.* 30 pairs in 1938.

6. Hyde Marsh, North Fambridge. Has existed for at least 42 years and probably from time immemorial. 50-70 pairs in 1927, *c.* 120 pairs in 1937 and 169 nests in 1938.

DESERTED COLONIES. 7. Island in the Blackwater from which 10,000-12,000 eggs were taken annually about 1832. 8. New England saltings, great numbers in 1833. 9. Foulness. Used to nest abundantly.

OXFORD.

DESERTED "COLONY." 1. Otmoor. One nest 1932.

SUFFOLK.

OCCUPIED COLONY.

1. Blythburgh Fen, Walberswick. Colonized 1927 when 1 or 2 pairs bred, 18 pairs 1930. 24 pairs 1931, 12 nests but *c.* 50 birds 1938.

DESERTED COLONIES. 2. Thorpe Fen. 1 pair about 1907. 3. Euston Park. 1 pair 1912 and 1913. 4. Near Lakenheath. Bred on flood land 1919.

NORFOLK.

OCCUPIED COLONIES.

1. Scoulton Mere. This colony was referred to in the seventeenth century. 15,000 eggs taken in 1860. 1,250 pairs nesting in 1918 and greater number in 1938.

2. Hoveton. Colonized 1854 by 30 pairs, probably from Rollesby which was deserted 1855. Hundreds in 1864, 20 pairs 1912, 39 pairs 1919 but not more than 6 pairs for several years preceding 1930.

3. Alderfen. Colonized 1905 from Hoveton. *c.* 100 pairs 1918, 35 in 1923 and 200 pairs 1925.

4. Hickling. 2 pairs 1927, 4 or 5 pairs 1929.

5. Breckles. A new colony in 1922, when 1,000 eggs were taken, and the same number 1923. Came in considerable numbers 1928 and 1929 but were discouraged from nesting.

6. Salthouse and Cley Marsh. Colonized 1922, 250 pairs in 1924, 50 1925 and a considerable number annually since. Nesting discouraged on Cley.

7. Blakeney Point. 2 pairs first in 1925; a few pairs attempt to nest annually but are "discouraged."

8. Wells. An ancient site, recolonized by 1 pair 1904. 50 pairs 1917; *c.* 200 pairs in 1924 and *c.* 100 pairs 1928.

9. Scolt Head. Colonized 1924. 38 nests 1928; *c.* 100 pairs 1938.

10. Cantley, near Norwich. Is the only new colony since 1930.

DESERTED COLONIES. 11. Horsey, and Horsey Warren. Was the original station in the Broads area. Immense numbers in Sir Thomas Browne's time (about 1650). Finally deserted about 1870 and Broadland Gulls are now much reduced in numbers. *c.* 8 pairs nested about 1937; the eggs were taken. 12. Stanford Warren. 13. Thompson Water. 14. Bagmoor. 15. Hockwold Fen. 16. Feltwell Fen. 17. Wretham Heath. 18. Rollesby. 19. Barton Broad. 20. Sutton Broad. 21. Woodbastwick. 22. Somerton Broad. 23. Brancaster. 24. Langmere. Sporadic; the last nest recorded in 1917. 25. Northwold Fen. *c.* 100 pairs 1921-1924, then drained.

Apart from Horsey and the two last-mentioned colonies, none have been used in the past 25 years.

CAMBRIDGE.

OCCUPIED COLONIES.

1. Burwell Fen. Colonized in 1933 when 6 pairs nested; 10 pairs in 1936; at least 200 pairs in 1937 and *c.* 180 in 1938. The great increase in 1937 was no doubt due to the complete flooding of the area in the spring of that year. Further increase is discouraged. The local marshmen report very sparing and sporadic nesting from time to time in the past, *e.g.*, a nest built on partly submerged plough about 1917.

NORTHAMPTON.

OCCUPIED COLONY.

1. Northampton Sewage Farm, Ecton. *c.* 12 pairs bred for the first time in 1935. 50-70 pairs 1938.

HEREFORD.

OCCUPIED COLONY.

1. Brampton Bryan. 5 miles W. of Knighton. Colonized about 1933; *c.* 60 pairs 1938.

WARWICK.

DESERTED COLONY. 1. Birmingham Sewage Farm, Curdworth. Colonized before 1913, deserted in 1936 owing to the destruction of the birds.

STAFFORD.

DESERTED COLONIES. 1. Shebden Pool, later shifted to Aqualate Mere. Colonized before 1662, about which time it was a very large colony, hundreds of young birds being taken for food yearly. Deserted by 1794. No present-day colonies.

LINCOLN.

OCCUPIED COLONIES.

1. Twigmoor, 2 miles W. of Scawby. Colonized about 1840, after the draining of Nathanland between the Trent and Bottesford, or perhaps founded from Manton. Colony is very large, nesting on two ponds. In 1909 the numbers were estimated at 5,000 pairs; in 1938 4,000-6,000 nests, possibly more. Some few nest in trees; chick mortality very heavy.

2. Scotton Common, 7 miles NE. of Gainsborough, said to have been colonized from Twigmoor in 1870. *c.* 1,000 pairs 25 years ago. 500-1,000 pairs 1938, concentrated round one pond only.

3. Laughton Common, 2 miles SW. of Scotton Common. An ancient gullery. Considerably below 100 pairs 1915. Three ponds occupied in 1938:—

(a) Much reduced by drainage in recent years, but the gulls have persisted, *c.* 200-300 pairs 1938.

(b) $\frac{1}{4}$ mile to W. *c.* 50 pairs 1938.

(c) Across road to E. *c.* 20 pairs 1938.

4. Frampton Marsh, $5\frac{1}{2}$ miles SE. of Boston. Colonized about 1934. *c.* 15 nests in 1938.

DESERTED COLONIES. 5. Nathanland. Drained about 1840 when the gulls appear to have left to found Twigmoor. 6. Manton Warren, 2 miles S. of Twigmoor. The birds appear to have joined the Twigmoor colony about the middle of last century. 7. North Cotes Fitties, about 8 miles SE. of Grimsby. Deserted before 1855. 8. Crosby Warren, 5 miles from Twigmoor, and probably an offshoot from it. Founded 1874. *c.* 5,000 pairs at the end of the century. Later decreased through mining operations and much decreased by 1909. Still existed 1929 but disappeared 1930 or 1931. In the past there had been a few nests on Risbury Warren, adjoining Crosby Warren.

DERBY.

OCCUPIED COLONIES.

1. Etwall Common, on the Burton-on-Trent sewage farm, 5 miles NE. of Burton-on-Trent. *c.* 12 pairs bred for the first time in 1929. 200-300 pairs in 1937 and 1938. Owing to the system of farming it is difficult to see how young can be reared.

2. Leash Fen, 3 miles E. of Curbar and Baslow. Colonized in 1917 or 1918. 20-40 nests in 1919, increasing to 56 nests in 1921; 40-50 in 1935 and *c.* 20 nests in 1937 and 1938. Apparently much persecuted.

3. Spondon, 2 miles SE. of Derby. Colonized in 1931 when a few pairs bred. 15-25 pairs in 1935, and in 1938 *c.* 200 pairs of which 20 or more nested in willows about 6 feet above the water. This colony is well guarded.

DESERTED COLONIES. 4. Big Moor, 3 miles N. of Leash Fen. Colonized apparently only in 1921. 5. Ringinglow, 4 miles N. of Big Moor on the county boundary near Sheffield. Colonized in 1924 with 33 nests, but apparently never returned. 6. Devil's Dyke, on Shelf Moss, 4 miles E. of Glossop, at *c.* 1,700 feet above sea level. Occupied for one year only, about 1935. 7. Beeley Moor (2 miles E. of Beeley) 6-7 pairs in 1927.

CHESHIRE.

OCCUPIED COLONIES.

1-2. Delamere Forest. This is of very ancient foundation, its existence in 1617 being quoted in King's "Vale Royal." There are three modern sites in the forest, one of which is deserted:—

1. Newchurch Common, an old site where considerable fluctuations occur. At least 15 pairs in 1899, *c.* 300 1907, deserted in 1917 but a fair number in 1918. Deserted again in 1922, 100 pairs 1925, while 500 pairs in 1931 is the highest number recorded. Only 2 or 3 pairs in 1938.

2. Oakmere, 2 miles from (1) above, was colonized in 1918. 50-100 pairs in 1919 and in subsequent years came in numbers varying between 10 and 300-400 pairs. In 1922 all were at this site, and none at (1) or (4) below. No nesting in 1925 and 1929 because of reed-cutting and drought. In 1934 drought caused desertion by all but 2 pairs, which nested in trees. One pair in a tree in 1937, but numbers on ground not estimated. 300 pairs in 1938.

In 1938 for the first time there was an offshoot of 30 pairs at Oakmere "Arm," a pool on the opposite side of the mere to the usual colony.

3. Burton Marsh, Dee Estuary, 7 miles NW. of Chester. Two sites are used $1\frac{1}{2}$ miles apart. Colonized years prior to 1910. One pair in 1921; 6 pairs in 1924; 50 pairs in 1937 and 30 pairs in 1938.

DESERTED COLONIES. 4. Delamere Forest. "Submerged Forest" Crabtree Green, about 2 miles from (1) above. Colonized 1917; 50 pairs in 1920; none 1922; several hundred in 1932. This flash has been drained once or twice and this has caused desertion. 5. Prestbury Sewage Farm, E. Cheshire. One nest in 1921 and 1922, 4 nests begun in 1925, 1 in 1928.

LANCASHIRE.

OCCUPIED COLONIES.

1. Walney Island. Colonized before 1908. *c.* 1,500-1,800 pairs in 1938, there having been a decrease since 1929 when big gulls became established.

2. Boretree Tarn, Finsthwaite-in-Furness. Colonized between 1930 and 1936. 300 pairs in 1938.

3. Bolton's Lot, Crosthwaite-in-Furness. A new colony with 12-15 pairs in 1937.

4. Grisedale, Scorton. Not old. 25-30 pairs in 1937.

5. Ainsdale Dunes, Southport. Colonized 1873. Many scattered nests 1908. *c.* 6-12 pairs 1913-1920, increasing from 1921 to reach a maximum of over 200 pairs in 1933. Down almost to nil 1935, '36 and '37. 3 pairs 1938.

DOUBTFUL COLONY. 6. Longton. A scattered colony of *c.* 30 pairs formed in 1937 on south bank of the Ribble. Attempts have been made here before. Birds present but no nests found June, 1938; may have been washed out by a high tide. 7. Leighton Moss, Carnforth. Colonized 1919-1920. Eggs destroyed every year recently.

DESERTED COLONIES. 8. Winmarleigh, Cockerham. An old colony coming originally from the site now occupied by the town of Fleetwood, which was deserted about 1830. Moved to Winmarleigh from Stalmine 1876. Estimated at 10,000 pairs in 1887. In 1903 thousands of pairs spread over about 5 acres. Deserted 1912 or 1913. 9. Pilling Marshes, near Fluke Hall. Colonized about 1912. A small colony. A few pairs, not more than 3 or 4 have bred intermittently since 1918. 10. Wyresdale Park, Scorton. Colonized 1902 or earlier

reached *c.* 150 pairs. Eggs destroyed since about 1930. 11. Crook, just outside Wigan. 21 young reared 1913. None nested since. 12. Hutton Marsh, near Preston. A few pairs in 1916. 13. Formby Moss. Colonized 1920; over 20 pairs 1923; 6 pairs in 1935 but none since. 14. West Derby Sewage Farm, Liverpool. 1 pair in 1935 and 1936. 15. Walton Sewage Farm. Several pairs 1935. 16. Seathwaite Tarn. A single pair nesting about 1886 and earlier. 17. Bleasdale Fell. Deserted perhaps 50 years ago. 18. Hill Tarn above Scorton. Deserted perhaps 50 years ago.

YORKSHIRE.

OCCUPIED COLONIES.

West Riding.

1. Fairburn, near Castleford. Colonized about 1910, over 1,000 pairs 1914, *c.* 150 pairs 1920, *c.* 180 pairs 1938.
2. Allerton, near Castleford. A new colony of *c.* 30 pairs in 1938.
3. Bolton Ings, near Darfield. Colonized about 1913. *c.* 40 pairs 1938.
4. Broomhead Moors, near Sheffield. A site occupied occasionally, generally in dry years. 30 pairs in 1929 and 1931. *c.* 250 pairs 1938.
5. Howden Moors, near Penistone. Colonized 1920. 200 pairs 1938 but only *c.* 20 allowed to breed.
6. Whiteholme Reservoir, Blackstone Edge. Colonized 1901. 40 nests 1919. *c.* 200 pairs 1938.
7. Fly Flat Reservoir, Cockhill Moor, near Denholme. Colonized about 1895, *c.* 40 pairs 1898, 20 pairs 1919 and 1920, 25 pairs 1938.
8. Black Hameldon, Hoarside Moor, near Heptonstall. Colonized 1927 or earlier. 11 pairs 1938.
9. Garple Moor, near Hebden Bridge. Colonized 1938 or earlier. 25 nests 1938.
10. Waddington Fell, near Clitheroe. Colonized 1933 or earlier. 30 pairs 1938.
11. Elslack Moor, near Skipton. Colonized 1928 or earlier, 7 pairs 1938.
12. Dovenanter Moor, near Keasden. Colonized 1900 by 2 pairs. *c.* 380 pairs 1920. In 1938 85 pairs on one tarn and 65 pairs on another.
13. Rathmell Moor, near Clapham. Colonized 1937, 211 pairs 1938.
14. Oughtershaw in Langstrathdale. Colonized 1897, 30-40 pairs 1920. 6 pairs 1938.
15. Malhām, 4 pairs in 1938.
16. Greensett Moss, Great Whernside, about 1,925 ft. above sea level. Colonized 1921, *c.* 250 pairs 1938.
17. Swarth Fell Tarn, 2 miles N. of Sedbergh. Colonized 1938 or earlier, 2 pairs 1938.
18. Baugh Fell, 2 miles E. of Sarthwaite, near Sedbergh. Colonized 1918 or earlier. 4 nests 1938.
19. Grassington Moor. Colonized 1900 or 1901, but after 10 years' occupation was deserted for a number of years. 20 pairs 1938.
20. Gowthwaite Reservoir, 5 miles NW. of Pately Bridge. Colonized 1928 or earlier. 4 pairs 1938.

North Riding.

21. Widdale Tarn, 2 miles E. of Dent Station. Colonized 1915 or earlier. 19 pairs 1938.
22. Dodd Fell Tarn, 6 miles SW. of Hawes. Colonized 1915 or earlier. 11 pairs 1938.
23. Summer Lodge Tarn, 3 miles N. of Askrigg. Colonized 1938 or earlier. 400 pairs 1938.

24. Locker Tarn, near Camperley, Wensleydale. Colonized about 1888 by one pair; *c.* 15 pairs 1914; 6 pairs 1938.

25. Balockdale Reservoir, near Cotherstone. Colonized 1932 or earlier. A small, variable colony.

26. Scaling Moors, near Guisborough. Colonized 1937 or earlier. *c.* 30 pairs 1937 and fewer in 1938.

27. May Moss, near Saltersgate. Colonized 1938 by 20 pairs.

28. Foul Syke Moss, Fylingdale Moor, 3 miles from Robin Hood's Bay. Colonized about 1893. 6 or 7 pairs 1920, 150 pairs 1936 and 50 pairs 1938.

East Riding.

29. Skipwith Common. An old colony. *c.* 800 pairs 1916; 1,200-1,300 pairs 1920; *c.* 600 pairs 1938.

DOUBTFUL COLONIES. *North Riding*: 30. Semmerwater, near Countersett. Colonized 1925 or earlier. A few pairs present 1938 but no proof of breeding.

DESERTED COLONIES. *West Riding*: 31. Thorn Waste. Was a large colony in 1881. Still a few pairs 1921. 32. Saddleworth Moors, near Greenfield. Colonized 1931 or earlier—a colony of *c.* 1,000 pairs. Deserted 1938 or earlier. 33. Black Moss Reservoir, Marsden and Diggle Moors. Colonized 1895 or 1896. *c.* 150 pairs 1913 to 1919. Deserted for some years prior to 1938. 34. Keighley Moor Dam. Colonized 1902 or 1903. 10-20 pairs 1920. Deserted for some years prior to 1938. 35. Browsholme Tarn in Bowland. Colonized (or re-colonized) in 1915, 5 pairs 1920. Deserted for some years prior to 1938. 36. Gagglemire, Newton Fell. Colonized 1915. 5 pairs 1920. 37. Upper Barden Reservoir. Colonized about 1900. *c.* 150 pairs 1912. 6 pairs 1920. 38. Grassington Moor, Upper Wharfedale. Colonized 1900. Deserted 1911. 39. East Baugh Fell Tarn, near Sedbergh. Colonized 1928. Deserted 1930. 40. Reservoir below Ringstone Edge. *c.* 10 pairs 1920.

North Riding: 41. Heron Tree Allotment, near Leyburn. Colonized 1910 or earlier. Deserted in 1916 due to military use. 42. North Dale, near Rosedale. Formerly a thriving colony, but drained some time prior to 1920. 43. Strensall Common. Formerly large, deserted after 1884.

East Riding: 44. Bubwith Ings. 2½ miles SE. of Skipwith. Colonized 1920 or earlier. 20 pairs in 1920. Deserted some years prior to 1938.

45. Hornsea Mere. Bred in great abundance 1844. Deserted about 1884.

DURHAM.

OCCUPIED COLONIES.

1. Sunnyside Moss, near Tow Law. Colonized 1918 or earlier and has increased steadily until in 1938 there were *c.* 100 pairs.

2. Mines Reservoirs above Howden Burn, Frosterley. Colonized 1936 or earlier, probably from (3) below. Only one occupied nest in 1938, but previous year's remains of 25 nests were found.

DOUBTFUL COLONY. 3. Old Mines Reservoirs near White Hill, off Stanhope-Egglestone road. Colonized 1930 or earlier. When visited in 1938 6 birds were flying round as though resenting intrusion, but no nests could be found. The colony has been interfered with a good deal in recent years.

DESERTED COLONIES. 4. On Wear-Derwent watershed between Wolsingham and Blanchland. Colonized about 1925 by 4 pairs; numbers and exact site of the colony varied considerably but there were probably none in 1938 on account of the drought. 5. Moorland above Tunstall Burn Reservoir. Colonized by 70 or 80 pairs in 1937, but probably none in 1938 on account of the drought. 6. Priors Close Bog, near West Rainton, a few miles W. of Sunderland. Used to be a large-sized colony but has been deserted since about 1934.

The moorland colonies tend to shift from year to year.

NORTHUMBERLAND.

OCCUPIED COLONIES.

1. Holy Island Lough. Colonized 1897. No young reared in 1938.
2. Coldmartin Lough (Gull Ponds), Wooler. Colonized 1875. Hundreds of pairs 1879. 500 birds and some nests May, 1938.
3. Pond near Whooperton Station. Colonized prior to 1925. 200 birds and some nests May, 1938.
4. Pond on Bewick Moor. 300 birds and some nests May, 1938.
5. Kimmer Lough. Colonized before 1918. 100 birds, few nests May, 1938.
6. Linsheeles Lough (Barrow Burn), Alwinton. Colonized prior to 1918. 400 birds, many nests June, 1938.
7. Harbottle Lough (Drakestone), Alwinton. Colonized prior to 1912. 24 birds and 1 or 2 nests June, 1938.
8. Darden Lough and Small Lough. Colonized prior to 1918. 200 birds and a few nests, June, 1938.
9. Redside Pond, W. of Redside Wood, Alnwick. Colonized before 1923.
10. Moor Pond, near Lemmington, Alnwick. 135 nests in 1918.
11. Black Lough, 1 mile E. of Edlingham. Colonized before 1912. 150 birds, few nests, May, 1938.
12. Fallowlees, S. of Rothbury. Colonized before 1918, but not in occupation when Gurney wrote his paper. 600 birds, many nests, May, 1938.
13. Blackaburn Lough, 4 miles S. of Tarsset. Colonized before 1918. Up to 2,000 birds, very many nests, May, 1938.
14. Hallington Reservoir, West Hallington. Colonized 1938.
15. Hallington Reservoir, East Hallington. Colonized before 1912. c. 1,200 nests in 1918. 200 birds and 6 or 7 nests, May 7th, 1938, later deserted.
16. Pond 5 miles W. of Simonburn. Colonized 1936 or earlier.
17. Halleypike Lough. 5 miles NE. of Bardon Mill. Colonized before 1912.
18. Moss 3 miles N. of Greenhead. 600 birds, some nests, May, 1938.
19. Greenlee Lough, 4 miles N. of Bardon Mill. Colonized before 1912. 4 birds, no nests, May, 1938.
20. Broomlee Lough, 4 miles N. of Bardon Mill. Colonized before 1918. 24 birds, no nests, May, 1938.
21. Settlingstones Dam (Covey Sike), Newbrough. Colonized 1929. Up to 2,000 birds, very many nests, May 10th, 1938. Another observer reported only 300 birds.
22. Grindon Lough, 3 miles NE. of Bardon Mill. Colonized before 1918. 20 birds, some nests, May, 1938.

The numbers of birds reported at the above colonies do not necessarily indicate the numbers breeding successfully. Several colonies fluctuated widely during the season, chiefly on account of drought.

DOUBTFUL COLONIES. 23. Cateran's Pool, Harehope Moor. This and neighbouring pools colonized before 1912. No birds seen May 14th, 1938; but has been occupied in the last few years. 24. Sweethope Lough, W. of Kirkwhelpington Station. Colonized before 1912. Not in occupation when Gurney wrote his paper. No birds seen June 6th, 1938, but has been occupied in the last few years. 25. Whitfield Lough, 5 miles N. of Alston. About 50 pairs in 1889; 12 pairs 1919. No 1938 information, but it has been occupied recently. 26. Pond near Blanchland, 9 miles SE. of Hexham. Colonized about 1899, and mentioned by Gurney as a small colony.

DESERTED COLONIES. 27. Pallinsburn, Coldstream. Immemorial, before 1854. Very large 1891. 28. Moor Lake, S. of Cock House, Alnwick. Colonized 1929. 29. Little Lough (near Moor Lake). 30. Coltracrag Lough, 2 miles NW. of Hallington. Colonized before 1918, but not in occupation when Gurney wrote his paper. 31. Gosforth Park Lake, 4 miles N. of Newcastle. Colonized before 1925.

The above five colonies have been occupied during the last few years, but were reported as unoccupied in 1938.

32. Prestwick Carr was given as a former colony by Gurney.

WESTMORLAND.

OCCUPIED COLONIES.

1. Sunbiggin Tarn, near Orton. Occupied prior to 1891. 1,000 eggs taken from the edge of the colony 1934. Estimates of numbers in 1938 varied between 400 and 1,500 pairs.

2. Aisgill Moor, Mallerstang. Colonized 1930 or earlier. 50 pairs in 1938.

3. A tarn in Ravenstonedale. Colonized 1936 or earlier. 10 pairs in 1938.

4. Tarn House Tarn, near Kirkby Stephen. Colonized 1936. 3 pairs in 1938.

5. Sunnycrow Reservoir, near Crook, 3 miles NW. of Kendal. 35-40 pairs 1938.

6. Lowfold Tarn, 1 mile S. of Crook Church. 5 pairs 1938.

DESERTED COLONIES. 7. Clibburn Moss, 6 miles SE. of Penrith. Mentioned in *Vertebrate Fauna of Lakeland* (Macpherson & Ferguson, 1892). 8. Bolton Fell, 3 miles SE. of Clibburn. Mentioned in *Vertebrate Fauna of Lakeland* (Macpherson & Ferguson, 1892).

CUMBERLAND.

OCCUPIED COLONIES.

1. Ravenglass. Colonized before 1884. Breed over an area of about $\frac{3}{4}$ square mile on N. of Esk estuary. In 1938 some tens of thousands breeding pairs, probably less than 50,000. Numbers now said to be less than in 1909-1913. *c.* 100 pairs breed on S. side of the estuary.

2. Bassenthwaite, at the head of the lake. One nest found 1910. *c.* 100 pairs 1938.

3. Carlatton Mill. 500 pairs in 1932. 12 nests found 1938.

4. Tarn Wadling, High Heskett. Colonized 1916 or earlier, 500 pairs in wet seasons, as 1924. 15 pairs 1938.

5. Blaze Fell. Colonized 1920 or earlier. 50 pairs 1938.

6. Wan Fell. 1,000 pairs in 1933. 3 pairs 1938 (dried up).

7. Lazonby Fell. Colonized 1920 or earlier. 150 pairs in 1938.

8. Newton Reiny Bog, near Blencow. Colonized 1892 or earlier. 1,500 pairs in 1938.

9. Greystoke Park. 250 pairs in 1884. 50 pairs 1938.

10. Solway Moss, Solway. Colonized before 1886. 100-150 pairs in 1938.

11. Rockcliffe Marsh, Solway. Colonized 1859. 300-400 pairs 1927. 50 pairs 1938, when there was a strong colony of Lesser Black-backed Gulls.

12. Burgh Marsh, Solway. Contemporary with Rockcliffe? Few scattered pairs 1938.

13. Newton Marsh, Solway. Colonized 1909 by 200 pairs. 60 pairs in 1938.

14. Skinburness Marsh. Contemporary with Newton Marsh? Few scattered pairs.

15. Salta Moss, Allonby, Solway. Colonized 1886 or earlier. 30 pairs 1937.

16. A tarn on White Preston, Bewcastle Fells. Colonized 1898 or earlier. 40 pairs 1932, 2 pairs 1938.

17. Denton Fell, near Tindale. Colonized 1886 or earlier. 200 pairs 1936.

18. Bolton Fell, North Cumberland. Colonized 1886 or earlier. 200 pairs 1935, 3 pairs 1938.

19. Walton Moss. Colonized 1892 or earlier. Maximum 400, minimum 50 pairs.

DESERTED COLONIES. 20. Arnaby Moss, near Green Road Station. Occupied by a small colony from about 1929 to 1933. 21. Moorthwaite Tarn, Wigton. Colonized by 4 pairs 1878. 1,000 in 1889. Deserted 1932. 22. Tirling Dub, Castle Carrock. Colonized 1930 or earlier. Deserted about 1934. 23. Monkhill Lough, Solway. Colonized before 1892. Deserted about 1930. 24. Bowness Moss, Solway. Colonized before 1886. Deserted 1910. 25. Drumburgh Moss, Solway. Contemporary with Bowness Moss? Deserted 1938. 26. Ponds by R. White Lyne, Bewcastle. Colonized by 20 pairs 1933. Deserted 1936. 27. Mungrisdale Moss. Colonized by c. 100 pairs 1909. Only 2 pairs 1910. 28. Wedholme, Solway. Colonized 1886 or earlier.

[29. Devoke Water was given by Gurney as a small colony but the present keeper who has been there since before the War of 1914-18 has never known the birds to nest.]

INFORMANTS: H. G. Alexander, W. B. Alexander, G. J. B. Bevan, Dr. H. M. S. Blair, Rev. F. L. Blathwayt, E. Blezard, J. Walpole-Bond, A. W. Boyd, B. T. Brooker, Maj. A. Buxton, R. W. Calvert, Dr. J. W. Campbell, J.-R. Charnley, R. Chislett, A. Clark, T. W. I. Cleasby, D. S. Cooke, J. Cordingley, P. S. Day, H. Drake, Maj. A. A. Dorrien Smith, Dr. F. R. Elliston-Wright, Dr. E. A. R. Ennion, K. Fisher, H. F. Forrest, U. C. Gardiner, R. M. Garnett, H. A. Gilbert, A. Gilpin, the late J. M. Goodall, C. S. Graham, R. Graham, E. Hardy, H. J. Harrison, S. B. Hewitt, F. W. Holder, P. A. D. Hollom, R. C. Homes, W. H. Hortin, P. A. Humble, G. C. S. Ingram, A. H. Johnson, T. L. Johnston, Rev. F. C. R. Jourdain, Dr. N. H. Joy, T. Kerr, A. Kimberley, Dr. G. S. B. Long, J. Lord, F. A. Lowe, S. Marchant, W. Marchant, D. I. Molteno, R. F. Moore, Nat. Hist. Soc. of Northumbs, Durham and Newcastle-on-Tyne, A. M. C. Nicholl, C. A. Norris, C. Oakes, C. Oldham, Oxford Ornithological Soc., R. K. Perry, J. Preston, Mrs. J. B. Priestley, T. N. Roberts, H. W. Robinson, A. Roebuck, W. D. Smith, F. Snowdon, Col. Sotheby, Miss A. V. Stone, M. F. Strutt, F. Taylor, W. Thompson, Dr. N. F. Ticehurst, the late Sir T. Troubridge, Miss E. L. Turner, J. P. Uttley, G. R. Vlies, T. J. Wallace, Maj. A. I. Waller, C. H. Wells, Mrs. H. White, T. S. Williams.

(To be continued.)

THE DISPLAY AND SONG OF THE TURTLE-DOVE.

BY

M. K. COLQUHOUN.

THE presence of Turtle-Doves (*Streptopelia t. turtur*) in a Berkshire wood under constant observation for the last two seasons makes it possible for me to add to Selous's account* of their display, and to draw another comparison between this species and the Wood-Pigeon (*Columba p. palumbus*).

Of the two types of display—the bowing or bobbing, and aerial—the former is best known. It appears to be essentially a prelude, on the male's part, to coition, but in far the majority of instances the female is not ready for him, and after regarding him (as it seems) with some curiosity, flies off, followed by her mate. Under these circumstances bowing lasts 5 to 10 seconds. On the one occasion when I had a clear view of coition (the female having been building ten minutes earlier) display lasted barely three seconds; neither plumage shaking nor bill-wiping followed. All the bowing which I have witnessed has taken place within three feet of the female, and on the high branch of a tree, although I have heard the display note (mentioned later) in dense hazel; Selous recorded display on the ground. During bowing the neck is contracted, the breast slightly "pouted," and the bill pointed directly downwards; the bird therefore does not look openly at his mate.

Aerial display consists of two components, the vertical or steep climb, and the glide. In view of published statements* I hesitate to suggest that this species does not give a wing clap, but it is certainly rare and seldom audible. In the vertical climb the bird soars steeply with rapidly beating wings and widely stretched tail, for some thirty yards or less, after which it glides down, usually in a circular movement, sometimes landing in the same tree and resuming its song. To an observer directly underneath the mounting bird, with the sun low in the sky, the white disc of its belly gleams with an astonishingly brilliant effect; witnessed from one side this is not noticed and the climb appears less steep. The climb seems to be always made in the presence of the mate; twice I have seen a singing bird break into a climb on the approach

**Bird Watching*, 1901, pp. 50-1.

*Selous fails to mention it, although describing the Wood-Pigeon's clap on the same page; Coward states in his book that it occurs, but I can find no reference to it in his unpublished field notes (I am indebted to Mr. W. B. Alexander on this point), nor do I know his authority for the statement.

of another, whose direct flight caused the first to cut short the subsequent glide in order that it might follow. Occasionally the gliding evolved into gull-like sailing over the margin of the wood.

While the Wood-Pigeon makes from one to three undulations in flight, with a wing clap for each (using this device to clear a tree when disturbed), the Turtle-Dove rarely makes more than one, and this with the impression of less effort and fuss than goes to the former's display. (On being disturbed its flight is swift and direct.) It is not only a matter of size; there is altogether less wing movement. Nobody would call the normal flight of the dove slow (see *antea*, Vol. XXV, p. 90) and Shakespeare's use of the phrase "slow winged turtle" suggests how prevalent is the gliding habit of this species as seen through the eyes of an intelligent countryman. It is tempting to suggest that there is a correlation between the greater wing movement of the Wood-Pigeon in display and its white wing-bar, but in fact (for the flashing wing-bar cannot be seen from directly underneath the bird) this is more likely to be a "recognition" rather than an epigamic character, the obvious analogy among mammals being the white tail or rump of some ungulates. Moreover, the Wood-Pigeon glides freely, although it is significant that it glides after it has clapped, and repeats the clapping at intervals. A woodland bird requires a conspicuous display flight, and if it be assumed that the Wood-Pigeon is such a bird, while the Turtle-Dove belongs more to the open country, then the reason for these differences becomes clearer.

The Turtle-Dove may sing in any one of four ways:

(a) rrurrrrr, rrur-rrurrrrr; etc.

(b) rrurrrrr, rrurrrrr, rrurrrrr; etc.

(c) As (b) but four notes in a phrase (sometimes a slight pause after the second note).

(d) The display note. rur-rur-rur . . .

The phrases are easily distinguished with a little practice, the first note of the "bar" being accented—especially in (c) when the necessity to include four notes instead of three causes the last to be hurried. It is interesting to find that a bird often ends its song on the first note of a phrase, exactly as the Wood-Pigeon. It is common to hear a bird switch from (a) to (b), or (b) to (c), and I have an occasional note of one singing all three consecutively. Recently it has been noted that (a), with its short second note, was used when singing was resumed after display, but the number of observations does not warrant any definite conclusion. It is still more

difficult to know which phrase is being used immediately before display. One individual may be singing one phrase and another a second close by; but on three occasions the display note was taken up by another bird within half a minute—only once lasting for more than a second or two. The display note does not (as Selous states) sound continuous—it is simply a speeding up of the ordinary song, with a complete absence of phrases. A note is uttered for each bow—it appears when the head is raised, but because of the distance it is quite likely to be the reverse.

In addition to the song described there are also subdued “echo notes,” only to be heard at close quarters, although if one has good hearing and listens intently this background of sound can be heard up to 100 yards. The echo note always follows the louder notes, and is especially loud after the first note of the phrase, when it sounds something like the “go back” of a Grouse. In mood it is brooding, like the purring of a Pheasant in a thicket, but during display it becomes an excited gasp or grunt, as though the bird was wheezing for breath; at such times it is perhaps louder than the echo note following the first note of a phrase in ordinary song.

Many writers have recorded bowing display in conjunction with the quick throbbing note, and I know of no evidence to suggest that they are ever divorced from each other; until this is forthcoming we may assume that display is taking place whenever this song is heard. The point is of considerable importance because the song is audible over a wide area and we are presented with a rare opportunity of gauging the frequency of courtship in any given population of Turtle-Doves. For instance, during 1939 the display of two pairs of Turtle-Doves reached its peak on June 9th, a bright sunny morning towards the end of a warm period, when the quick note was heard four times in one hour between about 7 and 8 a.m.; on other mornings it was never heard more than twice and usually only once within the same period, and not at all during a cool rather wet week from the 15th. At present it may be said that while display (including aerial) may take place at any time of the day, it is certainly at its maximum in the early morning.

THE CONTINENTAL REDSHANK AS A BRITISH BIRD.

I. DIRECT EVIDENCE.

As is well known, there are two forms of Redshank to be found in the British Islands—the British breeding-bird (*Tringa t. britannica*) and as a migrant the Iceland breeding-bird (*T. t. robusta*).

At the time the British form was separated by Dr. C. B. Ticehurst there was no definite proof of the occurrence of the typical or Continental form (*T. t. totanus*). Since then Mr. A. L. Goodson has very kindly sent me a male Redshank shot near Tring, Herts, on April 10th, 1934, which in all respects is clearly an example of the Continental form. It is in summer plumage and much more strongly marked with black and brown than any breeding example of our bird, and is also heavily streaked and spotted on the under-parts. Dr. C. B. Ticehurst has also kindly examined this specimen and agrees with me that it is of the Continental form.

The Iceland Redshank cannot be differentiated from the Continental by its plumage though in summer it tends to be rather less marked, but in size it is larger.

I find in re-examining Redshanks in connexion with work on *The Handbook* that the following wing-measurements obtain: Continental Redshank (7 Sweden, 4 Norway) 147-157 mm.; British Redshank (20 breeding birds) 145-163 mm.; Iceland Redshank (about 50 breeding birds) 157-171 mm.

The bird in question from Tring measures only 152 mm. in the wing so that it is considerably smaller than any Iceland.

There is in the British Museum collection a skin of a male taken at Pagharn, Sussex, in May, 1866, which in plumage fits the Continental form, but its wing measures 157 mm., so that, as can be seen from the measurements given above, it could be either a Continental or an Iceland bird. It is in heavily marked summer plumage and probably a Continental, but as the measurements do not confirm this it cannot be taken as certain.

It may be mentioned here that I can find no constant difference in the plumage of the three races in winter. It has been said that the Iceland Redshank is darker, but I find from ringed birds that British-bred birds can be equally dark. The tarsus and bill of Iceland birds tend to be thicker, but in many there is no observable difference, and the only definite character in winter in most cases is the length of the wing. Birds with wings of over 163 mm. may be accepted as of the Iceland form.

H. F. WITHERBY.

II. MIGRATIONAL EVIDENCE.

Analysis of 58 recoveries of ringed British young shows that a high proportion (about 40 per cent.) are more or less sedentary, *i.e.*, they move away from their breeding areas a comparatively short distance only and are found in winter in their native or neighbouring counties. The rest are migratory to a lesser or greater degree. About two-fifths of them winter on our coasts some distance south of their summer areas, the other three-fifths winter on the south coast of England, in Ireland or farther south across the Channel in about equal proportions. The recorded dates suggest that those that do migrate do so very early in the autumn. The breeding areas are abandoned, as the young get old enough, between mid-June and the end of July and movement begins at once, so that birds from Cumberland have reached the Cornish coast by July 24th and N. France by August 5th, one from Stirling was recovered in Co. Down on September 5th and one from Lancashire in W. France on September 9th, while there is a record of migrating Redshanks at Seven Stones light-vessel just north of the Scillies so early as August 20th. It seems probable therefore that, unless moved on later by weather conditions, our native birds are well on their way to, if not actually in, their winter quarters by the beginning of September. From observational data it is established that they return to their breeding areas between mid-February and mid-March almost everywhere and even those nesting in the northern isles are back in their territories by early April.

Though abundant in Orkney comparatively few Redshanks nest in Shetland. The migration periods at Fair Isle are stated by Eagle Clarke (*Studies of Bird Migration*, II., pp. 173-4) and since borne out by later observations, to be, autumn, July 13th to November 2nd, most abundant and frequent in August and September [*i.e.*, from what has been said above, after the Shetland birds have gone south]; spring, single birds in February, March and early April [*i.e.*, the Shetland breeders returning] in some numbers at the end of April, in May and the first week in June [*i.e.*, long after the Shetland birds have settled in and started nesting]. In Shetland, too, the bird is stated to be actually most numerous between October and March (*F. of Shetland*, p. 172). From geographical considerations evidence of this kind from elsewhere is naturally less definite and its interpretation more liable to error, but there are several statements in county faunas that bear on the subject. In autumn migration through

Northumberland (*B. of Northumberland*, etc., p. 588) and Cheshire (*F. of Cheshire*, p. 410) lasts from mid-July to mid-October or November and at Spurn (*B. of Yorks*, II., p. 635). large migratory flocks often consisting of hundreds of birds arrive in September. In Ireland (*B. of Ireland*, p. 298) there is a great influx in September and October and an immense number winter there. According to our ringing results only about 10 per cent. of birds bred in our northern counties migrate there, so that this great influx must be derived in a great part from elsewhere. In spring migratory flocks constantly pass through Cheshire (*l.c.*) in early May, after the local birds have begun to nest and in his summary of occurrences of waders on inland waters (*B.B.*, XXXII., p. 73) Mr. Hollom found that migration of the Redshank reaches its peak at the end of March or during April and continues throughout May to mid-June.

In the aggregate a good number of single observations and lighthouse records from other parts are to the same effect. Immigration from over-sea in spring on to our south coast continues at any rate up to mid-April, while scattered records from many localities on our east and west coasts show a considerable amount of movement to be taking place up to the beginning of June. Light records are rather more numerous in autumn than in spring and they all confirm the continuity of migration on both the east and west coasts throughout September, October and the first half of November.

It seems, therefore, that it can be accepted that there is a considerable body of migration going on throughout the British Isles, both in spring and autumn, that both as regards volume and period of duration can only be partly accounted for by the movements of our own birds. The question then arises whence do these passage migrants come in autumn and whither are they bound in spring? It is now amply proved that some, perhaps a considerable number of them, come from Iceland, but there must be great doubt about Icelandic birds being responsible for the total number of these migrants. By analogy of other species it would be very strange if Icelandic Redshanks should migrate through these islands, while Scandinavian and other north European Redshanks did not. Redshanks have twice been detected on migration over the North Sea, but unfortunately too far from our shores to be of any material assistance.

N. F. TICEHURST.

22
PURCHASED

NOTES

TWO CUCKOO'S EGGS IN DESERTED NESTS IN THE SAME BUSH.

At the end of July, 1939, at Martock, Somerset, I found two nests about three yards apart in a bramble bush. Each nest contained an egg of a Cuckoo (*Cuculus c. canorus*) of the same type. Both nests appeared to be those of a Hedge-Sparrow (*Prunella m. occidentalis*) and had evidently been deserted for weeks. There were no other eggs in the nests and the Cuckoo's eggs had not been incubated.

JOSEPH H. SYMES.

[There are a few cases on record in which two eggs laid by the same female have been found in one nest, and the usual explanation is that they are laid towards the end of the season by a bird which is unable to find another suitable fosterer for her last egg. This case may be somewhat similar and in default of anything better a hen may have laid in a Hedge-Sparrow's nest which was already deserted or was deserted subsequently and later on may have come back to the site and laid another egg in the adjoining nest. The fact that the eggs were not found until later makes it impossible to learn exactly what happened.—F.C.R.J.]

COMMON EIDERS IN CHESHIRE.

On November 19th, 1939, friends and I watched a flock of about ten Eiders (*Somateria m. mollissima*) diving off the north-west point of Hilbre Island. It was a rough day with plenty of wind and they seemed to be feeding on mussels. There were two drakes, I should say a second- and a third-year bird; the rest were ducks.

This is a rare bird in Cheshire and the first we have seen here.

W. WILSON.

COMMON REDSTART IN ISLE OF WIGHT IN NOVEMBER.—Mrs. J. B. Priestley has given us details of a Redstart (*Phoenicurus ph. phoenicurus*) which she watched at close quarters with binoculars on November 24th, 1939, near St. Catherine's Lighthouse. The bird was evidently a female. This is a later date than any of which we have previous note.

BLACK REDSTART IN CO. KILKENNY.—Major R. Archer Houblon informs us that he noticed a Black Redstart (*Phoenicurus o. gibraltariensis*) in his garden at Thomastown on November 29th, 1939, and it was still there on December 20th. It appeared to be a young male.

RED-NECKED PHALAROPE IN KENT IN AUGUST.—Mr. R. B. Sibson informs us that on August 30th, 1939, he spent some time watching a Red-necked Phalarope (*Phalaropus lobatus*) swimming on a fleet in the Isle of Sheppey.

A HISTORY OF THE BIRDS OF ESSEX

William E. Glegg, F.Z.S., M.B.O.U.

Numerous Photographs and a Map. Demy 8vo. 25/-.

**A HISTORY OF THE
BIRDS OF MIDDLESEX**

William E. Glegg, F.Z.S., M.B.O.U.

6 Plates and Map. Demy 8vo. 18/-.

**A HISTORY OF THE
BIRDS OF NORFOLK**

B. B. Riviere, F.R.C.S., F.Z.S., M.B.O.U.

16 Plates and Map. Demy 8vo. 25/-.

BIRD-LIFE IN THE ISLE OF MAN

Colonel H. W. Madoc, C.B.E., M.V.O.

Photographs. Crown 8vo. 6/-.

BIRD MIGRATION

A. Landsborough Thomson.

Illustrated. Small Crown 8vo. 5/- net.

HOW TO KNOW BRITISH BIRDS

Norman H. Foy.

Illustrated. Small Crown 8vo. 5/- net.

BIRDS OF THE GREEN BELT

R. M. Lockley.

Illustrated. Small Crown 8vo. 5/- net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner.

Illustrated. Small Crown 8vo. 5/- net.

H. F. & G. WITHERBY LTD.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement
des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique).

THE HANDBOOK OF BRITISH BIRDS

By H. F. WITHERBY (Editor), F. C. R. JOURDAIN,
NORMAN F. TICEHURST and B. W. TUCKER.

To be completed in five volumes.

*Illustrated by 500 paintings reproduced in full colour depicting about
1,800 birds.*

“The *Handbook* is a better, more complete, and infinitely more interesting history of the birds of a country than that published anywhere else in the world, including America.”—*The Field*.

£5 5s. the set complete. *Vols. I, II and III have been published.*

A HISTORY OF SUSSEX BIRDS

By JOHN WALPOLE-BOND.

*In three volumes published simultaneously and illustrated with
53 coloured plates*

By PHILIP RICKMAN.

“It would be difficult to say too much of the accuracy of personal observation and the thoroughness of research. The three volumes are likely to remain as a standard example of such literature.”—
SIR WILLIAM BEACH THOMAS in the *Observer*.

£5 5s. the set.

SONGS OF WILD BIRDS

Third Impression.

By E. M. NICHOLSON and LUDWIG KOCH.

Introduction by JULIAN HUXLEY.

With two double-sided 10-inch gramophone records featuring the Nightingale, Cuckoo, Blackbird, Song Thrush, Pied Woodpecker, Green Woodpecker, Robin, Wren, Hedge-Sparrow, Turtle-Dove, Wood-Pigeon, Chaffinch, Willow Warbler, Whitethroat and Great Tit.

By the same authors

MORE SONGS OF WILD BIRDS

With three double-sided 10-inch gramophone records featuring the Skylark, Woodlark, Curlew, Tree Pipit, Wood-Wren, Blackcap, Garden Warbler, Rook, Carrion Crow, Jackdaw, Magpie, Jay, Little Owl, Redstart, Chiffchaff, Mistle-Thrush, Heron, Stock-Dove, Nightjar and Blue Tit.

Each 15s. net boxed.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

FEB. 1,
1940.

Vol. XXXIII.
No. 9.



MONTHLY 1s 9d YEARLY 20s
326 HIGH HOLBORN LONDON
H. F. & G. WITHERBY LTD.

The Status and Distribution of Wild Geese and Wild Duck in Scotland

6 plates. By JOHN BERRY, Ph.D., F.R.S.E. 10s. 6d. net.

During the last hundred years there has been a complete revolution in conditions governing the habits and numbers of wildfowl in many parts of the world. The breech-loading gun, the steam-engine, and the internal combustion engine—to take only three examples—have not only enormously increased destruction, but, by disturbance of quiet resting places, have led to changes in distribution on a vast scale.

In most districts these changes are too much masked by seasonal fluctuations, and too slow, for the average wildfowler to notice them. But it began to be realized, especially in North America, that the number of wildfowl was seriously diminishing.

To obtain accurate information, the International Committee for Bird Preservation adopted a far-reaching scheme of investigation and inquiry. This first publication gives the results of the investigations in Scotland. It is an attempt—the first of its kind—to put on record a distributional index and a practical estimate of a country's total stock of wildfowl.

CAMBRIDGE UNIVERSITY PRESS

To be published in February

BIRD RESERVES

BY

E. C. ARNOLD

*Illustrated with 9 plates in colour and
12 in black-and-white by the author*

Medium 4to

15s. net
Postage 9d.

Readers will surely agree with the author, after reading his delightful book, that the £100 he paid for a pond proved a thoroughly successful and sound investment. The author tells of his adaptation of the pond to attract bird life and chronicles the activities of the various species that visited the pond at different seasons of the year.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

5 FEB 1940

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND
NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

PURCHASED

CONTENTS OF NUMBER 9, VOL. XXXIII., FEBRUARY 1, 1940.

	PAGE
Report on the 1938 Survey of Black-headed Gull Colonies. (Part II.). By P. A. D. Hollom	230
Notes on Birds seen on a Voyage to the West Indies and Back. By W. R. Philipson	245
The Species of Great Shearwaters in the English Channel. By H. F. Witherby	248
Obituary. George Marples... ..	250
Notes :—	
Continental Blue Tit in Kent (Dr. J. M. Harrison)	251
Continental Blue Tit in Radnorshire (J. G. Williams)	251
On Breeding Habits and Feeding Frequency of Flycatchers (R. H. Brown)	251
Chiffchaffs in Cork in Winter (Lt.-Col. C. F. Scroope)	252
Numbers of Black Redstarts on Passage in Man (K. Williamson)	252
On Incubation and Feeding Frequency of Swallows and Martins (R. H. Brown)	254
Large Number of Whooper Swans in Northumberland and Lanarkshire (H. Tully and R. Y. Ferguson)... ..	254
White Barnacle-Goose in Cumberland (E. Blezard)	255
Common Eiders in Cheshire (A. W. Boyd)	256
Packing of Broods and "Injury-feigning" of Velvet-Scoter (B. W. Tucker)	256
Black-necked Grebe Breeding in Westmorland (Miss M. Garnett)	256
The Record of Green Sandpipers Breeding in Westmorland in 1917 (Miss M. Garnett)	257
Specimens of Norfolk Great Bustards lost by Fire (H. S. Gladstone)	258
Status of Quail in British Islands (The Editors)	259
Short Notes :—	
Common Eiders in Dorset. Great Skua and Scandinavian Lesser Black-backed Gulls in Mouth of Thames	259
Review :—	
<i>The Birds of East Lancashire.</i> By C. Oakes and E. Battersby	259
Letter :—	
The Black-tailed Godwit in Cumberland (R. H. Brown)	260

A PUBLICATION OF THE BRITISH TRUST FOR
ORNITHOLOGY.

REPORT ON THE 1938 SURVEY OF BLACK-HEADED
GULL COLONIES.

BY

P. A. D. HOLLON.

(Concluded from page 221.)

WALES.

GLAMORGAN.

DESERTED COLONY. 1. Kenfig. First recorded 5 pairs in 1899. Rarely more than 3 to 6 pairs 1912 to 1937. 3 pairs 1937. None 1938.

BRECONSHIRE.

OCCUPIED COLONIES.

1. Pant Llyn, Eppynt. Colonized later than 1914. *c.* 40 pairs in 1923. None in 1926.

2. Pwll Ddu. $1\frac{1}{2}$ miles from Pant Llyn. *c.* 200 pairs 1923. 60 pairs 1928. 30 pairs 1933.

3. Llyn Legin.

It is not certain that all the above sites, which are within a radius of $1\frac{1}{4}$ miles, were occupied in 1938.

DESERTED COLONY. 4. River Trath. One pair nested about 1930.

RADNOR.

OCCUPIED COLONIES.

1. Rhiw Pool, 2 miles SW. of Bleddfa. Colonized about 1910. *c.* 200 pairs 1912. None 1933. 150-200 pairs 1934, a few in 1935, 20-30 pairs 1937 and 1938.

2. A small pool $1\frac{1}{2}$ miles WNW. of Bleddfa. A few pairs 1938. This pool is less than 2 miles N. of the occupied Rhiw Pool and about the same distance from the recently deserted St. Michaels Pool.

3. Llanwefr Pool, 3 miles SE. of Penybont. Probably colonized about 1910 (or possibly 10 years earlier). *c.* 400 pairs 1933, 500 or more in 1934, 150-200 pairs 1937. In 1938 estimates varied between about 300 and 1,500 pairs. One observer gave the number of breeding pairs as probably under 300 but reported that 2,000 birds might be seen in the evenings.

4. Rhosgoch Common, near Painscastle. Colonized 1908. *c.* 12 pairs 1938. A regularly occupied colony. Used to be large but much dried up in 1938.

DESERTED COLONIES. 5. St. Michaels Pool, near Llangunllo. Colonized 1918. *c.* 200 pairs 1925-1930, since when it has gradually dwindled owing to egg-taking. 6 pairs 1937. None 1938. 6. Pen-y-clawdd Pool, near Llangunllo. A few pairs have bred here, apparently as an overflow from St. Michaels Pool. Not now used. 7. Mawn Pools, NE. of Rhulen. Colonized 1904. Is persecuted and sinks to zero in drought years. Dried up in 1938. 8. Mawn Pools S. of Rhulen. Dried up in 1938.

CARMARTHEN.

OCCUPIED COLONY.

1. Laugharne. Colonized 1926 by 2 pairs, 4 pairs 1929, 32 in 1933 and 52-60 pairs 1938.

PEMBROKE.

No present-day colonies, but Gurney gives a reference to a large colony on Caldey Island in 1662.

CARDIGAN.

OCCUPIED COLONIES.

1. Pond Syfrydrin, 5 miles W. of Plynlimon. Colonization date uncertain, but not very recent. Formerly Llyn Craig-y-Pistyll, $\frac{1}{2}$ mile away, was occasionally used as an alternative site, but is now being converted into a reservoir. A small colony.

2. Llyn Du, 4 miles NE. of Strata Florida. Colonized 1923 or earlier. 200-300 pairs 1927, deserted 1932 or earlier. Recolonized 1935 or 1936. 150 nests 1938.

3. Fflur Bridge, Tregaron Bog, 2 miles S. of Strata Florida. 20 nests 1938.

4. Between Allt-ddu Farm and the Teifi, Tregaron Bog, $\frac{1}{2}$ mile S. of Fflur Bridge. 25 nests 1938.

5. Between Coed and the Teifi, Tregaron Bog, 2 miles N. of Tregaron. 125 nests 1938.

Tregaron Bog was colonized in 1923 or earlier.

6. Clwyd-goch Farm, Rhos Cilcennin, *c.* 100 pairs 1933. 150 nests 1938.

7. Small sheet of water 2 miles NE. of Llyn Berwyn. 25 nests 1938.

DOUBTFUL COLONIES. 8. Llyn Eiddwen, 7 miles NW. of Tregaron. 3 pairs 1923, also occupied 1926. 9. Lundy Bog, near Lloventium. Approximately 50 pairs in recent years, but disturbed by considerable flooding in 1938. 10. Borth Bog. A few pairs 1926.

MONTGOMERY.

OCCUPIED COLONIES.

1. Tregwynt Gull Pool, 3 miles S. of Llanerfyl. Colonized 1911 or earlier. *c.* 20 pairs in 1911; 1,000 pairs in 1936 and over 1,000 pairs in 1937 and 1938. (A colony reported from Llyn Hir is probably the same as this.)

2. Llyn Coethyn, 3 miles E. of Carno. *c.* 20 pairs 1935.

3. Llyn Mawr, 3 miles NW. of Caersws. Colonized 1910 by a few pairs. *c.* 30 pairs 1938.

4. Llyn Tarw. Near Llyn Mawr and colonized soon after it. 1,000-1,500 pairs 1926, *c.* 2,500 pairs 1927, and more recent estimates vary between 2,000 and 4,000 pairs.

MERIONETH.

OCCUPIED COLONIES.

1. Harlech, on the low land behind the sandhills. Apparently fairly recently colonized but before 1935. *c.* 400 pairs 1936 and 1937. *c.* 175 pairs 1938.

2. Mochras. 6 miles N. of Barmouth. Colonized about 1903 (?). 9 pairs 1938, reduced by drought. There are two other sites at Mochras which have been occupied in the past in addition to that used in 1938.

3. Cefndu Moor, near Petrayal Lodge. Colonized 1922 or earlier. *c.* 50 pairs tried to nest 1938, but were shot out.

4. Llyn Myn-y-lloed, near Llandrillo, or Bala. Colonized 1888 by 2 pairs. Quite 1,000 pairs in 1904.

5. Marsh near coast between Llanaber and Dyfferyn, 3 miles N. of Barmouth. Colonized 1938 or earlier. *c.* 30 pairs 1938.

DOUBTFUL COLONIES. 6. Llyn Gwernan, near Dolgelly. Small colony.

DESERTED COLONY. 7. Trawsfynydd Lake. Nested at one time, but were thoroughly "discouraged." None 1938.

CARNARVON.

OCCUPIED COLONIES.

1. Llyn Goddion-duon (or Glyn Lake), near Capel Curig. Colonized 1923 or earlier. Numbers vary between 30 and 100 pairs averaging 40 pairs.

2. Llyn Bodgynydd, $\frac{1}{2}$ mile from Glyn Lake. Colonized 1923 or earlier. Numbers vary between 10 and 80 pairs, averaging 30 pairs.

3. Llyn Tyn-y-Mynydd. Colonized 1923 or earlier. Numbers vary between 50 and 150 pairs, averaging 70 pairs.

A few pairs also nest on small moor pools adjoining the above lakes.

4. Ystumllyn, near Criccieth. Always destroyed by keepers.

DOUBTFUL COLONY. 5. Llyn Conway. Was occupied in Pennant's time, say 150 years ago, but believed now to exist again after being deserted for many years.

DESERTED COLONIES. 6. Small pool 1 mile NE. of Llyn Conway. Colonized 1936 or earlier. 6-12 pairs 1936 but none 1937 and 1938.

7. Llyn Llydaw. Occupied in Pennant's time.

8. Beddgelert. Occupied in 1864.

DENBIGH.

OCCUPIED COLONIES.

1. Llyn-y-Foel-frech, near Llansannan. Colonized about 1900. Over 400 pairs 1917. Flourishing 1922. Several hundred pairs in 1938, as usual.

2. Llyn Bran. Flourishing 1929. Subsequently much shot by keepers and now much reduced. 20-30 pairs 1938.

3. Ffriddog, a moor 4 miles SE. of Llanrwst. *c.* 12 pairs 1917. In 1938 100-130 pairs on two adjoining pools, and 30 pairs on pool $\frac{1}{4}$ mile away.

DOUBTFUL COLONY. 4. Llyn Alwen, near Pentre Voelas. *c.* 40 pairs in 1930.

DESERTED COLONIES. 5. Bwlch Du Moor, above Nantglyn. 2 pools. Flourishing 1900, 1912 and 1922. Became extinct about 10 (?) years ago through drainage. 6. Brodidris, 8 miles SE. of Ruthin. Recorded by Gurney as consisting of 150 pairs. 7. Nant-y-frith, on the Flint border. Recorded by Gurney as an occupied colony.

FLINT.

OCCUPIED COLONY.

1. Mostyn Marsh, near Point of Air. First colonized many years ago, as Gurney gives it as a deserted site. 10-20 pairs 1938; all eggs taken.

DESERTED COLONY. 2. Llyn Cyffynwy. Destroyed by keepers prior to 1919.

ANGLESEY.

OCCUPIED COLONIES.

1. Llyn Llywenan, Presaddfedd. Colonized 1902 or earlier. *c.* 500 pairs 1924 and 1925; *c.* 300 pairs 1934-1936.

2. Newborough Warren. Colonized 1935 by 4 pairs. Same number 1936.

DOUBTFUL COLONY. 3. Llyn Dynam, south end. Colonized later than 1904. *c.* 50 pairs 1916.

INFORMANTS: W. B. Alexander, E. F. Allen, F. C. Best, E. H. T. Bible, A. H. Bishop, Rev. F. L. Blathwayt, R. P. Bufton, W. A. Cadman, R. W. Calvert, Maj. W. M. Congreve, J. S. Elliott, H. E. Forrest,

G. H. J. Fusdon, H. A. Gilbert, G. H. Caton Haigh, R. C. Homes, R. S. Hughes, T. C. E. Hughes, G. C. S. Ingram, W. Miall Jones, H. Kenrick, R. E. Knowles, R. G. Lort, C. Oldham, B. Price, Mrs. M. Richards, H. M. Salmon, Prof. J. H. Salter, J. F. Thomas, T. S. Williams, C. H. R. Wynn.

SCOTLAND.

DUMFRIES.

OCCUPIED COLONIES.

1. Rockall, Torthorwald. 800 nests 1909-1910, 600 in 1914, 200 in 1921 and *c.* 3,000 pairs 1938.

2. Loch Urr, Glencairn. 1,300 nests 1909-1910, 1,200 in 1914, 1,250 in 1921, 944 in 1932. Occupied 1938.

DOUBTFUL COLONIES. 3. Lochar Moss. 4. Eastbanke Foreshore, Caerlaverock. 400 nests 1909-1910, 4 in 1914, 20 in 1921. 5. Town-foot Loch, Closeburn. 300-400 nests 1909-1910, 600-800 in 1914, 250-300 in 1921. 6. Racks, Dumfries. 800 nests 1909-1910 and 1914. 7. Craigs Moss, Dumfries. 20 nests 1921. 8. Tanlawhill, Eskdalemuir. 200 nests 1909-1910, 30 in 1914 and 214 in 1921. 9. Stranshalloch Loch, Glencairn. 25-40 nests 1909-1910, 80-100 in 1914 and 40-50 in 1921. 10. Mollin Farm, Johnstone. Colonized by 100 pairs in 1921. 11. Holehouse, Kirkmichael. Colonized by 120 pairs in 1921. 12. Raeburn Moss, Kirkpatrick Fleming. "Hundreds" in 1909-1910, 200 in 1914, 100 in 1921. 13. Stidriggs Back Moss, Kirkpatrick Juxta. Colonized 1920. 100 nests 1921. 14. Brocklehurst Moss, Mouswald. 200 nests 1909-1910, 600 in 1914, 50 in 1921. 15. Clonhie, Penpont. Colonized 1920. 6-20 nests 1921, 3 pairs 1932. 16. Shiel Loch, Penpont. Colonized 1917. 40-80 nests 1921. 17. Langbridge-muir, Ruthwell. Deserted 1914. 80 nests 1921. 18. Black Loch, Sanquhar. 200 nests in 1909-1910 and 1914, 100 in 1921. 19. Aird Loch, Tynron. 125 nests 1932. 20. Near Penbreek, Kirkconnel. Occupied 1932.

DESERTED COLONIES. 21. Langsawburn Loch, Eskdalemuir. 200 nests 1909-1910, 100 in 1914, 45 in 1921. Deserted 1925. 22. Cleughhead, Durisdeer. 160-180 nests 1909-1910, 3 in 1914, after which it was deserted. 23. Maryhill Loch, Durisdeer. 40-60 nests 1909-1910. Deserted 1911. 24. Black Loch, Kirkmahoe. 500 nests 1909-1910. Deserted by 1914. 25. Dhu Loch, Penpont. 800 nests 1909-1910. Deserted 1914. 26. Polvaird Loch, Sanquhar. Colonized 1917. Deserted 1920.

KIRKCUDBRIGHT.

OCCUPIED COLONY.

1. Kilquhanity Loch, near Kirkpatrick Durham. 50 pairs or less in 1938.

DOUBTFUL COLONIES. 2. Loch Kinda, New Abbey. Occupied in recent years. 3. Milton Loch, near Crocketford. Occupied in recent years. 4. Lochanhead Loch, near Dumfries. Occupied in recent years. 5. Loch Minnoch, 6 miles NW. of Dalry. 6. Black Loch. 7. Glentoo Loch. 8. Jordieland Loch. 9. Loch Moan.

WIGTOWN.

OCCUPIED COLONY.

1. Castle Loch. Colonized before 1913.

DOUBTFUL COLONIES. The following have been occupied within the past 10 years: 2. Loch Eldrig. 3. Barhapple Loch. 4. Loch Wayoch. 5. Dunskey Pond.

AYR.

OCCUPIED COLONIES.

Gray and Anderson (*Birds of Ayrshire*, 1869) state that there were then many stations but mention only Loch Doon.

E. R. Paton informs me that to-day there are Gulls on every hill, loch and reservoir throughout the county, but that they are persecuted too much to form large and permanent colonies. The following may be mentioned specifically :

1. Loudoun/Fenwick parish boundary. First nested 1894.
2. Dunton Reservoir. Founded 1900 with the formation of the reservoir. Increased enormously during the War, 1914-1918.
3. Hareshawmuir estate. At one time 2,000 pairs.
4. Loch Goyne.
5. Dunwan.
6. Loch Maberry.
7. Bogton Loch.

RENFREW.

OCCUPIED COLONIES.

1. Harelaw Dam, Neilston.
2. Little Loch, Mearns.
3. Binend Loch, Eaglesham.
4. Slaw Moss, Eaglesham.
5. Myres Hill, Eaglesham.

No information received from W. Renfrew. No counts were made at the above colonies in the east of the county, but great increase noted 1938.

DOUBTFUL COLONY. 6. Roebank Reservoir. Very large until about 1933, when steps taken to reduce the numbers.

DESERTED COLONIES. 7. Lochgoin, Eaglesham. Formerly fairly large, but abandoned owing to incessant egg-taking. Re-colonized 1935 but deserted again 1936. 8. Dunwan Dam, Eaglesham. Deserted 1935 or 1936 owing to deepening of reservoir.

LANARK.

OCCUPIED COLONIES.

1. Carnwath. A large colony. 2. Cranley estate, near Carstairs. Colonized many years ago. *c.* 200 pairs 1936, 80-100 pairs 1938.
3. Possil Marsh, near Glasgow. 1 pair 1935, +30 pairs 1937, 50-60 pairs 1938.

DESERTED COLONIES. 4. West of Craigengar Hill, near West Linton. Moved here from West Linton (Peebles) about 1919. Deserted 1937 owing to disturbance.

PEEBLES.

DESERTED COLONY. 1. White Moss, West Linton. Colonized 1878. *c.* 1,000 pairs 1902. Desertion commenced 1915 and was completed by 1919.

SELKIRK.

OCCUPIED COLONIES.

1. Haining Loch. Colonized before 1912.
2. Whitmuir Bog. A medium-sized colony.
3. A small loch on hill between St. Boswells and Selkirk.

ROXBURGH.

OCCUPIED COLONIES.

1. Hoselaw Loch. Colonized before 1893. A large colony.
2. Yetholm. Colonized before 1893. A large colony.
3. Ancrum Moss. Colonized before 1912. A large colony.
4. Kingside Loch, near Craik.

Miss Rintoul, who visited this area in 1938, found the birds more numerous than ever and states that there must be thousands nesting in the Scottish part of Tweed.

DOUBTFUL COLONY. 5. Adderstonelee Moss, a few miles south of Hawick. *c.* 50 pairs 1901.

DESERTED COLONIES. 6. Riddell, near Lilliesleaf. A good-sized colony founded many years ago. Deserted about 1928 owing to tree planting.

BERWICK.

OCCUPIED COLONIES.

1. Dowlaw, near St. Abbs. This colony has shifted from time to time between Coldingham Loch and Redheugh. 20-40 pairs 1886, 150 pairs 1920, 250-300 pairs 1933. Fairly large 1938.
2. Everett Moss. Colonized before 1895. A large colony.
3. Bemersyde Loch. Immemorial. *c.* 1,500 pairs 1895. Still a large colony.
4. Whitrig Bog, adjoining Bemersyde. Colonized by 1906.

DESERTED COLONIES. 5. Billie Mire. 6. Dogden Moss. 7. Corsbie Bog. 8. Redpath Bog. 9. Hen Poo, near Duns.

The above five colonies were all deserted before 1895.

EAST LOTHIAN.

DESERTED "COLONY." No colonies are known to exist, but a stray pair bred in 1927 at the mouth of the River Tyne.

MIDLOTHIAN.

OCCUPIED COLONIES.

1. Fala Flow. Colonized before 1885 when it was a fairly large colony. Deserted for some years from 1897. 200-300 pairs 1915, very few 1919. 10-15 pairs 1933; 6-10 pairs 1938.
2. Auchencorth Moss. Is shown as "the Maw Moss" on a plan dated 1796. Not numerous in 1866, 800-1,000 pairs 1885, 13 nests 1894, 250 pairs 1920, 10 nests 1933, 50 pairs 1938.
3. Cobbinshaw Loch. 1,800 eggs taken in 1883. Decrease 1905. *c.* 250 pairs 1919, 500-750 pairs 1938.
4. Threipmuir Reservoir (Bavelaw). First seen 1905 or 1906, 250-300 pairs 1919, 6 pairs 1938. Have often nested in stunted firs as well as on ground here.
5. Harperrig Reservoir. Nests plentiful in 1882; 250 pairs 1915; 30 pairs 1919, 50-60 pairs 1934, 150-200 pairs 1938.
6. Bawdy Moss, above Crosswood. Colonized 1916 or 1917; but deserted. Subsequently returned and in 1933 750-1,000 pairs. Only *c.* 100 pairs 1938.
7. Moss between Cobbinshaw and Crosswood. 150 or more pairs found in 1933. 12-15 pairs 1938.

DESERTED COLONIES. 8. Rosebery Reservoir. Colonized 1920 or earlier; a great increase 1925; 15-20 pairs 1933, none 1938. 9. Marsfield Loch. 3 nests 1894. 10 in 1925 when none had nested for years. One nest 1933.

WEST LOTHIAN.

OCCUPIED COLONIES.

1. Crane Loch. 12-15 pairs in 1938.

DESERTED COLONIES. 2. Bathgate Water and Balbardie Loch. Occupied about 1845.

FIFE.

OCCUPIED COLONY.

1. Tentsmuir. Colonized about 1902, marked increase 1913. 3,500-4,000 pairs 1936, 2,000 pairs on Earlshall section 1938.

DESERTED COLONIES. 2. Tulliallan Loch. Some time prior to 1885 on an island now submerged. 3. Otterston. Sporadic nesting in first decade of present century. 4. Kilconquhar Loch. 1 nest 1919. 5. Millar's Loch, Lomond Hills. 40-50 pairs 1919, probably an offshoot from Loch Leven. 6. Loch Glow, Cleish Hills. An occasional offshoot from Loch Leven. 7. Lindores. A few pairs for a year or two.

KINROSS.

OCCUPIED COLONY.

1. Loch Leven. Records of occupation in 1772 and 1793. Later deserted and none breeding there about 1890. Returned probably about 1905. Large colony 1908, 500-750 pairs 1913, more numerous than ever 1919 and continues to flourish.

STIRLING.

OCCUPIED COLONIES.

- (1. Flanders Moss—see Perthshire.)
2. Moor between Fintry and Lennoxton. Fair-sized colony in 1934. 50 pairs 1938.
3. Darnrigg Moss, Slamannan. *c.* 250 nests 1938.

DOUBTFUL COLONIES. 4. Gartmore Moss, near Aberfoyle. Occupied 1936, largely but perhaps not completely deserted 1937 and 1938. 5. Donovan Moss, Denny. *c.* 100 pairs 1928.

DESERTED COLONIES. 6. Loch Coulter. A small colony deserted in the 1860's. 7. Bog above Duchray Castle, near Aberfoyle. Colonized 1930, deserted 1936.

PERTH.

OCCUPIED COLONIES.

1. Flanders Moss. East Flanders Moss, including Cardross Moss, is in Perth; West Flanders Moss is in Stirling. A colony used to exist on the Moss but was deserted about 1840. Breeding on East Flanders Moss 1879; 1,500-2,000 pairs 1896 and increased rather than decreased up to 1919. Still very numerous 1927 and 1933. Several thousand pairs 1938, having perhaps decreased over last five years.

On West Flanders Moss *c.* 100 pairs 1896 and 1897, decreased owing to persecution, but over 100 pairs again 1920.

2. Loch Letter, near Loch Ruskie. Colonized 1937, increased to *c.* 1,000 pairs 1938.
3. Loch Mahaick near Doune. 250 pairs 1886, *c.* 500 pairs 1920. Still plentiful 1927.
4. Stormont, near Blairgowrie. Colonized 1912 or earlier. 300 pairs 1931, 150 pairs 1938.
5. Haremyre, near Blairgowrie. Colonized 1918 or earlier. 300 pairs 1931, 100 pairs 1935, 400 pairs 1938.

6. Huntingtower, W. of Perth city. Colonized 1920 or earlier. 40 pairs 1938.

7. Redmyre, SE. of Lochendores. Colonized before 1912. 150 pairs 1913, 250 pairs 1925, 20 pairs 1938.

8. Small loch E. of Dunsinane Hill, near Perth. Colonized 1920 or earlier. 80 pairs 1938.

9. Bandirran swamp, Balbeggie. Reported to have been there always. 800 pairs 1930-1938.

10. Seamaw Loch, Balbeggie. Reported to have been there always. 800 pairs 1930-1937, 500 pairs 1938.

11. Garth estate, S. of Schiehallion. Colonized 1900 or earlier, 8 pairs 1938, but formerly many more. Decrease due to egg collecting by keepers.

12. Southern slope of Ben Lawers. Colonized 1926 or earlier. 2 pairs every year.

13 to 15. Bolfracks estate, W. of Aberfeldy. Colonized 1914 or earlier. Three colonies in 1938 containing (i) 100 pairs; (ii) 200 pairs; (iii) 60-80 pairs.

16. Loch na Larich (borders of Foss and Castle Menzies estates). Colonized 1938 by 30 pairs.

17. New loch on Castle Menzies estate formed in 1936. Colonized 1938 by 2 or 3 pairs.

18. Loch Oil, Moness estate. Colonized 1912 or earlier. 100 pairs 1938.

19. Loch Formal, Moness estate. Colonized 1912 or earlier. 60 pairs 1938.

20. Finnart, Dall estate. Colonized 1905, or earlier, 350 pairs 1923, 100 pairs 1937, 60 pairs 1938.

21. Morenish estate. Colonization date unknown. 12 pairs 1938.

22. Island in west end of Loch Tay. Colonization date unknown. 12 pairs 1938.

23 to 25. Blair Atholl. Three colonies occupied for over 50 years. In 1938 (i) 200 pairs; (ii) 400 pairs; (iii) 500 pairs.

DOUBTFUL COLONIES. 26. Hill loch north of east end of Loch Tummel. Colonized 1921 or earlier; 150 pairs 1937. No 1938 information.

The following sites have been occupied from time to time by small colonies of say 10 pairs, dependant in part perhaps on the amount of disturbance at the regular colonies.

27. Clunie. 28. Curran, Strathardle. 29. Pilcarmich, Strathardle. 30. Moraig, near Blair Atholl. 31. Eigheach, west of Loch Rannoch. 32. White Mire of Methven. In occupation about 1906.

DESERTED COLONIES. 33. Lochandaim, SE. of Kinlochranoch. Colonized 1921 or earlier. 200 pairs 1928. Driven away 1935 or earlier.

34. Dupplin, SW. of Perth. Colonized 1921 or earlier. Driven away about 1933. 35. Near Crieff. A "huge" colony deserted 1936.

ANGUS.

OCCUPIED COLONIES.

1. Lochendores, S. of Coupar Angus. Colonized 1912 or earlier. 250 pairs 1923, 450 pairs 1924, 60 pairs 1937, 250 pairs 1938.

2. Duns Dish, about 3 miles NE. of Brechin.

DOUBTFUL COLONIES. The following sites are occupied from time to time by small colonies of say 10 pairs in part perhaps dependent on the amount of disturbance at the regular colonies: 3. Rescobie.

4. A hill pond E. of Lochendores.

ABERDEEN.

OCCUPIED COLONIES.

1. Belfatton Moor, near New Leeds. Colonized many years ago. Over 50 pairs 1938.
2. Mennie, N. of Aberdeen. A large colony.
3. Black Dog, N. of Aberdeen on coast. Not very large.
4. Newburgh, N. of Aberdeen on coast. Large colony.
5. Dess Bog, Deeside. A large colony.
6. Loch Coull, N. of Aboyne, Deeside. Fairly large colony.
7. Loch of Auchlossan, near Aboyne. Formerly a large colony but dried up about 1859 and was deserted until the War of 1914-1918 when neglect of ditches caused the loch again to be formed.
8. Loch of Braeroddach, W. of Aboyne. Colonized after the desertion of Loch of Auchlossan about 1859. Very large for many years, but now largely left in favour of the following three colonies.
9. Loch Davan, near Dinnet, Deeside. Colonized many years ago. Over 200 pairs 1938.
10. Near Ordie, near Dinnet. Colonized in recent years. Now very large.
11. Loch Kinnord, near Dinnet. Colonized in recent years. *c.* 500 pairs 1938.

DOUBTFUL COLONY. 12. Corby Loch, near Aberdeen. Colonized before 1900.

DESERTED COLONIES. 13. Loch of Strathbeg. Very old colony. Deserted within last two or three years through disturbance and egg-taking. 14. Uppermill Pond, near Kintore. Colonized 1861 by 2 pairs. Numbered *c.* 7,000 in 1902. Has been drained in recent years, and completely deserted.

MORAY.

OCCUPIED COLONIES.

1. Loch Spynie. Colonized 1895 or earlier. *c.* 500 pairs 1938.
2. Loch of Cotts, 4 miles NE. of Elgin. *c.* 150 pairs 1938.
3. Speyslaw Loch, 5 miles ENE. of Elgin. *c.* 100 pairs 1938.

DOUBTFUL COLONIES. 4. Pictarnie's Loch, Darnaway Forest, near Forres. Colonized before 1847. Occupied 1936. 5. Loch Annoir. Mentioned in *Fauna of the Moray Basin* (1895). 6. Islands in the Spey, near Orton. Colonized since 1905. Large number nesting 1936.

NAIRN.

OCCUPIED COLONIES.

1. "Nesting on almost all the little lochs on the moors in 1937"—Misses E. V. Baxter and L. J. Rintoul.

DOUBTFUL COLONIES. 2. Loch of Belivat. Colonized 1847 or earlier. 3. Loch of Boath. Colonized 1895 or earlier. 4. Dulsie Forest. Colonized 1895 or earlier.

INVERNESS. (*See also Outer Hebrides.*)

OCCUPIED COLONIES.

1. Dalfaber Farm, near Aviemore. Many years ago a big colony; *c.* 50 pairs 1938.
2. Loch a Gharbh-chorie, near Aviemore. *c.* 200 pairs 1938.
3. Loch Gynack, 2 miles from Kingussie. 200 nests 1938.
4. A roadside loch a few miles S. of Newtonmore. Small colony.
5. Loch beside Carrbridge-Grantown road.
6. Loch near Loch Askie.

7. Loch near Geadas, at SW. corner of Loch Duntelchaig. *c.* 70 pairs 1938.

Spycyside colonies have been in existence since before 1895.

8. Loch near Nethybridge. *c.* 150 pairs 1938.

DOUBTFUL COLONIES. 9. Loch Dallas, 2 miles S. of Boat of Garten. *c.* 40 pairs 1929. 10. Loch Kinellan.

ARGYLL.

OCCUPIED COLONIES.

1. Tangie Loch, Mull of Kintyre. Colonized 1928 or earlier. Still flourishes.

2. Loch Tromlee. Small colony.

DOUBTFUL COLONIES. 3. West Loch Tarbert. Has bred. 4. Loch nan Torran, Knapdale. Occupied within the last ten years. 5. Loch Gorm, Islay. 6. Loch na Beinne, Islay. 30-40 pairs in 1936.

DUMBARTON.

OCCUPIED COLONIES.

1. Fannyside Loch, 6 miles SW. of Falkirk. Colonized 1898 or earlier. *c.* 2,000 nests 1938.

DOUBTFUL COLONIES. 2. Inchmoan Island on Loch Lomond. Great numbers used to breed. 3. Loch Humphrey. Large colony many years prior to 1875, several hundred in 1890. 15-30 pairs 1918 to 1920. 4. Fyn Loch. Colonized about 1890. 30 pairs 1907 and 1914, more in 1921. 5. Burncrooks Reservoir. Colonized 1917, considerably increased by 1921. 6. Strathleven Moor. First reported 1919, large number 1921. 7. Craigmaddie, near Milgavie. Had increased to over 400 pairs 1921. 8. Baker Loch. A few pairs 1921. 9. Loch Lily. Formerly prosperous colony reduced to one pair 1921. 10. Carbeth Loch. Stated in 1921 to have bred occasionally 1910-1918. 11. Cochno Loch. Few dozen pairs about 1881 and over 50 pairs about 1893. One pair 1921. 12. Edinbarnet Loch. Colonized 1890. In 1916-1917 most of the birds went to Black Linn. 13. Black Linn. Colonized 1915 or earlier. Numerous 1918, only one pair 1920 and 1921. 14. Gilshaw Loch. Colonized 1915 or earlier. 60-70 pairs 1921.

BUTE.

DESERTED COLONY. 1. The Plan. Colonized about 1922. *c.* 300 pairs 1932. Last occupied 1935.

ROSS. (*See also Outer Hebrides.*)

OCCUPIED COLONIES.

1. Loch Luichart.

DOUBTFUL COLONIES. 2. Near Alness, between Dingwall and Bonar Bridge. 50-60 pairs 1927. The next three are taken from Gurney (1918): 3. Gruinard Island. 4. Tain Hill, near Fearn. 5. Strathglass. Several colonies.

DESERTED COLONIES. Gurney quoting from Harvie Brown and Macpherson *A Fauna of the North-West Highlands and Skye*, 1904: 6. Gairloch. "Nested 1888 on small islands, but apparently do not do so now or anywhere in Applecross."

SUTHERLAND.

OCCUPIED COLONIES.

1. Lochan Iain Bhuidhe, between River Fleet and Strath Carnaig. Colonized before 1934. *c.* 75 pairs 1938.

2. Loch nan Ubhlan, close to Lochan Iain Bhuidhe. Colonized before 1934. *c.* 10 pairs 1938.

3. Dornoch Firth, $4\frac{1}{2}$ miles ESE. of Bonar Bridge. *c.* 150 old and young birds together, 1938.

4. Dornoch Sands and Dornoch rifle range. A few scattered pairs annually since 1926 or earlier.

5. Skibo, near Dornoch. Colonized 1923 or earlier.

6. Two lochs above Lairg. Nest plentifully.

7. Loch Shin. Nest on some of the islands.

In 1887 said to be common on the east coast, rarer on the west.

DOUBTFUL COLONIES. 8. Loch Caladail, Durness, small colony on islet, 1935. 9. Badcall Islands, off coast. 30 pairs 1927. 10. Loch Doula. Occupied in last 10 years. 11. Loch Tigh na Creige. Occupied in last 10 years. 12. Loch Borrolaigh. Recorded by Gurney. 13. Near Bettyhill. Recorded by Gurney.

CAITHNESS.

OCCUPIED COLONIES.

1. Westfield Bog, near Thurso. "Huge" in 1931.

2. Brubster, near Thurso. "Enormous" in 1931.

3. Dubh Lochs, near Shielton. Scattered groups.

DOUBTFUL COLONIES. 4. Loch Calder, near Thurso. Small colony 1927. 5. Loch Olginey, near Thurso. Small colony 1927. 6. Loch Stemster. Gurney records a large colony.

OUTER HEBRIDES.

OCCUPIED COLONIES.

South Uist, Inverness :

1. Loch a'Mhachair, near Grogary Lodge. *c.* 20 pairs 1938.

2. Loch Druidibeg, near Grogary Lodge. *c.* 20 pairs 1938.

3. West Loch Bee. *c.* 20 pairs 1938.

4. Loch Kildman. A few pairs 1938.

5. Loch Ollay. Occupied in 1906. 100 pairs or less 1938.

6. Oban, near Caman P.O. 10-15 pairs 1938.

7. Loch Hallan. A few pairs 1938.

8. Loch Snigisclett. A few pairs 1938.

Benbecula, Inverness :

9. Loch nam Faoiléann, near Market Stance. 40-60 pairs 1938.

10. Loch Bail'fhionnlaidh, Nunton. One pair 1938.

North Uist, Inverness :

11. Boreray. 120-200 pairs 1938.

12. Loch Nighe. 2 pairs 1938.

13. Oban nan Steamain. 10-12 pairs 1938.

14. Islet near Cladach Baleshare. 15-20 pairs 1938.

15. Luigay. 5-10 pairs 1938.

16. Bru Hernish. 15-25 pairs 1938.

17. Balranald Bog. 300-500 pairs 1938.

18. Swamp near Langass. 3-4 (?) pairs 1938.

19. Loch Dusary. 4-5 pairs 1938.

20. Oban a'Chlachain. 3-4 pairs 1938.

North Uist was colonized 1888 or earlier.

(*Harris*.—No colonies seen 1938.)

Lewis, Ross.

21. Swamp near Branahuie. 50 pairs or more 1938.

DOUBTFUL COLONIES. 22. Barra; on small islet. 6-8 pairs 1895.

23. North Uist, Loch near Carinish. 24. Lewis. Loch near Eoropie.

25. South Uist, Coopers Loch. Small colony 1906.

ORKNEY.

OCCUPIED COLONIES.

1. North Ronaldshay. Colonized 1891 or earlier. 100-200 pairs 1938.

DOUBTFUL COLONIES. 2. Damsay. Colonized 1891 or earlier.
3. Eynhallow. Colonized 1891 or earlier. 4. Pomona. Colonized 1891 or earlier. 5. Loch Stennis. A few pairs 1905.

SHETLANDS.

OCCUPIED COLONIES.

1. Lang Lochs and Flossy Loch, Lerwick Landward. Probably hundreds of pairs. Colonized 1928 or earlier.

2. Loch of Kirkabister, Nesting. Colonized 1910-1912. Probably hundreds of pairs.

3. Loch of Culswick, Sandsting. Colonized 1916 or 1917. Probably hundreds of pairs 1938.

4. Loch of Brow, Dunrossness. Colonized 1887 or earlier. 20 pairs 1890.

5. Bog near Loch of Strand, Tingwall.

6. Loch of Tingwall, Tingwall.

7. Loch of Girlsta, Tingwall.

8. Loch of Strom, Whiteness.

9. Loch of Benston, Nesting.

10. Swamp at Vadill of Skellister, Nesting.

11. Small island off Lingness, Nesting.

12. Loch of Burga Water, near Vidlin, Lunnasting.

13. Loch of Housa Water, Sandsting.

14. Loch of Sinna Water, Northmavine.

15. Small lochs SE. of Bjorgs of Skelberry.

16. Loch of Flatpunds, near Walls. Colonized 1928 or earlier.

J. Peterson who sent the above list states that it is by no means complete and that the bird nests all over Shetland where conditions are suitable—for example, within a radius of five miles of Flatpunds there are possibly a hundred small freshwater lochs, all affording nesting sites for odd pairs.

DOUBTFUL COLONIES. 17. Houllma Water, Sandsting. Colonized 1895 or earlier. Occupied in last 10 years. 18. Bog between Loch of Belmont and Loch of Snarravoe, Unst. *c.* 40 pairs 1931.

DESERTED COLONY. 19. Loch of Clickimin, Lerwick Burgh. Deserted about 1928. Formerly *c.* 200 pairs. Desertion caused by invasion of Herring-Gulls.

INFORMANTS: W. B. Alexander, Miss E. Archer, J. Bartholomew, Miss E. V. Baxter, H. Boase, R. W. Calvert, Dr. J. W. Campbell, F. S. Chapman, R. Chislett, P. A. Clancey, E. Cohen, Sir I. Colquhoun, D. Fergusson, R. Y. Ferguson, H. S. Gladstone, F. G. S. Graham, Miss D. Hamilton, S. B. Hewitt, P. A. D. Hollom, A. H. Johnson, Rev. F. C. R. Jourdain, H. Kenrick, N. B. Kinnear, D. G. Laidlaw, J. M. D. Mackenzie, J. M. McWilliam, P. Maxwell, Midlothian Ornithological Club, A. P. Millard, Rev. R. I. Mitchell, J. Moffat, D. I. Molteno, Capt. G. Wolfe Murray, E. M. Nicholson, C. Oldham, E. R. Paton, J. Peterson, O. J. Pullen, W. Rennie, Miss L. J. Rintoul, G. L. Sandeman, P. W. Sandeman, G. D. Sprott, Col. A. R. Trotter, G. Waterston.

IRELAND.

FERMANAGH.

OCCUPIED COLONIES.

- 1-2. Upper Lough Erne. Colonized 1918 or earlier. Two colonies of 100 or more pairs.
3. Gull Island, Lower Lough Erne. Colonized long before 1925. Many hundreds in 1938.
- 4-5. Lower Lough Erne. Small colonies on little islands.

TYRONE.

OCCUPIED COLONIES.

1. Scaddy Island, Lough Neagh. Colonized 1930 or earlier. 1,200 pairs 1937, 1,000 pairs 1938.
 2. Kinturk Flat, Lough Neagh. Colonized before 1908. *c.* 500 pairs 1938.
 3. Lough na Tarpogue, between Mountfield and Carrickmore. Colonized before 1908.
 4. Snnagh Lough, near Drumquin. Colonized before 1908.
 5. Lough Patrick, near Beragh. Colonized before 1908.
- DESERTED COLONY. 6. Washing Bay, Lough Neagh, W. of Maghery. Consisted of 2,000 pairs or more. Last occupied 1923.

ARMAGH.

OCCUPIED COLONIES.

1. Reedy Island, Derry Crow, Lough Neagh. Colonized 1922 or earlier. 200 pairs 1925, *c.* 2,500 nests 1934-1937, but *c.* 1,000 in 1938; decrease attributed to rats.
2. Bird Island, Lough Neagh. A large colony.
3. Coney Island, Lough Neagh. A large colony formed since 1930.

DOWN.

OCCUPIED COLONIES.

1. Mow Island, 2-3 miles off coast. Colonized 1930 or earlier. 50-60 pairs.
2. Sheelah Island. A marine island colonized 1936. Very small colony.
3. Strangford Lough. A marine island.

ANTRIM.

OCCUPIED COLONIES.

1. Rams Island, Lough Neagh. Colonized 1851 or earlier. 30 pairs 1922, 100 pairs 1938.
2. Tolans Flat, Lough Neagh, near Aghalee. Colonized 1937 or earlier. 300 pairs 1937.
3. Two islets in Lough Neagh, near Toome; *c.* 10 pairs on the larger and 3 or 4 pairs on the smaller.
4. Garrybog, near Ballymoney. Colonized before 1898; then *c.* 50 pairs, now thousands.
5. Lough Beg. Colonized 1932 or earlier. 4 sites of 50-100 pairs each.
6. Lough Naroon, Long Mountain, near Dunloy. Colonized before 1908.
7. Cozies Bog, near Liscolman. Colonized before 1908.
8. Frocess Bog between Ballymoney and Ballymena. Colonized before 1908.
9. Moorland above Carnlough. Colonized before 1908.
10. Ballin Bog. Colonized 1929. 10 pairs 1938.
11. Buckha. Colonized 1935. *c.* 8 pairs 1938.
12. Rathlin Island. A marine island. Colonized 1932 or earlier. 100 pairs 1938.

DESERTED COLONY. 13. Feather Beds, Kilwaughter. Formerly large; deserted 1933.

LONDONDERRY.

OCCUPIED COLONY.

1. Lough Patrick, near Draperstown. Colonized before 1908. c. 100 pairs 1938.

KERRY.

DOUBTFUL COLONIES. The following were mentioned by Gurney: 1. Beginish in Blasket Islands. 2. Castleisland district. 3. East of Tralee.

G. R. Humphrey's *List of Irish Birds*, 1937, states "nests on some marine islands off Kerry."

CORK.

OCCUPIED COLONY.

1. Kilcoleman Bog, Buttevant. Colonized 1918. Over 300 pairs 1938.

TIPPERARY.

DOUBTFUL COLONY. 1. Bog of Kilsheelan. Mentioned by Gurney.

LIMERICK.

DOUBTFUL COLONY. 1. Lough Gurr. Colonized 1903 or earlier. Mentioned by Gurney.

CLARE.

DOUBTFUL COLONIES. 1. Cullam Lake. Mentioned by Gurney. 2. Tullymachen. Colonized about 1914; mentioned by Gurney.

LEIX (QUEEN'S COUNTY).

OCCUPIED COLONY.

1. Coolnsfeara Bog, near Portarlinton. Colonized 1932 or earlier. Many nests.

GALWAY.

OCCUPIED COLONIES.

1. Andserd Lough, Connemara. Enormous colony 1938.
2. Lough Truskar, Connemara. Enormous colony 1938.
3. Lough Corrib. Mentioned by Gurney. Small colony 1938 on islet at mouth of Oughterard river.

DOUBTFUL COLONIES. 4. Lough Mask. Mentioned by Gurney. 5. Lough Derg. Mentioned by Gurney. 6. Tootoge Rock, Lough Corrib, near Cornamona, c. 332 nests 1934. 7. Booeey, Lough Corrib, near Cong. c. 10 pairs 1934. 8. Maunaknick Islands, Lough Corrib, near Cornamona. Small colony 1934.

OFFALY (KING'S COUNTY).

DOUBTFUL COLONIES. 1. Monettia Bog. Shifted here in 1898 from Killeemore Bog. Mentioned by Gurney. 2. Raheenlough. Mentioned by Gurney.

WESTMEATH.

DOUBTFUL COLONIES. Large colonies are mentioned by Gurney: 1. Lake of Ennel. 2. Lake of Owel. 3. Dereveragh.

ROSCOMMON.

DOUBTFUL COLONIES. 1. Just west of Athlone. Occupied 1934. 2. Lough Key. Mentioned by Gurney. 3. Lough Ree. Mentioned by Gurney. 4. By railway about 2 miles E. of Ballinasloe station. c. 40 nests 1934.

MAYO.

OCCUPIED COLONIES.

1-2. Gortmore and Derreen Islands, Lough Carrowmore, near Bangor. Colonized 1933 or earlier. *c.* 40 pairs 1938.

3. Ballin Lough, near Westport. *c.* 50 pairs 1938.

4. Lough Cullen. Very dense colony on Griffin Island 1932. *c.* 200 nests 1938.

5. Termoncarragh Lough. Large colony 1924, small colony 1933, also occupied 1934.

DOUBTFUL COLONIES. 6. Lough Nash. Enormous colony 1928. 7. Urlaur Lough. Large colony 1932. 8. Mannin Lough. Large colonies on islands 1932. 9. Bartragh Lough, near Killala. Occupied in 1934. 10. Lough Conn. Mentioned by Gurney. *c.* 150 pairs 1933. 11. Lough Carra. Mentioned by Gurney.

DESERTED COLONY. 12. Rathroeen Lough. Deserted some years prior to 1932.

SLIGO.

DOUBTFUL COLONIES. The following were mentioned by Gurney:

1. Lough Gara. Colonized 1903 or earlier. 2. Lough Arrow.

3. Lough Gill.

LEITRIM.

DOUBTFUL COLONY. 1. Lough Allen. Colonized 1903 or earlier. Mentioned by Gurney.

CAVAN.

DOUBTFUL COLONY. 1. Lake near Shercock. Occupied 1851. Mentioned by Gurney.

DONEGAL.

DOUBTFUL COLONIES. 1. Lough Keel. 12-15 pairs in 1931-32. 2. Lough Derg. Mentioned by Gurney. 3. Kenny Lough. Mentioned by Gurney. 4. Garton Lake. Mentioned by Gurney. 5. Portlough. Mentioned by Gurney. 6. One part of the Donegal coast.

INFORMANTS: H. H. Barry, J. A. Benington, W. G. Byron, Capt. E. G. Case, C. D. Deane, H. F. I. Elliott, T. B. Graham, S. Henry, G. R. Humphreys, R. Kane, S. Marchant, E. M. Nicholson, E. O'Mahony, C. Oldham, A. R. M. Palmer, Maj. R. F. Rutledge, J. A. S. Stendall, L. J. Turtle, C. A. Webb.

NOTES ON BIRDS SEEN ON A VOYAGE TO THE WEST INDIES AND BACK.

By

W. R. PHILIPSON.

WHEN I was appointed by the Trustees of the British Museum to join the Cambridge University Expedition to Jamaica as systematic botanist I took the opportunity afforded by the outward and return voyages to watch for oceanic birds. We sailed from West India Dock on July 15th, 1939, reaching Kingston, Jamaica, on July 27th.

The return voyage was slower owing to wartime conditions ; beginning on September 15th, we reached the Straits of Dover on October 1st. It is interesting to compare these notes with those made by E. M. and B. D. Nicholson in 1929 over a very similar course and published in this journal (*antea*, Vol. XXIV, pp. 266-74). The notes published by L. S. V. Venables (*antea*, Vol. XXXIII, pp. 152-4) for the southern North Atlantic were made in the spring.

I have arranged the notes under three heads, namely, "Pelagic species," "Offshore species," and "Migrating land-birds." It is, perhaps, my records of these last, which were encountered in October, well out from both the American and European coasts, which are of greatest interest.

PELAGIC SPECIES.

NORTH ATLANTIC SHEARWATER (*Puffinus kuhlii*). Frequent on both voyages between the mouth of the Channel and the Azores, but more abundant at the end of September than in mid-July. The most easterly and most westerly records in July were 47°N., 21°W. and 39°30'N., 37°W. respectively; the corresponding records for September were 49°N., 6°W., and 42°30'N., 28°W. On September 28th (noon position 46°30'N., 18°W.) they were very abundant, groups of a dozen or even two dozen being seen, and at least one bird being always in view.

GREAT SHEARWATER (*P. gravis*).—On both voyages this species was mixed very sparingly with the preceding. On July 17th two were seen about 47°N., 15°W., on the 18th one at 45°30'N., 20°W., and on the 20th two others about 39°30'N., 37°W. On September 27th one was seen at 45°N., 22°30'W., and on the 29th three together at 48°30'N., 12°W. The bird's occurrence in this region in July is interesting as V. C. Wynne-Edwards (*Proc. Boston Soc. Nat. Hist.*, Vol. XL, 1935) does not record them from here until October.

SOOTY SHEARWATER (*P. griseus*).—Seen only on the return voyage, one on September 27th at 45°30'N., 21°30'W., and five or six throughout the 28th (noon position 46°30'N., 18°W.)

FULMAR (*Fulmarus glacialis*).—One bird on September 26th at 43°N., 27°W.

STORM-PETRELS.—These birds were present between the Azores and the English Channel on both voyages. I was unable to determine if the Storm-Petrel (*Hydrobates pelagicus*) or Wilson's Petrel (*Oceanites*

oceanicus) or both were represented. On the return voyage fewer were seen and they showed less tendency to follow astern. The eastern and western limits observed in July were 45°N. , 21°W. , and $39^{\circ}30'\text{N.}$, 37°W. ; and in September the corresponding records were $48^{\circ}30'\text{N.}$, 12°W. , and 43°N. , 27°W.

LEACH'S FORK-TAILED PETREL (*Oceanodroma leucorhoa*).—I was able to distinguish this petrel by its larger size and erratic flight. It was only seen on the outward voyage and had a more westerly range than the preceding. The first was seen on July 20th at $39^{\circ}30'\text{N.}$, 37°W. , and on the following day three were seen about $37^{\circ}30'\text{N.}$, 42°W.

KITTIWAKE (*Rissa tridactyla*).—One immature bird was seen on September 28th at $46^{\circ}30'\text{N.}$, 18°W.

YELLOW-BILLED TROPIC BIRD (*Phaeton lepturus*).—In July one was seen on the 20th near Flores ($37^{\circ}30'\text{N.}$, 42°W.) and one the day before we reached the West Indies ($25^{\circ}30'\text{N.}$, $65^{\circ}30'\text{W.}$). In September one was seen on each of the first four days after leaving the West Indies behind. This bird is more frequent among the islands, that is, in the offshore zone.

GREAT SKUA (*Stercorarius skua*).—Seen only on the return voyage at the end of September. The first were sighted on September 28th. about $46^{\circ}30'\text{N.}$, 18°W. , but from there no more were seen until near the Lizard.

POMATORHINE SKUA (*S. pomarinus*).—Two on September 28th about $46^{\circ}30'\text{N.}$, 18°W.

ARCTIC SKUA (*S. parasiticus*).—One south of Cape Clear on September 29th.

It is worth remarking how these notes confirm once more the scarcity of birds between the Azores and the West Indies. Apart from Tropic-Birds the only birds seen in the Western Ocean were the Leach's Petrels, and on several days no birds at all were seen.

OFFSHORE SPECIES.

European Side : The last species to be seen when outward bound in July were Lesser Black-backed Gulls (*Larus fuscus*) and Herring-Gulls (*L. argentatus*), which left us at nightfall on the 16th, when we were heading into half a gale ($48^{\circ}30'\text{N.}$, 8°W.). During the afternoon and evening we passed several Gannets (*Sula bassana*), two Manx Shearwaters (*Puffinus puffinus*), and a Puffin (*Fratercula arctica*). On the return voyage the first offshore species seen was a Gannet at $48^{\circ}30'\text{N.}$, 12°W. , on September 29th; Gannets were very abundant between the Bishop and the Lizard. The following species were seen before we sighted land in the order given; Lesser Black-backed Gull, Manx Shearwater, Herring-Gull, and Puffin. West Indies : The following species were seen near Turk Island and Tortuga : Bridled Tern, Brown Booby and Frigate Bird. On the Jamaican coast were, in addition, Brown Pelican, Laughing Gull, and some unidentified species of terns.

MIGRATING LAND-BIRDS.

(a) South-east of Bermuda : On September 19th we were held up owing to engine trouble some two hundred miles south-east of Bermuda. I was very interested to watch an American Barn Swallow (*Hirundo erythrogaster*) flitting around the ship before leaving southwards, and, a little later, an unidentified finch, which flitted across the deck and also departed southwards. We were then 1,000 miles from the nearest mainland (Carolina), and 1,200 miles south of Nova Scotia. These birds must have come from a point on the coastline somewhere

between these places, and had still 600 miles to travel if they made for Porto Rico, the nearest of the West Indies. The weather was beautifully fine and both birds in excellent condition. This fortunate chance points to a migration route of land-birds previously unsuspected, for it was thought that only such birds as the Golden Plover used this route to the south. The Barn-Swallow is listed as an occasional visitor to Bermuda by F. M. Chapman in his *Handbook of Birds of Eastern North America* (2nd edn., 1934, p. 384).

(b) Between the Azores and Sole Bank: On September 28th and 29th migrating birds were continually encountered. They were few in number but diverse in species. The movement lasted from 9 a.m. on the 28th until noon of the 29th, our positions being respectively 46°N. , 19°W. , and $48^{\circ}30'\text{N.}$, 12°W. On the 28th were seen Common Heron (*Ardea cinerea*), Whinchat (*Saxicola rubetra*), Dunlin (*Calidris alpina*), Redstart (*Phœnicurus phœnicurus*), and Robin (*Erithacus rubecula*); and on the 29th Song-Thrush (*Turdus ericetorum*), Common Sandpiper (*Tringa hypoleucos*), Greenfinch (*Chloris chloris*), and Blackcap (*Sylvia atricapilla*). When the first birds were sighted we were midway between Cape Clear and the Azores, that is about 500 miles south-west of Ireland, and very nearly as far west of Spain. These observations suggest a considerable migration direct from southern Ireland to the West African islands and Senegal.

THE SPECIES OF GREAT SHEARWATERS IN THE ENGLISH CHANNEL.

BY

H. F. WITHERBY.

THE GREAT SHEARWATER (*Puffinus gravis*).

MR. V. C. WYNNE-EDWARDS (*Proc. Boston Soc. Nat. Hist.*, Vol. 40, No. 4) thinks that recorded occurrences of this species in the English Channel may have referred to the species *Puffinus kuhlii* and he mentions especially one from Cornwall, January, 1872, described by D'Urban and Mathew as having pure white under-parts, but the describers also say it had a lightish brown cap and the identification as *P. kuhlii* seems extremely uncertain. The bird was evidently a stuffed one and if the brown belly patch was small, as it often is, it may not have been noticeable. Mr. Wynne-Edwards also thinks that J. Gatcombe's observations concerning birds (certainly *P. gravis*) obtained off Devon and Cornwall in November, 1874 (*Zool.* 1874, p. 4,262), indicate that previous examples may have been *P. kuhlii*, but it is clear that Gatcombe was comparing them with what he called "young birds in their first dark plumage," that is to say the Sooty Shearwater (*P. griseus*) which at that time was thought to be the young of the Great. E. H. Rodd in a note on the same page also describes birds with brown blotches on the belly as in the same plumage in which they usually appear. Further, Gatcombe (*op. cit.*, 1876, p. 5,127), in describing a bird taken off Plymouth in July, 1876, states that it had "scarcely a shade remaining of the dusky patch so conspicuous on the birds generally obtained at the beginning of winter." It seems clear, therefore, that these old records referred to *P. gravis*. Very few specimens of this species from S.W. England seem now available, but those in the Norwich Museum from Plymouth, December, 1852, August 20th, 1867, and Penzance, November, 1874, are *P. gravis*, as I am informed by Mr. B. B. Rivière, who has kindly examined them, while that figured by Yarrell, which was one of great numbers off Cornwall in November, 1839, is also *P. gravis*. Major A. A. Dorrien-Smith has a specimen taken off the Scilly Isles on August 9th, 1899, which is certainly *P. gravis*, and he obtained one, which he kindly sent to me, and saw others near the Bishop Rock Lighthouse on August 24th, 1939. Mr. P. H. Trahair Hartley informs me that when trawling near the Eddystone on September 19th, 1934, a number of Great Shearwaters amounting to about 40 in all passed his boat

at about fifty yards and from his description and particularly the distinct dark cap which he noted, these birds appear to have been *P. gravis*. It was from this date, September 19th (in 1901), until he left the Eddystone on October 19th, that W. Eagle Clarke records seeing Great Shearwaters almost daily and often in considerable numbers. He was a very excellent observer with much experience and I have no hesitation in accepting these as *P. gravis*.

There is then plenty of good evidence that *P. gravis* appears off the coast of S.W. England in August and September as well as later and there are some records of its occurrence on other parts of the south coast as, for instance, the two found dead in Kent and Sussex in November, 1938.

THE NORTH ATLANTIC AND MEDITERRANEAN SHEARWATERS (*Puffinus kuhlii borealis* and *P. kuhlii kuhlii*).

Except for one specimen of the Mediterranean picked up dead in Sussex in February, 1906, and one of the North Atlantic (Sussex, March, 1914), and possibly another Sussex specimen in November, 1920, we have to rest on a few sight observations of this species and therefore cannot define the subspecies, though the North Atlantic appears the one more likely to occur. In his paper above mentioned Mr. Wynne-Edwards records seeing a number of this species on September 10th, 1933, between the Casquets and Devon, and although he has informed me (*in litt.*) that he has since had some doubts about the correctness of his identification in this case, the birds were certainly not *P. gravis* and were more likely to have been *P. kuhlii* than any other species. The only other recorded instances are of one seen by Mr. C. M. N. White some way off Newhaven on September 21st, 1936 (*Brit. Birds*, XXX, pp. 229), and of some seen near the Scilly Isles by Mr. A. Farrant on August 23rd and by Mr. R. S. R. Fitter on September 5th and 10th, 1938 (*op. cit.*, XXXII, pp. 197 and 371). It must be said, however, that Mr. Farrant's identification is perhaps rather uncertain as he describes the under tail-coverts and vent as dark ash-brown whereas they are mostly white in *P. kuhlii* with very little brown. His other distinctions, however, point to this species. Mr. Wynne-Edwards suggested that more British taken specimens of *P. kuhlii* would come to light, but all the Great Shearwaters I have so far been able to trace have been *P. gravis* but these have not been many notwithstanding an appeal in the *Museums Journal*.

On our present knowledge, therefore, this species must be deemed very scarce off our coasts.

OBITUARY.
GEORGE MARPLES.

(1869-1939.)

THE unexpected death of George Marples has been a great shock to his many friends. He was indeed a man of many parts, and had built up a reputation as an authority on architecture, a painter, and above all an etcher, before he became known as a student of bird life, a bird photographer and a writer and lecturer on ornithological subjects. It is with the latter part of his career that we are concerned here, though many of his etchings were of subjects connected with animal life of some sort, especially birds and fishes. When he retired from the post of Principal of the Liverpool City School of Art in 1930, he made his home at Sway, in the New Forest, and began seriously to study and photograph birds. Concentrating on the Tern colonies in the British Isles, with some of which he was already acquainted, he and his wife planned out a round of visits to all the principal breeding stations, and also in order to make his work more complete, added trips to Holland and Denmark. The results of these studies were worked up into the delightful book on *Sea Terns or Sea Swallows* (in collaboration with his wife) which appeared in 1934. The many beautiful photographs with which this work is illustrated and the numerous diagrams and sketches by the author add greatly to its attractiveness, but the real value of the book lies in the long series of observations made from hides in the various terneries, the descriptions of display, family life, care of young and all the numberless details which make up the breeding cycle of these attractive birds. This part of the book will live; the compilations from literature and history are less satisfactory and detract from rather than add to its value.

The first note from George Marples on birds appeared in *British Birds* as far back as 1929 and from that time onward he contributed occasional notes and papers on different subjects, but all showing keen powers of observation and accurate recording. One on the Wren was actually in our hands at the time of his death on December 15th, 1939, and will appear in a future number. He was 70 years of age and leaves a widow and two sons, as well as a record of much good work accomplished in many fields.

F.C.R.J.

NOTES

CONTINENTAL BLUE TIT IN KENT.

ON November 22nd, 1929, I received a Blue Tit from the Sevenoaks Weald. This specimen which appeared paler and greyer on the back than British examples has since been compared with series from Continental Europe, which it matches perfectly. Mr. H. F. Witherby kindly examined the skin and agrees that it is referable to (*Parus caeruleus caeruleus*). The bird is a female, has a wing measurement of 67 mm. and is the first recorded instance for Kent.

JAMES M. HARRISON.

[It is of interest to note that an example of the Continental Blue Tit was obtained at Fair Isle on October 31st, 1929.—H.F.W.]

CONTINENTAL BLUE TIT IN RADNORSHIRE.

ON October 29th, 1939, whilst on a visit to the upper reaches of the River Wye, near Erwood, Radnorshire, I noticed a large movement of Siskins passing through the district, together with one or two small bands of Blue Tits. Having a good view of one of the latter it appeared to be so brightly coloured that I secured it.

It proved to be a freshly moulted adult male, with a wing measurement of just 69 mm. On comparing it with Welsh material in the National Museum of Wales collection I found it to be much more brightly coloured and with longer white tips to coverts and secondaries than any of the Welsh specimens.

Mr. H. F. Witherby has very kindly examined the specimen for me and confirms my suspicion that it is an example of the Continental race (*Parus c. caeruleus*). J. G. WILLIAMS.

ON BREEDING HABITS AND FEEDING FREQUENCY OF FLYCATCHERS.

DURING July, 1924, certain observations were made on a pair of Spotted Flycatchers (*Muscicapa s. striata*) which nested in a beech-tree in a garden in Cumberland. On July 2nd the nest held one egg. On July 4th there were three eggs and the hen brooded the eggs for about one hour at noon and again during the night. On the 5th there were four eggs (the clutch) and the hen was on the eggs most of the day. On the 6th the hen was off the eggs for three hours from 7 to 10 p.m. On July 14th the nest was kept under continuous observation

from 10 a.m. to 8.30 p.m. The hen was off the eggs twice each hour from 10 a.m. to 6 p.m., then once each hour. At 8.30 p.m. the cock took over the incubation. The cock usually fed the hen at the nest, but sometimes if the hen saw the cock with food in its beak, she would fly to him and get fed, sometimes returning direct to the eggs or else staying off for a few minutes. Whilst the hen was off the eggs the cock would stay on a branch near the nest until the hen returned. On the approach of the hen to the nest either it or the cock would call-out "tsit." The most the hen was fed in one hour was four times, 2 to 3 p.m. The average duration of the hen off the eggs was three minutes. Once she was off for twelve minutes.

On July 20th the four nestlings hatched out, incubation-period fifteen days (July 5th to July 20th). The nest was watched from 10.30 a.m. to 12.30 p.m., and during these two hours the nestlings were fed 7 times. They were brooded four times by the hen during this period, the longest period fifteen minutes, the shortest two minutes.

On July 21st the nest was under observation from 2.45 p.m. to 5.45 p.m. In these three hours the nestlings were fed 19 times, five times by the cock, the rest by the hen. The nestlings' fæces was swallowed by the feeding bird. After feeding the nestlings were usually brooded for an average of nine minutes.

A brood of four young Pied Flycatchers (*Muscicapa h. hypoleuca*) was fed 12 times from 3 to 4 p.m. on June 19th, 1932.
R. H. BROWN.

CHIFFCHAFFS IN CORK IN WINTER.

DURING three weeks previous to January 12th, 1940, I have been watching Chiffchaffs (*Phylloscopus collybita*). On one occasion I counted eight, which appear to have taken up their winter quarters here (Clontymon, Cork). They are daily to be seen frequenting the sides of a disused railway embankment which is much overgrown in places with briars and rank grass and is within a mile of the city.

I have never before come on this bird wintering in Ireland, though it is sometimes reported to do so. C. F. SCROOPE.

[Ussher notes five winter records from Cork, but so many birds together is quite exceptional.—EDS.]

NUMBERS OF BLACK REDSTARTS ON PASSAGE IN MAN.

A CONSIDERABLE passage of the Black Redstart (*Phoenicurus o. gibraltariensis*) was noted in the Isle of Man in November, 1939; indeed, birds were seen in such numbers as to suggest

that the autumn west-coast movement is much more marked than has hitherto been thought to be the case.

The first bird, a solitary specimen, was watched by C. F. Butterworth on November 10th at Port St. Mary. On November 12th, in company with W. and H. A. Quillin and Lieut.-Commander J. Hughes-Onslow, I observed a small party of some six to eight birds about the lighthouse station and the adjacent coastal rocks of Langness Point. These were all either females or immature, and one found dead in the lighthouse garden on the 13th was sexed as an immature female. This bird was very heavily infested with the flea *Ceratophyllus gallinae* Schrank, kindly determined by H. Britten.

The birds had not been seen prior to the 12th, and possibly reached Man the previous night on a wind veering from south to north. With the exception of one bird which remained about the station for three weeks, being last noted by H. A. Quillin on December 5th and 6th, the party had dispersed by the 13th, but is unlikely to have gone far owing to the strong southerly winds and squally weather prevailing after that date. A bird noted by James Corrin at Port St. Mary between November 14th and 18th, and seen by C. F. Butterworth, as well as other birds noted by him a few days later in localities near by, belonged doubtless to the same movement.

Another bird seen by James Corrin on November 26th in all likelihood belonged to the heavy passage which was observed by R. Barton Mitchell, the National Trust Warden on the Calf of Man, from November 24th to the end of the month. R. B. Mitchell estimated the number of Black Redstarts to be seen along the usual routes taken by passerine migrants going through the Calf as in the region of 200-250 birds when passage was at its height. From the 28th there was a noticeable decline in numbers, and by the end of the month all had gone.

W. Quillin again came to my assistance with meteorological data, and the birds appear to have come in on a NW. wind at forces 3 and 4 which changed on the morning of the 25th to S. and SW., and continued at forces 6 and 7 until midnight. The wind was then W. at forces 6, 7 and 8 until the night of the 27th, but the birds do not appear to have made use of it in order to leave the island. However, the change to NW., forces 6 and 5, throughout the night of the 27th-28th, coincides with the diminution in numbers noted by R. B. Mitchell on the 28th.

I should be most grateful if any observers could let me have notes of occurrences, particularly those lasting for a period, of Black Redstarts along the west-coast route, as I am interested in the migratory movements of this species.

KENNETH WILLIAMSON.

ON INCUBATION AND FEEDING FREQUENCY OF SWALLOWS AND MARTINS.

A BROOD of four young Swallows (*Hirundo r. rustica*) fifteen days old, was fed 54 times between 1.50 p.m. to 3.50 p.m. on July 18th, 1931. The afternoon was fine and sunny. The cock and hen both helped to feed the young.

A nest of a House-Martin (*Delichon u. urbica*) was under continuous observation from 10 a.m. to 5 p.m. on July 11th, 1922, when the eggs were twelve days incubated. The sitting bird was off the eggs from 10.45 a.m. to 11.15 a.m., whilst at 5 p.m. the non-sitting bird flew close to the nest and warbled, whereupon the sitting bird flew out of the nest and the non-sitting bird took its place. This was the only definite change-over that was seen during the seven hours that the nest was under observation. Otherwise the non-sitting bird would fly into the nest — the most three times in one hour — and after a varying period of several seconds a bird would emerge, but whether this was the sitting bird could not be determined. Mr. and Mrs. Moreau state in their notes on the incubation of the House-Martin (*antea* p. 147) that this visiting is connected with the change-over of the sexes, but as regards this particular pair the definite change-over that took place at 5 p.m. suggests that the visits to the nest by the non-sitting bird may not always be in connexion with the change-over during incubation.

R. H. BROWN.

LARGE NUMBER OF WHOOPER SWANS IN NORTHUMBERLAND AND LANARKSHIRE.

WE have a large number of Whooper Swans (*Cygnus cygnus*) at Hallington this winter, and the following particulars may be of interest: On November 6th, 1939, Mr. G. W. Temperley saw 75, of which 23 were young birds in families of 2 to 4, and on the 18th Mr. Temperley saw 29 come in from the east in groups, one family containing 5 young. On the 19th Dr. Natrass and I counted 131 birds, of which 42 were young in broods as follows: 3 of 4 young, 6 of 3 young, 3 of 2 young, the remaining 6 young were with one adult, and I suppose may or may not have been one family. On December 3rd there were none present, but on the 17th

Dr. Natrass and I saw not less than 143 birds, of which 44 were young, but it was not possible to separate out the various families.

Apart from the number of birds, it is of local interest to note that Whoopers appear to be coming increasingly to Hallington Reservoir. Of more general interest is the size of the broods arriving in this country: the average number of young on November 19th was exactly 3 if one omits the problematical 6 which may have had some connexion with Mr. Temperley's 5 on the 18th. H. TULLY.

ON a large area of shallow water near Clyde Bridge, Motherwell, on December 10th, I counted 31 Whooper and 8 Bewick's Swans. These birds have visited exactly the same spot for a good number of years. As the Whooper flock is the largest I have ever seen here, I thought this might be of interest. Six of the Whoopers and two of the Bewicks were immature.

ROBERT Y. FERGUSON.

WHITE BARNACLE-GOOSE IN CUMBERLAND.

A WHITE Barnacle-Goose (*Branta leucopsis*) now in the Carlisle Museum, was obtained at Bowness-on-Solway, Cumberland, on November 9th, 1939, by two local wild-fowlers, Robert Brown and William Storey. It proved to be a male bird, and the day after it was shot weighed three pounds ten ounces.

The plumage is all white except that the upper parts show very faint silver-grey traces of the dark bands, the rump is silver-grey, and there is a terminal band similar in shade on the underside of the tail. The iris was the normal brown; the bill black; the legs and feet, showing a leaden tinge, not so dark as in the normal bird.

From the stomach contents Miss Winsome Muirhead of the Museum staff named sheep's fescue (*Festuca ovina*), meadow poa (*Poa pratense*), white clover (*Trifolium repens*) and autumnal hawkbit (*Leontodon autumnale*). There were other grasses not identified. *L. autumnale*, a plant not included under the description of food in the *Handbook*, grows abundantly on parts of the Solway salt-marshes.

This is the fourth white Barnacle-Goose obtained on the Solway Firth since 1925 and the first on the English side. It was seen at Bowness more than a week before it was shot, and a visitor to the Museum said that he had seen what was presumably the same bird at Glencaple on the Dumfriesshire shore of the Firth a month earlier. ERNEST BLEZARD.

COMMON EIDERS IN CHESHIRE.

ON November 1st, 1939, I watched six Eiders (*Somateria m. mollissima*) fly down to an inlet in the south bank of the Mersey at Birkenhead. After a week one was, I believe, shot, but the other five could be seen daily until November 9th, often within a few yards of men working in the shipyard; they used to move up and down the river with the tide for about a mile. I last saw one on November 13th—a drake in what I took to be second-year plumage. The occurrence of these birds and of the flock of ten reported by Mr. W. Wilson at the mouth of the Dee on November 19th (*antea*, p. 228) is unprecedented in Cheshire waters; there are four or five previous records of single birds in the county, but that is all.

A. W. BOYD.

PACKING OF BROODS AND "INJURY-FEIGNING"
OF VELVET-SCOTER.

ON August 10th, 1939, I saw off the island of Stora Karlsö, off Gotland in the Baltic, a remarkable pack of approximately ninety young Velvet-Scoters (*Melanitta f. fusca*) of assorted sizes in charge of one or more females. A few of the young birds were so nearly full-grown that I could not be certain at the range at which they were observed whether one or more than one adult females were present. Such packing of broods is very well known in Sheld-Duck, Eider and Merganser, but I have not found it recorded for the Velvet-Scoter.

It may also be worth recording that on August 6th a Velvet-Scoter duck with a brood on the water amongst the wooded islands of the Stockholm archipelago performed a curious variant of the so-called "injury-feigning" trick, half flying and half pattering over the surface of the water round our boat, as happens ordinarily in a diving duck at the moment of getting clear on taking wing, as though she was unable to rise farther. I do not think that either this or the more usual form of "injury-feigning" on land have been described in the Velvet-Scoter.

B. W. TUCKER.

BLACK-NECKED GREBE BREEDING IN
WESTMORLAND.

I HAVE not hitherto published the following record as it was hoped that the birds might return, but as they did not reappear in subsequent years their breeding in the neighbourhood must be taken as only sporadic.

On July 18th, 1935, when visiting a Westmorland moorland tarn with two friends, I saw a bird which at first I could not

identify. It had a young one with it and kept in the margin of the reeds on the far side of the tarn, swimming slowly along. One of the party walked round the tarn while the others watched and had a good view of the bird, first when it started feeding and diving and then when it took the young one on its back and swam outside the reeds. Later we had a splendid view of it feeding among the thin reeds. It proved to be a Black-necked Grebe (*Podiceps n. nigricollis*). There was a Little Grebe, also with a young one, in another part of the tarn, and Coots for size comparison. The Black-necked Grebe was quite different from the Little Grebe in appearance, contour, size and actions: head and neck very dark, the light patches on the sides of the head were not very noticeable though slightly lighter than the rest and sometimes seemed to glint as they caught the light; irides red; the beak slender and longer in proportion than the Little Grebe's; flanks rich dark chestnut; underside shining white, and the wings when it flapped them showed a white bar on the secondaries. Its movements were darting and graceful. The young bird, probably less than a week old, looked grey, with the front of the neck and breast white. Part of the time it rode on the back of the old bird which never attempted to dive when carrying the chick, but seemed to catch insects (?) in the air or off the reeds, or just fished with its head and neck under water. When it wanted to dive, it tipped the chick off—I only saw the latter dive once—and its feeding dives were extremely rapid, the chick being fed after each. We saw no sign of the other of the pair, but it could easily have remained hidden in the reeds.

M. GARNETT.

THE RECORD OF GREEN SANDPIPERS BREEDING IN WESTMORLAND IN 1917.

MR. WITHERBY has asked me to put on record some evidence which has come into my hands about the recorded breeding of the Green Sandpiper (*Tringa ochropus*) in Levens Park, Westmorland, in 1917. It will be remembered that in the account published by H. W. Robinson (*Brit. Birds*, Vol. XI, p. 103), the essential proof of breeding by the observation of the nestlings attended by the old birds appeared to rest on the evidence of a gamekeeper and an hotel-keeper, neither of whom were known as ornithologists or could be regarded as competent authorities in a case of this sort. The identity of the old birds was never in question, but what was not made clear at the time was that the late Rev. E. U. Savage actually saw the young birds with their parents on one occasion.

A year or two ago, on behalf of a committee of the Carlisle Natural History Society which was preparing a work on the birds of Lakeland, I had several conversations with Mr. Savage about this Green Sandpiper incident, in the course of which he told me that he was the last survivor of the four or five people who had seen the chicks as well as the old birds. He authorized the committee to say that he himself "saw two young in the down," and described to me how they were running in the shingle and grass at the edge of the river with the old birds in excited attendance on them. There were no Common Sandpipers about, and the whole affair seems to have been so obvious to those who witnessed it that the advisability of capturing one of the chicks never struck them until too late.

With the kind permission of Mrs. Savage I have been able to examine Mr. Savage's ornithological papers, but unfortunately he very rarely wrote a detailed description of any incident except for publication, and the only reference to the Green Sandpipers consists of brief entries in his diary, which run as follows:—

"29 June. Waterhouse and Morse saw a bird in the Park sp. inc. This bird was seen at intervals.

6 Aug. H. W. R., F. W. and I saw it. R. said at once Green Sandpiper.

10. F. W., Bagot, Tarves, Morse and I saw 2 Green Sandpipers and 2 young. At Green Island in the Park.

13. H. W. R. and I tried to find young GS but failed. Saw an old one 3 times.

14. W'house saw 2 young Green Sandpipers. M. GARNETT.

SPECIMENS OF NORFOLK GREAT BUSTARDS LOST BY FIRE.

It is of melancholy interest to record that what was described by Henry Stevenson (*The Birds of Norfolk*; 1870: Vol. II, pp. 33-5) as "by far the finest series of Norfolk, or even British Bustards anywhere to be seen," was destroyed by a disastrous fire at Congham House at the end of November, 1939.

HUGH S. GLADSTONE.

[This is most regrettable. The specimens lost appear to have been a male, two females, a nestling and two eggs. A case containing a female and two eggs included by Stevenson as in this collection was moved to Gloucester (B. B. Rivière, *Hist. Birds, Norfolk*, 1930). The Norwich Museum now contains a very fine series of indigenous specimens consisting of two males and five females.—EDS.]

STATUS OF QUAIL IN BRITISH ISLANDS.

THE general scarcity of the Quail (*Coturnix c. coturnix*) in our islands and the possibility of its increase in the future seems to make it advisable to get some more accurate idea of its present *status* than is possible from stray notes which appear from time to time. We should therefore be very glad if readers would send in details of any occurrences of Quail that they know of in 1938 and 1939. The date, locality, number of birds and method of identification should be given. Particular attention should be paid to details giving proof of breeding or possibility of breeding, and to information as to whether the bird has been known in the locality before and if so whether sporadically or regularly and whether there has been any change in numbers.—EDS.

COMMON EIDERS IN DORSET.—Mr. G. B. Gooch, who recorded an Eider (*Somateria mollissima*) seen off Poole Harbour in January, 1939 (*antea*, Vol. XXXII, p. 308), informs us that he had a female and immature male under observation for an hour at the same spot on December 18th, 1939.

GREAT SKUA AND SCANDINAVIAN LESSER BLACK-BACKED GULLS IN MOUTH OF THAMES.—Mr. R. B. Sibson writes that when at the Nore Lightship on September 17th, 1939, he saw a Great Skua (*Stercorarius skua*) among Lesser Black-backed Gulls. Some of the latter were *L. f. fuscus* and some *L. f. grællsii* and as the birds came quite close to the ship it was easy to see the difference.

REVIEWS.

The Birds of East Lancashire. By C. Oakes and E. Battersby. (Burnley Express Printing Co. Ltd., Burnley). pp. 89. 6s.

Lancashire is fortunate in having naturalists who apply considerable energy to the study of the fauna of limited areas, and although some may regret limitations set by books such as this, yet when these books are considered along with other local avifaunas of the same type an accurate estimate of the birds of a considerable area can be made.

Thus, in 1935 I. Whittaker's *Birds of a Lancashire Cotton Town* (with supplement of 1938) dealt with the Borough of Heywood in SE. Lancs.; now Messrs. Oakes and Battersby have taken a portion of the county generally known as East Lancashire—190 square miles immediately to the north of the Heywood district—and have given a similar careful account of it. "East Lancashire" contains the large industrial towns of Blackburn, Accrington, Burnley and Nelson, and other smaller towns, but includes a large amount of moorland and the valleys of several hill streams which run into the River Ribble. Woodlands are few; most of the land is permanent pasture. As one might expect the most interesting birds in country of this kind are those of the moorlands and valleys: Twite and Lesser Redpoll, Tree- and Meadow-Pipits and Grey Wagtail, Goldcrest and Ring-Ousel,

Redstart, Dipper, Merlin, Golden Plover and Curlew and Dunlin, all breed there, and the Snow-Bunting is a regular winter visitor.

Equally interesting would be a list of the birds which rarely or never occur; the Jay is rare, the Corn-Bunting and Chiffchaff almost unknown, there is no record of the Lesser Spotted Woodpecker nor of the Turtle-Dove, and the Willow-Tit has not yet been found though the Marsh-Tit breeds in a limited area. Visitors to reservoirs and sewage farms materially increase the number of species recorded in the district, but these records are not in themselves of very great moment. More interesting altogether is an account of the extensive cross-Pennine migrations of adult Lesser Black-backed Gulls in spring and autumn, a report of which appeared in *British Birds*, Vol. XXXI. Particular attention has been paid to the Lesser Redpoll and its plumages, and the distribution of the Greater Spotted Woodpecker and Magpie have been carefully worked out, both of them subjects of British Trust local inquiries. As in other districts, the numbers of Redshank and Curlew are shown to have increased very greatly, and the latter has begun to breed in the lowlands.

The authors have been severely critical of records which have not been fully authenticated, and have referred to sundry old records in Mitchell's *Birds of Lancashire* as "unconfirmed"; there seems to be little reason for doubting some of these, but if the authors have erred, it has been on the right side.

There is a simple sketch-map of the district and several photographs of the countryside.

A. W. B.

LETTER.

THE BLACK-TAILED GODWIT IN CUMBERLAND.

To the Editors of BRITISH BIRDS.

SIRS,—Miss A. Morley in her paper on "The Black-tailed Godwit in the British Isles, 1890-1937" (*antea*, pp. 98-104) states amongst other remarks on p. 100 that "Essex, between the first and second, Cumberland, to the north of the third, show an unchanged tradition, regular irregularity. Perhaps both suffer from lack of observers and detail in recording . . ."

Between August, 1926, and August, 1939, I have never failed to make at least one visit each month to the open coastline or the Solway Firth in order to see what bird-life was present, whilst during the periods of the spring and autumn migrations I have usually averaged four visits a month, yet throughout these thirteen years I have only seen the Black-tailed Godwit (*Limosa l. limosa*) on two occasions, namely a party of five birds on October 14th, 1927 (*antea*, Vol. XXII, p. 157) and another of five on October 9th, 1932.

I admit that there are all the days of each month when I do not visit the coastline or estuary and when Black-tailed Godwits can be present, but surely this criticism also applies to the observations of other naturalists on this species unless they pay daily visits to their coastlines or estuaries.

R. H. BROWN.

[Besides Mr. Brown's observations Mr. E. Blezard informs us that the late W. Nichol stated that one or two Black-tailed Godwits were generally to be observed in autumn near Skinburness and that the Carlisle Natural History Society have the following records of occurrences in the Solway in comparatively recent years: Single birds in August or September in 1923, 1925, 1929, 1933, 1935 and 1936 and in April or May in 1919, 1920 and 1923. It appears, therefore, that the bird is still a very scarce visitor to this district.—EDS.]

51 1940

PURCHASED

A HISTORY OF THE BIRDS OF ESSEX

William E. Glegg, F.Z.S., M.B.O.U.

Numerous Photographs and a Map. Demy 8vo. 25/-.

**A HISTORY OF THE
BIRDS OF MIDDLESEX**

William E. Glegg, F.Z.S., M.B.O.U.

6 Plates and Map. Demy 8vo. 18/-.

**A HISTORY OF THE
BIRDS OF NORFOLK**

B. B. Riviere, F.R.C.S., F.Z.S., M.B.O.U.

16 Plates and Map. Demy 8vo. 25/-.

BIRD-LIFE IN THE ISLE OF MAN

Colonel H. W. Madoc, C.B.E., M.V.O.

Photographs. Crown 8vo. 6/-.

BIRD MIGRATION

A. Landsborough Thomson.

Illustrated. Small Crown 8vo. 5/- net.

HOW TO KNOW BRITISH BIRDS

Norman H. Foy.

Illustrated. Small Crown 8vo. 5/- net.

BIRDS OF THE GREEN BELT

R. M. Lockley.

Illustrated. Small Crown 8vo. 5/- net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner.

Illustrated. Small Crown 8vo. 5/- net.

H. F. & G. WITHERBY LTD.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique).

THE HANDBOOK OF BRITISH BIRDS

By H. F. WITHERBY (Editor), F. C. R. JOURDAIN,
NORMAN F. TICEHURST and B. W. TUCKER.

To be completed in five volumes.

*Illustrated by 500 paintings reproduced in full colour depicting about
1,800 birds.*

“The *Handbook* is a better, more complete, and infinitely more interesting history of the birds of a country than that published anywhere else in the world, including America.”—*The Field*.

£5 5s. the set complete. Vols. I, II and III have been published.

A HISTORY OF SUSSEX BIRDS

By JOHN WALPOLE-BOND.

*In three volumes published simultaneously and illustrated with
53 coloured plates*

By PHILIP RICKMAN.

“It would be difficult to say too much of the accuracy of personal observation and the thoroughness of research. The three volumes are likely to remain as a standard example of such literature.”—SIR WILLIAM BEACH THOMAS in the *Observer*.

£5 5s. the set.

SONGS OF WILD BIRDS

Third Impression.

By E. M. NICHOLSON and LUDWIG KOCH.

Introduction by JULIAN HUXLEY.

With two double-sided 10-inch gramophone records featuring the Nightingale, Cuckoo, Blackbird, Song Thrush, Pied Woodpecker, Green Woodpecker, Robin, Wren, Hedge-Sparrow, Turtle-Dove, Wood-Pigeon, Chaffinch, Willow Warbler, Whitethroat and Great Tit.

By the same authors

MORE SONGS OF WILD BIRDS

With three double-sided 10-inch gramophone records featuring the Skylark, Woodlark, Curlew, Tree Pipit, Wood-Wren, Blackcap, Garden Warbler, Rook, Carrion Crow, Jackdaw, Magpie, Jay, Little Owl, Redstart, Chiffchaff, Mistle-Thrush, Heron, Stock-Dove, Nightjar and Blue Tit.

Each 15s. net boxed.

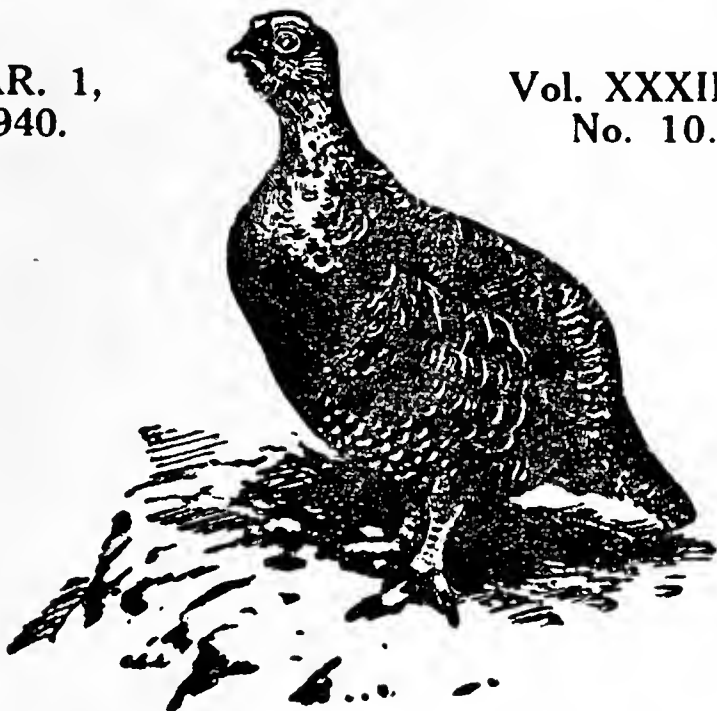
H. F. & G. WITHERBY LTD.

BRITISH BIRDS

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

MAR. 1,
1940.

Vol. XXXIII.
No. 10.



MONTHLY 1s 9d. YEARLY 20s.
326 HIGH HOLBORN LONDON.
H. F. & G. WITHERBY LTD.

To be published this month

BIRD RESERVES

BY

E. C. ARNOLD

*Illustrated with 9 plates in
colour and 12 in black-and-white
by the author*

Medium 4to 15s. net
Postage 9d.

Readers will surely agree with the author, after reading his delightful book, that the £100 he paid for a pond proved a thoroughly successful and sound investment. The author tells of his adaptation of the pond to attract bird life and chronicles the activities of the various species that visited the pond at different seasons of the year. The book also deals with Salthouse Broad, the Cuckmere Valley and Pevensey Marsh.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

REV. F. C. R. JOURDAIN, M.A., M.B.O.U., H.F.A.O.U., F.Z.S., AND

NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 10, VOL. XXXIII., MARCH 1, 1940.

PURCHASED -----

	PAGE
Observations on Captive Robins. By David Laek	262
Notes :—	
Effect of the Severe Weather on Bird-Life (The Editors) ...	271
Notes on Food of Tits and Finches (G. C. S. Ingram and H. M. Salmon)	271
Some Feeding-frequency Notes of Passeres (R. H. Brown) ...	273
Blaekeaps in Waterford in January (Mrs. K. C. Mackay) ...	273
Ring-Ouzel in Dorset in January (J. L. R. Baiss)	274
A Note on the Territorial Behaviour of Robins during Cold Weather (M. K. Colquhoun)	274
Bee-eater in Norfolk (B. B. Rivière)	275
Buzzard feeding on sand-lizard in Winter (A. Darlington) ...	276
Marsh-Harrier in Sussex and Hen-Harrier Eating Water-Rail (E. C. Arnold)	276
Status of Grey Geese in East Kent (T. C. Gregory)	276
Ferruginous Duck in Glamorgan (G. C. S. Ingram and H. M. Salmon)	278
"Up-ending" of Eiders (B. W. Tucker)	279
Northern Golden Plovers in Sussex (N. F. Ticehurst)	279
Numbers of Black-tailed Godwits in Winter in Co. Cork (Col. C. F. Serrope)	280
Large Numbers of Black-tailed Godwits in Sussex (J. P. Wilkins)	280
Grey Phalarope seen in Derbyshire (H. G. Alexander) ...	280
Puffin Ringed at St. Kilda reported in Newfoundland (Miss E. P. Leah)	281
Short Notes :—	
Pink-footed Geese in Dorset and Merionethshire. Smew and Goosanders in Merionethshire. Iceland Gull in Middlesex. Great Grey Shrike in Cornwall	281
Review :—	
<i>The Behaviour of the Robin.</i> Parts I and II. By David Laek	282
Letter :—	
Great Shearwaters in the English Channel (H. G. Alexander)	284

OBSERVATIONS ON CAPTIVE ROBINS.

BY

DAVID LACK.

A STUDY of the aggressive and sexual behaviour of the Robin (*Erithacus rubecula melophilus*) in the wild state (Lack (1939B)) was supplemented in 1938 by observations on captive birds. The reader will more readily understand this paper if he has read either the earlier paper, or the review on pp. 282-4 of this issue.

Two aviaries were built, each 30 ft. long, one 20 ft. and the other 12 ft. wide, both over 6 ft. high. The Robins were fed throughout on Mr. Allen Silver's special "Mosquito" mixture and live mealworms, and all remained in excellent condition until released. In late February, shortly after the wild Robins of the district had formed into pairs, two known pairs were placed in aviary 1 (M1, F1 and M2, F2), and one known pair (M3, F3) and an unmated male and female (M5 and F4) in aviary 2 (the sex of all these birds had been certainly determined by previous field observation).

This seems the first species for which detailed observations on territorial and sexual behaviour can be compared in the wild and in captivity. For the dominant pair in each aviary sexual behaviour, nesting, copulation, incubation and feeding of the young, seemed almost entirely normal, but territorial and aggressive behaviour, including posturing, were extremely modified. The subordinate pair showed at most only sporadic aggressive and breeding behaviour throughout the spring.

TERRITORY, FIGHTING AND SONG.

The minimum observed breeding territory in wild Robins was 2,000 square yards. Aviary 1 has an area of 67 square yards, aviary 2 of 40 square yards, but in both a pair of Robins reared young successfully, although another pair of Robins was continually present. For four days near the beginning, in aviary 2, each male held a territory at one end of the aviary, but, apart from this, only one male Robin held territory in each aviary at one time, though in each aviary near the beginning the ownership changed once, in one aviary twice. The aviary observations, therefore, partially fit the view that the Robin requires an exclusive territory with a specific lower limit of size. It would be of considerable interest to know the minimum size of aviary in which two pairs of Robins can *each* own territory and breed.

The Robin is considered the most pugnacious British bird, and aviculturists and naturalists seemed convinced that,

If two pairs were kept in the same aviary, one pair was certain to kill the other if breeding were to occur; see, for instance, Smith (1869). However, one pair did not kill the other in either aviary, and there seemed no likelihood of this occurring. Perhaps this was because the aviaries were sufficiently large to allow the attacked Robin room to escape. Experiments described in the earlier paper show that aggressive behaviour diminishes with repetition of the stimulus promoting it. In this connection it is suggestive that in both aviaries the aggressive behaviour of the dominant pair towards the other residents decreased as time went on, and that when, after two months, a strange Robin was experimentally introduced into aviary 2, it was attacked much more vigorously by the owners than they attacked the other resident Robins.

In both aviaries the correlation between fighting and song was well shown. Thus, in aviary 1, M2 was in good song only from March 1st to 11th when M1 was silent. After this, M1 became the dominant bird, was aggressive and sang irregularly, and M2 was silent. In aviary 2, M3 was the aggressive Robin during the first week, *i.e.*, from March 9th till 15th and only M3 sang. On March 16th M5 was chasing M3 and only M5, not M3, sang, this situation being reversed for both aggression and song next day. From March 22nd to 25th M3 sang at the north end, M5 at the south end, of the aviary, and M3 chased M5 only in the north end.

But the correlation between song and aggression, as was also found in the wild Robin (see earlier paper), was not complete. Thus, in aviary 1, M2 was not aggressive during his March singing. In aviary 2 M3 was the dominant male from March 26th onwards to the end of the spring. However, in early May, M5 sang regularly in this aviary. This male had no mate, and it was found in the wild that unmated male Robins sing more than mated ones.

As noted later, the two song periods of F3, one of the females in aviary 2, coincided with her two most aggressive periods.

RELATIONS WITH ROBINS OUTSIDE THE AVIARIES.

So soon as the captive Robins were put in aviary 1, the wild Robins which had included the aviary roof in their territory came on to the aviary and repeatedly sang and postured at the captives. M1 sang vigorously back, and after a few days the wild pair gave up frequenting this area. This wild pair were later captured (for aviary 2) and, a few days later, the wild male who held the adjacent territory began to extend his ground, but, when he reached aviary 1,

M₂ (who was now the dominant male) postured at the wild bird, which retreated. A similar observation was made several times later, when M₁ had become the dominant bird. On May 21st a new male Robin took over the outside territory with loud song. Promptly M₁ came into loud song, and for two days replied vigorously to the wild male, which never established itself on the ground round the aviary.

On May 24th a new Robin established itself, with loud song, in the copse adjoining aviary 2. Both M₃ and F₃ came into loud song, and the newcomer never claimed as territory any trees within twelve yards of the aviary.

It is remarkable that in all these "fights" for territories, the owners of the aviaries were successful against the outside birds in that the latter ceased to sing, in some cases never attempted to sing, in the region round the aviaries. These "victories" were, of course, achieved without any actual contact between the birds, thus supporting the views on psychological fighting in the earlier paper.

The encounters with outside Robins stimulated the captives not only to greater song but to greater aggressiveness. This was particularly well shown by M₃, F₃ and M₅ in aviary 2 during and after incidents with the newcomer male on May 24th and with two strange juvenile Robins experimentally introduced on June 24th and 25th. The birds were then far more aggressive than usual to the other Robins resident in the aviaries.

BREEDING.

The observations show clearly that possession of territory is psychologically essential for nesting, since in aviary 1 the subordinate pair showed no traces of breeding behaviour, and in aviary 2 only sporadic traces. Since in each aviary the dominant pair of Robins bred normally, general conditions were clearly suitable for breeding.

A function sometimes attributed to territory is that it prevents or restricts the disturbance to the pair by neighbours. Since one pair bred successfully in each aviary, though another pair was continuously present, this factor cannot be important, but a little disturbance was recorded. On May 24th, in aviary 2, F₃ repeatedly interrupted nest building to chase F₄ (the aggressive behaviour of F₃ had been stimulated by an outside Robin). More interesting, on both occasions when M₃ was seen to copulate with F₃, M₅ flew the length of the aviary, and drove M₃ off F₃'s back. On the first occasion, M₅ actually mounted and copulated in place of M₃, and F₃ seemed quite unaware that any change of partner had

occurred. This excitement on observing another bird copulate seems not uncommon in birds, being recorded, for instance, in the Blackcock (*Lyrurus tetrix*) (Lack 1939A) and in the Green Sandpiper (*Tringa ochropus*) (Lack 1938). It is interesting to find this in the Robin for, owing to the existence of territories, it must be rare indeed in nature for one male to see another male copulating.

In aviary 2, but not aviary 1, the dominant male, *i.e.*, M₃, nested with both females. It will be remembered that in aviary 2 (unlike aviary 1), the second male and female placed in the aviary had not been previously paired up in the wild. Bigamy has been recorded in the wild state (see earlier paper). In aviary 2 M₃ nested first with F₄, not with his original mate, but three days after F₄ began to lay, F₃ began to build, and another three days later M₃ copulated with her. During the next week, when both females were incubating, M₃ fed each of them on the nest, F₃ more than F₄. In both cases the parents failed to rear the young. F₄ showed no further traces of breeding behaviour; F₃ built again and successfully reared a brood.

COURTSHIP FEEDING.

The courtship of the Robin consists in the male feeding the female, details being given in the earlier paper, but some observations in aviary 2 may be added.

M₃ fed both his mates regularly during incubation, and also during the preceding courtship period, but ceased to feed F₄ after she left her nest. In every case except one the male proffered the female a single mealworm, whereas when feeding young the parents took several mealworms at once. The one exception occurred just after F₃'s young had died. M₃ again came to the nest with a number of small insects, looked in, hopped out again and then fed them to his mate who had come up.

As in the wild state, M₃ ceased to feed the female in courtship when there were young to be fed.

In the wild state only the male Robin was seen to feed the female, but in captivity traces of the behaviour appropriate to the other sex were found in both male and female, and F₃ accepted mealworms not only from her own mate but from the other two birds. Details are as follows:—

On several occasions in late May and early June F₄ (who never started a second nest) carried a mealworm away from the food tray instead of swallowing it there. Usually she later swallowed it, but on May 27th she took it first to F₃, then to M₅ who opened his beak just like a female prior to

being fed, then back to F3 who opened her beak and, after a little hesitation, F4 fed F3. This is specially noteworthy because at other times on this day both F3 and M5 were chasing F4. Having fed F3, F4 now opened her beak at F3, as if expecting to be fed, F3 did the same to F4 and the latter retired. On June 8th F4 again twice offered a mealworm to F3 who ignored it. It should be noted that earlier in the season F4 had been regularly fed by her mate (M3) and then had behaved like a normal female.

No male was seen to accept a mealworm from another Robin, the above incident between M5 and F4 coming nearest to it. But M3 was four times seen to open his beak to his mate, F3, as if expecting to be fed, twice just after M3 had fed F3 and twice when they were near together on the food tray. In addition, six times between June 1st and 3rd M3 opened his beak to M5 as if expecting food, and once he did it to F4.

M5 showed traces of this courtship-feeding, even though he never acquired a mate. Repeatedly between the end of April and early June M5 would carry off a mealworm from the food tray, hop about with it for a while in his beak, and eventually swallow it. While F3 was incubating, M5 often brought a mealworm to the entrance to her box, but always ended by swallowing it himself. He continued to do this on May 17th when the young had hatched (and M3 brought them small insects) and also throughout the next month, when the box was no longer occupied by a female! On May 11th F3, who was temporarily off her nest, begged M5 for food, but he was not carrying any. On May 18th F4, who had now ceased nesting, begged M5, and he fed her, and on May 28th, just after being fed by her mate (M3), F3 begged M5 and after a little hesitation he fed her. These were the only two occasions on which M5 was seen actually to feed another bird. The behaviour of M5 is a good example of what happens when an instinctive drive is present but lacks the appropriate external situation.

INCUBATION AND FEEDING THE YOUNG.

In aviary 2 F3 laid the first egg in her second nest on May 26th. The second egg was laid on May 28th, the others, up to five, followed one on each day, when she began to incubate. The young hatched 13 days after incubation started, and left the nest 11 days after hatching, rather early, but they were disturbed for ringing. On the 8th day after leaving the nest a juvenile was seen taking some "Mosquito" food on its own from a food tray, but all live mealworms were still fed

to the young by the parents. On July 10th the juveniles were taking some mealworms on their own but were still fed mostly by the parents. On July 13th the young took as many mealworms independently as from their parents. On July 14th and 15th the young took most food on their own, but some from their parents. Not infrequently the parents would carry a mealworm about and do nothing special with it, failing to respond even when the young begged them for food. After July 15th the parents were not seen to feed their young, which were now 21 days out of the nest and 32 days old, which is exactly the same age as that at which the fledglings in aviary 1 were at the same stage. These observations well show the gradual waning of the instinctive drive of the parents to feed the fledglings, even though the young still begged them for food ; but the young were also begging less as time went on. It may also be noted that, though the young occasionally begged for food from both the other Robins, F₄ and M₅, the latter did not attempt to feed them.

On June 24th, a few minutes after pair 3's young left the nest, a strange wild juvenile Robin, probably 10-14 days out of the nest, perched on the aviary roof. M₃, F₃ and M₅ showed great excitement and followed it about ; it gave the food-begging reaction to all three birds, and M₃ and F₃ attempted to feed it through the wires, temporarily quite ignoring their own young. On June 25th a juvenile, 20 days out of the nest from aviary 1, was experimentally introduced into aviary 2 ; this bird did not give the food-begging reaction. It was violently attacked by M₃, F₃ and M₅, all three striking repeatedly, and M₃ also posturing ; they might have killed it, so it was removed. The next day F₂ from aviary 1 was placed in a cage in aviary 2 ; M₃ postured and tried to chase it mildly and F₃ watched from near by. A 21-days-old juvenile was substituted and both M₃ and F₃ tried to chase it hard. The bearing of these experiments on aggressive behaviour, recognition, etc., are discussed in the earlier paper.

In aviary 2 M₃, having sung very little for over a month, suddenly came into good song for the last week of June and occasionally up to July 6th, just after the young had fledged. An increase of song just after the young have fledged has also been noted in the wild (see earlier paper). M₃ was singing three weeks later than any wild Robins normally sing in the district, and, when the captive Robins were released on July 20th, neither M₃ nor F₃ had started to moult which is unusually late (for South Devon), hence late breeding had presumably delayed the onset of moulting.

SEXUAL AMBIVALENCE.

Shortly after introduction to aviary 2, F₃ came into good song for five days, and had a further period of good song on May 24th and 25th, when stimulated by a male claiming territory outside the aviary. This bird had also been seen singing in spring in a wild state, as had one other wild female Robin. This fact, and the observations on courtship feeding, show that each sex has a tendency to assume the rôle normally adopted by the other, which raises the whole problem of sexual ambivalence.

It has been known for some time that, in captivity, and rarely in the wild, homosexual pairs of birds of either sex may be formed in which one member takes the rôle normally played by the other, showing that each sex has the potentialities of the behaviour of the other. Sometimes this has been related to the phenomena described as dominance; the dominant individual is said to play the male rôle, the subordinate one the female rôle. However, the facts cannot all be so simply explained. To give some examples of different aspects:—

Craig (1909) found that if a female dove (*Turtur risoria*) was isolated, she assumed the aggressive and cooing behaviour of the unmated male. Nice (1939) reports a captive female Bobwhite Quail (*Colinus virginianus*) isolated in April singing the male song, and I am told that if a female domestic Turkey (*Meleagris gallopavo*) is isolated it begins to strut like a male. It seems possible that the aggressive behaviour and song of female Robins in autumn (a phenomenon also found in the Loggerhead Shrike (*Lanius ludovicianus*) (Miller 1931) and the American Mocking-bird (*Mimus polyglottus*) (Michener 1935)) is connected with isolation, since females normally give up this behaviour when paired up in spring. However, exceptionally, a female Robin sings in spring, as noted. Noble and Wurm (1938) in the Black-crowned Night-Heron (*Nycticorax n. hoactli*) and Shoemaker (1939) in the Canary (*Serinus canarius*) have induced male behaviour in the female by injections of the male sex hormone; but it should be noted that one out of a hundred control female Canaries also sang. In other species, such as the Phalaropes, the female normally has the territorial behaviour typical of males in other species, and in *Turnix* it is the female which feeds the male in courtship (Seth-Smith 1905).

Hence the exhibition of male behaviour by a female may be due to very different factors in different cases: in Phalaropes, *Turnix*, etc., it is genetic; in some other species, such

as the Robin, it seems partly under genetic control with some other factor normally restricting it to the autumn ; in other species it can be induced by injections of male hormone (which may well have the opposite effect in Phalaropes), in other species it is induced by isolation, and perhaps by other environmental factors. Really, of course, there is no such thing as " male " and " female " behaviour ; there are simply certain behaviour patterns which are usually (but not invariably) associated with one sex or the other. Only the position of the sexes in copulation seems a usual sex difference, and even this is confused by the occurrence of " reversed mounting " following genuine copulation in Moorhen ((*Gallinula chloropus*), Great Crested Grebe (*Podiceps cristatus*) and some Doves.

As noted in the earlier paper, see also Lack (1939A), the occurrence of autumn song and fighting in the Robin is of great interest in connexion with periodicity phenomena, since the gonads are normally said to have only one maximum, in spring. H. N. Southern has drawn my attention to a paper by K uchler (1935) who shows that in the Robin the thyroid gland shows two periods of activity, one in spring and another in autumn, of about equal magnitude. Possibly this is correlated with the occurrence of autumn song in the Robin. In the Yellow Bunting (*Emberiza citrinella*), the thyroid is actually more active in autumn than in spring ; one wonders if this could be correlated with the greater amount of song in autumn than spring, in which the Yellow Bunting is highly exceptional among birds. Whether the thyroid secretion itself induces song, or whether both thyroid activity and song are induced by some other factor, only future experiment can determine.

PREVIOUS BREEDING RECORDS IN CAPTIVITY.

In 1937 two pairs of another territorial species, the Chaffinch (*Fringilla caelebs*), were placed in aviary I. After a time one of the males began to sing well, and vigorously chased the other male. This behaviour later ceased and the pair nested and hatched out their young. The second pair showed no traces of breeding behaviour throughout the observations. This result with Chaffinches shows a close parallel with those on Robins.

Dr. Emilius Hopkinson, the authority on British breeding records, informs me that there are no previous records of Robins breeding in captivity in Britain, though there are four German records. I have been unable to refer to the latter, as *Die Gefiederte Welt* does not appear to be taken by any British library. Presumably they refer to isolated pairs.

SUMMARY.

1. In nature each pair of Robins breeds in an exclusive territory, and the birds are renowned for their pugnacity.

2. Two pairs of Robins were placed in each of two aviaries. In both cases one pair dominated the other, and the former, but not the latter, successfully reared a brood. The second pair was not killed, but was tolerated after a time.

3. Territorial and aggressive behaviour were extremely modified, but the breeding behaviour of the dominant pair was nearly normal.

4. In the wild, courtship consists of male feeding female. Aviary observations show that each sex shows traces of behaviour characteristic of the other sex. Sexual ambivalence is discussed.

5. Various observations confirm and extend the data on song, fighting and breeding habits already published.

ACKNOWLEDGMENTS.

I am greatly indebted to a number of experienced aviculturists for their advice as to the best methods of keeping and breeding British wild birds in captivity, and to Mr. C. Winson and various pupils of Dartington Hall School for their assistance in designing and constructing the aviaries, which were made in the school workshop.

REFERENCES.

- Craig, W. (1909). The expression of emotion in the Pigeons.
 1. The blond Ring Dove (*Turtur risorius*). *J. Comp. Neur. Psychol.* 19, 29-80.
 Küchler, W. (1935). Jahreszyklische Veränderungen im histologischen Bau der Vogelschilddrüse. *Journ. f. Orn.*, 83, 414.
 Lack, D. (1938). Display of Green Sandpiper. *Brit. Birds*, XXXII, 86.
 Lack, D. (1939A). The display of the Blackcock. *Brit. Birds*, XXXII, 295-6, 301-2.
 Lack, D. (1939B). The behaviour of the Robin. *Proc. Zool. Soc. A* 109, pp. 169-219.
 Michener, H., and J. R. (1935). Mocking-birds, their territories and individualities. *Condor*, XXXVII, 97-140.
 Miller, A. H. (1931). Systematic revision and natural history of the American Shrikes (*Lanius*). *Univ. Calif. Publ. Zool.*, 38, 2, 148-160.
 Nice, M. M. (1939). The Watcher at the Nest. 141.
 Noble, G. K., and Wurm, M. (1938). Effect of testosterone propionate on the Black-crowned Night Heron. *Anat. Rec.*, 72 (4), suppl. 60.
 Seth-Smith, D. (1905). The importance of aviculture as an aid to the study of ornithology. *Ornis*, XIV, 663-675 (*Proc. IV. Int. Orn. Cong.*).
 Shoemaker, H. H. (1939). Effect of testosterone propionate on behaviour of the female Canary. *Proc. Soc. Exp. Biol. & Med.*, 41, 299-302.
 Smith, C. (1869). *Birds of Somersetshire*, p. 79.

NOTES

EFFECT OF THE SEVERE WEATHER ON BIRD-LIFE.

WE have received a number of letters and preliminary reports on this subject and from these it is already evident that many species have suffered severely. The full effects cannot be accurately gauged until the breeding-season when the number of pairs present in a locality can be compared with that in previous years.

With a view to making a full report on the subject we shall be glad if our readers would collect information on the lines indicated below. Reports including the breeding-season should be sent in not later than June 1st, but should an observer be unable to make notes during the breeding-season a report on the first part (1 and 2 A.) can be sent in at once.

The notes should be arranged as follows :—

1. Account of weather in the district giving dates and extent of frost and snow and dates of thaws. Special mention should be made of ice formation on trees ("glazed frost" or "silver thaw") and its effect.
2. Effect on bird-life.
 - A. During the hard weather.
 - (c) ascertained deaths.
 - (d) unusual movements to and from the locality.
 - B. During the coming breeding-season.
 - (e) definite diminution compared with previous years of pairs breeding in the locality arranged under species.
 - (f) definite diminution of fertility: number of eggs laid or young hatched or number of broods as compared with previous years.
 - (g) list of species apparently not diminished.

THE EDITORS.

NOTES ON FOOD OF TITS AND FINCHES.

ON November 27th, 1938, while crossing some rough land near Llanishen, Glamorgan, which was covered with a perfect forest of dried stems and seed-heads of knapweed, we noticed besides the usual Goldfinches (*Carduelis carduelis*) nearly always present there at this season, that some ten or a dozen Blue Tits (*Parus caeruleus*) and two Great Tits (*Parus major*) were also busy at the seed-heads. They spent quite a long time at each head, hanging from them like the Goldfinches but working at them with considerably greater vigour. This was the first time we had seen Tits so employed.

At first we thought they were taking the seeds but thinking it over later it occurred to us that it was more than probable they were searching for insects hidden within the seed-heads. The following week, December 4th, there were five Blue Tits busy at the knapweed, so we picked a bunch of heads for examination at home. These were placed in a paper bag and kept in a warm room for a couple of days, but as nothing had emerged from them by that time, they were picked to pieces one by one over a sheet of white paper and the debris carefully examined under a powerful pocket lens. Fifty heads were treated in this manner and of these 22 per cent. were found to be inhabited by very small larvae which were apparently hibernating amongst the seed-cases, while 18 per cent. had a hard gall in the centre of the head. When these galls were cut open some were found to contain one and others two dirty-white coloured larvae, considerably larger and fatter than the others, in fact, quite a good prize for a Tit. All these larvae and some unopened heads were sent to Mr. W. B. Alexander at Oxford, and through the good offices of Professor Hale Carpenter, passed on to Mr. G. C. Varley, Department of Zoology, University of Cambridge, who specializes in the insects found in the heads of knapweed. Mr. Varley reported that "six species of insect larvae were found altogether" and added "I am very interested to know that tits feed on knapweed heads. I have sometimes found damaged flower heads and considered that birds might be responsible but I never saw any birds at work. Possibly they are only interested in the galls during the winter when other food is scarce." The insect responsible for the galls was identified by him as the fly *Euribia jaceana*. In a second selection of flower-heads we sent to him unopened, Mr. Varley found sixteen cocoons of the moth *Parasia metzneriella* and of these nine had been opened and contained no larvae; he considered that this was the work of the Tits and it therefore appears probable that both the above-mentioned insects are taken as food by both Blue and Great Tits.

On June 25th, 1939, we kept a Greenfinch (*Chloris c. chloris*) and a male British Bullfinch (*Pyrrhula p. nesa*) under close observation for half an hour. They were busy feeding amongst the long, uncut herbage on the banks of Lisvane Reservoir. The Bullfinch was first seen stripping the unripe seeds of a dock, but soon found something else close at hand which appeared to be more attractive. This proved to be seed-heads of yellow goatsbeard (*Tragopogon pratensis*). His bill was quickly covered with the sticky, milky juice of the plant and

the hard outer seed-cases. The Greenfinch, just beyond him, was constantly rising and hovering close over the long herbage evidently searching for some particular seed-head. We marked down three that were visited and in each case it was yellow goatsbeard. These heads had been torn open at the base exposing the closely packed seeds which were still green and unripe but contained a considerable amount of soft, white pulp within their hard outer cases.

GEOFFREY C. S. INGRAM.
H. MORREY SALMON.

SOME FEEDING-FREQUENCY NOTES OF PASSERES.

A BROOD of three young Reed-Buntings (*Emberiza s. schæniclus*) was fed 14 times (11 times by the hen and 3 by the cock) between 2.30 and 4 p.m. on June 18th, 1926. The afternoon was fine and sunny.

A brood of six young Willow-Warblers (*Phylloscopus t. trochilus*) was fed 17 times between 6.30 and 7.30 p.m. on June 6th, 1934.

At a nest of a Mistle-Thrush (*Turdus v. viscivorus*) with three eggs, the hen was usually off the eggs for about ten minutes at 8 a.m. and 3 p.m. Most of the incubation was the work of the hen, but twice the cock was seen to brood the eggs. On April 26th, 1929, a brood of four young was fed 6 times in two hours, 11 a.m. to 1 p.m., and 5 times between 2.30 and 4.15 p.m. The afternoon was fine.

A brood of four young Hedge-Sparrows (*Prunella m. occidentalis*) was fed 5 times between 7 and 8 a.m. on May 24th, 1933.

A brood of five young Wrens (*Troglodytes t. troglodytes*) was fed 13 times between 2 and 3 p.m. on July 25th and 25 times from 1 to 3 p.m. on August 1st. The weather was fine and sunny on both days.

A brood of four young Dippers (*Cinclus c. gularis*) six days old was fed 6 times between 1 and 2 p.m. on April 22nd, 1938, and 14 times from 3 to 4 p.m. on May 2nd.

R. H. BROWN.

BLACKCAPS IN WATERFORD IN JANUARY.

It may be of interest to record that during the spell of bitter weather in mid-January, 1940, a cock and a brown-capped hen Blackcap (*Sylvia atricapilla*) came each day for four days to feed with many other birds in my garden at Dunmore East, Co. Waterford. The food put out consisted of potatoes,

bread, meat scraps, suet, apple pips and peelings, pieces of milk pudding, holly and guelder-rose berries. The Blackcaps partook of almost everything, but were particularly partial to the guelder-rose berries. I am glad to say that they came through the testing time showing no loss of vigour.

KATHLEEN C. MACKAY.

RING-OUZEL IN DORSET IN JANUARY.

ON January 4th, 1940, Mr. E. Wall and I saw a cock Ring-Ouzel (*Turdus torquatus*) at Durdle Door near Weymouth. The bird flew along the cliff and settled in a patch of brambles. On being flushed it sat on the cliff giving us a perfect view for several moments; it also uttered its characteristic call. I would add that it was freezing all day with a bitter east wind.

J. L. R. BAISS.

A NOTE ON THE TERRITORIAL BEHAVIOUR OF ROBINS DURING COLD WEATHER.

LACK'S recent paper (*Proc. Zool. Soc. Lond.*, 109, ser. A, 169-219) on the behaviour of the Robin (*Erithacus r. melophilus*) raises several interesting points. One of these, not studied by Lack (perhaps because of the leniency of the south Devon climate), is the effect of low temperature on aggressiveness, although this would seem to have some bearing on the function of territory. For if its primary function is associated with food supply, as some writers have maintained, one would expect heightened, or at least not lessened, aggressiveness during a food scarcity caused by frost or snow. The following notes on colour-ringed Robins at a stationary trap on the Berkshire Downs may therefore be of interest.

The data focus on a male, BB/- (M₁), who bred in the same territory for two seasons, but relinquished it in the intervening autumn to his future mate, BY/A (F₁). This is unusual, and Lack found only one such instance among those he studied; the female usually leaves her territory and joins a male in his.

On January 20th, 1939, M₁ and F₁—the latter with more animation—were posturing to each other on the trap, which was only just within the territorial boundary. Thereafter they were seen together regularly. But on the 23rd a neighbouring male, RB/A (M₂), believed but not known to be mated, spent the morning at the trap unhindered, and on the 26th he drove off F₁ when she reappeared after three days absence. She came again repeatedly, but was always driven off. The very cold weather began on the 25th, with

9 inches of snow and 10 degrees drop in mean temperature. On the 31st, with still 6 inches of frozen snow, I recorded 9 Robins at the trap (4 newcomers), and on the following day, 10 (two more newcomers), in two hours—a record. On the first of these two days F1 was present more often than M2, but the latter was always the dominant bird; in his repeated absences she was dominant over all visiting Robins, several of which fed at the trap together. She tolerated M1 within a few yards, but would not let him approach the food while she was feeding. The following day aggressiveness had so declined that M1 and M2 were content to feed side by side, F1 being still dominant to the former and sub-dominant to the latter. On February 2nd F1 watched M2 feeding, and finally drove him off; she remained dominant, and his visits dwindled away. On the next day she showed markedly more toleration of M1, but would not let him feed with her until a week had passed. Temperature rose 10 degrees on the 4th. Not until the 28th was M1 seen driving off other species; the antipathy shown by him towards Hedge-Sparrows was remarkable (noticed in two seasons). On one occasion a pair of resident Hedge-Sparrows flew off in alarm as a Robin alighted on the trap; they had, I am convinced, mistaken F1 for M1, and soon they returned shyly to feed undisturbed with her.

It seems clear that the hard weather caused a breakdown in sexual behaviour, expected by Lack (p. 189) to be extremely rare for the Robin, which normally pairs before the coldest weather. But because of the posturing seen on January 20th (I was absent the first half of the month), this pair must have been formed only a few days before the temperature drop. As regards territorial behaviour, it would seem that with a loosening of the tie between the pair there was a decline in aggressiveness. The changes in ownership were both times slightly in advance of the changes in weather.

M. K. COLQUHOUN.

BEE-EATER IN NORFOLK.

An adult male Bee-Eater (*Merops apiaster*) which was killed at Gooderstone and sent in the flesh to Mr. F. Gunn, the Norwich taxidermist, on June 12th, 1939, has been presented to the Norwich Museum by Sir Samuel Roberts. There are seven previous records of this species for the county. Six have been obtained, the most recent being a pair killed on June 3rd, 1854, while the last record is of one seen on May 19th, 1880.

B. B. RIVIÈRE.

BUZZARD FEEDING ON SAND-LIZARD IN WINTER.
 ON January 14th, 1940, an adult male Buzzard (*Buteo b. buteo*) was found dead and in a fresh condition on the northern part of Dartmoor and was sent to me for dissection. Examination of the crop showed that this part of the alimentary tract was completely empty except for the remains of a sand-lizard (*Lacerta agilis*). Only the feet, tail and dorsal scales of the reptile could be found but from these identification of the species proved a simple matter, particularly as the scales showed the characteristic row of white spots by which the sand-lizard can readily be distinguished from other British forms.

The specimen is unusually interesting for two reasons. In the first place, the sand lizard is a species with an extremely local distribution. E. Sandars (*A Beast Book for the Pocket*, 1937) gives Dorset, Hampshire, Surrey and the Southport district of Lancashire as the only regions in this country where the reptile has been taken. He makes no mention of Devonshire or any of the neighbouring counties. Secondly, the sand-lizard is regarded by most authorities as an animal which lies closely hidden throughout the winter season and which does not leave the state of hibernation until the onset of warm weather. At the time when the Buzzard was picked up the ground had been subjected to hard frosts for several days.

It is known that reptiles form a part of the Buzzard's normal diet. In central Wales I have found the remains of the common lizard (*Lacerta vivipara*) in the nest of a Buzzard.

ARNOLD DARLINGTON.

MARSH-HARRIER IN SUSSEX AND HEN-HARRIER EATING WATER-RAIL.

ON December 1st, 1939, while I was Snipe shooting with Mr. F. S. Tritton in the Cuckmere Valley, a large raptorial flew across the marsh. It was obviously a Harrier without white on the rump and proved on closer inspection to be an adult-male Marsh-Harrier (*Circus aruginosus*). It had in the distance the same "dirty" appearance as the bird seen by Mr. Higgins and myself near Wartling some years ago.

On January 24th, 1940, in the same valley I came upon an adult male Hen-Harrier (*C. cyaneus*) and managing to get within ten yards of it found that it was feeding on a Water-Rail.

E. C. ARNOLD.

STATUS OF GREY GEESE IN EAST KENT.

IN 1909 Dr. N. F. Ticehurst wrote (*Hist. of Birds of Kent*, p. 330) that the known status of the four species of grey

geese in Kent was in a most unsatisfactory condition, so that future occurrences of any of them, whose identification had been accurately determined, would be well worth recording. As a matter of fact, very few positive identifications have since been put on record, so that the following notes on their present status in east Kent may not be out of place. I would add that my observations are based on twenty-five years' experience of wildfowling and bird-watching on the east Kent coast and marshes.

GREY LAG-GOOSE (*Anser a. anser*).—This goose is a rather irregular winter visitor to east Kent. Although sometimes fairly large flocks turn up during severe weather abroad the birds usually make only a very brief halt. Small numbers, at long intervals, frequent the coast in less severe weather and flight in to the coastal marshes. On the northward migration an odd gaggle sometimes lingers for an appreciable time. The Grey Lag is rather partial to visiting inland waters and the few specimens I have handled have been obtained when "flying in" to fresh water.

WHITE-FRONTED GOOSE (*A. a. albifrons*).—Experience leads me to believe that this goose is the only grey goose to pay regular winter visits to east Kent, for even in mild winters small gaggles make desultory appearances. I have shot a fair number and had I so wished, could have shot many more. During the recent hard weather in January, 1940, I visited a remote area which for many years has been a favourite haunt of the White-fronts on their not infrequent visits, and I was not disappointed, for quite two hundred birds were present feeding on some grassy patches exposed by an overnight blizzard; when deep snow covers the marshlands the birds "go elsewhere" but often return when a thaw sets in. Of late years there seems little doubt that the number of visitants has increased and that the birds stay for longer periods.

BEAN-GOOSE (*A. f. fabalis*).—From time to time I have noticed what I believe to have been small numbers of Bean-Geese feeding on the short-grass marshes with White-fronted Geese. Be that as it may, there seems no doubt that the Bean is now the rarest of the grey geese visiting east Kent. So far as my knowledge goes, only two have been obtained, one in the Thanet marshes many years ago and the other in the Deal marshes on January 12th, 1940—this bird was one of a skein of three. In the *South Eastern Bird Report* for 1936 Mr. B. B. Osmaston states that five Bean-Geese were seen on the Reculver marshes on October 24th, and as these birds

allowed a close approach, there seems no doubt as to their identity.

PINK-FOOTED GOOSE (*A. f. brachyrhynchus*).—The Pink-footed Goose can hardly be described as other than a very casual winter visitor to east Kent, yet in stress of weather quite large flocks do sometimes put in an appearance. Nevertheless, as these flocks invariably rest at sea and pass on quickly, the Pink-foot must rank as a rare fowl on the marshlands and a difficult bird to bring to bag. This is the only species of grey goose of which I have never obtained a specimen in east Kent, nor have I knowledge of any being shot by local gunners. Furthermore, I know of no collections that contain specimens shot locally. Records, however, can be misleading, and so far as the Pink-foot is concerned it may be that they suggest that the bird is a rarer visitor than it actually is.

T. C. GREGORY.

FERRUGINOUS DUCK IN GLAMORGAN.

ON December 3rd, 1939, we noticed a solitary duck on Lisvane Reservoir, near Cardiff, which presented to us an unfamiliar appearance. It was very shy and although Common Pochard (*Aythya ferina*), Tufted Duck (*Aythya fuligula*) and Goldeneye (*Bucephala c. clangula*) were present at the other end of the reservoir this bird seemed to shun them but kept in company with a few Coot (*Fulica a. atra*). The weather was particularly unfavourable, low black clouds obscuring the light, and heavy rainstorms accompanied by a violent wind making observation difficult, especially as the duck was never nearer than some 200 yards. All we could gather after three quarters of an hour's observation through the telescope was a general impression of rusty-red upper parts with darker wings, and very light yellow or white eyes. It did not dive once during the whole time we were watching. Fortunately it was still present on December 10th, when brief gleams of sunlight enabled us to pick out further details of plumage and so confirm our suspicions of the previous week that it was an adult male Ferruginous Duck (*Aythya n. nyroca*). The further details were a considerable amount of white on the waterline at sides denoting white under-parts, a detail which was confirmed when it rose on its tail and vigorously flapped its wings. This action also displayed a white patch on each wing, hidden while the bird was swimming. We were also able to see clearly a triangular white patch on each side under the tail and when it suddenly began to dive there could be no doubt as to its identity. We timed four consecutive dives,

the longest being 27 seconds, the shortest 20 seconds and the average 24 seconds, the depth being between 10 and 11 feet at that spot. There is only one previous record of this species in Glamorgan, one shot near Swansea prior to 1848.

GEOFFREY C. S. INGRAM.

H. MORREY SALMON.

“UP-ENDING” OF EIDERS.

IN the *Handbook of British Birds*, Vol. III, I stated that the Common Eider (*Somateria m. mollissima*) does not “up-end.” This was in accordance with my own experience at the time and appeared to be amply confirmed by the statement of such a careful observer as the late T. A. Coward and the fact that such a habit is not mentioned by either Millais or Phillips, of whom the latter goes very carefully and thoroughly into the feeding habits of the various species of duck. However, as so often happens with birds, there prove to be exceptions to the general rule. Last August when spending a summer holiday in the Swedish island of Gotland in the Baltic I found Eiders common in the boulder-strewn shallows along the coast close to the little town of Visby. Here it was no uncommon sight to see Eiders “up-ending” in a manner precisely like that of surface-feeding ducks, except that, so far as I saw, they only maintained themselves thus for very brief periods. It may be suggested that the development of the habit is connected with the fact that the Baltic is practically tideless. It is probable that good feeding happens to be found in water which is constantly just too shallow for diving and just too deep to reach by merely submerging the head, so that it can only be got at in the way described. It would be interesting to know whether any other readers of *British Birds* have observed this undoubtedly exceptional habit elsewhere. It may be added that the Eiders at Visby in August were all females and full-grown, or practically full-grown, young birds. B. W. TUCKER.

NORTHERN GOLDEN PLOVERS IN SUSSEX.

As, apart from ringed birds, identifications of the Northern Golden Plover (*Charadrius a. altifrons*) in this country are very few, it seems worth while to record them. Certain fields in Walland Marsh are favourite winter resorts of Golden Plover and there is annually a large flock there from September to April. In 1938 they were temporarily banished by the weather on December 21st, but returned in February, 1939. On April 8th a portion of them, numbering about 150, flew over into the Midrips and settled, giving me a

good view of them at about sixty yards. Nearly all had acquired practically full summer plumage and it was possible to be sure that a good many at any rate, by their intensely black breasts, necks and faces, outlined with broad white sinuous bands, belonged to the Northern race. Two days later Mr. P. A. D. Hollom saw them and confirmed my observations. On May 13th at the same place a flock of thirty flew over, coming in direct from the sea and continuing into the marsh. It could be seen that they were all in summer plumage and probably also of the Northern race, as the date would lead one to expect, but this could not be verified with the same certainty as in the case of the standing birds.

N. F. TICEHURST.

NUMBERS OF BLACK-TAILED GODWITS IN WINTER IN Co. CORK.

I HAVE been observing Black-tailed Godwits (*Limosa limosa*) during the present (1939-40) and last (1938-39) winter in the estuary of the river Lee and Queenstown harbour, Co. Cork, and find them to be abundant.

Throughout December and January they are to be seen in numbers feeding on the mudbanks of all tideways and when these are covered, collecting in large flocks on adjacent promontories.

Close to Cork itself in a low-lying area near the river, known as the Marina Estate, birds are always present in large numbers feeding in the waterlogged fields. I have on occasions here counted over 120. This ground is now being drained and brought into cultivation and will presumably cease to attract these birds.

C. F. SCROOPE.

[Hitherto the Black-tailed Godwit has been chiefly known as a passage-migrant in Ireland and winter records have been only occasional.—EDS.]

LARGE NUMBERS OF BLACK-TAILED GODWITS IN SUSSEX.

IN September, 1938, I counted a flock of 150 Black-tailed Godwits (*Limosa limosa*) at Thorney Island (*antea*, Vol. XXXII, p. 240). On August 19th, 1939, at about half a mile from the same spot I counted a flock of 235. This is by far the largest number I have seen.

J. P. WILKINS.

GREY PHALAROPE SEEN IN DERBYSHIRE.

EARLY in December, 1939, I received a letter from Mr. F. C. Banton, of King's Heath, Birmingham, in which he described a small wader seen on the banks of the Trent near Repton on December 2nd. He described it as "8 or 9 inches long

mostly white, ivory grey back, black eye and stripe, black legs and bill. In flight the wings seemed rather narrow and pointed and it seemed to me to be a very fast flier. While feeding at the edge of the river it seemed very tame and gave a rather faint double whistle." In reply to a question from me, Mr. Banton added that it "certainly swam although not for any distance." I think there can be no doubt that it was a Grey Phalarope (*Phalaropus fulicarius*).

H. G. ALEXANDER.

PUFFIN RINGED AT ST. KILDA REPORTED IN NEWFOUNDLAND.

AN UNIQUE recovery of a ringed bird has just been reported to the Bird-ringing Committee, and is worthy of special mention outside the ordinary Recovery lists. A Puffin (*Fratercula a. grabæ*) was ringed (RV 4692) at St. Kilda by Lord Dumfries as a young one on August 10th, 1939, and was shot at Herring Neck, on the northern coast of Newfoundland on December 20th, 1939.

ELSIE P. LEACH.

PINK-FOOTED GEESE IN DORSET AND MERIONETHSHIRE.—Mr. G. K. Yeates informs us that he shot a Pink-footed Goose (*Anser f. brachyrhynchus*) on February 1st, 1940, near Sherborne. A flock of 40-50 had been observed for several days. There are very few positive records of the species in Dorsetshire. The bird shot was an immature male and its bill was all pink except for the nail.

Mr. W. A. Cadman writes that he examined an adult Pink-footed Goose shot at Dovey Junction on February 2nd, 1940. Three others with this bird may have been of this species, but of large numbers of geese in the Dovey Estuary during the hard weather examined with binoculars at reasonable distances all were White-fronted Geese. There are only a few scattered records of the Pink-footed for Merionethshire.

SMEW AND GOOSANDERS IN MERIONETHSHIRE.—Mr. W. A. Cadman informs us that an adult female Smew (*Mergus albellus*) was shot in the Dovey Estuary on January 4th, 1940. The bird is a scarce visitor to north-west Wales. In the same locality several Goosanders (*M. m. merganser*) were seen in the last half of January, and an adult male shot on the 22nd was brought to Mr. Cadman for identification, as well as a female from some miles inland in Montgomeryshire.

ICELAND GULL IN MIDDLESEX.—Mr. C. A. White sends us a description of a bird which he correctly identified as an

Iceland Gull (*Larus leucopterus*) seen by him at Staines Reservoir on December 25th, 1939. Subsequently several other observers saw the bird and Mr. J. Safford informs us that it was present on January 15th, 1940. The species is rarely seen inland and we believe this is the first record for Middlesex.

GREAT GREY SHRIKE IN CORNWALL.—Mr. C. J. Stevens informs us that on January 5th, 1940, a Great Grey Shrike (*Lanius e. excubitor*) was shot at Par and brought to him for identification. The bird is scarce in the west.

REVIEW.

The Behaviour of the Robin.—Part I. The Life-History, with special reference to Aggressive Behaviour, Sexual Behaviour, and Territory. Part II. A Partial Analysis of Aggressive and Recognitional Behaviour. By David Lack. *Proc. Zool. Soc., Ser. A*, Vol. 109, 1939, pp. 169-219.

A GOOD many ornithologists are already aware of Mr. Lack's intensive field studies of the Robin by means of colour-ringed birds, and we are glad to welcome the first of the several papers in which the results of these investigations are presented. It affords an effective commentary on the ignorance of complacent people who not so very long ago seriously imagined that British birds were "worked out," and it will rank as a contribution of first-rate importance to the study of bird behaviour. Its general interest is such that it seems desirable that this notice should include something more expressly in the nature of a summary than is required in a good many reviews. The paper is long and it is so crammed with significant material that a full summary is impossible even in a notice of some length, but the salient points can be indicated. Part I describes the life-history and more especially the aggressive and sexual behaviour, based on four years' work in the field. Burkitt's conclusion that the display of the Robin is not "courtship," but aggressive is abundantly confirmed. Territories are maintained by males and defended against trespass from August to the end of the next breeding-season. Female behaviour is less constant; some maintain autumn territories with fighting and song and, in fact, behave exactly like males; others keep to restricted areas, but apparently do not defend them or sing. In any case, the females abandon their territories in late December or January, enter those of males, and pair up with them. After pairing up, the females do not normally sing. Each breeding pair occupies a territory of between 2,000 and over 10,000 square yards, the shape being determined by encounters with neighbours. The behaviour in the territory is of the general type which the work of Howard and others has made familiar to ornithologists. The "owner" normally only sings within its territory and defends it against trespassers. Both sexes regularly trespass on neighbouring territories to feed, but put up little or no resistance there when attacked.

The posturing consists mainly of stretching the throat and breast to display the orange-red colouring, with a rhythmical side to side swaying of the body and is illustrated by some very successful photographs by Mr. H. N. Southern. Contrary to a widespread belief, juveniles are not normally driven away by the parents, but appear to keep to the parental territories till territorialism wanes in late

summer. Attacks on other species of about the same size which enter the territory occur at times, but in an erratic and inconstant manner. Occasionally a Robin "invades" a territory already occupied, and such cases constitute an exception to the rule that the Robin does not fight or sing actively in another's territory. The fighting on such occasions is, however, often merely "formal," consisting of singing and chasing, one bird or the other finally establishing its "dominance" without any real attack. But sometimes serious fights occur.

Behaviour on the female's first arrival varies considerably. About half the males postured at the female and extremely loud singing from the male is usual. In all cases the female at intervals flew right up to the male, who generally retired. Some females postured at the males, but the posturing of both sexes is too inconstant and transient to be regarded as a "display." It may be due partly to heightening of emotional tone which finds an outlet in this way, partly to difficulty in immediate adjustment to the new situation on the part of a bird whose reaction to another Robin on his territory has, up to now, been hostile. Verwey observed much the same thing in the Heron. Pair-formation has more the character of a social than a sexual phenomenon, and during the more or less prolonged "pre-nuptial phase" which follows it there is neither display nor coition. But towards the end of March nest-building begins and is followed within a few days by coition and feeding of the female by the male. No display precedes coition; the female merely assumes an invitatory posture and is mounted by the male. How the unmated male distinguishes a potential mate from trespassing Robins is unknown, but it is clear that paired males recognize their mates as individuals. Parents do not readily distinguish their fledglings individually.

The above is a bare summary of the typical course of the breeding cycle, but not the least striking of the results of Mr. Lack's studies is the remarkable variability which is demonstrated in almost every feature of behaviour. Only the broadest outlines of the behaviour pattern are constant.

This part concludes with a discussion of the significance of territory in the Robin. Mr. Lack now defines territory as an isolated area defended by one individual of a species or by a breeding pair against intruders of the same species and in which the owner of the territory makes itself conspicuous. This seems a sound and acceptable definition. It is concluded that "while the whole question of survival value is extremely tentative, the most plausible reasons for the importance of territory in the Robin are that it assists pairing-up and perhaps in maintaining the pair, while, since it results in local spacing, it may possibly assist in rapid feeding of the young. But that territorial behaviour sets a specific upper limit to breeding density is doubtful and it seems unlikely that it is important in ensuring an optimum density as regards food. Since the Robin is one of the most territorial of all birds, these conclusions may be of fairly wide application." With regard to the occupation of territory in autumn Mr. Lack takes the view that this is probably to be regarded as a partial revival of spring behaviour without adaptive value.

Part II is an attempt to analyse the factors on which the "territorial instinct" depends. This interesting section is even harder to summarize shortly than the other. The situation proves to be one of considerable complexity and any simple "explanation" proves inadequate. The Robin shows aggressive behaviour not only towards intruding Robins, but (to a markedly variable extent) towards a

stuffed adult Robin, other species (especially in flight), living and stuffed juvenile Robins, and even an isolated red breast! It is evident that aggressive behaviour is correlated with at least four elements in the external situation, flying-away movement, Robin shape, red breast, and song, each of which tends to be associated with a particular motor behaviour, namely pursuit-flight, striking, posturing, and song respectively, but the division is not complete. Occasionally, for instance, a Robin will posture at a specimen lacking the red breast, strike a red breast, or sing at a silent Robin. Further, the Robin's own mate, which possesses all the above four elements in the external situation eliciting aggressive behaviour, is not normally attacked; and again the said elements exert their effect only within a given area, the territory; the bird attacks every other Robin but its mate within that area and (with the exception already noted of an "invading" male) none outside it. Again the internal physiological state of the bird is clearly of prime importance in eliciting aggressive actions, and this internal state is also evidently complex and certainly varies in more ways than one. There is a seasonal variability with a spring and autumn maximum, the female having a shorter spring period and a much more variable autumn period than the male, and the fluctuations do not follow those of sexual behaviour or coincide completely with those of song. In spring aggressiveness increases on pair formation, but the unmated male in autumn is as aggressive as the mated male in spring. The internal state varies markedly in intensity in different birds and may vary somewhat from day to day in the same bird, and further it cannot be regarded as a unity, for it seems to be different for striking as compared to posturing and perhaps for the different types of posturing. "One is left with a confused picture of complex inter-action between the visual and auditory situation ('object attacked'), the motor behaviour ('manner of attack') and the internal driving factors ('predisposition to attack'), the first and second of which are partially, but not completely, separable into several correlated elements, while the third may also show a similar division." None of the current theories of instinctive behaviour seems, without some adjustment, fully to fit the facts, but Mr. Lack clearly recognizes that they are too incomplete, especially in connexion with the influence of internal secretions, for a positive interpretation to be attempted. But interpretations can come with increase of knowledge; meanwhile the facts which Mr. Lack has elucidated in this model field investigation are of first-rate importance amongst current ornithological researches, in greatly advancing our knowledge of the biology of an extremely interesting species, and we offer him our congratulations. B.W.T.

LETTER.

GREAT SHEARWATERS IN THE ENGLISH CHANNEL.

To the Editors of BRITISH BIRDS.

SIRS,—In connexion with the discussion of this subject (*antea*, pp. 248-50) it is perhaps worth mentioning that in September, 1911, I watched quantities of Great Shearwaters in the Bay of Biscay on a voyage to Bordeaux on the 6th, and on the return voyage on the 24th; on the 25th, in the Channel, they were still plentiful until the boat was fairly near the Devon and Dorset coasts at 5 p.m. Although I was not then aware that *P. kuhlii* ever visited these waters, it is certain that all those seen at close quarters, both in the Bay and the Channel, were *P. gravis*, as I saw the markings on the head and nape quite distinctly and mentioned it in my notes written at the time.

H. G. ALEXANDER.

117 40
PURCHASED

A HISTORY OF THE BIRDS OF ESSEX

William E. Glegg, F.Z.S., M.B.O.U.

Numerous Photographs and a Map. Demy 8vo. 25/-.

**A HISTORY OF THE
BIRDS OF MIDDLESEX**

William E. Glegg, F.Z.S., M.B.O.U.

6 Plates and Map. Demy 8vo. 18/-.

**A HISTORY OF THE
BIRDS OF NORFOLK**

B. B. Riviere, F.R.C.S., F.Z.S., M.B.O.U.

16 Plates and Map. Demy 8vo. 25/-.

BIRD-LIFE IN THE ISLE OF MAN

Colonel H. W. Madoc, C.B.E., M.V.O.

Photographs. Crown 8vo. 6/-.

BIRD MIGRATION

A. Landsborough Thomson.

Illustrated. Small Crown 8vo. 5/- net.

HOW TO KNOW BRITISH BIRDS

Norman H. Joy.

Illustrated. Small Crown 8vo. 5/- net.

BIRDS OF THE GREEN BELT

R. M. Lockley.

Illustrated. Small Crown 8vo. 5/- net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner.

Illustrated. Small Crown 8vo. 5/- net.

H. F. & G. WITHERBY LTD.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique).

THE HANDBOOK OF BRITISH BIRDS

By H. F. WITHERBY (Editor), F. C. R. JOURDAIN,
NORMAN F. TICEHURST and B. W. TUCKER.

To be completed in five volumes.

*Illustrated by 500 paintings reproduced in full colour depicting about
1,800 birds.*

“The *Handbook* is a better, more complete, and infinitely more interesting history of the birds of a country than that published anywhere else in the world, including America.”—*The Field*.

£5 5s. the set complete. Vols. I, II and III have been published.

A HISTORY OF SUSSEX BIRDS

By JOHN WALPOLE-BOND.

*In three volumes published simultaneously and illustrated with
53 coloured plates*

By PHILIP RICKMAN.

“It would be difficult to say too much of the accuracy of personal observation and the thoroughness of research. The three volumes are likely to remain as a standard example of such literature.”—
SIR WILLIAM BEACH THOMAS in the *Observer*.

£5 5s. the set.

SONGS OF WILD BIRDS

Third Impression.

By E. M. NICHOLSON and LUDWIG KOCH.

Introduction by JULIAN HUXLEY.

With two double-sided 10-inch gramophone records featuring the Nightingale, Cuckoo, Blackbird, Song Thrush, Pied Woodpecker, Green Woodpecker, Robin, Wren, Hedge-Sparrow, Turtle-Dove, Wood-Pigeon, Chaffinch, Willow Warbler, Whitethroat and Great Tit.

By the same authors

MORE SONGS OF WILD BIRDS

With three double-sided 10-inch gramophone records featuring the Skylark, Woodlark, Curlew, Tree Pipit, Wood-Wren, Blackcap, Garden Warbler, Rook, Carrion Crow, Jackdaw, Magpie, Jay, Little Owl, Redstart, Chiffchaff, Mistle-Thrush, Heron, Stock-Dove, Nightjar and Blue Tit.

Each 15s. net boxed.

H. F. & G. WITHERBY LTD.

8 APR 1940

PURCHASED

BRITISH BIRDS

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

APRIL 1,
1940.

Vol. XXXIII
No. 11.



MONTHLY 1s 9d. YEARLY 20s.
326 HIGH HOLBORN LONDON
H. F. & G. WITHERBY LTD.

The Fourth Volume of THE HANDBOOK OF BRITISH BIRDS will be published in May or June. The exact date will be announced later.

The Publishers regret that the publication of this volume has been much delayed by various unavoidable circumstances.

Ready

BIRD RESERVES

BY

E. C. ARNOLD

*Illustrated with 9 plates in colour and
12 in black-and-white by the author*

Medium 4to

15s. net
Postage 9d.

Readers will surely agree with the author, after reading his delightful book, that the £100 he paid for a pond proved a thoroughly successful and sound investment. The author tells of his adaptation of the pond to attract bird life and chronicles the activities of the various species at different seasons of the year. The book also deals with Salthouse Broad, the Cuckmere Valley and Pevensey Marsh.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER II, Vol. XXXIII., APRIL 1, 1940.

	PAGE
Obituary. The Rev. F. C. R. Jourdain	286
Observations on Breeding and Song of Wren. By the Late George Marples	294
The Index of Heron Population, 1939. By W. B. Alexander ...	304
A study of Blue Tits by Colour Ringing. By Hugh Kenrick ...	307
Notes :—	
Rooks' Nests lined with Feathers (A. G. Tayler)	311
Starlings swallowing Pellets (G. B. Gooch)	311
Male Yellow Wagtail's share in Incubation (Stuart Smith) ...	312
Little Owl preying on Birds (J. S. Elliott)	312
The Pale-breasted Brent Goose in Sussex (J. Walpole-Bond) ...	313
Flock of Bewick's Swans in Lancashire (J. Armitage)	314
Short Notes :—	
Starlings with young at Christmas. Blackcap in Hereford in February. Iceland Redwings in Dublin, Devon and Dorset. Hoopoe in Hampshire in January. Bean-Geese in Middlesex and Kent. Pink-footed Geese in Co. Wexford. Dark- breasted Brent Geese in Middlesex and Surrey. Smew and Velvet-Scoter in Cambridgeshire. Common Eiders in Dorsetshire. Red-necked Grebe in Ayrshire. Great North- ern Diver inland in Sussex.	314
Letter :—	
The Bill-snapping of a Little Owl (G. B. Gooch)	316

w

PURCHASED

OBITUARY.

THE REV. F. C. R. JOURDAIN.

(1865-1940.)

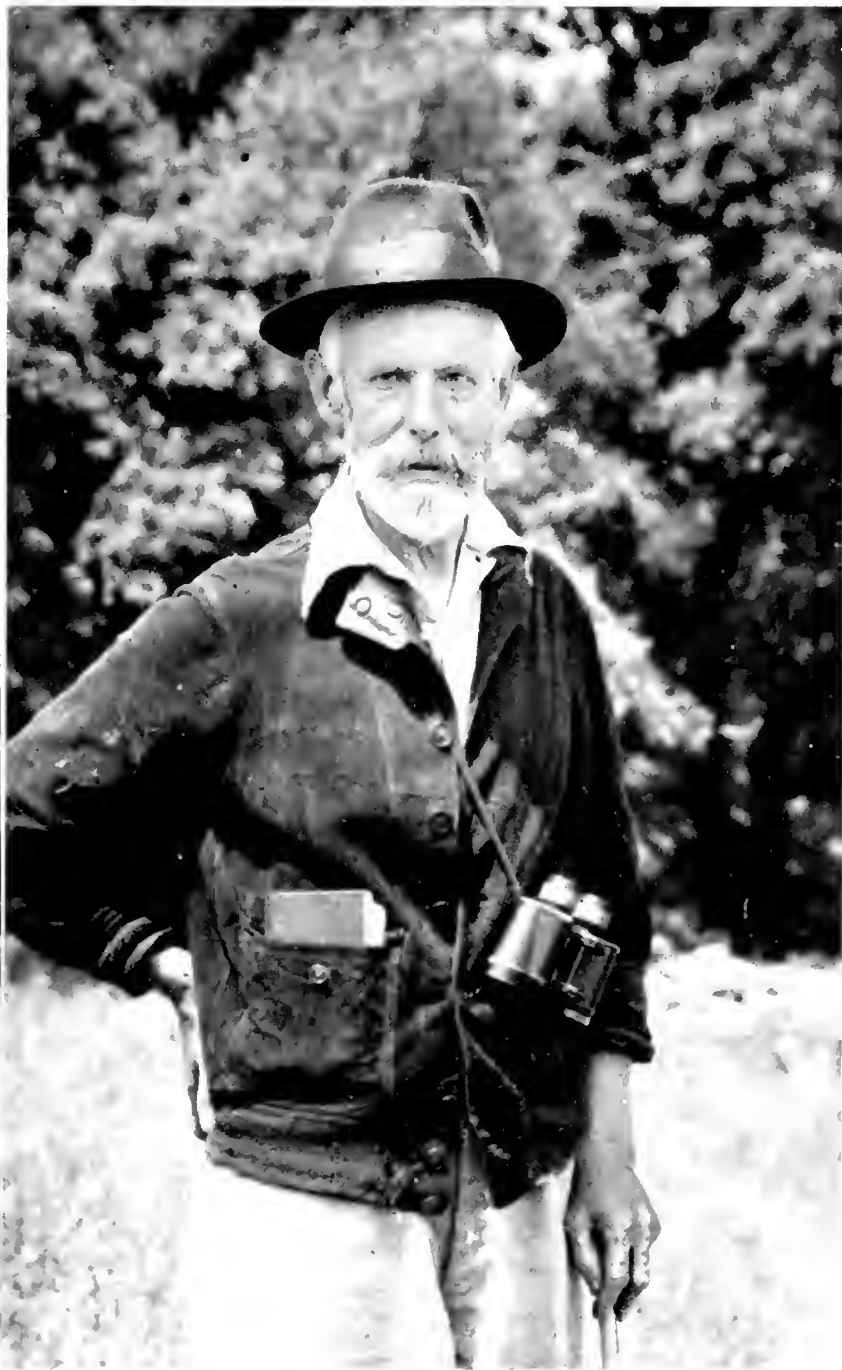
FOR just thirty-one years Jourdain has given us most constantly his very valuable help and expert advice in the conduct of this Magazine, and his sudden passing away makes a loss which is difficult to realize and impossible to exaggerate : it is indeed irreparable.

He had been ailing some time and felt the cold weather very severely, but he was always resentful of any disability and persisted in struggling on with his work. He insisted on fulfilling a long-standing engagement to lecture at Oxford in February and although he was really very ill he braced himself for the occasion and spoke in his usual fluent and interesting way. He was unable to do much after this, but he was of an indomitable nature, and he was downstairs attempting to work within four days of his death.

Francis Charles Robert Jourdain was born on March 4th, 1865. He was the eldest son of the late Rev. F. Jourdain, vicar of Ashbourne-cum-Mapleton. He was educated at Magdalen College, Oxford, where he graduated B.A. in 1887 and M.A. in 1890, in which year he was ordained. After curacies in Suffolk he was appointed vicar of Clifton-by-Ashbourne in 1894, and remained there for twenty years until 1914 when he became rector of Appleton, near Abingdon, Berkshire. In 1925 he retired and lived for a short while in Norfolk, but in 1927 moved to Southbourne, Bournemouth, where he was residing at the time of his death, which occurred on February 27th, 1940, a week before his 75th birthday. He was buried at Clifton, near Ashbourne.

He married in 1896 Frances Emmeline, daughter of William Richard Smith of Clifton. His wife inherited the Clifton property from her brother, the Rev. F. C. Smith, and at her death in 1933, Jourdain became tenant for life of this property, which now passes to his daughter Miss V. Jourdain. He also leaves a son Major F. W. S. Jourdain.

As an ornithologist Jourdain will be remembered first for his intimate and exact knowledge of all that is known concerning the breeding biology of the birds of the Palæ-arctic Region and especially those of the western part of that area. It may be safely said that no one else was in any way his equal as an authority on this subject. He was always working hard to get the gaps filled, and to get observations on such difficult points as the share of sexes



F. C. R. JOURDAIN
Corsica, June, 1937.

(Photographed by John Armitage.)



and incubation and fledging periods. His paper on the subject in 1930 in this Magazine was illuminating. That so much had been done to fill the gaps between the time of the publication of the *Practical Handbook* and the present *Handbook* was in fact largely due to the stimulus given to the study of the subject by his exact statements of the known facts in the earlier work, and although this was a great satisfaction to him, he had the intention to urge again the importance of making more observations when his work on the *Handbook* was finished.

He had also worked many years in collecting together every scrap of knowledge on the nature of the food of birds. A good many have made researches on this subject from the economic stand-point, but Jourdain's careful compilations of records of the specific nature of food of each species are obviously of the greatest value to ornithologists. He had too a regard for the economic side, and as far back as 1903 had written a prize essay on the subject which was published by the Royal Society for the Protection of Birds, while in 1927 he wrote about the economic status of finches in the *Journal of the Ministry of Agriculture*.

He had a fine knowledge of geographical distribution, and here his numerous journeys in many parts of the western Palæarctic area stood him in great stead, while in all this work he made the best use of his very considerable linguistic abilities and was untiring in his search for facts both in literature and from correspondents in all parts of the world.

On these three subjects he has set out in his sections of the *Handbook* very exact records of the facts, and ornithologists will be glad to know that before his death he had completed his work on "Breeding" and "Food" for volume 4, and very nearly that for the "Distribution Abroad." For the remaining 50-60 species to be dealt with in volume 5 he has left very careful notes.

Jourdain's capacity for work, both physical and intellectual, was remarkable, and he was tireless both in the field and with his pen. He was constantly engaged in writing about birds, and often worked far into the night. Many of these contributions were in the form of notes, letters and papers in ornithological journals of many kinds both at home and abroad, and a selection of these is given at the end of this notice. In longer tasks he was rather lacking in a determination to complete the work, not indeed because he was at any time idle, but for the reason that he was led away on to new tasks, and being always willing to help others

this often resulted in so much research and labour that it kept him from completing his own work. The following notes will give some idea of his more extensive literary work.

In 1906 he published the first part of a work on *The Eggs of European Birds*, which was planned to be completed in ten parts, but only four were issued and the publishers failing, Jourdain never finished it. Between 1910 and 1913 he made important contributions with others to F. B. Kirkman's *British Bird Book*, and in 1930 was joint author with the same writer in a single volume under the title *British Birds*. In 1912 was issued the *Hand-List of British Birds* in which Jourdain collaborated with us, and shortly afterwards work was started on the *Practical Handbook*, though owing to the war publication of the first part was delayed until 1919. It may here be mentioned that during part of that war Jourdain edited this Magazine during the Editor's absence abroad. About this period he collaborated with W. H. Mullens and the late H. K. Swann in their useful *Geographical Bibliography of British Ornithology*, published during 1919 and 1920, and had assisted the authors mentioned in their previous *Bibliography of British Ornithology*. Amongst other important works in which he gave assistance must be mentioned especially Hartert's *Die Vögel der palaarktischen Fauna* and to a less extent A. C. Bent's later volumes of the *Life Histories of American Birds*. In 1930 he translated from the German Pastor Kleinschmidt's work *The Formenkreis Theory*.

Jourdain always attached great importance to gathering together and publishing local records and in this work he had a long experience and a critical judgment. He began such recording for his native county of Derby and published the first report for 1899 in the *Zoologist*, where it appeared annually for a number of years and was then continued in the *Journal* of the Derbyshire Natural History Society, and after a lapse of some years he again took over the task and acted as recorder up to his death. He also contributed sections on Zoology in the *Victoria History of Derbyshire*.

On becoming rector of Appleton near Abingdon, Berkshire, he soon began to take interest in the birds of the district and encouraged others to do so. This led to the formation of the Oxford Ornithological Society of which he was first President, and the annual report on the birds of Oxford, Berkshire and Buckinghamshire, the first of which, covering the years 1915-22, was edited by Jourdain with B. W. Tucker. He subsequently contributed the section on birds to the *Natural History of the Oxford District* and collaborated with

E. Hartert on the *Birds of Buckinghamshire*. In recent years he has compiled annual reports on the birds of the Bournemouth district and of Hampshire. Since 1935 he has edited in conjunction with others *The Oologists Record*, a quarterly journal.

Jourdain organized and led the first Oxford expedition to Spitsbergen in 1921 and voyaged there again in 1922. He wrote papers on the birds and spent much time over several years in writing a book on the subject but unfortunately this was never completed and published.

Almost every year he made an ornithological excursion abroad and had thus studied birds in many parts of Europe and North Africa. He was a hard traveller, a very good observer and untiring in the field; only two years ago he was able to do a twelve-hour day in the Scottish highlands. These trips resulted in some valuable papers on the birds of Corsica, Cyprus, Dobrogea, Algeria, Morocco, Egypt and South Spain. In the last paper he gathered together all observations on the birds of South Spain but unfortunately completed only the part dealing with the Passeres.

One of the main objects of his trips was to collect eggs and add to his splendid collection, but apart from this Jourdain had always intense longing to be out among the birds, seeing them in different countries, observing and noting. He took note of everything and his diaries are wonderfully detailed and full of information. He also kept regular notes at home, and it is hoped that these extremely valuable records will be kept so that they are available for reference. It should be mentioned here that his handwriting was a marvel of neatness and that he was able to draw very nicely. He was a most enthusiastic collector but a discriminating one and he has often said that in collecting in the field about one clutch in five hundred found was the maximum he could expect to take. He also was constantly acquiring eggs to make his collection more complete. His aim was not only to have well-authenticated eggs of all the species in the western Palaearctic region, but that his collection should contain sufficient variety to illustrate the range of normal individual, and especially geographical, variation in form, size and coloration, as well as to show affinities or differences in specific or larger groups. That he had the true collector's delight in an interesting or beautiful specimen or clutch is undoubted, but that he made the best possible use of his great collection from a scientific standpoint is acknowledged by all. It was his constant endeavour to make it illustrate to

the best advantage the kind of comparative and other biological principles already mentioned and he never tired of demonstrating such points to visiting ornithologists who were genuinely interested. His collection is thus a very notable one and it may safely be said that no other in this country, if, indeed, in Europe, is at the same time so extensive and so scientifically valuable.

He joined the British Ornithologists' Union in 1899, served on the Committee and was a vice-President (1934), and also for many years was a member of the British List Committee. He became a member of the British Ornithologists' Club in 1905 and was a regular attendant at the meetings, in the proceedings of which he frequently took part. The impetus which he gave to the study of birds at Oxford, as already mentioned, undoubtedly played a great part in preparing the ground for the developments, which led in later years to the foundation of the British Trust for Ornithology and the Edward Grey Institute of Field Ornithology in the University. Of the Trust he was an original member and served on the council as well as being up to the time of his death a member of the Scientific Advisory Committee. He was also one of the originators of the British Oological Association of which he was President from 1932 to 1939 and served as editor of the *Bulletin* for several years.

He was an honorary fellow of the American Ornithologists' Union and an honorary member of the ornithological societies of France, Holland, Germany and Hungary. He was also a member of the International Ornithological Committee and was chairman of section III at the Berlin (1910) and Copenhagen (1926) Congresses, while of the Oxford Congress (1934) he was the honorary secretary and edited the *Proceedings* of that Congress.

He had quite an exceptional memory which was remarkably accurate in detail. Though he kept carefully written records this faculty was of the greatest assistance to him in his work, while in discussions it was an unfailing advantage. He had a horror of any statement which he knew to be inaccurate and always felt it a stern duty to correct such statements so far as he could. It was very seldom indeed that he was wrong in his facts, but his criticisms were usually very severe and made in a satirical style which though often very humorous was sometimes too caustic to be wise. This made him enemies and caused some dislike though all could not but admire him for his great knowledge and accuracy. Nevertheless this irrepressible trait, as he himself well knew, kept him from

some of those high honours in the ornithological world for which his great attainments undoubtedly fitted him.

However characteristic was that withering style of his public controversies, to those who knew him well and especially those of a younger generation, this was far outweighed by his remarkable sympathy and inexhaustible kindness and helpfulness. No estimate of his character could be true without stressing this side of it. His mind was a store-house of precise knowledge, and he had the gift of being able to impart it to others with clarity. He was indeed always ready to give help and advice to any true seeker after knowledge and his understanding and encouragement of those at the outset of their career in ornithology formed one of the great features of his life and work.

To the end Jourdain was intensely interested in every phase of bird-life and was ever searching for the truth, and it may truly be said of him that ornithology never had a truer or more enthusiastic and devoted servant.

A SELECTED LIST OF THE ORNITHOLOGICAL WRITINGS
OF F. C. R. JOURDAIN.

1899. Photography applied to Science: Natural History. *Photography Annual*.
- 1900-9. Rough Notes on Derbyshire Ornithology. *Zool.* 1900, 1902, 1904, 1905, 1906, 1909.
1903. On the Preservation of the Kite. *Bull. B.O.C.*, XIII., pp. 43-5.
On the Economic Value of Birds. (Prize essay published as a pamphlet by the Society for the Protection of Birds.)
1905. On the Discovery of the Nest and Eggs of the Solitary Sandpiper. *Ibis*, pp. 158-61.
Birds, in Victoria History of the County of Derbyshire.
- 1906-12. *The Eggs of European Birds.* (Incomplete: Parts I-IV. only issued out of 10 planned.)
1906. On hybrids between Black Game and Pheasants. *Bull. B.O.C.*, XVI., *Zool.*, pp. 321-330, 433-4, *Ann. Scot. N.H.*, pp. 238-9; also 1912, *British Birds*, VI., pp. 146-9.
1907. On Colour Variation in the Eggs of Palearctic birds. *Ornis.*
- 1909-39. Zoological Record for Derbyshire—Birds. *Journ. Derbys. Arch. and N.H. Soc.*, 1909-1913, 1931-1938.
- 1910-13. *The British Bird Book.* (Some twenty chapters and collaboration in classified notes and bibliography.)
1910. A number of communications on eggs. *Bull. B.O.C.*, XXVII.
The Bird-life of Corsica. *Verhandl. V. Internat. Orn. Kongress*, Berlin.
- 1911-12. Notes on the Ornithology of Corsica. *Ibis*, 1911, pp. 189-208, 437-458, 1912, pp. 63-82, 314-332.
1912. *A Hand-List of British Birds.* (With E. Hartert, N. F. Ticehurst and H. F. Witherby.)
1913. Notes on the Bird-Life of S.W. Iceland. *British Birds*, VI., pp. 234-245.

1913. On the Breeding-Season and Clutch of the Steganopodes. *British Birds*, VII., pp. 94-100.
Breeding-habits of the Marsh- and Willow-Tits. *British Birds*, VII., pp. 141-4.
Corrections to the *Catalogue of Birds' Eggs in the British Museum*. *Ibis*, pp. 513-527.
1914. Erythrism in the Eggs of British birds. (With C. Borrer). *British Birds*, VII., pp. 246-260.
1915. Notes on the Bird-life of Eastern Algeria. *Ibis*, pp. 132-169.
1916. The breeding range of Leach's Petrel. *Auk*, pp. 196-7.
The status of the Black Redstart in England as a breeding species. *Zool.*, pp. 417-421.
1918. The first nesting record of the Great Skua in the Orkneys. *British Birds*, XII., pp. 50-2, 170-1.
The effect of the winter of 1916-17 on our resident birds. (with H. F. Witherby). *British Birds*, XII., 26-35.
- 1918-24. Orn. Report for Oxfordshire. *Rep. Ashmolean Nat. Hist. Soc.*
- 1919-20. *A Geographical Bibliography of British Ornithology*. (With W. H. Mullens and H. K. Swann).
- 1919-24. *A Practical Handbook of British Birds*. Sections on Breeding-habits and Food and assistance in Distribution, British and Abroad.
1920. The birds of Buckinghamshire and the Tring Reservoirs. (With E. Hartert). *Nov. Zool.*, 27, pp. 171-259.
1921. Les oiseaux de la Forêt de Mamara et des environs de Rabat. *Revue Fr. d'Orn.*, 13, pp. 128-133, 149-153.
1922. The breeding habits of the Barnacle Goose. *Auk*, 39, pp. 166-171.
The birds of Spitsbergen and Bear Island. *Ibis*, pp. 159-179.
1923. On the specific name of the Common Guillemot. *British Birds*, XVI., p. 322, *Ibis*, pp. 436-8.
The hitherto known birds of Marocco. (With E. Hartert.) *Nov. Zool.*, 30, pp. 91-152.
1924. The light and dark-breasted Brent Geese. *British Birds*, Vol. XVIII., pp. 49-52, *Bull. B.O.C.*, XLIV., pp. 84-6.
- 1924-6. *Report of the Oxford Orn. Soc. on the Birds of Oxfordshire, Berkshire and Buckinghamshire*. (With B. W. Tucker.)
1925. The Dobrogea. *Ool. Rec.*, 5, pp. 49-56.
A study on Parasitism in the Cuckoos. *Proc. Zool. Soc.*, pp. 639-667.
1926. *The Natural History of the Oxford District*. Section on Ornithology, pp. 128-160.
1927. Die Eier der Vögel von Mallorca. *Beitr. Fortpfl.-biol. Vög.*, pp. 33-7, 79-87.
Wall building birds. *British Birds*, XX., pp. 223-5.
The supposed nesting of the Velvet-Scoter, Long-tailed Duck and Scaup in Scotland. *British Birds*, XXI., pp. 38-40.
Palæarctic birds' eggs and egg-collecting. *Bull. Brit. Ool. Assoc.*, 2, pp. 24-29.
- 1927-9. British Finches: their economic status. *Journ. Ministr. Agric.*, 34, pp. 528-533; 35, pp. 651-6; 36, pp. 52-7.
1929. The breeding birds of Cyprus. *J. für Orn. Festschrift E. Hartert*, pp. 33-40.

1930. *Handbook of Cyprus*. Birds.
Our present knowledge of the breeding biology of birds.
British Birds, XXIV., pp. 138-144.
1930. *British Birds*. (With F. B. Kirkman).
1932. *The truth about the Kite*. Pamphlet.
Notes on Spitsbergen. (With others.) *Bull. B.O.A.*,
pp. 77-91.
1933. E. J. O. Hartert (Obituarial notice. With H. F. Witherby.)
British Birds, XXVII., pp. 225-9.
On the Palæarctic element in the *A.O.U. Check List*. *Auk*,
pp. 201-4.
Larus audouini im ostlichen Mittelmeer. *Orn. Monatsb.*,
41, pp. 122-3.
The Bald Ibis (*Comatibis eremita*). *Ool. Rec.*, 14, pp. 2-5.
1935. The Courtship of the Red-backed Shrike and the Woodchat.
British Birds, XXIX., pp. 95-7.
Notes on a collection of eggs and breeding habits of birds
near Lokoja, Nigeria. (With R. Shuel.) *Ibis*, pp. 623-63.
Progress in Ornithology during the past half-century.
S. East Nat., pp. 43-51.
1936. Critical note on Swinhoe's account of the breeding of the
Oyster-catcher in N. China. *Bull. B.O.C.*, LVI., pp. 86-8.
On the winter habits of the Green Woodpecker. *Proc.*
Zool. Soc., pp. 251-6.
Notes on Egyptian birds. (With H. Lynes.) *Ibis*, pp. 39-47.
- 1936-7. The so-called "injury feigning" in birds. *Ool. Rec.*, 1936,
pp. 25-37, 1937, pp. 14-16, 37-8, 71-2.
The birds of Southern Spain. (Passeres.) *Ibis*, 1936, pp.
725-63, 1937, pp. 110-52.
1937. Eggs of the Ravens of the Palæarctic Region. *Bull. B.O.A.*,
54, pp. 2-4.
- 1937-8. Ornithological Report for the county of Hampshire.
Proc. Hampshire F. Club & Arch. Soc.
- 1938-9. *The Handbook of British Birds*. Vols. 1-3 (in progress).
Sections on Breeding, Food and Distribution Abroad
and with B. W. Tucker on Display and Posturing.
1938. Pallid Harrier in Dorset. *British Birds*, XXXII., pp. 150-1.
1939. Cliff-breeding in the House-Martin. (With H. F. Witherby.)
British Birds, XXXIII., pp. 16-24, 137-8.

H. F. W.

OBSERVATIONS ON BREEDING AND SONG OF WREN.

BY

THE LATE GEORGE MARPLES.

IN *British Birds* (*antea*, XXXII, p. 397) I gave an account of recurrent singing by Wrens (*Troglodytes t. troglodytes*) in my garden. Below I offer details of singing and other actions which were associated, not directly with territory, but with the later stages of nest-building. Whether this singing emanated from one of the birds previously reported I cannot say, but think it likely as the nest in question was built in the area frequented by the nearer of the two singers whose performances were reported.

Before describing these occurrences reference may be made to several other instances of song also immediately connected with nest-construction:

The first of these references is to a nest in process of being built, from which, each time the structure was approached, a Wren would emerge and at once burst into loud song. At another partly constructed nest one of the birds was noticed to sing just before entering and as soon as it came out. A third reference is to a nest built by Wrens inside an old Martin's nest (*Delichon u. urbica*) over my bedroom window. One of these Wrens would begin singing on the spout above and, without stopping its song, enter the nest and continue to sing while inside. On its mate entering singing began again and when the singer emerged its song was repeated on the spout. None of these singing Wrens was ever seen to carry material but whether they were males or not is impossible, positively, to say.

To return to the main story.

When, on July 1st, 1939, the nest to which the following notes refer was discovered in a gorse bush some six yards from my studio window it was well on towards completion but was still unlined and lacked the usual strengthening twigs round the entrance. The removal of a small branch brought the nest well into view.

Owing to the likeness between the male and female Wren and to the suspicion that, at times, both sexes indulge in song, one cannot with certainty say whether the later stages of nest construction were a joint affair or not. In the case under review, as will be seen later, there was little evidence, if any, that incubation or young-feeding was carried out by both parents either. But whether the male assisted in the

work or not, assuredly he saw to it that his wife did not neglect her task. He followed close behind her when she left the nesting bush for more material and accompanied her when she returned. Commonly while she was at the nest, he sat on a near-by shrub singing loudly. When she left the nest and ran across some open ground, mouse-like, crouching very low with tail held horizontally, he would fly down from his singing-perch, alight and chase after her with tail erect. He would then spread and shiver his wings and with mandibles wide open give his full song, after which, as she disappeared under the bushes he returned to his perch and resumed his song there.

It may be remarked that the way the tail was carried was, in the early stages of the proceedings, a positive indication of the sex of each Wren, though, as time passed the distinction was not maintained.

For sake of description I shall, with justification, I think, assume that the bird which did all the later work was the female; I have called her "the builder" and later "the feeder," the male being referred to as "the singer."

That I might get a clear conception of the Wrens' behaviour I kept a close watch at various times most days from the discovery of the nest until the young were away. From these observations several facts were established. First, that one bird (the female?) visited the nest many times but, except during the first phase, was seldom seen to carry any building material. Second, that one bird only (again the female?) appeared to incubate and to feed the young. Third, that one bird (the male?) sang incessantly during the construction period and, fourth, that song was almost entirely abandoned after incubation had started. Fifth, that early in the proceedings, attacks on the builder were made by the singer and, later, attacks on the singer were made by the feeder. Sixth, that their actions were curiously spasmodic, and, lastly, that there seemed to be long periods, sometimes days, of absence from the nest.

On the first day of watching, July 1st, one Wren was seen to be busily engaged in collecting fairly long pieces of grass from an area within a yard or two of the nest. This she did with great assiduity, returning to the nest many times with this material. Later in the day her energy had almost evaporated, for building, though still in evidence, occurred only at long and irregular intervals.

It should be said that all times mentioned are to be understood as "summer time."

On July 2nd I watched from 6.30 to 8 a.m. during which period the nest was visited 27 times. The visiting bird stayed in the nest for short intervals varying from a few seconds to a minute. Sometimes material was gathered near the nest and taken in but, usually, which seems curious, it was not apparent that anything whatever was carried. The intervals between the visits to the nest averaged 3.15 minutes. The longest absence was $15\frac{1}{2}$ minutes this being one of those "holiday periods" which seem to happen about once every hour with most birds when engaged in building their nest or feeding the young. On three occasions the singer was visible at the same time as its mate but once only was it seen to go to the nest—an inspection call, perhaps? It seemed certain that the singer and the builder were different birds each keeping strictly to its own occupation.

During the building the other bird sang repeatedly, 62 songs being counted between 2 and 3 p.m. during which hour no visit was made to the nest by either bird. Later in the day no less than 190 songs were sung between the hours of 7 and 8 p.m.

Two or three times during the day slight scuffles took place in the air between the two birds; these seemed to indicate that the visit of inspection had not satisfied the singer that the builder was giving proper attention to her duties.

Two days after, on July 4th, watch was kept in the early morning for 80 minutes. During this time the builder seldom returned to the nest. From this it seemed possible that the nest was completed. Still the singer continued his part, singing as he had done hitherto—close at hand or some distance away and in between as he was constantly going and coming. He sang 158 times, *i.e.*, at the rate of 1.97 songs each minute. He did not sing in the usual regular manner but often combined his singing into groups of 2 to 14 songs without any break whatever between. At these times he seemed seized with ecstasy, so passionately did he sing. The groups of songs were separated by silences of varying length. From notes I have made of the diurnal beginning of 74 other Wrens' songs I find that singing begins early and continues throughout the day until late, the average time for giving the first song of the day being 21.55 minutes before sunrise and for the last song, 13.4 minutes after sunset, this making a 17-hour singing-day. When the Wren sang at uniform intervals as it usually did, particularly in the early stages of these proceedings, each complete song lasted 4 seconds with pauses of 6 seconds between. Occasionally

the song was continued when the bird was in the air flying from one perch to another. I have heard one Wren, but not this one, repeat its song for over an hour with perfect regularity, the 4-second song alternating with the 6-second intermission without any rest whatever.

Between July 4th and July 9th the builder was never seen to go to the nest though a careful watch was kept, except that on the latter date one visit was paid, the bird carrying a feather. Afterwards, late in the afternoon and in the evening it was seen to return to the nest 4 or 5 times but never appeared to be carrying material. The male, though still singing in the vicinity of the nest only did so intermittently; building had finished, so song was dying away.

The following day, July 10th, I started watching at 7.15 a.m. but it was not until 8.45 that a bird was seen at the nest. This was the only visit observed that day though a good look-out was maintained.

On July 11th the builder was seen to leave the nest at 8.30 a.m. but circumstances prevented any further observations being made.

Nothing was seen of either bird on the 12th or on the 13th though one or two songs were heard; both building and song seemed to be in abeyance.

On July 14th, at about 8 a.m., a Wren was noticed within a yard or so of the nest and at 8.15 it went in. But it was not seen to come away though a strict watch was kept.

During the next few days no Wren was seen or heard and after five days had elapsed the nest was examined; it was found to be completed being lined with feathers and containing two eggs.

For at least a week after this no bird was seen near the nest and seldom was a song heard even in the distance.

July 26th, however, brought a recrudescence of activity. A song came from the neighbourhood of the nest at 10.30 a.m. At 4 p.m. one of the Wrens was seen feeding on ants about two yards from the nest when suddenly it stretched itself up and looked around, evidently some sound had been heard, for immediately another Wren appeared. Followed a slight scuffle and one of the birds bolted hotly pursued by the other. Presently one was seen to go to the nest and the other returned to its feeding. In a short time this bird went into the nesting-bush and a second Wren appeared, probably from the nest. At once the conflict was resumed, one bird being driven off. Then one again entered the nest, stayed awhile, came out, returned, remaining inside for 7 minutes. Emerging,

it stayed out 11 minutes. Meanwhile the other Wren had resumed its meal on the ants, and, as it had the cocked-up tail associated with the male, was evidently the singer though it was not heard to sing.

It now seemed evident that the roles of these Wrens had been reversed. Earlier in the proceedings it was the singer which harried the builder, compelling her to work; now the builder resented the presence of the singer driving him from the vicinity of the nest.

At 4.28 the Wren in the nest came out and again chased the feeding bird away. In 5 minutes it returned to the nest but stayed 5 minutes only. It re-entered in 2 minutes carrying an ant's egg, departed again quickly and so continued. At 5.40 a furious pursuit was initiated by the bird from the nest. This driving away of the male by the female was most interesting for it was on all fours with the action observed with mammals after young ones have been born. It was, therefore, not a surprise to find, when an examination of the nest was made, that the renewed activity and the chasing away of the male was due to the fact that the eggs had hatched. It was now seen that incubation must have taken 14 or more days and that the almost complete cessation of song coincided with the beginning of incubation.

The same bird continued to go in and out of the nest at short intervals throughout the evening, regular feeding of the young having begun. The last visit was made at 8.32 p.m., sunset occurring at 8.56.

Observation was continued during 60 minutes on July 27th, beginning at 7.30 a.m. During this hour only 8 visits were paid to the nest at intervals varying from 3 to 9½ minutes. No singing was heard this day.

On July 29th watch was kept for one hour in the afternoon starting at 3.30 and again from 8.30 until the last time the feeder returned to the nest which was at 8.53. The afternoon visits numbered 8 in the hour with intervals for seeking food ranging from 1 to 12 minutes. In the evening she paid four visits with food in 23 minutes and after her last return appeared to stay in the nest for the night. No singing was heard on this date.

Having on two occasions (*supra*) noted the final visit to the nest of the day and wishing to time the earliest visit I started observation on August 1st at 5 a.m., sunrise taking place at 5.24. The feeder's first visit to her young was at 5.19, it having been too dark to see anything before this. If I am right in supposing she spent the night in the nest,

she must have emerged unseen in the darkness and was now returning with the first food of the day. For some time she slipped in and out the nest in the indifferent light like a ghost. My observations continued until 6.20; during this period 16 visits were noted, these being made on an average of one every 5 minutes. There was very little evidence, if any, of the male assisting in the task of feeding the young, the two birds were never seen at the nest together; visits paid at very short intervals, at 6.4 and 6.5 and again at 6.9 and 6.10, for example, may have been made by different birds but I did not think so, for the feeder often obtained food in the bush quite close to the nest and was thus able to return speedily. Only one song was heard on August 1st, a partial one given some distance away. The following day, also, one song only, again incomplete, was heard.

On August 4th I started to photograph the act of feeding the young and this provided me with a close-up of the operations. I found there were two young ones only in the nest, evidently the two eggs seen on July 19th formed the full clutch. One parent came back freely and, after the first few minutes, without any obvious nervousness. Again I have to say that while photographing I never saw the two Wrens at the nest at the same time, as so commonly happens when both birds take shares in feeding the chicks. But one bird did visit the nest twice without conveying food, visits seemingly made to inspect the nest-surroundings and this may have been the male. To give the camera a clear view of the nest several twigs had been tied back and it was this alteration of the environment which appeared to interest this particular bird. At first, when a little alarmed at the "hide," the feeder called "Tick-tick-tick" a number of times, this being a high note of anxiety resembling the one made by Robins when uneasy. Feelings of alarm wore off very quickly and this call was not heard thereafter. A "rattle" lower in pitch and quicker than the rattle of a disturbed Robin was given sometimes, especially when the cat came into view. While making this sound the beak was opened a little and the lower mandible vibrated. On one occasion "rattles" accompanied by a "dipping" action were given by the feeder when its beak was bulging with flies.

From this time the feeder seldom entered the nest for, usually, it departed as soon as the food had been delivered. Occasionally, however, she would wait, introduce her head into the nest and remove faeces. Four times in four hours

she went into the nest, staying some time ; on these occasions she generally emerged, bearing a dropping, but she never brooded the young. It seemed certain that feeding was done by one bird only.

On August 5th, between 6.20 and 7.20 p.m. food was given to the chicks 18 times. The feeder stayed at the nest an average of 8.6 seconds except on two visits when it entered and stayed 5 minutes and 3 minutes respectively. Never during this day was the singer heard.

The operation of feeding was watched for $1\frac{1}{2}$ hours on the morning of August 6th. During 90 minutes 42 visits were made to the nest, these being, on the average, every 2.14 minutes. Usually they lasted 6.8 seconds only, but three times the parent remained for 28 seconds and once for 27 seconds. While on these longer stays she appeared to be picking parasites or skin-scales from the nestlings.

There was no evidence of method in the search for food ; the bird flew in every direction seldom going twice to the same spot though once having flown to a bush 50 yards away she returned immediately to the same place after delivery of the food obtained there. Often enough she would find what she required close at hand, frequently in the nesting bush itself. On one occasion a slug was brought and once a spider ; flying ants as well as ant eggs seemed popular and so were small flies.

Another count of feeding visits was made in the evening of August 6th during $1\frac{3}{4}$ hours. Food was taken to the nest every 2.94 minutes for the feeder returned 35 times. She remained there when delivering the food on an average of 10.51 seconds and once again long stays of 60, 41, 38 and 31 seconds were noted. These times, as in the morning, were connected with ridding the bodies of the nestlings of something small or with the removal of excrement. Sunset occurred at 8.38 and the last visit seen was at 8.47 $\frac{1}{2}$. The feeder may have gone back to brood her young during the night, but if so, darkness prevented her return being seen, though watch was kept until well after 9 o'clock.

Next day, August 7th, observation was again begun early in the morning when it was dark. The sun rose at 5.33 and with it came a strong wind. Robins and other birds began feeding at 5.10 and it is probable that the Wren began about the same time although it was not actually seen until 5.32. Once more it was evident that one parent only was engaged in attending to the brood and it became inevitable that this bird should come to be regarded as a widow. But if so, she

was not at all like Shelley's "Widow bird" which "sate mourning for her love" for, with scarcely a moment's relaxation, she busied herself with the cares of her young; her approximate working day being one of $15\frac{1}{2}$ hours. This, it may be noted, was $1\frac{1}{2}$ hours less than the singing day.

Later in the day the nest was found lying on the ground; it had been dislodged by the heavy wind. Fortunately the young were ready to fly and the disaster merely accelerated their departure.

August 11th saw the return of the missing husband—if it was not some other male—for two partial songs were heard and a scuffle accompanied by low "hisses" was seen to take place near the nesting bush between the singer and another Wren. During this day and the one following the feeder constantly was seen foraging in the region of the nest and along the terrace. At intervals it would fly off with food into a hedge 30 to 40 yards away, where evidently the young ones were waiting to be fed. From time to time another Wren would appear working its way along the terrace among the plants. Sooner or later the feeder would discover this bird and there would be a fight followed by a chase, after which she would return and resume her food search. At times, during these frequent combats which, usually, were conducted silently, the attacker would call a loud, harsh "Chaat-chaat-chaat." The feeder never attacked any species other than its own. These actions seemed to provide an interesting and clear example of a female bird defending the territory.

After two days of being fed from food gathered near the nesting site the young ones moved off to more distant places and the feeder was no longer seen. But partial songs were noticed on several occasions each day until August 18th when once again a complete song was heard, thus signaling the termination of the breeding season. After that date the singer announced his presence almost every day in the same way.

As I had not the good fortune to see this particular pair of Wrens engaged in courtship, it may complete my picture if I add notes of fragmentary displays of this act by other Wrens previously witnessed.

"Two were in a hedge. Each sang a long, soft song somewhat different from the usual confident, challenging production. When one had completed its song except for the last few notes, the other commenced to sing, and after he had almost finished, the first bird began again. This alternation

of song continued for a considerable time. Both birds sang exactly the same series of notes which had some resemblance to the normal song. The songs were given when the birds, about a dozen yards apart, were moving up and down and along in the hedgerow as though engaged in feeding. They were so preoccupied as to be quite fearless. One flew into a tree and sang there, moving about as it had done in the hedge. The other once or twice mounted to an outstanding twig at the top of the fence and sang there. The sex could not be determined; they may have been rival males.

“Two Wrens on the rock garden. One ran, crouching like a mouse, then drew itself upright like a Guillemot, hopping quickly in this strange attitude with tail dragging on the ground. Then it resumed the ‘crouch,’ flew into the air, singing loudly, dropped back to earth and resumed the ‘Guillemot pose.’ While this was going on another Wren, some three yards away, was feeding and moving about in a normal manner seeming unconscious of the other’s grotesque performance. During this display long ‘trills’ were given some of them higher in pitch than others though which bird trilled could not be decided.

“Two Wrens perched about a yard apart on the topmost twigs of a hedge, ‘facing.’ Each raised its beak at an angle of 45 degrees and each bowed several times to its *vis-a-vis*.”

The details given above were the result of concentrated watchings during the times mentioned but throughout each day and almost every day an eye was kept on the nest and the doings of the Wrens, if any, did not escape notice.

[Mr. Marples’s paper raises some interesting points. That the male can and does build nests rapidly is a matter of common observation, but these nests are unlined, though sometimes subsequently lined, apparently by the hen. As far back as 1837 T. D. Weir watched a hen building a nest accompanied by her mate, who sang incessantly but gave little assistance. In this case the nest was built between 7 a.m. and 7 p.m. on one day; the following day some additional work was done by both sexes and in the evening the hen was carrying in feathers. This work was also carried on for the next six days, both sexes taking part. It is evident that in some cases the hen may do most of the building and the cock may take part in lining the nest.

With regard to feeding the young, Weir watched a nest from 3 a.m. to 9.10 p.m. and records both sexes feeding 278

times in the day. The fact that both sexes feed is confirmed by the observations of Messrs. E. P. Butterfield, R. F. Ruttledge, R. H. Brown and some continental workers. On the other hand, J. P. Burkitt found that there was no evidence of the male taking any share in feeding the young while they remained in the nest and in Germany O. Steinfatt has made similar observations. Now Mr. Marples records another case of the same kind. It is, I think, clear that there is great variation individually in this species. Weir's case of both sexes building may have been a case of emergency owing to the destruction of the usual "cock" nests; but that some hens undertake the whole work of feeding the young while in the nest and even, as Mr. Marples shows, resent the presence of the male, while others share in the task without friction, shows that behaviour in this case is not stereotyped but subject to individual variation.

F. C. R. JOURDAIN.]

*PUBLICATION OF THE BRITISH TRUST FOR
ORNITHOLOGY.*

THE INDEX OF HERON POPULATION, 1939.

BY

W. B. ALEXANDER.

THE number of heronries in which the nests were counted in 1939, and the figures reported to the Edward Grey Institute, was again greater than in any previous year. Particulars were received for one or more heronries in every county in England and Wales except Monmouth and Flint (and London, Middlesex, and Rutland, in which none are known to exist). Figures were also received from 11 counties in Scotland and 15 in Ireland, a large proportion of the latter being due to the assistance of the Rev. P. G. Kennedy. In England and Wales the number of sites reported on was 139, in Scotland 16, and in Ireland 33. Of these 188 heronries 166 were counted also in 1938, when they contained 2,820 nests as against 2,720 in 1939. The totals thus indicate a decrease of 3 per cent. in the breeding population compared with the previous year.

Mr. E. M. Nicholson, in his report on the 1937 figures (Vol. XXXI, p. 341), has explained the reasons that have led us to adopt two indices, one based on 1928 and the other on 1936. The statistical problems arising in connexion with the 1928 standard grow more troublesome every year. At the outset it was decided that the annual sample should contain heronries of various sizes in proportion to their relative abundance in the total in the 1928 census. This meant that only one heronry in the class with over 100 nests could be included. It happens that the one included has in the last 6 years varied between 54 and 68 nests. It has thus tended to keep the index down. On the other hand two heronries which had respectively 51 and 65 nests in 1928 both had well over 100 nests in 1939. Ought they now to be excluded from the sample? Of two other heronries in the class with over 100 nests in 1928, on which we have regularly received reports, but which have hitherto been excluded from the sample used for calculating the index, one still contains over 100 nests but the other has this year dropped to 61. Thus, of 5 heronries in the class with over 100 nests either in 1928 or 1939, two have fallen out of it since 1928, one has remained in it throughout and two have risen into it since 1928.

It seems to the writer that it is more satisfactory to include them all in the sample especially now that its size warrants

the inclusion of at least two heronries of this class. Adopting this procedure we get an index figure of 109 for England and Wales in 1939, compared with 100 in 1928. This figure is based on 2,288 nests, well over 50 per cent. of the total population in 1928. It is the same as the index for 1938 (Vol. XXXII, p. 139) and indicates that the severe weather experienced at Christmas, 1938, when many rivers and streams were frozen and deep snow covered most of the country, did not affect the Heron population as had been anticipated. It will be of interest to see whether the more prolonged cold spell of January and February will reduce the numbers of Herons breeding in 1940.

NEW INDEX, BASED ON 1936.

<i>Year.</i>		<i>Index.</i>	<i>Number of nests on which index is based.</i>
<i>England and Wales.</i>			
1936	... ..	100	1,982
1937	... ..	100	1,974
1938	... ..	101	2,017
1939	... ..	98	1,936
<i>Great Britain.</i>			
1936	... ..	100	2,129
1937	... ..	99	2,111
1938	... ..	101	2,069
1939	... ..	98	1,997
<i>British Isles.</i>			
1936	... ..	100	2,208
1937	... ..	99	2,183
1938	... ..	101	2,226
1939	... ..	99	2,149

It will be seen from the above table that the fluctuations during the past 4 years have been very slight. The index has in no case varied by more than 2 per cent., an amount which is not statistically significant. The main reason why the index based on 1936 has varied so much less than that based on 1928 is no doubt that the figures for each year are for almost exactly the same list of heronries counted by the same observers at approximately the same season. On the other hand the figures used for comparison with 1928 have each year included those for a number of heronries from which regular reports have not been received, but which can be utilized since we have a complete set of figures for 1928. Some of the 1928 figures, however, are for dates much earlier in the season than those adopted in recent counts, these latter having almost all been made between April 15th and May 10th.

As in previous years the stability of the Heron population

as a whole is the result of opposite tendencies in different parts of the country. In comparison with 1936 the samples from south-west England, south-east England, and Wales and the border counties show decreases of more than 10 per cent., whilst the samples from the Midlands and Ireland show increases of over 10 per cent.

As a check on the results obtained by the counting of sample heronries distributed over the country we have again been able to obtain figures for all the known heronries in four considerable areas of England, namely, the Thames drainage area; Sussex, where the survey was undertaken by Mr. E. M. Cawkell; Lancashire and Cheshire, where much help was received from Mr. A. W. Boyd; and Yorkshire and Durham, where the figures for the West Riding were collected by Mr. H. B. Booth.

In these four areas all or almost all the heronries have been counted for several years past. By interpolating figures for a few heronries not counted in certain years it has been possible to compile the following table. Figures in brackets indicate that in those years a number of figures have had to be interpolated so that the index is only approximate.

INDEX FIGURES FOR SAMPLE AREAS.

<i>Area</i>	<i>No. of of nests in 1928</i>	1928	1934	1935	1936	1937	1938	1939
Thames Basin ...	325	100	99	94	94	105	105	108
Sussex ...	294	100	(85)	95	(106)	103	111	93
Lancs, Cheshire and part of								
Westmorland ...	329	100	—	—	(124)	125	127	127
Yorks and Durham ...	129	100	(85)	(101)	106	92	100	100

It will be noted that the Heron population breeding in Yorkshire and Durham in the last two years has been the same as in the census year 1928, whilst in Lancashire and Cheshire it has been approximately 25 per cent. greater than in 1928 for the last four years.

It can perhaps hardly be expected that so many returns will be received in the present year, but it is hoped that as many helpers as possible will make a special effort to count nests in heronries between April 15th and May 10th and send particulars to the Edward Grey Institute of Field Ornithology, 39, Museum Road, Oxford. The data accumulated in past years provide a basis which has hitherto been lacking for determining the effect of an unusually severe winter on the Heron population of the British Isles, and such an opportunity may not occur again for many years.

A STUDY OF BLUE TITS BY COLOUR RINGING.

BY

HUGH KENRICK.

OWING to the present restrictions on petrol, many ornithologists are now cut off from their regular haunts, and are forced to confine themselves to watching the better known birds of their immediate surroundings. It seems to me a great opportunity for such people to study their birds as closely as possible. For some years I have been interested in the Blue Tits (*Parus c. obscurus*) at my home and have gained some very mixed results by the use of aluminium and coloured rings. While these are still barely sufficient to justify a paper, I am anxious that other people should be encouraged to experiment on similar lines. By this means we might get significant variations in results and others may follow a line which, whether of scientific value or not, is at least amusing and of absorbing interest.

The area in question is about three miles from the centre of Birmingham in a residential district, the house itself being surrounded by some seven acres of garden and nine acres of fields, beyond which comes a new housing estate. The study was begun with aluminium rings in 1932 and extended by the use of coloured rings in 1935. In addition there are a number of nest-boxes in the area; this year the total available is 19. There are not many natural holes or cracks. As I wished to band the young, if I found one being used I put up a box on the nearest tree, encouraging the tits to change by blocking the crack if necessary. At this point I may say I have not yet proved a general increase in population, but only that I have more nesting in boxes each year.

For the first years the Blue Tits were caught in a variety of traps in the winter, and in the summer the hens were ringed in their nests. This method had the obvious limitation that few tits will submit to trapping and handling more than once or twice a season; and for every one which is caught repeatedly, ten at least cannot be recovered, even though they frequent the food-tables. The use of coloured rings widens the field immensely. These rings can be readily recognized with the aid of field-glasses when the bird is at a feeding table, at a nest-box, or even in a tree. (It is difficult to identify a ringed bird in a quickly moving flock in trees without very good conditions of light and background.) The establishment of a regular supply of nuts, hemp and fat just outside the window of a living-room enables me to

Examples :

LH665, recorded 30.11.35.	HR775, recorded 6.2.38.
18.1.36.	12.2.39.
5.2.37.	
KN583, recorded 16.2.36.	
28.2.37.	

With such divisions the most profitable season for watching is February and March. During the summer any unringed breeding tits are caught on the eggs or when feeding young, by using a butterfly net or other apparatus to close the hole behind the parent. In the late autumn there are only the parents of the year and a few unringed birds, probably young hatched outside the ground. In January the visitors at the tables increase, and a cold week-end in February may keep me fully occupied observing, recording and trapping new arrivals.

By these coloured rings on one day I recorded 21 Great, 22 Blue and 3 Coal Tits. Another day 17 Great, 18 Blue and 3 Coal. While in the whole season even more tits are noted, for in 1936/7 I had 46 Blue Tits and the same number in 1937/8, though not all the same birds. These results are rather surprising, as most people think of the visitors at food-tables as being just one set of birds, small in numbers.

Some of the Blue Tits, either owing to the frequency of their visits, their nesting in the boxes, or some peculiarity of character, have become of special interest to me. The history of a few of these will sufficiently explain the possibilities of my methods.

(1) A cock first caught in September, 1936, was seen on 48 different days in the winter, and mated to a hen at No. 4 nest-box and raised 5 young. He reappeared alone next September and was seen on 60 different days until in April he took No. 9 box, mating with another hen who had been about all the winter. They raised 7 and his wife disappeared. The cock was back in September and recorded for 48 days. In the new year he made a habit of flying back to No. 9 box and chipping the hole wider, and in February paired up with a third tit who, the year before, had raised a family with a different cock who was still alive. The new pair were continually playing round No. 9 and on the 19th they removed some of last year's nest. The hen, however, was last seen on March 26th and apparently died (or was bullied to death) and on April 21st the cock was showing off No. 9 to an unringed tit. Matters then became rather involved. They appear to have left No. 9—perhaps as a woodpecker drummed on it one day—they tried No. 18 but something interfered, and

they finally settled in No. 1 box where they raised a family of 8, and I caught his wife.

(2) A hen Blue Tit was ringed January, 1933. She nested in 1933, '36, '37 and '38. On the last occasion, when at least six years old, she mated with a cock who had only been hatched the year before. They failed to bring off a family.

(3) A hen ringed December 28th, 1934, for two consecutive years married the same cock, but on his (presumed) decease last year married a cock hatched only the previous year when she herself must have been at least five. She deserted her eggs.

(4) Three tits were caught and ringed on the same day in February, 1937.

A. Cock nested in 1937 and 1938 in the area.

B. Hen nested in 1937 and 1938.

C. Never heard of again until caught June 2nd, 1938, at King's Norton, two miles away.

All the families of Blue Tits in the nest-boxes are banded. I use one set of rings for each brood—say, a blue ring on the right leg, and when I re-trap one in the autumn I can be sure of its origin and then substitute a full set.

The survival rate appears to be small. Out of 80 young I have so far recovered 5 in the area, and one trapped two miles away. This suggests that individual ringing of young tits with aluminium rings is a very wasteful procedure. My observations apply chiefly to young tits. During 1939 particularly I was surprised at the low survival rate in the nest-boxes. I have not been able to draw any useful conclusions about the winter flocks.

Figures collected over four years from the boxes give results as follows:—

Year.	Boxes.	Average Eggs.	Average Hatched.	Average Fledged.
1936	7	7	5.1	4.6
1937	10	7.9	5.0	4.1
1938	9	7.84	5.33	2.44
1939	11	7.9	5.0	3.0

The 1938 fledging figure is low owing to two desertions of families of seven each, for reasons not clear. The average is taken over all the boxes, not merely those affected in each class.

The method outlined above need not be confined to one species. I have myself used coloured rings on Great Tits, Blackbirds, Robins and Hedge-Sparrows and a friend has applied the technique to Ringed Plovers! But I should be interested to know whether other people have made studies of this kind with Blue Tits, as I have by now amassed a number of records which would be all the better for some comparison.

NOTES

ROOKS' NESTS LINED WITH FEATHERS.

THE new *Handbook* does not mention feathers as part of the lining of the nest of the Rook (*Corvus f. frugilegus*). So that it may be of interest to record what is an unusual habit, probably due to local conditions.

At Notgrove, Gloucestershire, on high ground, a rookery which I have visited several times in the past, contains some hundreds of nests all of which as far as examined, had the rough dry grass, which abounds round the rookery, as the inner lining.

In early April, 1938, with two friends, I visited this rookery. Being unwell I was unable to climb to any nests myself, but my friends astonished me by saying that a lot of nests had feathers as a lining. In late March, 1939, I paid two visits to this rookery and found 75 per cent. of the nests that I could reach or see into contained feathers. Some of the eggs were almost buried, so profusely were the nests lined. The reason for this was apparently the fact that in the field next the rookery there were two very large folding units of laying hens. These were moved every day or so and left a trail of feathers behind. It would be interesting to know if this habit has been observed in other rookeries as the folding unit system is now quite a feature of poultry farming.

A. G. TAYLER.

STARLINGS SWALLOWING PELLETS.

It is well known that the small insectivorous birds bring up the indigestible parts of an insect through the mouth, as do the birds of prey. A few years ago I watched a Starling (*Sturnus v. vulgaris*) throw up a small dark pellet as it perched close to my window. For perhaps a second it held the pellet in its beak then it swallowed it and flew away. Now for the second time I have seen the same thing happen. On each occasion the Starling seemed almost taken aback at the apparently unexpected appearance of the pellet, and the hasty swallowing again seemed a sort of apology for a misdemeanour. I have twice or more seen a Robin (*Erithacus r. melophilus*) and once a Song-Thrush (*Turdus e. ericetorum*) bring up a pellet. The Thrush sat quietly for a little while and then wriggled its head and neck in a peculiar manner, at the same time opening its mouth for a moment, during which a small pellet fell out.

It then flew away. In none of these cases was there any suggestion of the bird's wanting to retain the pellet, let alone swallow it as the Starlings did. G. B. GOOCH.

MALE YELLOW WAGTAIL'S SHARE IN INCUBATION.

IN Vol. I of *The Handbook of British Birds*, p. 220, it is stated, for the Yellow Wagtail (*M. flava rayi*) ". . . only the hen observed on the eggs," though it is added that in confinement the male was noted as taking part.

I wish to state that from close observation of 5 nests of this species over a period of 2 years, it can definitely be stated that the male bird certainly shares in incubation, as well as in feeding and brooding the young. Possibly the mode of "changing-over" has made observation difficult, for the change-over never takes place at the nest. Instead, the bird returning to take its share in incubating alights on some tree or post often quite a distance from the nest and calls to the sitting bird. The latter slips off the nest and flies straight away, when the first bird, after seeing that the coast is clear, drifts by slow stages to the nest. I have never seen the female fed on the nest by the male, and feel that the male incubates at regular intervals so that the female can visit feeding areas. Out of the total period of incubation of 13 days (± 1 day) the female is sitting during the day about three times longer than the male. The female alone appears to incubate during the night, for on leaving a hide-tent at evening, I have never left the male bird on the nest, but always the female.

J. Armitage (*Romance of Nature*, p. 1,043) has a photograph of the male bird brooding; E. L. Turner (*Broadland Birds*, p. 143) shows a cock Yellow Wagtail returning to a nest apparently containing eggs; and R. Kearton (*Nature Pictures*, p. 179) says: "Both sexes share the work of incubation."

STUART SMITH.

[Miss Turner in *Broadland Birds* states of the photograph mentioned that the cock came to inspect the nest and then flew away again and the hen returned to brood.—EDS.]

LITTLE OWL PREYING ON BIRDS.

THE past severe winter wrought havoc on many species and none more so than the Thrush family. Whilst staying some ten days at Kerry, Wales, I was feeding the birds very largely with quantities of waste apples. Blackbirds came in the largest numbers, then Fieldfares and Mistle-Thrushes, but only two

Song-Thrushes put in an appearance and a solitary Redwing. Raiding by a Sparrow-Hawk was frequent but the disturbance caused was of brief duration before the feeding birds were back again; their most persistent enemy was a Little Owl (*Athene n. vidalii*) that frequented the vicinity every day and made a shambles of the feeding-ground. Its presence seemed to be to a considerable extent ignored, even when at times it was perched on the ground within a few yards of the birds, but if too close they took the precaution of feeding facing in its direction. Even when a kill was made many of them would continue feeding though the Owl and its victim were but a few feet distant. The Owl when disturbed with its prey usually flew to the cover of a nearby rhododendron bush. No doubt kills were made daily and I saw it take three Blackbirds, a Mistle-Thrush and a Fieldfare. One evening when the birds had practically ceased coming, the Owl took up its position on the bird-table and suddenly becoming aware of a canary in a cage within the recently lighted-up room, it made a lightning dash for it, but baulked by the closed window it seemed dazed for a time by the contact it had made.

During last summer a pair of Starlings nested in a fruit tree at Bewdley and one evening a Little Owl evidently realizing its opportunity, followed up the action of the parent bird in the feeding of their youngsters and when they again came to the mouth of the nesting hole, for food, one was immediately secured and carried off.

J. S. ELLIOTT.

THE PALE-BREASTED BRENT GOOSE IN SUSSEX.

UNLESS the authors of *The Practical Handbook* possess information to me unknown, surely it would have been well had they called attention therein to the scarcity of the Pale-breasted Brent (*Branta bernicla hrota*) off the south coast of England as well as off the east coast (see Vol. III, p. 215). Off Sussex, at any rate—beyond a hint by Millais as to occasional specimens and five birds considered to have been *B. b. hrota* seen by Mr. P. Allen on or about the county boundary at Jury Gap (possibly a Kentish record)—nothing was known of this race (at any rate, no more than the above had been published) when my *History of Sussex Birds* appeared in October, 1938. It gave me considerable pleasure, therefore, when on February 18th, 1940, Mr. C. G. des Forges and I clearly identified a couple consorting with Dark-breasted Brents on the reef-rocks under the east end of Seaford Head. Being partially numbed by the cold still prevailing, the

birds allowed us to examine them at easy range through excellent glasses, whereby it was plainly seen that from the upper-breast downwards they were, roughly, dirty-white, whilst the upper-breast itself was somewhat less dark than that of *Branta b. bernicla*. In connexion with the above, I may add that for well over thirty years past I have looked at a very great many Brents in Sussex.

JOHN WALPOLE-BOND.

[The distribution of the two forms on the south coast is not at all clear and for this reason I made no statement about it. In Dorset and Hampshire, for instance, Mr. Jourdain considered that the Pale-breasted form was the more numerous. As I indicated, under the Dark-breasted form, more observation is required before the distribution of the two forms can be clearly defined.—H. F. W.]

FLOCK OF BEWICK'S SWANS IN LANCASHIRE.

DURING the evening of March 3rd, 1940, residents near Oldham, Lancs, noticed nearly one hundred large birds careering about and calling loudly, creating a disturbance which lasted from about 9 p.m. until midnight. The birds proved to be Bewick's Swans (*Cygnus b. bewickii*), and no fewer than five of them collided with a building in which there were lights and were killed.

A sixth Swan struck some telegraph-wires but was only slightly injured. This bird was seen by Mr. Fred Taylor and identified as an adult Bewick's Swan. It was taken in hand by an official of the R.S.P.C.A., and subsequently accepted at Belle Vue Zoo, Manchester. Unfortunately, few details of the five dead birds are available, because they were soon picked up and put into a boiler fire.

JOHN ARMITAGE.

STARLINGS WITH YOUNG AT CHRISTMAS.—Mr. H. E. Forrest writes that a pair of Starlings (*Sturnus v. vulgaris*) were feeding young in a hole in an ash tree at Bayston Hill, Shrewsbury, at Christmas, 1939. The old birds were seen taking food to the nest on several days and the young could be heard but were out of sight.

BLACKCAP IN HEREFORD IN FEBRUARY.—Capt. T. F. V. Matthews accurately describes to us a hen Blackcap (*Sylvia atricapilla*) which he watched near Hereford on February 13th, 1940.

ICELAND REDWINGS IN DUBLIN, DEVON AND DORSET.—Mr. E. O'Mahony has sent us for identification an Iceland

Redwing (*Turdus m. coburni*), which was picked up at Dollymount, near Dublin, on January 21st, 1940. This was a male with wing 118.5 mm., slightly small for this race, but with the typical dark colour.

Mr. D. Lack has also sent us an example of this race, a dark bird, which proved to be a male with wing 124 mm. This was found dead at Totnes, Devon, on January 30th, 1940. Mr. Lack informs us that around the same date 20-25 other Redwings examined were all of the typical race.

Mr. H. Tetley informs us that a Redwing picked up on February 1st at Iwerne Minster, Dorset, and sent to the Bristol Museum was of the Iceland race and its identification was confirmed by Mr. N. B. Kinnear. This was a typically dark bird, a female with wing 119 mm.

HOOPOE IN HAMPSHIRE IN JANUARY.—Major M. Portal informs us that a Hoopoe (*Upupa e. epops*) which had been about farm buildings near Swanmore for several days was picked up dead in a cow-house on January 19th, 1940. The bird was in a starved state as the ground was frozen deep at the time. It was sent to the Natural History Museum and was exhibited by Mr. N. B. Kinnear at a meeting of the British Ornithologists' Club (*Bull., B.O.C., LX, p. 57*).

BEAN-GEESE IN MIDDLESEX AND KENT.—Mr. P. W. E. Currie informs us that he observed a party of eight Bean-Geese (*Anser f. fabalis*) at Staines Reservoir on February 10th and 11th, 1940. On the 15th and 16th, Dr. G. Carmichael Low and Mr. A. H. Macpherson found the party increased to eleven.

Mr. R. G. Finnis writes that in connexion with Mr. T. C. Gregory's notes on this species (*antea*, p. 277) it is worth recording that he found a dead Bean-Goose in good condition on the sands at Cliftonville, Margate, during severe weather on December 29th, 1938.

PINK-FOOTED GEESE IN CO. WEXFORD.—Mr. A. E. Williams of Dublin has sent us two Pink-footed Geese (*Anser f. brachyrhynchus*) which he had received from Mr. J. L. Nunn for identification. They were shot on the North Slob, Co. Wexford, on February 13th, 1940. There are only twelve previous records for this species from Ireland.

DARK-BREASTED BRENT GEESE IN MIDDLESEX AND SURREY.—Mr. W. R. Philipson writes that he saw two Dark-breasted Brent Geese (*Branta b. bernicla*) on the Thames by Chiswick Ait on February 14th, 1940. On the 16th they were still there but on the Surrey side.

SMEW AND VELVET-SCOTER IN CAMBRIDGESHIRE.—Mrs. M. D. Brindley informs us that on February 15th, 1940, during a visit to the "washes" near Earith, she saw a "red-headed" Smew (*Mergus albellus*) and a male Velvet-Scoter (*Melanitta f. fusca*) resting together in a small pool beside the frozen Hundred Foot River. There are few previous records for either species in Cambridgeshire.

COMMON EIDERS IN DORSET.—With reference to the occurrences of the Common Eider (*Somateria mollissima*) in Dorset, recorded on page 259, Mr. G. M. King writes that he watched two, probably immature birds, at Studland on December 25th, 1937, and saw them again on the 29th. Not realizing that they were sufficiently unusual in the county he had not previously reported them.

RED-NECKED GREBE IN AYRSHIRE.—As there are few records of the Red-necked Grebe (*Podiceps griseigena*) in Ayrshire it should be recorded that Mr. J. P. Wilkins has sent us a description of one which he saw at the mouth of the river Doon near Ayr on January 28th, 1940. The bird was somewhat oiled on the breast.

GREAT NORTHERN DIVER INLAND IN SUSSEX.—Mr. W. R. Macklin informs us that a Great Northern Diver (*Colymbus i. immer*) was shot in the valley of the Adur, near Partridge Green, on February 21st, 1940. Mr. C. A. Humphrey gives us the additional information that the bird on being dissected was found to contain two perch.

LETTER.

THE BILL-SNAPPING OF A LITTLE OWL.

To the Editors of BRITISH BIRDS.

SIRS,—As the "bill-snapping" of Owls seems still to be cloaked in a certain amount of mystery (*The Handbook of British Birds*, Vol. II, p. 339, footnote), it may be worth recording our experience with a Little Owl (*Athene n. vidalii*). The bill would open slowly, then suddenly the snapping sound would follow, at first without any obvious explanation. Then one day, when the Owl was sitting on my finger, my wife noticed, just before a typical "snap," that as the bird slowly opened its mouth, it raised its tongue and pressed it firmly against the underside of the upper mandible. But as the "snap" occurred, it was not possible to follow the exact movements of the tongue. Nevertheless, after subsequent observations, we felt that this so-called "bill-snapping" could be more accurately described as "tongue-clicking." Allowing for the softness of the human mouth, one can give an approximation of the Owl's noise by pressing the tongue against the roof of the mouth and then withdrawing it suddenly so as to produce a sharp "click."

G. B. GOOCH.

8 FEB 1940

PURCHASED

A HISTORY OF THE BIRDS OF ESSEX

William E. Glegg, F.Z.S., M.B.O.U.

Numerous Photographs and a Map. Demy 8vo. 25/-.

**A HISTORY OF THE
BIRDS OF MIDDLESEX**

William E. Glegg, F.Z.S., M.B.O.U.

6 Plates and Map. Demy 8vo. 18/-.

**A HISTORY OF THE
BIRDS OF NORFOLK**

B. B. Riviere, F.R.C.S., F.Z.S., M.B.O.U.

16 Plates and Map. Demy 8vo. 25/-.

BIRD-LIFE IN THE ISLE OF MAN

Colonel H. W. Madoc, C.B.E., M.V.O.

Photographs. Crown 8vo. 6/-.

BIRD MIGRATION

A. Landsborough Thomson.

Illustrated. Small Crown 8vo. 5/- net.

HOW TO KNOW BRITISH BIRDS

Norman H. Foy.

Illustrated. Small Crown 8vo. 5/- net.

BIRDS OF THE GREEN BELT

R. M. Lockley.

Illustrated. Small Crown 8vo. 5/- net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner.

Illustrated. Small Crown 8vo. 5/- net.

H. F. & G. WITHERBY LTD.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique).

THE HANDBOOK OF BRITISH BIRDS

By H. F. WITHERBY (Editor), F. C. R. JOURDAIN,
NORMAN F. TICEHURST and B. W. TUCKER.

To be completed in five volumes.

*Illustrated by 500 paintings reproduced in full colour depicting about
1,800 birds.*

“The *Handbook* is a better, more complete, and infinitely more interesting history of the birds of a country than that published anywhere else in the world, including America.”—*The Field*.

£5 5s. the set complete. Vols. I, II and III have been published.

A HISTORY OF SUSSEX BIRDS

By JOHN WALPOLE-BOND.

*In three volumes published simultaneously and illustrated with
53 coloured plates*

By PHILIP RICKMAN.

“It would be difficult to say too much of the accuracy of personal observation and the thoroughness of research. The three volumes are likely to remain as a standard example of such literature.”—SIR WILLIAM BEACH THOMAS in the *Observer*.

£5 5s. the set.

SONGS OF WILD BIRDS

Third Impression.

By E. M. NICHOLSON and LUDWIG KOCH.

Introduction by JULIAN HUXLEY.

With two double-sided 10-inch gramophone records featuring the Nightingale, Cuckoo, Blackbird, Song Thrush, Pied Woodpecker, Green Woodpecker, Robin, Wren, Hedge-Sparrow, Turtle-Dove, Wood-Pigeon, Chaffinch, Willow Warbler, Whitethroat and Great Tit.

By the same authors

MORE SONGS OF WILD BIRDS

With three double-sided 10-inch gramophone records featuring the Skylark, Woodlark, Curlew, Tree Pipit, Wood-Wren, Blackcap, Garden Warbler, Rook, Carrion Crow, Jackdaw, Magpie, Jay, Little Owl, Redstart, Chiffchaff, Mistle-Thrush, Heron, Stock-Dove, Nightjar and Blue Tit.

Each 15s. net boxed.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

8 MAY 1940
PURCHASED

AN ILLUSTRATED MAGAZINE
DEVOTED CHIEFLY TO THE BIRDS
ON THE BRITISH LIST

MAY 1,
1940.

Vol. XXXIII
No. 12.



MONTHLY 1s 9d. YEARLY 20s.
326 HIGH HOLBORN LONDON
H. F. & G. WITHERBY LTD.

*The Fourth Volume of THE
HANDBOOK OF BRITISH
BIRDS will be published in June.
The exact date will be announced
later.*

*The Publishers regret that the
publication of this volume has been
much delayed by various unavoidable
circumstances.*

Ready

BIRD RESERVES

BY

E. C. ARNOLD

*Illustrated with 9 plates in colour and
12 in black-and-white by the author*

Medium 4to

15s. net
Postage 9d.

Readers will surely agree with the author, after reading his delightful book, that the £100 he paid for a pond proved a thoroughly successful and sound investment. The author tells of his adaptation of the pond to attract bird life and chronicles the activities of the various species at different seasons of the year. The book also deals with Salhouse Broad, the Cuckmere Valley and Pevensey Marsh.

H. F. & G. WITHERBY LTD.

BRITISH BIRDS

WITH WHICH WAS INCORPORATED IN JANUARY, 1917, "THE ZOOLOGIST."

EDITED BY

H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O.U.

ASSISTED BY

NORMAN F. TICEHURST, O.B.E., M.A., F.R.C.S., M.B.O.U.

CONTENTS OF NUMBER 12, VOL. XXXIII., MAY, 1940.

	PAGE
Report of the Bird-Ringing Committee: Progress for 1939. By A. Landsborough Thomson, C.B., D.Sc., F.R.S.E. ...	318
Birds of Inner London. By A. Holte Macpherson ...	326
On the Birds of the Islands of Oigh-Sgeir and Causamul, North Uist. By R. B. Freeman	330
Obituary. Henrik Grönvold	333
Notes :—	
Information required for the "Breeding" Section of <i>The Handbook of British Birds</i> (H. F. Witherby)	334
Nest-building by Male Cirl Bunting (L. S. V. Venables) ...	334
Food of Nestling Swallows (J. F. Thomas)	335
Hoopoe in Anglesey (D. Macdonald)	336
An Aggressive Bittern (T. C. Gregory)	336
An Unusual Aggressive Display of the Great Crested Grebe (P. H. T. Hartley)	337
Iceland Redshank in Isle of Man (K. Williamson)	338
Little Gull in Shropshire (H. G. Alexander)	338
Great Skua ringed in Shetland reported in U.S.A. (Miss E. P. Leach)	338
Short Notes :—	
Yellow Buntings Roosting in Evergreens. Blackcaps in Warwickshire and Worcestershire in February. Early White Wagtail in Norfolk. Early Wheatear in Sussex. Early Sand-Martins in Pembrokeshire. Little Bittern in Wiltshire. Colour of Webs of Shoveler. Scaup-Duck Inland in Norfolk. Early Stone-Curlew in Suffolk. Black-tailed Godwits in Suffolk in Winter. Glaucous Gull in Gloucestershire ...	339
Letter :—	
Male Yellow Wagtail Incubating (J. Walpole-Bond)	340

A PUBLICATION OF THE BRITISH TRUST FOR
ORNITHOLOGY.
REPORT OF THE BIRD-RINGING COMMITTEE :

PROGRESS FOR 1939.

A. LANDSBOROUGH THOMSON, C.B., D.SC., F.R.S.E.

Chairman of the Committee.

THIS is the third annual report to be issued on behalf of the Bird-Ringing Committee of the British Trust for Ornithology. It covers 1939, the second complete year of working under present arrangements.*

The year was a very successful one, in spite of the fact that the latter part of it fell within the period of war. Future progress will inevitably be affected to a greater extent, but it is nevertheless hoped that valuable work will continue to be done.

MANAGEMENT.

The headquarters of the work remain in the Bird Room of the British Museum (Natural History) at South Kensington, by kind permission of the Trustees. All new rings are inscribed "BRITISH MUSEUM NAT. HIST. LONDON."

The Committee is constituted as follows: Dr. A. Landsborough Thomson (Chairman), Mr. A. W. Boyd, Mr. A. B. Duncan (representing Scottish ringers), Mr. P. A. D. Hollom, Lord Ilchester (representing the British Museum Trustees), Lord Mansfield, Mr. H. F. Witherby (representing *British Birds*), and Miss E. P. Leach (Hon. Secretary). The last-named is responsible for the whole of the headquarters work, including all correspondence, records and accounts as well as the issue of rings. During the earlier part of the year she had the assistance of Miss Joyce Baggallay, but since the outbreak of war she has been single-handed and has latterly had to give practically all her time to the task. Her colleagues on the Committee are very sensible of the extent to which the operation of the scheme is dependent on Miss Leach, and would wish it to be appreciated that its continued success is in very large measure due to the labour and skill which she so freely gives.

FINANCE.

The expenses of the ringing scheme are met independently of the main funds of the Trust. The subscriptions from

*The previous reports in this form were published in *British Birds*, 1938, Vol. XXXI, p. 345, and 1939, Vol. XXXII, p. 382, in continuation of the series of Annual Reports by H. F. Witherby, published from 1910 onwards under the general title "The *British Birds* Marking Scheme."

co-operators, at the rate of 6s. per hundred rings issued, are supplemented by further donations and by a subvention from *British Birds*. Part of the special grant from the Trustees of the late Viscount Leverhulme, reported last year, has also been expended.

For reasons related to the war, the accounts for 1939 were not available for inclusion in the Sixth Report of the Trust. They will be published later.

PROGRESS OF RINGING.

Again it is possible to announce a new high record in the total number of birds ringed during the year. As will be seen from the table, the figure is 55,817; this total is incomplete, moreover, owing to the fact that a good many schedules are in arrear through the absence of ringers on war service.

For the first time the total of trapped birds exceeds the total of nestlings. The margin is a slight one, and the proportion is approximately half and half. The usual tables are appended, but a few points may be particularly mentioned.

The leading individual total is that of the Skokholm Bird Observatory—6,393 birds, belonging to 54 species. It includes 3,210 Manx Shearwaters and 851 Gannets, for both of which species several other ringers had also high figures. Dr. H. J. Moon and Mr. Cooper, with the second largest individual total of 5,569, ringed 1,132 Song-Thrushes and 1,334 Lapwings.

At the Orielton Decoy, 1,215 Teal were ringed. Mr. Guy Charteris trapped 619 Chaffinches. The Earl of Dumfries ringed 488 Puffins on St. Kilda, and also 27 full-grown Snipe. Mr. H. W. Robinson's total included 537 Sandwich Terns. Members of the London Natural History Society accounted for 259 Great Skuas, and Mr. Niall Rankin added 42. Mr. P. I. R. Maclaren contributed an unusual item, 196 Redwings.

Two species appear for the first time—a Grey Plover was ringed by Dr. N. H. Joy, and 5 Irish Coal-Tits by Messrs. M. N. and D. H. Rankin. Curiosities included 5 hybrid Carrion × Hooded Crows ringed by Messrs. W. S. Cowin and E. F. Ladds. No rare or unusual migrants were marked during 1939, as trapping on the Isle of May was necessarily in abeyance.

WAR-TIME ECONOMY IN THE USE OF RINGS.

Aluminium has become very difficult to obtain for ordinary purposes, but the Committee had acquired a considerable stock of rings against this contingency. In order to make

supplies go as far as possible, however, it has been decided to place certain restrictions on ringing until further notice. The following species are not to be ringed except in the course of special investigations or statistical studies : Starling, House-Sparrow, tits, Robin, Hedge-Sparrow. The following are not to be ringed as nestlings : Rook, Jackdaw, Chaffinch, Blackbird, Cormorant, Common Tern, Herring-Gull and Lesser Black-backed Gull. (The ringing of the following as nestlings was already excluded : House-Sparrow, Goldcrest, tits, Sky-Lark, Willow-Warbler, Whitethroat, Spotted Flycatcher, Wren, Sand-Martin and Black-headed Gull—as well as all Grouse, Partridge and Pheasant, irrespective of age.) In addition, visitors to Skokholm must not use their own rings for marking Manx Shearwaters. Some of these species have been shown to be unremunerative ; others have yielded so many results that it is not immediately important to seek further data. All these economies will thus leave a greater number of rings, of the particular sizes, available for more profitable use.

It is hoped that ringers will assist the Committee by carefully following these instructions, the reasons for which will be readily appreciated. In this regard it may be mentioned that the ringing of young tits has continued in spite of the ban placed on these some years ago ; experience shows this to be valueless, except when coloured rings are also used for the purposes of some systematic observational study.

SPECIAL DEVELOPMENTS.

The special effort to ring larger numbers of Kittiwakes, projected last year, was frustrated by unfavourable weather conditions at the breeding stations. It is improbable that any further plans of this kind will be feasible during the war.

The appeal for greater attention to Redshanks, Nightjars, Coots and Peregrine Falcons has had some result. The numbers of Coots and Peregrines ringed show a definite increase ; the figure for Redshanks is higher than in the previous year but not than the average.

Rings continue to be supplied for the large-scale ringing of various species of ducks, caught at decoys, under the auspices of the Wild-fowl Inquiry Committee appointed by the British Section of the International Committee for Bird Preservation.

TRAPPING METHODS.

Mr. Hollom has now completed a draft of the manual of trapping methods to which reference was made in the

previous report. This will be considered by the Committee, but publication will have to be deferred.

RECOVERIES.

Valuable recovery records have again accrued in good numbers, and the reports which have continued to come in since the beginning of the war include many from abroad. Only a few instances can be mentioned here.

Three birds marked in 1939 have since been reported from across the Atlantic, and these were the first records of the kind for the two species concerned. A Puffin ringed on St. Kilda and recovered in Newfoundland was the subject of a special note last month (*antea*, p. 281); there has since been a similar case. Details of the recovery of a Great Skua in the United States are given elsewhere in this issue (p. 338). Apart from the transoceanic record, there have been thirteen other recoveries relating to this species, a few of them from places some distance inland. A Wigeon ringed in Norfolk in January, 1938, was reported in the spring of 1939 from the River Ob, Western Siberia, which is farther east than any previous recovery locality.

Warblers have yielded few records so far, and interest attaches to the case of a Whitethroat ringed in July, 1939, as an adult in Oxfordshire and recovered in September at Bilbao, in northern Spain. A Pied Wagtail ringed in 1939 as a nestling in Yorkshire was recovered in February, 1940, in Morocco, the most southerly record as yet. Another Pied Wagtail was trapped at Winchester in the winter of 1937 and recovered in Inverness-shire in March, 1940.

Two ringed birds rank as war casualties. A Cormorant was killed during the first air-raid on the Firth of Forth, and a Lesser Black-backed Gull by a car with the B.E.F.

PUBLICATION OF RESULTS.

Since the last report, a further list of recoveries and two special notes have been published for the Committee, as follows:—

E. P. Leach (1939): "Recovery of marked birds." *British Birds*, Vol. XXXIII, pp. 127 and 155.

E. P. Leach (1940): Note on "Puffin ringed at St. Kilda reported in Newfoundland." *British Birds*, Vol. XXXIII, p. 281.

E. P. Leach (1940): Note on "Great Skua ringed in Shetland, reported in U.S.A." *British Birds*, Vol. XXXIII, p. 338.

In addition, the following papers not issued directly under

the auspices of the Committee deal in part with results of the ringing scheme :—

H. Kenrick (1940) : " A study of Blue Tits by colour ringing." *British Birds*, Vol. XXXIII, p. 307.

N. F. Ticehurst (1940) : " The Continental Redshank as a British Bird. II—Migrational Evidence." *British Birds*, Vol. XXXIII, p. 226.

H. F. Witherby and E. P. Leach (1939) : " Movements of ringed birds from abroad to the British Isles and from the British Isles abroad. Addenda VI. Omitting records of British-bred birds." *British Birds*, Vol. XXXIII, p. 62.

NUMBER OF BIRDS RINGED.

				<i>Trapped.</i>	<i>Nestlings.</i>	<i>Total.</i>
In 1939	...	...	...	27,983	27,834	55,817
„ 1938	...	...	...	24,162	26,162	50,324
„ 1937	...	...	...	21,900	23,281	45,181
„ 1936	...	...	...	19,235	29,428	48,663
„ 1935	...	...	...	16,066	30,364	46,430
„ 1934	...	...	...	17,835	31,816	49,651
„ 1933	...	...	...	10,466	27,975	38,441
„ 1932	...	...	...	7,643	22,950	30,593
„ 1931	...	...	...	7,041	22,513	29,554
From 1909 to 1930	...	...	...	...	...	287,401
Grand Total (including arrears)					682,175	

	<i>Trapped.</i>	<i>Nest- lings.</i>	<i>Total.</i>		<i>Trapped.</i>	<i>Nest- lings.</i>	<i>Total.</i>
Skokholm B. Obs.	4,815	1,578	6,393	H. Trimnell	155	77	232
Moon & Cooper	219	5,350	5,569	Miss Morse	2	218	220
Bootham School	1,693	653	2,346	G. Paulson	152	65	217
P. Morshead	1,860	226	2,086	N. H. Joy	209	—	209
G. Charteris	1,169	630	1,799	Chapman and Richter	55	150	205
Wildfowl Inq.	1,667	—	1,667	St. Edmund's Sch.	3	172	175
W. & A. Eggeling	325	1,230	1,555	Kingswood Sch.	68	102	170
London N.H.S.	861	621	1,482	Miss Garden	2	165	167
A. Darlington	425	735	1,160	Dauntsey's Sch.	139	21	160
A. J. Harthan	1,067	69	1,136	A. H. Bishop	87	71	158
Leighton Park S.	781	342	1,123	N. Rankin	—	158	158
H. W. Robinson	80	1,034	1,114	Zool. Society	138	19	157
Oxford Orn. Soc.	943	156	1,099	Brooker & Cawkell	24	130	154
"Wippletree"...	789	270	1,059	J. D. Mills	146	—	146
E. Cohen	218	803	1,021	Repton School...	7	135	142
A. W. Boyd	760	245	1,005	Christ's Hospital N.H.S.	134	6	140
Manx Field Club	54	900	954	M. Boardman	24	104	128
G. M. King	888	63	951	Canford School...	46	81	127
Winchester Coll.	667	241	908	R. Carrick	5	120	125
Rugby School	36	834	870	W. E. Macve	11	114	125
W. A. Cadman	350	427	777	Midlothian Orn.C.	6	119	125
Clayesmore Sch.	603	168	771	M. Colquhoun	91	31	122
Miss Ferrier	19	582	601	A. Adams	102	16	118
Lord Dumfries	151	432	583	M. & D. Rankin	47	70	117
Mrs. Dumgkin	47	504	551	Oakes and Battersby	1	110	111
R. Martinson	35	445	480	A. E. Billett	1	109	110
J. Barnes	274	204	478	H. G. Alexander	109	—	109
M. Stewart	64	404	468	V. H. Spry	1	105	106
Lord D. Stuart	18	438	456	P. Jeavons	1	101	102
Charterhouse B.C.	349	92	441	Mrs. Upton	88	14	102
J. F. Thomas	55	371	426	Mrs. Cornish	67	24	91
C. F. Tebbutt	201	198	399	Miss Henderson	8	81	89
P. Hirst	54	329	383	J. A. Gibb	85	—	85
E. G. Holt	372	11	383	P. K. Chance	—	82	82
Rochester N.H.S.	329	44	373	D. J. Robertson	1	78	79
Miss Medcalf	183	179	362	H. Tully	17	61	78
P. Maclaren	253	103	356	C. R. Mills	—	77	77
J. Bartholomew	11	328	339	G. Brown	3	69	72
A. Wainwright	282	54	336	W. M. Congreve	68	—	68
Cowin & Ladds	95	240	335	H. Langstaff	1	65	66
M. Wainwright	179	155	334	E. Wishart	2	63	65
Shrewsbury Sch.	241	71	312	Dover College	5	59	64
W. Felton	208	100	308	J. S. Hewitt	44	17	61
R. H. Brown	5	298	303	C. S. Clarke	6	48	54
J. Cunningham	123	175	298	R. Evans	1	53	54
Sedbergh Sch.	13	285	298	A. Farrant	—	52	52
Cheltenham Coll.	153	140	293	Mrs. Greenlees	—	51	51
T. R. Tallis	—	292	292	Mrs. Gaskell	37	9	46
D. Garnett	235	56	291	J. Ellis	17	27	44
W. Pollok-Morris	58	224	282	D. Lack	44	—	44
J. Buxton	236	34	270	M. Hardy	2	40	42
R. M. Garnett	222	21	243	Bedale's School	—	41	41
J. C. Allen	161	81	242	R. Hudson	22	18	40
Camb. B. Club	210	28	238				
P. Hollom	181	54	235				
F. J. Brown	82	150	232				

	NUMBERS OF EACH SPECIES RINGED.				RECOVERED		
	1909 to 1938	Trapped	1939 Nest- lings.	Total	Grand Total.	of those ringed 1909-38	Per- centage
Raven ...	158	—	30	30	188	11	7.0
*Crow, Carrion	1307	5	150	155	1462	62	4.7
Rook...	4680	51	185	236	4916	220	4.7
Jackdaw ...	3592	120	227	347	3939	149	4.1
*Magpie ...	912	4	88	92	1004	30	3.2
Jay ...	456	7	16	23	479	29	6.4
Chough ...	34	1	8	9	43	—	—
Starling ...	55915	5432	1185	6617	62532	2460	4.4
Greenfinch ...	26112	1674	445	2119	28231	1771	6.8
*Goldfinch ...	431	8	22	30	461	8	1.9
Redpoll, Lesser	569	10	9	19	588	5	0.9
Linnet ...	9697	102	265	367	10064	69	0.7
Bullfinch ...	1490	30	35	65	1555	53	3.6
Chaffinch ...	29191	2567	528	3095	32286	1285	4.4
Brambling ...	968	29	—	29	997	36	3.7
Sparrow, Tree	2165	35	61	96	2261	46	2.1
Bunting, Yellow	5153	270	103	373	5526	250	4.9
Bunting, Reed	1799	32	11	43	1842	84	4.7
Lark, Sky ...	3518	121	13	134	3652	41	1.2
Pipit, Tree ...	1733	4	36	40	1773	5	0.3
Pipit, Meadow	5041	211	101	312	5353	116	2.3
Pipit, Rock ...	565	33	39	72	637	27	4.8
Wagtail, Yellow	983	13	46	59	1042	4	0.4
Wagtail, Grey	739	1	93	94	833	1	0.1
Wagtail, Pied	6054	82	398	480	6534	83	1.4
Wagtail, White	77	2	—	2	79	—	—
Flycatcher, S.	3284	58	56	114	3398	10	0.3
*Flycatcher, Pied	1246	4	132	136	1382	9	0.7
Chiffchaff ...	869	15	13	28	897	5	0.6
Warbler, Willow	9907	376	57	433	10340	51	0.5
Warbler, Wood	990	2	17	19	1009	2	0.2
Warbler, Sedge	1232	27	7	34	1266	7	0.6
Warbler, Garden	1261	4	10	14	1275	5	0.4
Blackcap ...	890	2	5	7	897	2	0.2
Whitethroat...	4332	361	20	381	4713	26	0.6
Thrush, Mistle	4378	38	211	249	4627	99	2.3
Thrush, Song	63308	596	2780	3376	66684	1222	1.9
Redwing ...	648	282	—	282	930	6	0.9
Ouzel, Ring	506	—	17	17	523	5	1.0
Blackbird ...	54578	1374	2566	3940	58518	2404	4.4
Wheatear ...	1741	86	36	122	1863	39	2.2
Whinchat ...	1614	6	13	19	1633	12	0.7
Stonechat ...	811	2	25	27	838	5	0.6
Redstart ...	2022	3	46	49	2071	14	0.7
Redbreast ...	21264	828	550	1378	22642	1937	9.1
Sparrow, Hedge	13987	595	249	844	14831	1248	8.9
Wren...	3650	60	12	72	3722	21	0.6
Dipper ...	1197	9	110	119	1316	12	1.0
Swallow ...	40565	141	2337	2478	43043	398	1.0
Martin ...	11134	93	444	537	11671	78	0.7
Martin, Sand	4548	14	8	22	4570	11	0.2
*Swift ...	917	24	23	47	964	57	6.2
Kingfisher ...	670	4	28	32	702	29	4.3
Cuckoo ...	696	3	32	35	731	20	2.9

	NUMBERS OF EACH SPECIES RINGED.				RECOVERED		
	1909 to 1938	Trapped.	1939 Nest- lings.	Total.	Grand Total.	of those ringed 1909-1938	Per- centage.
*Owl, Little ...	555	10	38	48	603	51	9.2
Owl, Long-eared	204	—	14	14	218	7	3.4
Owl, Barn ...	578	4	19	23	601	54	9.3
Owl, Tawny...	902	4	48	52	954	52	5.8
Peregrine Falcon	66	—	15	15	81	7	10.6
*Merlin ...	214	—	29	29	243	46	21.5
Kestrel ...	862	4	49	53	915	92	10.7
*Buzzard ...	305	—	30	30	335	13	4.3
Hawk, Sparrow	489	2	29	31	520	69	14.1
Heron, Common	2002	5	120	125	2127	239	11.9
Sheld-Duck ...	461	—	12	12	473	22	4.8
Mallard ...	6350	348	159	507	6857	1000	15.7
Teal ...	1176	1333	19	1352	2528	156	13.3
Wigeon ...	402	13	3	16	418	56	13.9
Duck, Tufted	176	1	—	1	177	36	20.5
Goosander ...	50	2	—	2	52	10	20.0
Cormorant ...	2090	6	360	366	2456	420	20.1
Shag ...	1680	9	157	166	1846	170	10.1
Gannet ...	8668	217	1280	1497	10165	304	3.5
Petrel, Storm	402	157	2	159	561	43	10.7
Shearwater, Mx.	14155	5768	28	5796	19951	1038	7.3
Petrel, Fulmar	255	3	78	81	336	1	0.4
Wood-Pigeon	2689	12	84	96	2785	99	3.7
Dove, Stock...	594	11	36	47	641	52	8.8
Dove, Turtle	611	15	8	23	634	70	11.5
Stone-Curlew	235	—	16	16	251	10	4.3
Oyster-catcher	1382	1	161	162	1544	52	3.8
Plover, Ringed	1299	58	99	157	1456	16	1.2
Plover, Golden	298	—	19	19	317	5	1.7
Lapwing ...	35412	4	3255	3259	38671	775	2.2
Dunlin ...	102	9	2	11	113	1	1.0
Sandpiper, C.	852	1	41	42	894	3	0.4
Redshank ...	2099	2	171	173	2272	75	3.6
Curlew, Common	2798	3	273	276	3074	117	4.2
Snipe, Common	1457	40	103	143	1600	78	5.4
Woodcock ...	5125	1	152	153	5278	389	7.6
Tern, Sandwich	15449	—	1837	1837	17286	286	1.8
Tern, Roseate	163	—	34	34	197	—	—
Tern, Common	18410	1	1247	1248	19658	463	2.5
Tern, Arctic...	2293	1	268	269	2562	11	0.5
Tern, Little ...	706	19	83	102	808	7	1.0
Gull, B.-headed	13750	88	25	113	13863	643	4.7
Gull, Common	1749	29	36	65	1814	56	3.2
Gull, Herring	7737	24	871	895	8632	195	2.5
Gull, L.Bl.-bkd.	10526	19	131	150	10676	402	3.8
Gull, G.Bl.-bkd.	504	2	65	67	571	15	3.0
Kittiwake ...	1649	46	138	184	1833	22	1.3
Skua, Great...	130	—	373	373	503	3	2.3
Razorbill ...	3660	99	437	536	4196	87	2.4
*Guillemot ...	2225	12	143	155	2380	52	2.3
Puffin ...	4414	345	559	904	5318	76	1.7
Rail, Land ...	438	34	6	40	478	5	1.2
Moor-hen ...	1598	28	23	51	1649	39	2.4

BIRDS OF INNER LONDON.

BY

A. HOLTE MACPHERSON.

DURING 1939 there was no addition to the list published in this Magazine in 1929 (Vol. XXII, pp. 222-244) and subsequently extended.*

ADDITIONAL NOTES IN 1939.

Mr. R. S. R. Fitter informs me that on October 29th fifteen or sixteen Rooks (*Corvus f. frugilegus*) flew in a northerly direction over London Bridge. Rooks are now very rare visitors.

A Hawfinch (*Coccothraustes c. coccothraustes*) was seen in Kensington Gardens by Miss M. S. van Oostveen on May 9th.

Mr. D. Seth-Smith noticed a young Goldfinch (*Carduelis c. britannica*) on July 5th on Primrose Hill.

Mrs. H. Rait Kerr informs me that a small party of Lesser Redpolls (*Carduelis f. cabaret*) on May 22nd flew across Lord's cricket ground.

A cock Bullfinch (*Pyrrhula p. nesa*) was seen on June 10th in St. James's Park by Mr. R. A. Richardson, who also observed Yellow Wagtails (*Motacilla f. flavissima*) there in April, May and September.

A Grey Wagtail (*Motacilla c. cinerea*) was seen on the roof of the pavilion of Lord's by Mrs. Rait Kerr on October 7th; others were noticed in Hyde Park by Mr. R. A. Richardson on the 14th, and by Mr. D. Seth-Smith on the 25th, in the Zoological Gardens.

Mrs. Rait Kerr saw a Tree Creeper (*Certhia f. britannica*) on November 9th in her garden in St. John's Wood.

A party of eight Long-tailed Tits (*Ægithalos c. rosaceus*) was noticed in Kensington Gardens on March 13th by Mr. R. W. Hayman.

There was a Golden-crested Wren (*Regulus r. anglorum* (?)) near Kensington Palace on September 12th (Sir Cyril Hurcomb); and one was observed on October 24th in the Zoological Gardens by Mr. D. Seth-Smith, who had never seen one there before.

Spotted Flycatchers (*Muscicapa s. striata*) bred in Kensington Gardens and the grounds of Holland House; and Mr. K.

*For other reports on this subject see Vol. XXIII, pp. 266-268; Vol. XXIV, pp. 323-325; Vol. XXV, pp. 355-356; Vol. XXVI, pp. 292-294; Vol. XXVIII, pp. 34-35 and 292-294; Vol. XXIX, pp. 345-348; Vol. XXX, pp. 365-368; Vol. XXXI, pp. 372-375; and Vol. XXXII, pp. 390-393.

Piercy found a nest at the same spot as in 1938 in the Inner Circle, Regent's Park.

A Wood-Warbler (*Phylloscopus sibilatrix*) was seen and heard by Miss M. S. van Oostveen and myself in Kensington Gardens on May 10th, and a Garden-Warbler (*Sylvia borin*) on the next day.

A few Fieldfares (*Turdus pilaris*) were observed in Regent's Park in the early days of January. Mrs. Rait Kerr reports that on October 15th a flock of about 30 passed over Lord's.

Mr. D. Seth-Smith informs me that a pair of Mistle-Thrushes (*Turdus v. viscivorus*) nested twice in the Zoological Gardens. They used to breed there regularly, but had not done so for seven or eight years, having been driven away by grey squirrels.

Most of the Redwings (*Turdus musicus*) which came into the town during the cold weather at the end of 1938 left by the end of January. Some passed through London during the last week in March, when they were observed in the Green Park (Miss M. A. F. Lillie) and Regent's Park (Mr. K. Piercy).

A Wheatear (*Ænanthe ænanthe*) was seen by Mr. K. Piercy on April 10th on Primrose Hill. I noticed one in Kensington Gardens and two in Regent's Park on August 24th; and on the 28th, Mrs. Rait Kerr saw one on the grandstand at Lord's.

The occurrence of the Black Redstart (*Phœnicurus o. gibraltariensis*) in Bloomsbury in May and June has been recorded in these pages by Mr. J. le C. Sumner and Mr. S. P. W. Shave (Vol. XXXIII, pp. 81 and 108).

Little was seen of Swifts (*Apus a. apus*) over the Serpentine which is generally their favourite haunt; but Mr. A. Simms saw them over Ladbroke Square constantly throughout the summer from the second week in May.

Kingfishers (*Alcedo a. ispida*) were noticed by Mr. W. J. L. Sladen on January 10th in Hyde Park; by Mr. D. Seth-Smith on January 8th, February 22nd and March 3rd by the Regent's Canal; and by Mr. R. A. Richardson on September 4th in St. James's Park.

A pair of Great Spotted Woodpeckers (*Dryobates m. anglicus*) nested successfully in a fruit tree in the grounds of Holland House. The nest, being only seven feet from the ground, was not interfered with by Starlings.

Mr. W. J. L. Sladen saw a Lesser Spotted Woodpecker (*Dryobates m. comminutus*) on March 10th in Hyde Park. I heard and saw one there early in May.

A Cuckoo (*Cuculus c. canorus*) was calling in the grounds

of Holland House on May 14th and June 8th. One was seen by Mr. R. A. Richardson on August 3rd in St. James's Park. One visited Mrs Rait Kerr's garden in St. John's Wood on August 25th.

In May and June a pair of Kestrels (*Falco t. tinnunculus*) again frequented a small opening high up in the western tower of the Imperial Institute where they probably had a nest, but I did not see or hear of any young birds.

Mrs. Rait Kerr reported that on August 28th a Sparrow-Hawk (*Accipiter n. nisus*) flew close past her windows in St. John's Wood.

A pair of Mallards (*Anas p. platyrhyncha*) for the second consecutive year nested successfully in the roof garden of Berkeley Court, a very high block of flats by Baker Street Station. Nine ducklings were hatched. The gardener told me that two ducklings, when only partly fledged, tried to follow their mother on one of her flights to Regent's Park and fell from the parapet to the pavement about 100 feet below. One was picked up, apparently unhurt, and taken to Regent's Park lake to which the gardener afterwards removed the remaining seven.

Mr. R. A. Richardson observed a duck Shoveler (*Spatula clypeata*) on September 30th on the Serpentine.

A drake Scaup (*Aythya m. marila*) visited the Round Pond on January 28th and stayed for about a week. I saw another on the Serpentine on December 7th. It remained till the 11th (Dr. G. C. Low).

Visits of the Great Crested Grebe (*Podiceps c. cristatus*) were not as numerous as usual.

The Little Grebe (*Podiceps r. ruficollis*) nested in St. James's Park for the first time since 1914. This followed the introduction of sticklebacks to the lake. Mr. C. S. Bayne informs me that three broods of two, four and two respectively, were hatched and all reared. The first two chicks were seen on June 27th; the second brood, the family of another pair, on August 12th. The first pair nested again, and two more chicks were hatched and were a day or two old when first seen on October 12th, a very late brood. A third pair attempted to nest by the island at the west end of the lake, but did not complete the nest. The two birds hatched in October with one adult were still on the lake at the end of the year.

Large assemblies of Wood-Pigeons (*Columba p. palumbus*) were seen in the Parks at the end of the summer. On August 5th, Mrs. Rait Kerr counted a flock of 287 feeding on the ground near the Regent's Canal.

The Turtle-Dove (*Streptopelia t. turtur*) was noticed in St. James's Park by Mr. R. A. Richardson on several occasions in May and June.

On December 29th a flock of about 40 Golden Plover (*Charadrius apricarius*) was seen and heard by Mrs. Rait Kerr. They were flying over Lord's in a westerly direction.

Mr. R. S. R. Fitter counted 22 Lapwings (*Vanellus vanellus*) flying over Blackfriars on January 8th. Three were seen over Kensington Gardens by Mrs. E. MacAlister on October 22nd; and Mr. D. Seth-Smith saw nine on October 26th and six on October 27th over Regent's Park.

Sir Cyril Hurcomb saw a Dunlin (*Calidris alpina*) by the Round Pond on May 3rd. Its bill appeared to be very short, and the bird may have been a *schinzii*. Mr. R. W. Hayman and I noticed a Dunlin on December 7th by the Serpentine.

Miss M. S. van Oostveen saw two Common Sandpipers (*Tringa hypoleucos*) on April 27th in Kensington Gardens. These were the only ones I heard of in spring; but during the autumn migration they passed through London in unusual numbers and were seen frequently from the end of July to the beginning of October.

Early on the morning of August 20th I heard a Redshank (*Tringa totanus*) in Kensington Gardens and found it by the Round Pond.

Mr. R. A. Richardson reports that on August 2nd he saw a Curlew (*Numenius a. arquata*) over St. James's Park. Mrs. Rait Kerr on December 29th saw a flock of these birds passing over Lord's.

An adult Lesser Black-backed Gull (*Larus fuscus*) on the Serpentine on December 22nd could not be ascribed definitely to either the British or Scandinavian race.

Mrs. Barker saw a Common Partridge (*Perdix p. perdix*) on her lawn at 18 Gilston Road, South Kensington, on April 18th. It flew away to the north, and was probably the bird reported to have been seen on April 21st by Mr. C. H. Blathwayt (*The Times*, April 26th, 1939) on a small lawn at the back of a house in Porchester Terrace, Paddington.

ON THE BIRDS OF THE ISLANDS OF OIGH-SGEIR AND CAUSAMUL, NORTH UIST.

BY

R. B. FREEMAN.

A SHORT visit was paid to these two islands on July 10th, 1939. Oigh-sgeir, called alternatively Heiskeir or Haskeir, lies seven and a half miles west of the north-west point of North Uist, Outer Hebrides (O.S. 1" Scotland 22), in lat. $57^{\circ} 42' N.$ and long. $7^{\circ} 41' W.$ It is a small rocky island of Lewisian gneiss, half a mile long and less than a quarter of a mile wide at the widest part. The highest point is 123 ft. above sea-level. The map given is modified from the 6-inch



ISLAND OF OIGH-SGEIR, NORTH UIST, HEBRIDES.

Modified from O.S. 6", North Uist, Sheet XXIV. Scale $8'' = 1 \text{ mile}$
 $\frac{1}{7920}$. Barred areas represent Guillemot cliffs. Figures represent numbers of Fulmar nests, in the approximate position of each group.

O.S. To any one visiting the island in future, it may be well to state that the only convenient landing place is that marked on the map, to the south-east side of the central natural arch. The only indication of human interference is a small hollow circular dun, now in ruins, on the north plateau.

Much of the island is bare rock but the two plateaux have a good plant covering, and there is some plant growth on the more sheltered east side of the central ridge. *Plantago maritima*, with large, spatulate, erect leaves interspersed with *Silene maritima* and *Armeria maritima* cover the plateaux, and more clumped, stocky forms of these three grow in the crevices of the rocks. The only other phanerogamic plants observed were *Glaux maritima*, *Cochlearia officinalis*, *Chenopodium sp.*, *Matricaria Chamomilla* and an unidentified grass.

The following birds were recorded. Only in the cases of the Fulmar and Guillemot was any careful attempt made to assess numbers, but rough estimates are given for other species.

ROCK-PIPIT (*Anthus spinoletta meinertzhageni*).—One pair on the north plateau with nest and four young, in a cavity of the dun remains; two pairs on south plateau, one with four hopping young.

SHAG (*Phalacrocorax a. aristotelis*).—Probably fifty to sixty nests with young and eggs, mostly in very accessible places, and many on flat ground; several hundred adults.

LEACH'S FORK-TAILED PETREL (*Oceanodroma l. leucorrhoa*).—A single bird was put up from a hole at the base of the dun on the northern plateau. The hole, which was through an *Armeria* tuft and under a stone, was examined but contained nothing, nor, except for the entrances did it appear to have been worked at all. Similar holes and crevices at the base of the dun were examined but no more birds were seen.

FULMAR PETREL (*Fulmarus g. glacialis*).—Sixty-two nests with eggs or young were counted; the map shows their distribution. None of these was on the cliffs but on gentle slopes or flat ground. One with a sitting bird, was in the dense *Plantago* in the middle of the dun.

OYSTER-CATCHER (*Hæmatopus o. occidentalis*).—One pair north end with chick; one pair south end.

COMMON GULL (*Larus c. canus*).—A few about; none nesting.

HERRING-GULL (*Larus a. argentatus*).—A few score particularly at the south end.

LESSER BLACK-BACKED GULL (*Larus f. graellsii*).—A few nesting pairs on the north and south plateaux.

GREAT BLACK-BACKED GULL (*Larus marinus*).—Two birds at the south end.

KITTIWAKE (*Rissa tridactyla*).—About four hundred nests on the four cliffs.

RAZORBILL (*Alca t. britannica*).—A large number on the tops of the cliffs and also under boulders on the plateau.

GUILLEMOT (*Uria a. aalge*).—Confined to the cliff edges in the four areas marked on the map. The total population was not above 2,000, of which 1,247 were examined to get an estimate of the frequency of the bridled form. The percentage found was 12.7.

PUFFIN (*Fratercula a. grabæ*) were entirely absent although common in the waters around the island.

A mile to the south-west of Oigh-sgeir are five small stacks called together Oigh-sgeir Eagach. They are very inaccessible and the older men of the west side villages maintain that there was once a Gannet colony there. The man who told me this would not be more definite than "a long time ago." There are certainly none there now.

Causamul is a very small island lying one and a half miles to the west of the coast of North Uist (O.S. 1" Scotland 22), lat. $57^{\circ} 35'$ N. and long. $7^{\circ} 37'$ W. It consists of a circular southern piece rising to 33 ft. with a modern cairn in the middle, and a long rocky spit to the north intersected with tide channels and continued as a reef for half a mile; a small beach of large shingle is contained within the landward curve of this spit.

Only four species of birds were seen breeding. Twenty-eight Eider (*Somateria m. mollissima*) nests, many with deserted eggs, were counted in the dense *Matricaria* growth of the island proper; a few Eider with young were seen on the water. Black Guillemot (*Uria g. grylle*) were nesting in the interstices of the cairn and under its surrounding rocks; a flock of about 30 birds was seen on the water. The shingle beach had a small colony of Arctic Tern (*Sterna macrura*), and two nests of the Common Gull were found amongst it. Two Black-headed Gulls (*Larus r. ridibundus*) were flying with the Terns, this being rather an exposed place for this species compared with their usual distribution in the Hebrides. The only other birds seen were, two Rock-Pipits, a single Oyster-catcher and a few non-breeding gulls.

OBITUARY.

HENRIK GRÖNVOLD.

(1858-1940.)

THE death occurred at Bedford Hospital on March 22nd, 1940, of Henrik Grönvold, in his 82nd year. Born in Denmark on September 6th, 1858, he studied art in Copenhagen and afterwards worked as a draughtsman. At one time he was attached to the Danish Biological Station at Copenhagen as an artist, under Dr. Carl Petersen.

In the autumn of 1892 he came to England on his way to America, and hearing there was a vacancy for an articulator in the British Museum, he applied for and was appointed to the post. He remained in the employ of the Museum until February, 1895, in the spring of which year he accompanied Mr. Ogilvie-Grant on his collecting trip to the Salvage Islands. On his return he continued to work unofficially in the Museum at painting birds. At first he did not confine his work to them but drew fish and reptiles for Dr. G. A. Boulenger, and skulls of the okapi for Professor Ray Lancaster. Soon Mr. Grönvold became well-known as an illustrator of books and papers, and regularly painted plates for the *Ibis*. He was responsible for the plates in Shelley's *Birds of Africa* published in 1900 and, since that date has illustrated partly or entirely numerous works on birds.

Mr. Grönvold's work is seen at its best in Eliot Howard's *British Warblers* and *Territory in Bird Life*, especially the uncoloured plates. As a painter of birds' eggs he had few equals, and even that exacting critic, the late Professor Newton, had nothing but praise for the eight plates of the Great Auk's eggs in the *Oothea Wolleyana*. His drawing, too, of anatomical preparation was of a very high standard. Shortly after the war Mr. Grönvold broke his leg and afterwards was obliged to walk with a stick. A few years ago his sight began to fail and it was found he was suffering with cataract, which, with difficulty, he was persuaded to have removed. The operation was successful and, in spite of his age, he was able to draw and paint as well as ever.

Mr. Grönvold was married in 1895 and is survived by a daughter, Mrs. J. J. Ayres.

Mr. Grönvold will be greatly missed by the staff and workers at the Museum and he will not be easily replaced.

N.B.K.

NOTES

INFORMATION REQUIRED FOR THE "BREEDING" SECTION OF *THE HANDBOOK OF BRITISH BIRDS*.

THOSE who have studied the "Breeding" sections of volumes one to three of the *Handbook* will be aware that much more observation is needed on many points and although the late F. C. R. Jourdain had gathered together a number of new observations since the publication of these volumes much more is required to be done. There are also many gaps in the accounts of the species included in volume four and in examining Mr. Jourdain's records I find that while in some cases he had no information, in others he evidently refrained from making a statement owing to there being a few dissimilar observations and not sufficient to give a true idea of the variability obtaining.

The object of this brief note is to point out now how much there is to be done on this subject in the hope that our readers will take every opportunity this season to make observations, which could be included in the fifth and last volume of the *Handbook*.

This volume will be concerned with the terns, gulls, skuas, auks, rails and game birds and will also contain additions and corrections to volumes one to four, so that notes on any of the species on the British list can be included.

The following are the chief points on which more data are desirable: share of sexes in building, intervals at which eggs are laid, period at which incubation begins, share of sexes in incubation, incubation-period, intervals of hatching, share of sexes in tending young, and fledging-period of young.

Data should be sent to me at Gracious Pond Farm, Chobham, near Woking, Surrey, and if notes on a number of species are made it would be a great convenience if those concerning birds appearing in volume five (as given above) were written on separate paper from those on other birds. As the manuscript will shortly be in active preparation all notes should be sent in as soon as possible. H. F. WITHERBY.

NEST-BUILDING BY MALE CIRL BUNTING.

IN the *Handbook of British Birds*, Vol. I, it is stated in the Cirl Bunting (*Emberiza c. cirrus*) section (p. 127): "Nest—built by hen only." I record some notes taken in the spring of 1937 at Dartington Hall, S. Devon, in which the male did

a certain amount of building though it was, admittedly, a somewhat casual part.

The nest was situated in a Devon bank-and-coppice hedge and the first sign of building I saw was on April 28th when the male broke off a long piece of grass at the foot of the hedge, about 100 yards from where I subsequently found the nest, and, accompanied by the female, flew with it in the wrong direction and out of sight.

On April 29th the male was seen to pick up a few pieces of dead grass and build them into the hedge 25 yards away from the nest-site.

On April 30th I saw the male carrying grass and the female carrying moss fly to the nest which I then found. It was about two days old.

On May 1st I watched at the nest from 5.35 to 6.56 a.m. During this time the female came 16 times with nest-material and once without. The male came 7 times (usually in company with the female). On three occasions he succeeded in building material into the nest, on two occasions he built his grass into the wrong part of the ivy-covered stump (i.e., 2-3 feet from the nest), on one visit he dropped his material before reaching the nest and on one visit he came with an empty beak.

The male in this territory was also seen helping to build the second-brood nest but no detailed watch was kept.

L. S. V. VENABLES.

FOOD OF NESTLING SWALLOWS.

THE following list gives the names of insects obtained from adult Swallows (*Hirundo r. rustica*) as they were going to feed their young; they were secured in Carmarthenshire during 1939. Mr. R. L. Coe and one or two other members of the British Museum staff have very kindly determined the species where the condition of the insect would allow. Other lists have appeared during the last six years (cf. Vol. XXXII, p. 233).

Family.	Genus.	Species.	No. of Specimens.
HEMIPTERA.			
APHIDIDÆ	?		(4)
HYDROPHILIDÆ	<i>Helophorus</i>	<i>brevipalpis</i> Bed.	(1)
COLEOPTERA.			
ELATERIDÆ	<i>Athous</i>	<i>hæmorrhoidalis</i> F.	(1)
HYMENOPTERA.			
TENTHREDINIDÆ	<i>Nematinxæ</i>	?	(1)
CHALCIDIDÆ	<i>Pteromalus</i>	?	(1)
CYNIPIDÆ	<i>Synergus</i>	?	(1)

Family.	Genus.	Species.	No. of Specimens.	
			♂	♀
DIPTERA.				
BIBIONIDÆ	<i>Dilophus</i>	<i>febrilis</i> L.	(8)	8
STRATIOMYIIDÆ	<i>Beris</i>	<i>vallata</i> Forst.	(2)	1 1
LEPTIDÆ	<i>Chrysopilus</i>	<i>aureus</i> Mg.	(1)	1
		<i>cristatus</i> Fab.	(1)	1
TABANIDÆ	<i>Hæmatopota</i>	<i>pluvialis</i> L.	(3)	1 2
THEREVIDÆ	<i>Thereva</i>	<i>plebeia</i> L.	(1)	1
EMPIDIDÆ	<i>Empis</i>	<i>albinervis</i> Mg.	(1)	1
		<i>Hilara</i>	<i>litorea</i> Fln.	(3)	3
		<i>chorica</i> Fln.	(1)	1
		? <i>chorica</i> Fln.	(1)	1
	<i>Tachydromia</i>	<i>cursitans</i> F.	(1)	1
		<i>candicans</i> Fln.	(1)	1
		?	(1)	1
SYRPHIDÆ	<i>Melanostoma</i>	<i>mellinum</i> L.	(2)	1 1
		<i>scalare</i> F.	(1)	1
	<i>Rhingia</i>	<i>campestris</i> Mg.	(1)	1
CALLIPHORIDÆ	<i>Pollenia</i>	<i>vespillo</i> F.	(1)	1
		<i>cæsar</i> L.	(1)	1
ANTHOMYIIDÆ	<i>Limnophora</i>	?	(1)	1
		<i>Hydrotæa</i>	<i>irritans</i> Fln.	(4)	3 1
	<i>Cænusia</i>	? <i>lineatipes</i> Zett.	(1)	1
	<i>Phaonia</i>	<i>basalis</i> Zett.	(1)	1
	?		(9)	9
CORDYLURIDÆ	<i>Scatophaga</i>	<i>stercoraria</i> L.	(1)	1
CHLOROPIDÆ	<i>Oscinella</i>	<i>frit</i> L.	(1)	1
BORBORIDÆ	<i>Sphærocera</i>	<i>subsultans</i> F.	(1)	1
OPOMYZIDÆ	<i>Opomyza</i>	<i>germinationis</i> L.	(2)	2

J. F. THOMAS.

HOOPOE IN ANGLESEY.

ON March 18th, 1940, I watched a Hoopoe (*Upupa epops*) among the sand-dunes at Aberffraw. The bird first appeared flying against a strong headwind and was later observed with glasses from a distance of ten yards. It spent some time running about the shore just above high-water mark but did not appear to feed. The crest was once half erected when a gust of wind nearly blew the bird off its balance. The bird has rarely been recorded from North Wales.

A few minutes earlier I had seen a Black Redstart among the rocks above the shore.

DUNCAN MACDONALD.

AN AGGRESSIVE BITTERN.

IN the severe weather of January and February, 1940, Bitterns (*Botaurus s. stellaris*) were not uncommon on the Kentish marshlands, and in certain areas where the water remained partially open during severe frost there was a deal of competition between the birds for the few favourite feeding-spots, in one area these "spots" consisted of small open spaces or holes in the ice situate in a large reed-bed.

One of the Bitterns frequenting this particular reed-bed

resented being disturbed from its feeding-hole and on several occasions when so disturbed hovered above my Labrador dog and swooped down at the animal at the same time uttering a series of angry "Kok-kok-kok's." This performance was repeated daily for several days and on each occasion I stood within a few yards of the bird.

I have read of wounded Bitterns striking out the eye of a dog but have never heard of an attack of this description. Although the bird never actually struck the Labrador I thought it wise on one occasion when the bird seemed particularly aggressive to call the dog to heel. T. C. GREGORY.

AN UNUSUAL AGGRESSIVE DISPLAY OF THE GREAT CRESTED GREBE.

IN his paper on the sexual display of the Great Crested Grebe (*Podiceps c. cristatus*) Huxley (*Proc. Zool. Soc.*, 1914, pp. 491-562) describes an elaborate pose in which the bird extends and tilts forward its wings, at the same time fanning out its ruff with head held low. This pose, named by Huxley the "cat attitude," is normally part of a greeting display between paired birds. On April 10th, 1938, at Blelham Tarn in Lancashire, I saw a Great Crested Grebe twice use the "cat attitude" as a threatening display against a bird which was advancing to attack it.

A single Great Crested Grebe had been shaking heads with one bird of a pair. This flirtation was interrupted by the second bird of the pair; the single grebe was harried to and fro by the mated birds and savagely attacked by one of them. After being brought to grips the single bird broke free and "—pattered some way along the surface. On alighting it went into the 'cat attitude'—and in this position rotated a little from side to side. The paired birds again bore down upon it, attacking both submarinely and along the surface." Soon afterwards the single Grebe was menaced by another, unpaired bird, whose cruising area bordered that of the pair. This Grebe swam towards the single bird "—in full fighting attitude, neck laid flat along the surface, beak awash, with almost all the white of the plumage concealed. The single Grebe was at first inclined to assume the same position, but presently went into the 'cat attitude' instead." The single Grebe was then chased right away from the scene of these encounters.

Variations in behaviour such as these may help to elucidate the relationship between the sexual and aggressive displays of the Great Crested Grebe.

P. H. T. HARTLEY.

ICELAND REDSHANK IN ISLE OF MAN.

DURING the severe easterly gale and snowfall in the Isle of Man at the end of January and early February, 1940, there was an unusually heavy mortality among Redshanks (*Tringa totanus* subsp. ?). At Langness and Derbyhaven, on February 11th, I collected for examination a number of the remains of this species, and recorded birds with wing-measurements of 168, 166, 165, and 164 mm. (four). According to the data given by H. F. Witherby (*antea*, p. 225) all these would be referable to the Iceland form (*Tringa t. robusta*); but in the light of more recent knowledge it appears that only the specimen with wing 168 mm. may be claimed as a member of this race.

KENNETH WILLIAMSON.

[Since I wrote the note referred to, Dr. J. M. Harrison and Mr. P. A. Clancey have shown me breeding birds from Scotland measuring 164, 165 and 166 mm. in the wing so that birds in winter plumage cannot be regarded as definitely of the Iceland form unless measuring over 166 mm.—H.F.W.]

LITTLE GULL IN SHROPSHIRE.

MR. C. G. TANGYE found an immature Little Gull (*Larus minutus*) which had evidently died very recently, in the Wyre Forest, a short distance from the Shropshire-Worcester county boundary. The bird, which I saw on the following day, had some dirt, apparently oil, on its plumage. Its stomach was empty; it seems probable that it had been trying to preen off the oil which had thus got into its stomach and upset its digestion.

H. G. ALEXANDER.

GREAT SKUA RINGED IN SHETLAND REPORTED IN U.S.A.

A GREAT SKUA (*Stercorarius s. skua*) was ringed (401218) at Hermaness, the most northerly point of Shetland, for the Oxford Ornithological Society, on July 3rd, 1939, as a nestling, and was found dead near Boston (Mass.) on February 4th, 1940. The record was sent by the Bureau of Biological Survey, Washington.

The *A.O.U. Check List* states that this species (called Northern Skua) winters on the fishing banks off Newfoundland, Nova Scotia and Massachusetts, casually south to New York. The bird was sent to the New England Museum of Natural History and Mr. D. L. Garrison (curator of ornithology) informs the Bird-Ringing Committee that positive information about the occurrence of the species in states east of New York is extremely limited and that consequently the Museum is doubly interested in securing this ringed example.

E. P. LEACH.

YELLOW BUNTINGS ROOSTING IN EVERGREENS.—Mr. G. M. King informs us that on several occasions in January and February, 1939, he caught for ringing a number of Yellow Buntings (*Emberiza c. citrinella*) which were roosting in some Japanese arbor-vitæ (*Thuja (Thujopsis) dolabrata*) about 15-20 feet high in a garden in Staffordshire. This was evidently a regular resort as amongst those caught in the same trees in March, 1940, was one ringed bird which had been captured there the year before.

BLACKCAPS IN WARWICKSHIRE AND WORCESTERSHIRE IN FEBRUARY.—Mr. H. G. Alexander informs us that on February 10th, 1940, a female Blackcap (*Sylvia atricapilla*) was found dead in the snow near a bird-table in the garden of Dr. Stanley Barnes, at Moseley, Birmingham. It showed no sign of injury. A male and female were also reported at Bromsgrove on March 9th and it was stated that they had been observed there for about a fortnight.

EARLY WHITE WAGTAIL IN NORFOLK.—Miss J. M. Ferrier writes that she had a good view of an adult male White Wagtail (*Motacilla a. alba*) at Blakeney on March 10th, 1940. A Pied Wagtail only a few yards away served for comparison.

EARLY WHEATEAR IN SUSSEX.—Mr. J. Southerden informs us that he saw a Wheatear (*Enanthe c. enanthe*) at the Midrips on February 25th, 1940.

EARLY SAND-MARTINS IN PEMBROKESHIRE.—Mr. Bertram Lloyd reports the arrival of four Sand-Martins (*Riparia r. riparia*) at Tenby on March 14th, 1940.

LITTLE BITTERN IN WILTSHIRE.—Mr. B. W. H. Coulson writes us that a Little Bittern (*Ixobrychus m. minutus*) was seen on a farm on the northern edge of Salisbury Plain on March 18th, 1940. On the following day the bird, which was apparently exhausted, was captured and on being released in the evening made no attempt to fly away. It was found dead the next morning and was sent to the Natural History Museum.

COLOUR OF WEBS OF SHOVELER.—Mr. H. Tetley informs us that of five adult Shoveler (*Spatula clypeata*) examined by him on January 9th, 1940, three had the usual orange webs but one male had slate-coloured webs and one female had those parts dusky.

SCAUP-DUCK INLAND IN NORFOLK.—Mr. P. H. T. Hartley informs us that he identified an adult drake Scaup-Duck

(*Aythya m. marila*) on the River Bure, near Decoy Broad, on March 4th, 1940. The bird, which allowed a close approach, was in excellent condition and flew strongly when flushed.

EARLY STONE-CURLEW IN SUFFOLK.—Mr. Cecil A. Joll writes that he saw a Stone-Curlew (*Burhinus æ.ædicnemus*) between Brandon and Barton Mills on March 3rd, 1940.

BLACK-TAILED GODWITS IN SUFFOLK IN WINTER.—Although the Black-tailed Godwit (*Limosa l. limosa*) has in recent years been frequently observed in winter there are not many such records for Suffolk. It should therefore be noted that we are informed by Mr. I. A. Williams that he had excellent views of a party of six on the Orwell, near Ipswich, on February 11th, 1940.

GLAUCOUS GULL IN GLOUCESTERSHIRE.—Mr. H. Tetley informs us that an immature Glaucous Gull (*Larus hyperboreus*) was seen in the Bristol Docks (Cumberland Basin) on December 27th and 28th, 1939, and January 2nd, 9th, 10th and 11th, 1940. The observers were H. W. Neal, A. A. Adams, H. H. Davis and Mr. Tetley. On the last occasion it was closely compared with Herring-Gull (*L. a. argentatus*) and British Lesser Black-backed Gull (*L. f. graellsii*) and was considerably larger with a stronger deeper bill. The plumage was cream above freckled with brown; the tail was mottled and the primaries were pale cream. This is the third record for Gloucestershire.

LETTER.

MALE YELLOW WAGTAIL INCUBATING.

To the Editors of BRITISH BIRDS.

SIRS,—In *A Practical Handbook of British Birds* (Part III, p. 201) it is stated of the Yellow Wagtail (*Motacilla f. flavissima* (= *rayi*)) that incubation is performed "chiefly at any rate by hen," so that when Jourdain (whose death, greatly lamented by all, has created an irreparable loss to ornithology) asked me to assist him in the breeding habits of British birds in *The Handbook*, I naturally assumed that what had been penned anent the point in the earlier work had been derived from field knowledge, and I therefore (not having his notes) thought it needless to mention that I had long been aware from field study that the male Yellow Wagtail sometimes did help in incubation. What I actually put in my *History of Sussex Birds* (Vol. I, p. 258) is: "Within my own experience the male incubates but very seldom," but that came out after the first volume of *The Handbook*, so that the statement in the latter about the observation having (only) been taken from captive birds could not then be rectified. JOHN WALPOLE-BOND.

INDEX.

NOTE.—The nomenclature followed in this volume is in accordance with the "Systematic List" printed at the end of the Volume II of *A Practical Handbook of British Birds* and reprinted in *A Check List of British Birds* and the additions and alterations appearing on pages 101-2 of Volume XXII, pages 24 and 25 of Volume XXIV, pages 8 and 16 of Volume XXVI, pages 2 and 3 of Volume XXVII, pages 90-96 and 186-187 of Volume XXVIII, pages 7-13 of Volume XXXI, pages 2 and 3 of Volume XXXII and pages 2 and 3 of Volume XXXIII of *British Birds*.

- acuta*, *Anas a.*, see Pintail.
æruuginosus, *Circus*, see Harrier, Marsh-
affinis, *Sitta e.*, see Nuthatch.
alba, *Crocethia*, see Sanderling.
 —, *Tyto a.*, see Owl, Barn-
albellus, *Mergus*, see Smew.
albifrons, *Anser a.*, see Goose, White-fronted.
 —, *Sterna a.*, see Tern, Little.
albionis, *Uria a.*, see Guillemot, Southern.
 ALEXANDER, H. G., Note on Grey Phalarope seen in Derbyshire, 280; Letter on Great Shearwaters in the English Channel, 284; Note on Little Gull in Shropshire, 338.
 ALEXANDER, W. B., Index of Heron Population 1939, 304.
alpina, *Calidris*, see Dunlin.
altifrons, *Charadrius a.*, see Plover, Northern Golden.
anglicus, *Dryobates m.*, see Woodpecker, Great Spotted.
anser, *Anser*, see Goose, Grey Lag-
apiaster, *Merops*, see Bee-eater.
apivorus, *Pernis*, see Buzzard, Honey-
apus, *Apus a.*, see Swift.
aquaticus, *Rallus a.*, see Rail, Water-
argentatus, *Larus a.*, see Gull, Herring-
aristotelis, *Phalacrocorax a.*, see Shag.
 ARMITAGE, JOHN, Note on flock of Bewick's Swans in Lancashire, 314.
 ARNOLD, E. C., Note on Marsh-Harrier in Sussex and Hen-Harrier eating Water-Rail, 276.
arquata, *Numenius a.*, see Curlew.
arvensis, *Alauda a.*, see Lark, Sky-Atlantic, Birds seen on an autumn and a spring crossing, 152.
 (Atlantic) Notes on birds seen on a voyage to the West Indies and back, 245.
atlanticus, *Anser hyperboreus*, see Goose, Greater Snow-
atra, *Fulica a.*, see Coot.
atricapilla, *Sylvia*, see Blackcap.
auritus, *Podiceps*, see Grebe, Slavonian.
 Avocet, Incubation period of, and notes on the nestling, 114.
avosetta, *Recurvirostra*, see Avocet.
Aythya to be used instead of *Nyroca*, 3.
 BAISS, J. L. R., Note on Ring-Ouzel in Dorset in January, 274.
 BARNES, J. A. G., Note on Fecundity of Blue Tit and Tawny Owl in relation to age, 195.
bassana, *Sula*, see Gannet.
 Bee-eater in Norfolk, 275.
 BENTHAM, HOWARD, Note on Short-eared Owls in Surrey, 82.
 BEST, A. T., Note on Nest-building by male Mallard, 52.
bewickii, *Cygnus b.*, see Swan, Bewick's.
 BIBLE, E. H. T., Note on Status of Nuthatch in W. Merionethshire, 80.
 Bird-Life, Effect of severe weather on, 271.
 Bittern perching in a tree in Lancashire, 29; breeding in Cambridgeshire, 56; an aggressive, 336.
 —, Little, in Wiltshire, 339.

- Blackbirds feeding on tadpoles, 25; Vocal activity of, at a Winter Roost, 44; Movements to and from abroad, 66; Recovery of marked, 132.
- Blackcap seen between Azores and Ireland, 247; in Waterford in January, 273; in Hereford in February, 314; in Warwickshire and Worcestershire in February, 339.
- BLEZARD, ERNEST, Note on White Barnacle-Goose in Cumberland, 255.
- borealis*, *Puffinus kuhlii*, see Shearwater, North Atlantic.
- BOYD, A. W., Notes on Water-Pipit in Cheshire, 79; Great Crested Grebes' unusual nesting-site, 84; Early nesting of Great Crested Grebes in Cheshire, 85; Nesting of the Black-necked Grebe in Cheshire, 163; Common Eiders in Cheshire, 256; Letter on the Swallow, 200.
- brachyrhynchus*, *Anser fabalis*, see Goose, Pink-footed.
- Brambling, Movements to and from abroad, 65; Recovery of marked, 130.
- BRANWELL, W. H., Note on Red-backed Shrike as fosterer of Cuckoo, 80.
- Breeding section of *The Handbook of British Birds*, Information required for the, 334.
- britannica*, *Alca t.*, see Razorbill.
- , *Tringa t.*, see Redshank.
- British List, Additions and Alterations to, 2.
- BROWN, R. H., Notes on the Lapwing and Curlew breeding populations of a Cumberland farm, 12; Notes on Breeding Habits and feeding-frequency of Flycatchers, 251; Incubation and feeding-frequency of Swallows and Martins, 254; Feeding-frequency of *Passeres*, 273; Letter on the Black-tailed Godwit in Cumberland, 260.
- Buds of Trees and Shrubs, The destruction of, by Birds, 90.
- Bullfinch, Recovery of marked, 130; Late breeding of, 166; Food of, 272.
- Bunting, Cirl, Nest-building by male, 334.
- , Reed-, Recovery of marked, 130; Feeding-frequency of, 273.
- , Yellow, Recovery of marked, 130; Roosting in evergreens, 339.
- Bustards, Great, Specimens of Norfolk, lost in fire, 258.
- buteo*, *Buteo b.*, see Buzzard, Common.
- BUXTON, E. J. M., Breeding of the Oyster-catcher, 184; Notes on Lapwings nesting at high altitude in Norway 118, 168.
- Buzzard, Common, in Shetland, 195; Feeding on Sand-Lizard in winter, 276.
- , Honey-, in Yorkshire recorded as Goshawk, 199.
- cæruleus*, *Parus c.*, see Tit, Continental Blue.
- CAMPBELL, DR. JAMES W., Note on Green-winged Teal in Outer Hebrides, 84.
- canadensis*, *Branta c.*, see Goose, Canada.
- camabina*, *Carduelis c.*, see Linnet.
- canorus*, *Cuculus c.*, see Cuckoo.
- canus*, *Larus c.*, see Gull, Common.
- canutus*, *Calidris c.*, see Knot.
- Capercaille, Incubation period of and precocity of chicks, 198.
- carbo*, *Phalacrocorax c.*, see Cormorant.
- carduelis*, *Carduelis*, see Goldfinch.
- carolinensis*, *Anas c.*, see Teal, Green-winged.
- CARRUTHERS, OLIVER, Note on Cormorants roosting in trees in Dumfriesshire, 27.
- CAWKELL, E. M., Note on Storks in Sussex, 83.
- Chaffinch, Movements to and from abroad, 64; Recovery of marked, 130; Same pair of, mating three times, 162.
- CHARTERIS, HON. GUY, Note on Fecundity of Blue Tits in relation to age, 162.

- CHAVE, S. P. W., Note on two Black Redstarts in London in June, 108.
- Chiffchaff in Cork in winter, 252.
- chloris*, *Chloris ch.*, see Greenfinch.
- chloropus*, *Gallinula ch.*, see Moorhen.
- Chough, Down-plumage of nestling and soft parts of juvenile, 78.
- chrysaëtus*, *Aquila ch.* see Eagle, Golden.
- ciconia*, *Ciconia*, see Stork.
- cinerea*, *Ardea c.*, see Heron, Common.
- , *Motacilla c.*, see Wagtail, Grey.
- cirlus*, *Emberiza c.*, see Bunting, Cirl.
- citrinella*, *Emberiza c.*, see Bunting, Yellow.
- clangula*, *Bucephala c.*, see Goldeneye.
- clypeata*, *Spatula*, see Shoveler.
- cælebs*, *Fringilla*, see Chaffinch.
- collurio*, *Lanius c.*, see Shrike, Red-backed.
- collybita*, *Phylloscopus*, see Chiffchaff.
- COLQUHOUN, M. K., Vocal Activity of Blackbirds at a Winter Roost, 44; The Display and Song of the Turtle-Dove, 222. Note on the territorial behaviour of Robins during cold weather, 274.
- Coot, Recovery of marked, 161.
- corax*, *Corvus c.*, see Raven.
- Cormorants roosting in trees in Dumfriesshire, 26; Recovery of marked, 156.
- , Southern, Movements from abroad, 71.
- cornix*, *Corvus c.*, see Crow, Hooded.
- corone*, *Corvus c.*, see Crow, Carrion.
- coturnix*, *Coturnix c.*, see Quail.
- COWIN, W. S., and LADDS, E. F., Note on Incubation-period of Oyster-catcher, 112.
- Crake, Spotted, in Sussex in June, 87.
- crecca*, *Anas c.*, see Teal.
- crisatus*, *Podiceps c.*, see Grebe, Great Crested.
- Crossbills breeding in Sussex in 1939, 79.
- Crow, Carrion-, Interbreeding with Hooded Crow in Co. Dublin, 194.
- Crow, Hooded, Movements from abroad, 63; Interbreeding with Carrion-Crow in Co. Dublin, 194.
- Cuckoo, Two eggs in deserted nests in the same bush, 228.
- Curlew, Notes on breeding populations of a Cumberland farm, 12; Movements from abroad, 72; Incubation period of, 85; Attacking rabbit, 142; Recovery of marked, 159.
- , Stone-, Early in Suffolk, 340
- curonicus*, *Charadrius d.*, see Plover, Little Ringed.
- curvirostra*, *Loxia c.*, see Crossbill.
- cyaneus*, *Circus*, see Harrier, Hen-.
- cygnus*, *Cygnus*, see Swan, Whooper.
- DARLINGTON, ARNOLD, Note on Buzzard feeding on Sand-Lizard in winter, 276.
- DENT, G., Note on a case of bigamy in Montagu's Harrier, 51.
- DERSCHEID, J. M., Note on Incubation period of Avocet, 114; Letter on Size of eggs and incubation period of Icelandic Mallards, 117.
- DEWAR, DR. J. M., Timing the under-water activities of Diving Birds, 58; Letter on Diurnal song and its relation to latitude and twilight, 116.
- Dipper, Recovery of marked, 133; Feeding-frequency of, 273.
- Diver, Great Northern, inland in Sussex, 316.
- Diving Birds, Timing the under-water activities of, 58.
- domesticus*, *Passer d.*, see Sparrow, House-.
- DORRIEN-SMITH, MAJOR ARTHUR A., Notes on Mistle-Thrush, Kittiwake and Quail breeding in Scilly Islands, 110; Greater Yellowshank seen in Scilly Islands, 113.
- Dove, Stock-, Recovery of marked, 158; Flocking in May in Hertfordshire, 165; Flocks in breeding season, 196.

- Dove, Turtle-, breeding in Ireland, 140; Recovery of marked, 158; Display and song of the, 222.
- Duck, Ferruginous, in Glamorgan 278.
- , Long-tailed, in Sutherland in June, 139.
- , Ruddy Sheld-, in Lanarkshire, 55.
- , Scaup-, Movements from abroad, 71; in Bedfordshire, 138; Inland in Norfolk, 339.
- , Tufted, Movements to and from abroad, 71; Breeding in Worcestershire, 115; Recovery of marked, 156.
- Dunlin, Movements from abroad, 72; Breeding-season of, 88; seen between Azores and Ireland, 247.
- Eagle, Golden, Fledging period of, 111.
- Eider, Recovery of marked, 156; in Cheshire, 228, 256; in Dorset, 259, 316; "Up-ending" of, 279.
- ELLIOTT, J. S., Note on Little Owl preying on birds, 312.
- epops*, *Upupa e.*, see Hoopoe.
- ericetorum*, *Turdus e.*, see Thrush, British Song-.
- europæus*, *Caprimulgus e.*, see Night-jar.
- excubitor*, *Lanius e.*, see Shrike, Great Grey.
- fabalis*, *Anser f.*, see Goose, Bean-.
- faeroeensis*, *Capella g.*, see Snipe, Færoe.
- FERGUSON, ROBERT Y., Note on large number of Whooper Swans in Lanarkshire, 255.
- ferina*, *Aythya f.*, see Pochard, Common.
- ferruginea*, *Casarca*, see Duck, Ruddy Sheld-.
- Firecrest at Spurn, Yorks, 29.
- Flamingo in Yorkshire and Lincolnshire, 141.
- flammeus*, *Asio f.*, see Owl, Short-eared.
- flavissima*, *Motacilla f.*, see Wagtail, Yellow.
- Flycatcher, Pied, Recovery of marked, 131; Breeding habits and feeding-frequency of, 252.
- , Red-breasted, at Spurn, Yorks, 29.
- , Spotted, Breeding habits and feeding-frequency of, 251.
- FREEMAN, R. B., On the Birds of the islands of Oigh-Sgeir and Causamul, North Uist, 330.
- frugilegus*, *Corvus f.*, see Rook.
- FRYER, J. C. F., The destruction of buds of Trees and Shrubs, by birds, 90.
- fulvicarius*, *Phalaropus*, see Phalarope, Grey.
- fuligula*, *Aythya*, see Duck, Tufted.
- fusca*, *Melanitta f.*, see Scoter, Velvet-.
- fuscata*, *Sterna f.*, see Tern, Sooty.
- fuscus*, *Larus f.*, see Gull, Scandinavian Lesser Black-backed.
- gallinago*, *Capella g.*, see Snipe, Common.
- Gannet, Breeding of, on the Scar Rocks, Wigtownshire, 105, 142; Recovery of marked, 157.
- Garganey, Movements from abroad, 70; in Pembrokeshire, 199.
- GARNETT, MISS M., Obituary of the late E. U. Savage, 76; Notes on Black-necked Grebe breeding in Westmorland, 256; Record of Green Sandpipers breeding in Westmorland in 1917, 257.
- gibraltariensis*, *Phœnicurus o.*, see Redstart, Black.
- glacialis*, *Fulmarus g.*, see Petrel, Fulmar.
- GLADSTONE, HUGH S., MRS. C. E. L. Perrott's Selection of British Birds, 122; Note on specimens of Norfolk Great Bustards lost by fire, 258.
- glareola*, *Tringa*, see Sandpiper, Wood-.
- GLEGG, WILLIAM E., see MACPHERSON, A. HOLTE.

- Godwit, Bar-tailed, Movements from abroad, 72.
- , Black-tailed, in Northumberland, 30; in the British Isles, 1890-1937, 98; in Isle of Man, 165; in Cumberland, 260; Numbers of, in Co. Cork, 280; Large numbers of, in Sussex, 280; in Suffolk in winter, 340.
- Goldeneye, On the Courtship Display of the, 48.
- Goldfinch, Notes on food of, 271.
- Gooch, G. B., Note on Starlings swallowing pellets, 311; Letter on bill-snapping of a Little Owl, 316.
- Goosander, Recovery of marked, 156; in Merionethshire, 281.
- Goose, Barnacle-, in Northumberland in June, 87; White, in Cumberland, 255.
- , Bean-, Status of, in East Kent, 276; in Middlesex and Kent, 315.
- , Canada, Addition to British List, 3.
- , Brent, Dark-breasted, in Middlesex and Surrey, 315.
- , —, Pale-breasted, in Sussex, 313.
- , Greater Snow-, Change of name, 3.
- , Grey Lag-, with pink bill, 163; Status of, in East Kent, 277.
- , Pink-footed, Change of name, 3; Status of, in East Kent, 278; in Dorset and Merionethshire, 281; in Co. Wexford, 315.
- , White-fronted, Status of, in East Kent, 277.
- GORDON, SETON, Notes on Lapwings nesting at high altitude, 54; fledging period of the Golden Eagle, 111.
- grabæ*, *Fratercula a.*, see Puffin.
- grællsii*, *Larus f.*, see Gull, Lesser Black-backed, British.
- gravis*, *Puffinus*, see Shearwater, Great.
- Grebe, Black-necked, Nesting in Cheshire, 163; Breeding in Westmorland, 256.
- , Great Crested, Unusual nest-site, 84; Early nesting in Cheshire, 85; an unusual aggressive display of, 337.
- Grebe, Red-necked, in Somerset, 166; in Ayrshire, 316.
- , Slavonian, Courtship and display of, 170.
- Greenfinch singing at night, 78; Recovery of marked, 129; seen between Azores and Ireland, 247; Notes on food of, 272.
- Greenshank in Somerset, 86.
- GREGORY, T. C., Notes on Grey Lag-Goose with pink bill, 163; Nuptial Song of Little Stint, 197; Status of Grey Geese in East Kent, 276; an aggressive Bittern, 336.
- griseigena*, *Podiceps*, see Grebe, Red-necked.
- griseus*, *Puffinus*, see Shearwater, Sooty.
- GRÖNVOLD, HENRIK, Obituary of, 333.
- grylle*, *Uria g.*, see Guillemot, Black.
- Guillemots, Black, Breeding in Yorkshire, 142; Breeding in holes in harbour walls in Wigtownshire and Co. Down, 141, 168.
- , "Bridled", Notes on Percentage of, 174.
- , Southern, Movements from abroad, 75.
- gularis*, *Cinclus c.*, see Dipper.
- Gull, Black-headed, Movements to and from abroad, 73; Recovery of marked, 160; Colonies, Report on the 1938 Survey of, 202, 230.
- , Common, Movements from abroad, 74; Recovery of marked, 160.
- , Glaucous, in Gloucestershire, 340.
- , Great Black-backed, Movements from abroad, 75.
- , Herring-, Movements from abroad, 75.
- , Iceland, in Surrey, 28; in Middlesex, 281.
- , Lesser Black-backed, British, Recovery of marked, 160.
- , —, —, Scandinavian, in Mouth of Thames, 259.
- , Little, in Shropshire, 338.
- GUNN, DONALD, the late, On the courtship-display of the Goldeneye, 48.

- Harrier, Hen-, eating Water-Rail, 276.
 —, Marsh-, in Sussex, 276.
 —, Montagu's, A case of bigamy in, 51.
- HARRISON, DR. JAMES M., Notes on Great Snipe in Lincolnshire, 166; Continental Blue Tit in Kent, 251.
- HARTLEY, P. H. T., Note on an unusual aggressive display of the Great Crested Grebe, 337.
- Hawk, Sparrow-, Movements from abroad, 67; Recovery of marked, 134.
- HENDY, E. W., Notes on same pair of Chaffinches mating three times, 162; Song-Thrush nesting in its first year, 162.
- Heron, Common, Movements from abroad, 67; Recovery of marked, 134; seen between Azores and Ireland, 247; Index of Population 1939, 304.
- Heronry, Exodus from a Breconshire, 25.
- hiaticula*, *Charadrius h.*, see Plover, Ringed.
- hirundo*, *Sterna h.*, see Tern, Common.
- Hobby in Pembrokeshire, 111
- HOLLOM, P. A. D., Letter on Trapping Methods, 32; Note on Wood-Sandpipers in Surrey, 166; Report on the 1938 Survey of Black-headed Gull Colonies, 202, 230.
- Hoopoe in Hampshire in January, 315; in Anglesey, 336.
- HOSKING, ERIC J., Courtship and display of Slavonian Grebe, 170; Note on Incubation period of Capercaillie and precocity of chicks, 198.
- hrota*, *Branta bernicla*, see Goose, Brent, Pale-breasted.
- HURCOMB, SIR CYRIL, Note on Blackbirds feeding on Tadpoles, 25.
- HUXLEY, DR. JULIAN S., F.R.S., Notes on the Percentage of Bridled Guillemots, 174.
- hyemalis*, *Clangula*, see Duck, Long-tailed.
- hyperboreus*, *Larus*, see Gull, Glaucous.
- hypoleuca*, *Muscicapa h.*, see Fly-catcher, Pied.
- hypoleucos*, *Tringa*, see Sandpiper, Common.
- ignicapillus*, *Regulus i.*, see Firecrest.
- immer*, *Colymbus i.*, see Diver, Great Northern.
- INGRAM, GEOFFREY C. S., and SALMON, H. MORREY, Notes on Food of Tits and Finches, 271; Ferruginous Duck in Glamorgan, 278.
- interpres*, *Arenaria i.*, see Turnstone.
- Jackdaw, Recovery of marked, 127; Nesting in its first year, 194.
- Jay, Recovery of marked, 127.
- JENKINS, A. REAVLEY, Note on Scaup-Ducks in Bedfordshire, 138.
- JONES, RICHARD W., Note on Fulmar Petrels in Carnarvonshire, 164.
- JOURDAIN, REV. F. C. R., Obituary of the late George Marples, 250. Obituary of, 286.
- , —, and WITHERBY, H. F., Cliff-breeding in the House-Martin, 16, 137.
- KENNEDY, REV. P. G., Note on Interbreeding of a Hooded and Carrion-Crow in Co. Dublin, 194.
- KENRICK, HUGH, A Study of Blue Tits by colour ringing, 307.
- KERR, MRS. H. RAIT, Note on Unusual Nesting Sites and food of Grey Wagtail, 137.
- Kestrel, Movements from abroad, 66; Taking Willow-Warbler, 115; Recovery of marked, 134.
- KINNEAR, N. B., Obituary of Henrik Grönvold, 333.
- Kites, Black, released in London, 198.

- Kittiwake in Berkshire, 30 ; Breeding in Scilly Islands, 110 ; Recovery of marked, 160.
- kleinschmidti*, *Anthus spinoletta*, see Pipit, Færoe Rock-.
- Knot, Movements from abroad, 72 ; Inland in Somerset, 116 ; in Hertfordshire, 167.
- kuhlii*, *Puffinus*, see Shearwater, North Atlantic.
- LACK, DAVID, Observations on captive Robins, 262.
- LADDS, E. F., see COWIN, W. S.
- LANCUM, F. HOWARD, Note on Greenfinch singing at night, 78.
- lapponica*, *Limosa l.*, see Godwit, Bar-tailed.
- Lapwing, Notes on breeding populations of a Cumberland farm, 12 ; Early nests at high altitudes in Shropshire, 30 ; nesting at high altitude, 54 ; Movements from abroad, 72 ; Fledging period of, 85 ; nest with six eggs, 86 ; nesting at high altitude, 87 ; nestling "freezing" upside down, 88 ; nesting at high altitude in Norway, 118, 168 ; Recovery of marked, 158.
- Lark, Sky-, carrying young bird, 79 ; Recovery of marked, 130 ; nesting in October in Lancashire, 198.
- LEACH, MISS E. P., Recovery of Marked Birds, 127, 155 ; Notes on Puffin ringed at St. Kilda reported in Newfoundland, 281 ; Great Skua ringed in Shetland reported in U.S.A., 338.
- , —, see WITHERBY, H. F.
- leucopsis*, *Branta*, see Goose, Barnacle-.
- leucopterus*, *Chlidonias*, see Tern, White-winged Black.
- , *Larus*, see Gull, Iceland.
- leucorodia*, *Platalea*, see Spoonbill.
- LEWIS, STANLEY, Note on Velvet-Scoters in Somerset, 112.
- limosa*, *Limosa*, see Godwit, Black-tailed.
- Linnet, Recovery of marked, 130.
- LLOYD, BERTRAM, Note on Stock-Doves flocking in May in Hertfordshire, 165.
- LLOYD, L. C., Note on Nesting association of Swallow and House-Martin, 109.
- lobatus*, *Phalaropus*, see Phalarope, Red-necked.
- London, Birds of Inner, 326.
- LOW, DR. G. CARMICHAEL, see MACPHERSON, A. HOLTE.
- MACDONALD, DUNCAN, Note on Hoopoe in Anglesey, 336.
- MACKAY, MRS. KATHLEEN C., Note on Blackcaps in Waterford in January, 273.
- MACPHERSON, A. HOLTE, Birds of Inner London, 326.
- , —, GLEGG, WILLIAM E., and LOW G. CARMICHAEL, Note on Purple Sandpiper and other birds in Middlesex, 197.
- MCCULLOCH, G. K., Note on association of Drake Mallard with alarmed Call Duck and brood, 195.
- MCWILLIAM, REV. J. M., Breeding of Gannet on the Scar Rocks, Wigtownshire, 105.
- major*, *Parus m.*, see Tit, Continental Great-.
- Mallard, Nest-building by male, 52 ; Association of Drake with the Duck and young brood, 53 ; Movements from abroad, 67 ; Unusual behaviour of Duck and brood, 83 ; Recovery of marked, 135 ; Association of Drake with alarmed call Duck and brood, 195.
- , Icelandic, Size of eggs and Incubation period of, 117.
- marila*, *Aythya m.*, see Duck, Scaup-.
- marinus*, *Larus*, see Gull, Great Black-backed.
- Marked Birds, Recovery of, 127, 155.
- Marked Birds, see Ringed Birds.

- MARPLES, GEORGE, Notes on the diurnal song of Birds, 4; Observations on breeding and song of Wren, 294; Notes on stones in gizzard of Nightjar, 81; nestling Wood-Pigeon, with undigested food in crop, 138. Obituary of, 250.
- MARTIN, REV. CYRIL E., Notes on evidence for male House-Sparrow selecting nesting-site 108; Food and method of feeding fledged young of Great Spotted Woodpecker, 110.
- Martin, House-, Change of name, 2; Cliff-breeding in, 16, 137; Nesting association of, and Swallow, 109; Little Owl taking, 111; Recovery of marked, 133; at the nest, 146; on Incubation and feeding-frequency of, 254.
- , Sand-, Observations on, at the nest, 95; early, in Pembrokehire, 339.
- maura*, *Saxicola torquata*, see Stonechat, Siberian.
- media*, *Capella*, see Snipe, Great.
- Melanitta* to be used instead of *Oidemia*, 3.
- melanoleuca*, *Tringa*, see Yellowshank, Greater.
- melophilus*, *Erithacus r.*, see Robin.
- merganser*, *Mergus m.*, see Goosander.
- Merganser, Red-breasted, Movements from abroad, 71; Summer plumage of female, 196.
- merula*, *Turdus m.*, see Blackbird.
- migrans*, *Milvus*, see Kite, Black.
- minuta*, *Calidris*, see Stint, Little.
- minutus*, *Ixobrychus m.*, see Bittern, Little.
- , *Larus*, see Gull, Little.
- mollissima*, *Somateria m.*, see Eider.
- montanus*, *Passer m.*, see Sparrow, Tree-.
- montifringilla*, *Fringilla*, see Brambling.
- Moorhen, nest built of grass, 88; Recovery of marked, 161.
- MOREAU, R. E., AND W. M., Observations on Sand-Martins at the nest, 95; observations on Swallows and House-Martins at the nest, 146.
- MORGAN, D. A. T., Note on Iceland Gull in Surrey, 28.
- MORLEY, MISS A., Rising and Roosting of a pair of resident Starlings in Winter and early Spring, 39; Black-tailed Godwit in the British Isles 1890-1937, 98.
- MOUNTFORT, G. R., Note on Skylark carrying young bird, 79.
- musicus*, *Turdus m.*, see Redwing.
- nebularia*, *Tringa*, see Greenshank.
- nesa*, *Pyrrhula p.*, see Bullfinch.
- newtoni*, *Parus m.*, see Tit, Great.
- niger*, *Chlidonias m.*, see Tern, Black.
- Nightjar, Stones in gizzard of, 81.
- nigricollis*, *Podiceps n.*, see Grebe, Black-necked.
- nisoria*, *Sylvia*, see Warbler, Barred.
- nisus*, *Accipiter n.*, see Hawk, Sparrow-.
- Nuthatch, Status of, in W. Merionethshire, 80, 141.
- Nyroca* to be replaced by *Aythya*, 3.
- nyroca*, *Aythya n.*, see Duck, Ferruginous.
- obscurus*, *Parus c.*, see Tit, Blue.
- occidentalis*, *Hæmatopus o.*, see Oyster-catcher.
- , *Prunella m.*, see Sparrow, Hedge-.
- ochropus*, *Tringa*, see Sandpiper, Green.
- œdicnemus*, *Burhinus œ.*, see Curlew, Stone-.
- œnanthe*, *Enanthe*, see Wheatear.
- œnas*, *Columba*, see Dove, Stock-.
- Oidemia* to be replaced by *Melanitta*, 3.
- Oigh-Sgeir and Causamul, North Uist, On the birds of the islands of, 330.
- OLDHAM, CHARLES, Note on association of Drake Mallard with Duck and young brood, 53.

- O'MAHONY, EUGENE, Note on Turtle-Dove breeding in Ireland, 140.
- ostralegus*, *Hæmatopus*, see Oyster-catcher.
- otus*, *Asio o.*, see Owl, Long-eared.
- Ouzel, Ring-, in Dorset in January, 274.
- OWEN, J. H., Note on Little Owl taking House-Martin, 111.
- Owl, Barn-, Recovery of marked, 134.
- , Little, taking House-Martin, 111; Recovery of marked, 133; Preying on birds, 312; Bill-snapping of, 316.
- , Long-eared, Movements from abroad, 66.
- , Short-eared, in Surrey, 82.
- , Tawny, Fecundity in relation to age, 195.
- Oyster-catcher, Movements from abroad, 71; Incubation-period of, 112; Recovery of marked, 158; Breeding of, 184.
- PAGET-TOMLINSON, E. E., Note on Lapwing's nest with six eggs, 86.
- palumbus*, *Columba p.*, see Pigeon, Wood-.
- palustris*, *Acrocephalus*, see Warbler, Marsh-.
- parva*, *Muscicapa p.*, see Fly-catcher, Red-breasted.
- pelagicus*, *Hydrobates*, see Petrel, Storm-.
- penelope*, *Anas*, see Wigeon.
- peregrinus*, *Falco p.*, see Falcon, Peregrine.
- PERROTT, MRS. C. L. E., Selection of British Birds, 122.
- Petrel, Fulmar, in Carnarvonshire, 164; on Oigh-sgeir, North Uist, 331.
- , Leach's Fork-tailed, on Oigh-sgeir, North Uist, 331.
- , Storm-, Late breeding of, 166.
- Phalarope, Grey, seen in Derbyshire, 280.
- , Red-necked, in Yorkshire, 167; in Kent in August, 228.
- PHILIPSON, W. R., Notes on Birds seen on a voyage to the West Indies and back, 245.
- philomelus*, *Turdus e.*, see Thrush, Continental Song-.
- phænicurus*, *Phænicurus ph.*, see Redstart.
- Pigeon, Wood-, Nestling with undigested food in crop, 138; Recovery of marked, 158.
- Pintail breeding in Yorkshire, 55, 115; Movements to and from abroad, 70; Recovery of marked, 155.
- Pipit, Færoe Rock-, Possible occurrence in British Isles, 144.
- , Meadow-, Movements from abroad, 65; Recovery of marked, 131.
- , Tree-, Recovery of marked, 131.
- , Water-, in Norfolk, 56; in Cheshire, 79.
- platyrhyncha*, *Anas p.*, see Mallard.
- Plover, Grey, in Hertfordshire, 167.
- , Kentish, in Norfolk, 56.
- , Killdeer, in Ireland, 167.
- , Little Ringed, in Sussex, 28.
- , Northern Golden, Movements from abroad, 71; in Sussex, 279.
- , Ringed, Movements from abroad, 71; Incubation period of, 85.
- Pochard, Common, breeding in Sussex, 112; Recovery of marked, 155.
- porzana*, *Porzana*, see Crake, Spotted.
- POUNDS, HUBERT E., Note on Hobby in Pembrokeshire, 111.
- pratensis*, *Anthus*, see Pipit, Meadow-.
- PRING, REV. C. J., Note on Common Buzzard in Shetland, 195.
- Puffin ringed at St. Kilda reported in Newfoundland, 281.
- puffinus*, *Puffinus p.*, see Shearwater, Manx.
- pugnax*, *Philomachus*, see Ruff.
- pygargus*, *Circus*, see Harrier, Montagu's.
- pyrrhocorax*, *Pyrrhocorax p.*, see Chough.

Quail breeding in Scilly Islands, 110; Status of, in British Islands, 259.
querquedula, *Anas*, see Garganey.

Rail, Water-, Movements from abroad, 75; Eaten by Hen-Harrier, 276.

RAVEN, REV. DR. CHARLES E., Note on Long-tailed Duck in Sutherland in June, 139.

Raven, Return of the, as a Nester in Sussex, 77.

Razorbill, Recovery of marked, 161.
Redshank, Recovery of marked, 159.

—, Continental, as a British bird, 225.

—, Iceland, in Isle of Man, 338.

Redstart, Spring migration of, over Europe, 34; in Isle of Wight in November, 228; seen between Azores and Ireland, 247.

—, Black, at Spurn, Yorkshire, 29; breeding in Cambridgeshire, 56; in London in May and June, 81; Two, in London in June, 108; in Co. Kilkenny, 228; Number of, on passage in Man, 252.

Redwing, Movements to abroad, 66; Recovery of marked, 132.

—, Iceland, in Dublin, Devon and Dorset, 314

Reviews :—

Birds as Animals, 30.

At the Turn of the Tide: A Book of Wild Birds, 31.

Fifth Report of the British Trust for Ornithology, Spring 1939, 32.

Report on Somerset Birds, 1938, 32.

Transactions of the Hertfordshire Natural History Society and Field Club, Vol. XXI., Pt. 1, 56.

Transactions of the Norfolk and Norwich Naturalists' Society, 1938, 56.

Annual Report of the Oundle School Natural History Society, 56.

Reviews (*continued*) :—

Report of the Cambridge Bird Club, 1938, 56.

Report of Skokholm Bird Observatory, 1938, 88.

London Bird Report, 1938, 119.

Report of Birmingham Bird Club, 1938, 119.

Lancashire and Cheshire Fauna Committee: Report on Birds, 1937, 119.

Ornithological Record for Derbyshire, 1938, 120.

Report of Committee on Bird Sanctuaries in Royal Parks (England), 1938, 120.

Ornithology of the Isle of Man, 1938, 120.

Hastings and East Sussex Naturalist, 1938, 120.

South-Eastern Bird Report, 1938, 143.

Ornithological Report for Hampshire, 1938, 143.

Eleventh Report of the Devon Bird-Watching and Preservation Society, 144.

Report of Marlborough College Natural History Society, 1938, 168.

Annual Report of Gresham's School Natural History Society, 1938-9, 168.

The Birds of Staffordshire, 199.

The Birds of East Lancashire, 259.

The Behaviour of the Robin, 282.

ridibundus, *Larus r.*, see Gull, Black-headed.

Ringed Birds, Movements of, from Abroad to the British Isles and from the British Isles Abroad, Addenda VI., 62.

Ringling, Bird-, Report of the Committee, for 1939, 318.

riparia, *Riparia r.*, see Martin, Sand-.

RITCHIE, JOHN, Note on Sooty Tern in Stirlingshire, 197.

RIVIÈRE B. B., Note on Bee-eater in Norfolk, 275.

- Robin, Recovery of marked, 132 ; seen between Azores and Ireland, 247 ; Observations on captive, 262 ; Territorial behaviour of, during cold weather, 274.
- Rook, Movements from Abroad, 63 ; Recovery of marked, 127 ; nests lined with feathers, 311.
- ROOKE, K. B., Notes on Little Ringed Plover in Sussex, 28 ; Tenminck's Stint in Hertfordshire, 54.
- roseus*, *Phenicopterus r.*, see Flamingo.
- rubetra*, *Saxicola*, see Whinchat.
- Ruff in Somerset, 86 ; in Isle of Man, 165.
- rufitergum*, *Garrulus g.*, see Jay.
- rustica*, *Hirundo r.*, see Swallow.
- rusticola*, *Scolopax r.*, see Woodcock.
- SALMON, H. MORREY, see INGRAM, GEOFFREY C. S.
- SANDEMAN, R. G., Note on Exodus from a Breconshire Heronry, 25.
- Sanderling in Somerset, 86.
- Sandpiper, Common, seen between Azores and Ireland, 247.
- , Green, Record of, breeding in Westmorland in 1917, 257.
- , Wood-, in Somerset, 86 ; in Surrey, 166.
- sandvicensis*, *Sterna s.*, see Tern, Sandwich.
- SAVAGE, ERNEST URMSON, Obituary notice of, 76.
- schinzii*, *Calidris a.*, see Dunlin.
- schœniclus*, *Emberiza s.*, see Bunting, Reed-.
- schwarzi*, *Phylloscopus*, see Warbler, Radde's Bush-.
- Scoter, Velvet-, in Somerset, 26, 112 ; Packing of broods and "injury-feigning" of, 256 ; in Cambridgeshire, 316.
- SCROOPE, C. F., Notes on Chiffchaffs in Cork in winter, 252 ; numbers of Black-tailed Godwits in winter in Co. Cork, 280.
- serrator*, *Mergus*, see Merganser, Red-breasted.
- Shag, Nest of, with nine eggs, 55 ; nest with seven eggs, 115 ; Recovery of marked, 156.
- Shearwater, Great, in Atlantic, 245 ; Species of, in the English Channel, 248, 284.
- , Manx, Recovery of marked, 157.
- , North Atlantic, in Atlantic, 245.
- , Sooty, in Irish Sea, 87.
- Sheld-Duck, see Duck, Sheld-.
- Shoveler, Movements to and from abroad, 71 ; Recovery of marked, 155 ; Colour of webs of, 339.
- Shrike, Great Grey, in Cornwall, 282.
- , Red-backed, as fosterer of Cuckoo, 80.
- sinensis*, *Phalacrocorax c.*, see Cormorant, Southern.
- Skua, Great, in Mouth of Thames, 259 ; Ringed in Shetland reported in U.S.A., 338.
- skua*, *Stercorarius*, see Skua, Great.
- Smew, Unusual number in Somerset, 30 ; in Merionethshire, 281 ; in Cambridgeshire, 316.
- SMITH, STUART, Note on male Yellow Wagtail's share in incubation, 312.
- Snipe, Common, Movements from abroad, 73.
- , Færoe, Movements from abroad, 73.
- , Great, in Lincolnshire, 166.
- Song of Birds, Notes on the diurnal, 4.
- SOUTHERN, H. N., Spring migration of Redstart over Europe, 34.
- Sparrow, Hedge-, Feeding-frequency of, 273.
- , House-, Evidence for male selecting nesting-site, 108.
- , Tree-, Recovery of marked, 130.
- spermologus*, *Corvus m.*, see Jackdaw
- Spoonbills in Cornwall, 29 ; in Kent, 30 ; in Hampshire, 166.
- Spurn, Yorkshire, Birds at, 29.
- squatarola*, *Squatarola*, see Plover, Grey.

- Starlings, Rising and Roosting of a pair of resident, in winter and early spring, 39; Movements to and from abroad, 63; Recovery of marked, 127; swallowing pellets, 311; with young at Christmas, 314.
- stellaris*, *Botaurus*, see Bittern.
- Stint, Little, Nuptial song of, 197.
- , Temminck's, in Hertfordshire, 54; in Somerset, 86; in Yorkshire, 116.
- Stonechat, Siberian, Change of name, 2.
- Storks in Sussex, 83.
- striata*, *Muscicapa s.*, see Flycatcher, Spotted.
- subbuteo*, *Falco s.*, see Hobby.
- SUMNER, J. LE C., Note on Black Redstart in London in May and June, 81.
- Swallow, Nesting association of, and House-Martin, 109; Recovery of marked, 133; at the nest, 146; Notes on the, 200; On Incubation and feeding-frequency of, 254; Food of nestlings, 335.
- Swan, Bewick's, Influx of, 29; Flock of, in Lancashire, 314.
- , Whooper, Large number of, in Northumberland and Lanarkshire, 254.
- Swift, Recovery of marked, 133.
- sylvatica*, *Strix a.*, see Owl, Tawny.
- SYMES, JOSEPH H., Note on Two Cuckoo's eggs in deserted nests in same bush, 228.
- TAYLER, A. G., Note on Rooks' nests lined with feathers, 311.
- Teal, Movements to and from abroad, 68; Recovery of marked, 135.
- , Green-winged, in Outer Hebrides, 84.
- TEBBUTT, C. F., Note on Unusual behaviour of Duck Mallard and brood, 83.
- temminckii*, *Calidris*, see Temminck's Stint.
- Tern, Black, in Wiltshire, 30; Late, in Middlesex, 197.
- Tern, Common, Movements from abroad, 73.
- , Gull-billed, in Norfolk, 56.
- , Little, Recovery of marked, 160.
- , Sandwich, Recovery of marked, 160.
- , Sooty, in Stirlingshire, 197.
- , White-winged Black, in Sussex, 87.
- TETLEY, H., Note on Velvet-Scoter in Somerset, 26; Note on Waders in Somerset, 86.
- THOMAS, J. F., Notes on Incubation periods of some Waders and fledging period of Lapwing, 85; Food of nestling Swallows, 335.
- THOMSON, DR. A. LANDBOROUGH, C.B., Report of the Bird-Ringing Committee: Progress for 1939 318.
- Thrush, British Song-, Movements from abroad, 65; Recovery of marked, 132; Nesting in its first year, 162; Seen between Azores and Ireland, 247.
- , Continental Song-, Movements from abroad, 65.
- , Mistle-, breeding in Scilly Islands, 110; Recovery of marked, 131; Feeding-frequency of, 273.
- TICEHURST, DR. N. F. The Continental Redshank as a British bird, 226; Note on Northern Golden Plovers in Sussex, 279.
- tinnunculus*, *Falco t.*, see Kestrel.
- Tit, Blue, Recovery of marked, 131; Fecundity of, in relation to age, 162, 195; A Study of, by colour ringing, 307; Notes on food of, 271.
- , Continental Blue, in Kent, 251; in Radnorshire, 251.
- , Continental Great-, Movements from abroad, 65.
- , Great, Recovery of marked, 131; Notes on food of, 271.
- torquatus*, *Turdus*, see Ouzel, Ring-
- totanus*, *Tringa t.*, see Redshank, Continental.
- Trapping Methods, 32.
- tridactyla*, *Rissa t.*, see Kittiwake.
- trivialis*, *Anthus t.*, see Pipit, Tree-
- trochilus*, *Phylloscopus*, see Warbler, Willow.

- troglydites*, *Troglodytes t.*, see Wren.
- TUCKER, B. W., Notes on Packing of broods and "injury-feigning" of Velvet-Scoter, 256; "Up-ending" of Eiders, 279.
- TULLY, H., Note on Large number of Whooper Swans in Northumberland, 254.
- Turnstone in Somerset, 86.
- turtur*, *Streptopelia t.*, see Dove, Turtle-.
- urbica*, *Delichon u.*, see Martin, House-.
- urogallus*, *Tetrao u.*, see Capercaillie.
- vanellus*, *Vanellus*, see Lapwing.
- VENABLES, L. S. V., Letter on possible occurrence of Færø Rock-Pipit in British Isles, 144; Birds seen on an Autumn and a Spring Atlantic crossing, 152; Notes on Stock-Dove flocks in breeding season, 196; Nest-building by male Cirl Bunting, 334.
- vidalii*, *Athene n.*, see Owl, Little.
- viridis*, *Picus*, see Woodpecker, Green-.
- viscivorus*, *Turdus v.*, see Thrush, Mistle-.
- vociferus*, *Charadrius*, see Plover, Killdeer.
- vulgaris*, *Sturnus v.*, see Starling.
- Wagtail, Grey, Unusual nesting sites and food of, 137.
- , Pied, Recovery of marked, 131, 321.
- , White, Early, in Norfolk, 339.
- , Yellow, Change of name, 2; Male's share in incubation, 312, 340.
- WALPOLE-BOND, JOHN, Notes on the return of the Raven as a nester in Sussex, 77; Crossbills breeding in Sussex in 1939, 79; White-winged Black Tern in Sussex, 87; Spotted Crake in Sussex in June, 87; Pale-breasted Brent Goose in Sussex, 313; Letter on male Yellow Wagtail incubating, 340.
- Warbler, Barred, at Spurn, Yorkshire, 29; at the Isle of May, 55.
- , Marsh-, Arrival in Isle of Wight, 115.
- , Radde's Bush-, Change of name, 2.
- , Willow-, Recovery of marked, 131; Feeding-frequency of, 273.
- Weather, Effect of severe, on bird-life, 271
- West Indies, Notes on birds seen on a voyage to the, and back, 245.
- Wheatear, Early, in Sussex, 339.
- Whinchat seen between Azores and Ireland, 247.
- Whitethroat, Recovery of marked, 321.
- Wigeon, Movements to and from abroad, 70; Recovery of marked, 155, 321.
- WILKINS, J. P., Notes on Common Pochard breeding in Sussex, 112; Large numbers of Black-tailed Godwits in Sussex, 280.
- WILLIAMS, JOHN G., Notes on Summer plumage of female Red-breasted Merganser, 196; Continental Blue Tit in Radnorshire, 251.
- WILLIAMSON, KENNETH, Notes on Down-plumage and soft parts of juvenile Chough, 78; Ruff and Black-tailed Godwit in the Isle of Man, 165; Numbers of Black Redstarts on passage in Man, 252; Iceland Redshank in Isle of Man, 338.
- WILSON, W., Note on Common Eiders in Cheshire, 228.

WITHERBY, H. F., Additions and Alterations to the British List, 2; The Continental Redshank as a British bird, 225; The Species of Great Shearwaters in the English Channel, 248; Note on Black Guillemots breeding in Wigtownshire and Co. Down, 141; Obituary of the late F. C. R. Jourdain, 286; Note on Information required for the Breeding section of *The Handbook of British Birds*, 334.

———, ———, AND E. P. LEACH, Movements of Ringed Birds from abroad to the British Isles and from the British Isles abroad, 62.

———, ———, see JOURDAIN, REV. F. C. R.

WONTNER-SMITH, C., Note on Jackdaw nesting in its first year, 194.

Woodcock, Movements from abroad, 73; Recovery of marked, 159.

Woodpecker, Great Spotted, nesting in Bute and Sutherland, 87, 115; Food and method of feeding fledged young, 110.

———, Green, in Lanarkshire, 55.

Wren, Feeding-frequency of, 273; Observation on breeding and song of, 294.

yarrellii, *Motacilla a.*, see Wagtail, Pied.

Yellowshank, Greater, seen in Scilly Islands, 113.

2 MAY 1940

PURCHASED





A HISTORY OF THE BIRDS OF ESSEX

William E. Glegg, F.Z.S., M.B.O.U.

Numerous Photographs and a Map. Demy 8vo. 25/-.

**A HISTORY OF THE
BIRDS OF MIDDLESEX**

William E. Glegg, F.Z.S., M.B.O.U.

6 Plates and Map. Demy 8vo. 18/-.

**A HISTORY OF THE
BIRDS OF NORFOLK**

B. B. Riviere, F.R.C.S., F.Z.S., M.B.O.U.

16 Plates and Map. Demy 8vo. 25/-.

BIRD-LIFE IN THE ISLE OF MAN

Colonel H. W. Madoc, C.B.E., M.V.O.

Photographs. Crown 8vo. 6/-.

BIRD MIGRATION

A. Landsborough Thomson.

Illustrated. Small Crown 8vo. 5/- net.

HOW TO KNOW BRITISH BIRDS

Norman H. Foy.

Illustrated. Small Crown 8vo. 5/- net.

BIRDS OF THE GREEN BELT

R. M. Lockley.

Illustrated. Small Crown 8vo. 5/- net.

EVERY GARDEN A BIRD SANCTUARY

E. L. Turner.

Illustrated. Small Crown 8vo. 5/- net.

H. F. & G. WITHERBY LTD.

LE GERFAUT

REVUE BELGE D'ORNITHOLOGIE (Fondée en 1911)

La seule publication scientifique belge traitant des oiseaux, spécialement des oiseaux de la Belgique

Abonnement 25 francs belges - 5 Belgas par an

Direction : Square Prince Charles 21, Bruxelles-Laeken (Belgique).

41
2-20

THE HANDBOOK OF BRITISH BIRDS

By H. F. WITHERBY (Editor), F. C. R. JOURDAIN,
NORMAN F. TICEHURST and B. W. TUCKER.

To be completed in five volumes.

*Illustrated by 500 paintings reproduced in full colour depicting about
1,800 birds.*

“The *Handbook* is a better, more complete, and infinitely more interesting history of the birds of a country than that published anywhere else in the world, including America.”—*The Field*.

£5 5s. the set complete. Vols. I, II and III have been published.

A HISTORY OF SUSSEX BIRDS

By JOHN WALPOLE-BOND.

*In three volumes published simultaneously and illustrated with
53 coloured plates*

BY PHILIP RICKMAN.

“It would be difficult to say too much of the accuracy of personal observation and the thoroughness of research. The three volumes are likely to remain as a standard example of such literature.”—SIR WILLIAM BEACH THOMAS in the *Observer*.

£5 5s. the set.

SONGS OF WILD BIRDS

Third Impression.

By E. M. NICHOLSON and LUDWIG KOCH.

Introduction by JULIAN HUXLEY.

With two double-sided 10-inch gramophone records featuring the Nightingale, Cuckoo, Blackbird, Song Thrush, Pied Woodpecker, Green Woodpecker, Robin, Wren, Hedge-Sparrow, Turtle-Dove, Wood-Pigeon, Chaffinch, Willow Warbler, Whitethroat and Great Tit.

By the same authors

MORE SONGS OF WILD BIRDS

With three double-sided 10-inch gramophone records featuring the Skylark, Woodlark, Curlew, Tree Pipit, Wood-Wren, Blackcap, Garden Warbler, Rook, Carrion Crow, Jackdaw, Magpie, Jay, Little Owl, Redstart, Chiffchaff, Mistle-Thrush. Heron, Stock-Dove, Nightjar and Blue Tit.

Each 15s. net boxed.

H. F. & G. WITHERBY LTD.



1-20-4
63

