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BRITISH BIRDS

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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 F.Z.S. M.B.O.U.

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Volume XI.

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JUNE 1,
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Vol. XI.
No. 1.



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



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ADDITIONS AND CORRECTIONS TO THE
HAND-LIST OF BRITISH BIRDS.

(SECOND LIST)

BY

THE AUTHORS.

Two years ago when we published the first list of additions and corrections to our *Hand-List* (see *Brit. B.*, IX., pp. 2-10), we expressed our intention of issuing future lists when occasion arose at the commencement of a volume of *British Birds* so that the least inconvenience possible might be occasioned by any necessary change of name.

In this second list we have set out all the changes of names, which we know of, additional to those mentioned in our first list, and in adopting these changes we have acted on the principles enunciated in the Introduction to our *Hand-List*.

The additions only refer to those species or subspecies which have been added to the British list since our first list of additions, and no attempt has been made here to include any additional records, or corrections of the distribution of species or subspecies already in the *Hand-List*.

Add—

MELANOCORYPHA CALANDRA

58a. *Melanocorypha calandra calandra* (L).—THE
CALANDRA LARK.

See *Brit. B.*, X., p. 261.

Add—

LUSCINIOLA MELANOPOGON

130a. *Luscinola melanopogon melanopogon* (Temm).—
THE MOUSTACHED WARBLER.

See *Brit. B.*, IX., p. 207.

Add—

135a. *Acrocephalus arundinaceus orientalis* (Temm.
& Schleg).—THE EASTERN GREAT REED-
WARBLER.

See *Brit. B.*, X., p. 261.

136. *Acrocephalus scirpaceus scirpaceus* (Herm).—
THE REED-WARBLER.

TURDUS SCIRPACEUS Hermann, *Observ. Zool.*, p. 202 (1804—
Alsace)

instead of *Acrocephalus streperus streperus*.

Mr. Stresemann long ago called my attention to many names of *Hermann* which have hitherto never been quoted, and a full list will, it is hoped, soon be published. Mr. Hellmayr called my special attention to this case, in which one of *Hermann's* overlooked names takes precedence over an old established name, and I believe he has published the fact.—E. H.

Add—

HYPOLAIS PALLIDA

142a. *Hypolais pallida pallida* (Hempr. & Ehr).—
THE OLIVACEOUS WARBLER.

See *Brit. B.*, IX., p. 207.

160. *Turdus eunomus* Temm.

TURDUS EUNOMUS Temminck, Pl. Col. 514 (1830—Japan)

instead of *Turdus fuscatus* Pall.

Mr. T. Iredale has pointed out to us that *Turdus fuscatus* of Pallas 1827 is anticipated by *Turdus fuscatus* Vieillot, *Hist. Nat. Ois. Amérique Sept.*, II., pl. 57 bis and text (1808—Porto Rico and Santo Domingo). The next oldest available name must therefore be used.

171. *Cenanthe hispanica melanoleuca* (Güld).

MUSCICAPA MELANOLEUCA G \ddot{u} ldenstädt, *Nov.-Comm. Petrop.*, XIX., p. 468, pl. 15 (1775—Georgia, Caucasus).

instead of *Cenanthe hispanica xanthomelæna* (Hempr. & Ehr.), 1833.

A careful re-examination of G \ddot{u} ldenstädt's plate and text shows that the name *melanoleuca* refers to the Eastern Black-eared Wheatear (of the black-throated form) which has recently actually been found in the country where G \ddot{u} ldenstädt observed it.—E. H.

Add—

174a. *Cenanthe leucura syenitica* (Heugl).—THE
NORTH AFRICAN BLACK WHEATEAR.

See *Brit. B.*, IX., p. 207.

195. *Hirundo rustica rustica* L.—THE SWALLOW.

196. *Hirundo daurica rufula* Temm.—THE RED-
RUMPED SWALLOW.

197. *Delichon urbica urbica* (L.).—THE MARTIN.

instead of *Chelidon rustica rustica*, *Chelidon daurica rufula* and *Hirundo urbica urbica*.

Correspondence with several ornithologists has shown that the Rules for Nomenclature are so interpreted by the Members of the International Commission, that we must fall into line and adopt the above changes.

Hirundo Linnæus, Syst. Nat. Ed. X., I., p. 191, 1758, type by subsequent determination (Gray, 1840) *Hirundo rustica* L.

Delichon Moore, Proc. Zool. Soc. London, XXII. ("1854"), p. 104 (1855—Monotype: *D. nipalensis* Moore).—E. H.

Add—

324a. *Puffinus assimilis boydi* Math.—THE CAPE VERDE LITTLE SHEARWATER.

See *Brit. B.*, IX., p. 208.

Add—

326a. *Puffinus kuhlii borealis* Cory—THE NORTH ATLANTIC GREAT SHEARWATER.

See *Brit. B.*, IX., p. 208.

For the same reasons as those given under the Swallows the generic name of the Grebes (Nos. 336, 337, 338, 339, 340), must be *PODICEPS* instead of *Colymbus* and the Divers (Nos. 341, 342, 343, 344) must again be called *COLYMBUS* instead of *Gavia*.

Podiceps Latham, Gen. Syn. B., Suppl., I., p. 294 (1787—Type by subsequent determination (Gray 1840): *P. cristatus* (L)).

Colymbus Linnæus, Syst. Nat., Ed. X., I., p. 135 (1758—Type by subsequent determination (Gray 1855) *Colymbus arcticus* L.).—E. H.

Add—

CHARADRIUS SEMIPALMATUS

358a. *Charadrius semipalmatus* Bp.—THE SEMI-PALMATED RINGED PLOVER.

See *Brit. B.*, X., p. 262.

371. *Erolia canutus canutus* (L).—THE KNOT.

instead of *Canutus canutus* (L.).

From the point of view from which the genera are limited in the *Hand-List*, there is no reason whatever why the Knot should be placed in a separate genus. There is no more difference between the Purple Sandpiper and the Knot, for example, than between the Dunlin and the Purple Sandpiper. To place the British species of *Erolia* into four or five genera as has been done by some writers seems to us useless and

embarrassing. The generic separation of the Dunlin and Curlew-Sandpiper cannot be justified under any circumstances.

Add—

TRINGA INCANA

397a. *Tringa incana brevipes* (Vieill).—THE GREY-RUMPED SANDPIPER.

See *Brit. B.*, IX., p. 208.

449. *Fratercula arctica grabæ* (Brehm).—THE BRITISH PUFFIN.

MORMON GRABÆ Brehm, *Handb. Naturg. Vög. Deutschl.*, p. 999 (1831—Færoes “und andere ihnen naheliegende Inseln”).

Fratercula arctica forme *armoricana* Bureau, *Bull. Soc. Zool.*, France, IV., p. 18 (1879—coasts of Brittany, British Isles and Færoes)

instead of *Fratercula arctica arctica* (L.).

The Puffins breeding on the coasts of Brittany, the Channel Islands, British Isles and Færoes are as a rule very much smaller than the typical form from Sweden, Norway, Iceland, North America, etc. Wings of twelve Irish and British adult birds measure 158-166, eight from Herm 155-166, type of *grabæ* 158 mm. Bill 43-48, height at base 34-37 mm. In a large series of *F. arctica arctica* the wings measure 160-177, bills 45-54, height 31-44 mm.—E. H.

464. *Lagopus scoticus* (Lath.)

instead of *Lagopus lagopus scoticus* (Lath.).

A careful study of the Red Grouse has shown so many differences between it and *L. lagopus* and its subspecies, that it appears to be hazardous to consider *scoticus* as a subspecies of *Lagopus lagopus*, although it is a close ally.—E. H.

469. *Alectoris rufa rufa* (L.).

instead of *Caccabis rufa*, the name *Alectoris* being published three pages before *Caccabis*.

Alectoris Kaup, *Skizz. Entw. Gesch. u. Nat. Syst. Eur. Thierw.*, pp. 180, 193 (1829—Monotype: “*A. petrosa*” = *barbara*).*

Attention must also be drawn to the remarks on the Cormorant and Little Bustard (Vol. X., pp. 210-14).

* See *Novitates Zoologicæ*, 1917, p. 275.

NOTES ON THE BREEDING-HABITS OF THE
DOTTEREL ON THE YENESEI.

BY

MAUD D. HAVILAND.

THE Tundra, although not varying in altitude for more than two or three hundred feet for many miles round the River Yenesei, has nevertheless most marked distinctions in avifauna. The lowest marshes are full of Divers and Phalaropes: the gullies and swampy slopes hold Willow-Grouse and Red-throated Pipits; and on the highest points there are Shore-Larks, Wheatears and Dotterels. But in that country of vast level horizons, these belts of different conditions are, as it were, telescoped together, with the result that sometimes a bird misses its proper environment by a few yards, and you may find such anomalies as a Willow-Grouse breeding among the Stint in the river swamps, or a Dotterel nesting in willow-scrub and marsh-grass in such a place as a Snipe might have chosen. Such a nest was that shown in Fig. 1. It was built in one of the wide, wet valleys that slope from the higher tundra to the river; and I think that the view from the spot must be one of the most noble in the world; for the silent, slow Golchika winds eastwards among the grey-green mud hills, and you can trace its course mile after mile, until in the furthest distance it meets the thick clotted clouds that hang along the curve of the earth, and alone, as it seems, set any limit to human vision.

The bird at the nest was very tame. How tame can be judged by the photograph, which was obtained by careful stalking, and shows the camera and tripod reflected in the bird's eye. When put off her eggs she crept off in a curious mammalian way, and began to feign injury. I tried to get a series of photographs of her attitudes at such times, but the extreme quickness of her movements and the nature of the ground baffled all attempts. It would have needed a kinematograph to do justice to



Fig. 1. DOTTEREL ON NEST IN A SWAMPY PLACE AMONG BOG GRASS AND DWARF WILLOW.
(This nest was at a level 20 ft. lower down than that in Fig. 2.)
(*Photographed by Miss M. D. Haviland.*)

the variety of her arts. First she threw herself on her breast and lay as if crucified. Then, jumping up, she ran forward and collapsed into a fluttering heap. Next she dashed up in a kind of anger, and ran sideways (and this was how I liked best to see her) like a little *Ædicnemus* in display, with feathers all bustled out. When she had (or thought she had) drawn you from the nest, she would break off and run quickly out of sight. Moreover, if you paid no attention to her guile, but went straight to the eggs to handle them, she would drop these tricks of pretence at once, and if you glanced secretly at her while still pretending to examine the nest, you would find her watching you silently or else tripping round the place nimbly enough. Only when she thought that she had captured your attention and could bamboozle you again did she fall anew to her antics.

It is only just to say that I have never identified a Dotterel's sex at the nest, and use the feminine pronoun here only because it pleases me better than the neuter. The Rev. H. H. Slater, who observed the Dotterel in northern Europe, found two males on the eggs, and Naumann (*Die Vogel Mitteleuropas*) also says that the male incubates. In the *British Bird Book* it is stated: "The young . . . are assisted in their search for food probably by both parents, but there is no direct evidence." On the Yenesei I shot a female Dotterel that was accompanied by a nearly full-fledged young one. Mr. Trevor-Battye (*Icebound on Kolguev*) shot two females off their nests in Kolguev.* One nest he remarks contained four eggs, evidently all laid by one bird, and Dr. Walter (*Ibis*, 1904, p. 229) found a similar clutch on the Taimyr.

I found two nests of the Dotterel at Golchika, and heard of a third, all within a space of half a mile and placed on the little hills that form the bluff boundary of

* When in Russian Lapland with my friend, A. E. Hamerton, we shot, Aug. 4, 1899, two old Dotterel within a few yards of two young scarcely able to fly. Both the old birds on dissection proved to be males.—H. F. W.

the tundra in the angle of the meeting of the Golchika and Yenesei Rivers. This agrees with the statement of Heysham that this bird is sociable even in the breeding season, and with the experience of Mr. Trevor-Battye, who shot two nesting females within two hundred yards of each other. One of the nests was in a marshy spot (Fig. 1), but the other, although not more than sixty feet above the swamps, was made among an Alpine flora



Fig. 2. DOTTEREL ON A NEST IN THE USUAL SITUATION AMONG STONES AND ALPINE HERBAGE.

(*Photographed by Miss M. D. Haviland.*)

in soil as dry and stony as the mountain top that it resembled in miniature (Fig. 2). I never saw more than one bird near the nest; but the late Major F. W. Proctor, who had seen this species breeding in Scotland, told me that there, as in the case of most waders, the "male" gives the alarm to the "female" on the nest.

The call of the Dotterel has been variously rendered. Aplin gives it as "wite wee; wite wee; wite wee," and Naumann as "düt-düt-düt-düt."* I have heard a little

* Hence the German "Dütchen."

plaintive sound, as inarticulate as a sob or sigh, that seemed to be wrung from the bird by the strength of her distress; and also once a long sibilant trill which may be the note written by Naumann as "Sisihririri." Otherwise the bird was very silent at the nest. The note that I liked most to hear, however, came later in the summer when the broods joined in little "trips" on the great open slopes of the tundra, which at that season, when the Asiatic Golden Plovers were congregating in the swamps, were empty of any sound or movement but that of the wind. Here, walking over the rough hummocky ground, you would suddenly hear a tinkle of notes, very soft and liquid, like the drip, not of water, but of something slower and richer—nectar, perhaps, which, as it was the drink of the world in the celestial Childhood of Things, surely must have been golden and sticky.

Then up would spring half a dozen Dotterel, and whirling away up the slope on a curious curve, as of a ball that is thrown with a spin and breaks sideways from its trajectory, they would plump down as suddenly as they rose, and instantly became as invisible as if they had been turned into the peaty tussocks around. Even with a field-glass it was very difficult to pick up their slim stone-coloured forms among their surroundings, and it was hard to believe that the tangerine tint of their breasts, which appears in the first plumage and persists through life, could be so inconspicuous on the grey tundra. I have seen as many as twenty birds in such a "trip" in August.

One day I was lying on the tundra, and taking up my field-glasses to look at some distant spot, was astonished to find that it was eclipsed by a moving blurr near at hand, which was presently condensed into a Dotterel which was crossing a ridge only twenty yards in front of me. I then became aware that four birds, three young and an adult, were feeding close by, and because the place was not far from the site of the nest shown in the photograph, I have a sentimental hope that it may have

been the same bird and her prosperous brood. All four birds seemed quite unconcerned at my presence and must have been there for some time. I lay and watched them for a while, enjoying a sight that seemed so secure and happy, when suddenly it was rudely interrupted by a Rough-legged Buzzard which came sailing over the hill. The three young ones flew away at once—they were not taking any chances under a trial of colour protection—and the Buzzard, recognizing, I suppose, that they were strong on the wing, ignored them and went on looking for Lemmings. But the adult Dotterel lay down sideways (the old trick) and made pretence most sorrowfully, fluttering about the tundra, as if the brood were still in the down. It seemed a queer thing—for life to play at cross purposes with itself. One bird offered to sacrifice herself for young which did not need it, to another who did not expect it: thus, so I interpreted his behaviour, mistrusted, and therefore ignored it. Probably the Buzzard had been hoaxed in that way before, for at first he took no notice of the little martyr's invitation. However, as she became more insistent, he stooped at her as she fluttered over the ridge. He would probably have missed her, for a Dotterel's flight has incalculable twists, but I was not going to let her suffer for her heroic stupidity, and so sent a charge of small-shot after the Buzzard. It did not ruffle his feathers, but he sheered off majestically, and gave the Dotterel a chance to whizz over the hill after her brood.

FIELD-NOTES ON THE NESTING OF THE
DOTTEREL IN SCOTLAND.

BY

THE LATE CAPTAIN C. S. MEARES.

Abstracted and prepared for publication by LIEUT. D. H. MEARES.

THE hills visited in mid-June were a chain of the Grampian Mountains some five miles in extent and varying from 2500 to 3000 feet in height. This chain is divided into seven hills (hereinafter referred to as hills Nos. 1 to 7) and a spur to the north. They are conical in shape, and the broad tops and higher ridges below the summits are covered with a growth of lichens and bilberry. This is the home of the Dotterel (*Charadrius morinellus*).

Snow was lying at the head of every gully, and in some places was 20 to 30 feet deep. The Dotterels were located rather lower down the mountains than usual, due to the severe snows earlier in the season. Weather conditions were unusually favourable, and the days were bright and warm with little wind.

Hill No. 2 was first visited. No bird was seen in the first instance, but after we had spent a few hours walking round the mountain, a Dotterel was located at last within a few feet of its nest. The nest, which was soon found, was placed on a small hummock covered with crisp lichens and bilberry on the western slope about 70 feet below the summit. It contained a clutch of three eggs incubated about ten days. The nest was by no means a mere scratching, the lichens and bilberry forming the structure having evidently been placed there with care, and it was lined with dead bilberry leaves picked from a quite obvious hole at the side of the nest. The bird, after being watched for about five minutes from a distance of thirty yards, returned to its eggs, but was evidently very nervous, and left, running away so soon as a nearer approach to the nest was attempted. It never went more than about thirty yards away from its nest, running up and down apparently feeding and gradually coming nearer and nearer until it regained the eggs. This procedure was repeated five or six times as we approached nearer to the nest, but the limit of the bird's confidence was reached when we were within twelve yards. Only the one bird was seen.

About three hundred yards further along the western slopes of this same hill, No. 2, another Dotterel ran off a nest about thirty yards ahead. This nest contained two eggs.

The bird was more nervous, keeping always right on the brow of the hill. The eggs were quite fresh, but when the nest was revisited the next day and also the day after, it still had only two eggs, and they showed no sign of incubation, though the bird ran off the eggs both days. This nest was also well formed, and again contained a lining of bilberry leaves. It was placed on a hummock of lichens and bilberry. Only the one bird was seen.

Hills Nos. 3 and 4 were visited, but no Dotterels were located. On the lower slopes of the summit of hill No. 5 a Dotterel was seen some twenty-five yards away, sitting, and remained sitting until a careful approach was made to within ten yards. It then flew up, and alighted again near by, but there was no nest here. On our retiring to a distance to watch, the bird rapidly settled down again about ten yards from the previous spot, and again appeared to be sitting, and, as it showed no signs of moving, a closer approach was again attempted, and it flew off at a distance of about ten yards, uttering a harsh "*Wer-r-r-r-r.*" Almost immediately another bird flew past from behind, and they both disappeared over the brow together. We accordingly retired right up to the summit in the direction whence the second bird had come, and after waiting half-an-hour, the Dotterel again appeared running about some thirty yards in front, but was presently lost again over the brow. Nothing further being seen of it after waiting an hour, the summit was systematically walked out, and the bird was eventually flushed at foot from a nest containing three eggs which had been incubated two or three days. It fluttered only a yard away, and lay there with wings slightly raised and tail extended, shivering, shaking and uttering little squeaks, and on our advancing, it fluttered on, keeping always about a yard ahead. Its attitude showed very clearly the white tips on its tail-feathers. This nest was about four hundred yards from the spot where the first Dotterel had been sitting. The nest was again on a lichen-covered hummock, and was neatly constructed and lined with bilberry leaves.

A thorough search of hill No. 6 did not disclose the presence of any Dotterel. Hill No. 1 was a splendid eminence with much fine "*Dotterel ground,*" but no birds were located. The southern spur, and the hills running east from this place did not appear to hold much likely ground. On hill No. 2 the nest before described still contained two eggs only, the bird running off the eggs as soon as even an appearance was made on the sky-line. Thence to hill No. 6, where no Dotterel was observed, in spite of a prolonged and thorough search.

On hill 7 the southern slopes were thoroughly beaten out without seeing anything of the Dotterels. On the northern slope, however, a Dotterel was observed. It was uttering the note "*Whit-whit-whit*," and eventually flew on to the southern slope, where it was joined by two more birds, and then by a fourth, the latter disappearing again, leaving the three, which ran and flew about at random. This took place between 3.30 and 5 p.m., so that in any case the birds were probably only feeding. On the northern spur of this hill a pair of Dotterels flew past and disappeared over the crest of the hill about 6.15 p.m., after the whole of the western slope had been thoroughly searched, containing much excellent ground for the birds, and the summit had nearly been reached. They did not re-appear on this day.

The following morning hill No. 7 was revisited and a nest was found containing a clutch of three eggs on the point of hatching. The nest was situated on comparatively low ground some two hundred yards from the head of the burn which divides hills Nos. 6 and 7. On emerging from the shelter of the head of the gorge we observed a Dotterel running away with one wing drooping. On our halting and sitting down this bird returned and settled on its eggs within two minutes. The nest was built on a slight hummock covered with lichen and some dry moss, but no bilberry was growing immediately around, yet the nest, which was well constructed, contained the lining of bilberry leaves which had evidently been placed there intentionally. While the nest was being examined the bird disported itself near by, feigning broken wings, uttering small squeaks, and fanning out its tail. Only the one bird appeared.

Failing to locate any Dotterel on the western slope, the northern spur was revisited, and a pair of birds were observed about 3 p.m. feeding on the summit. They were very tame and, except for one bird uttering a few warning notes at first, they were silent, and allowed an easy approach to within twenty yards. It was afterwards ascertained that a gillie on this estate had found the nest and eggs a fortnight before, so that judging from the behaviour of the birds, and the fact that they were together on two successive days, they probably now had young. About 6 p.m. hill No. 6 was revisited and a pair of birds were observed feeding together. They were quite tame and permitted an easy approach to very close quarters. At the same time a male was heard calling on the top of hill No. 5.

THE MOULTS OF THE BRITISH PASSERES,
WITH NOTES ON THE SEQUENCE OF THEIR
PLUMAGES.

BY

H. F. WITHERBY.

PART VIII. *

(Continued from Vol. X, page 290.)

GENUS *Locustella*.

THE adults of the four British species of this genus have a complete moult in late summer or autumn extending in some to December. The determination of the spring moult is unfortunately uncertain in some of the species owing to want of material. Savi's Warbler does not appear to have a spring moult, while the Lanceolated Warbler certainly has a complete spring moult, and so probably has our Grasshopper Warbler, as its eastern representative certainly has. Pallas's Grasshopper-Warbler appears to moult its body-feathers only, but this also is uncertain for want of material.

Examples moulting from juvenile to first winter are also scarce or altogether lacking in the collections I have examined, but it is interesting to note that in addition to the body-feathers and some of the wing-coverts the tail also moults, at all events in some of the species.

In all the species the sexes are alike, and there are scarcely any differences in winter and summer plumages. The juveniles are very much like the adults, but they are always distinguishable. First winter birds are like the adults in two of the species, while in the other two they may be distinguished by careful comparison.

SAVI'S WARBLER (*Locustella l. luscinioides*).

ADULTS.—Complete moult in late summer. Apparently no moult in spring, and abrasion has little effect, but both the upper- and under-parts become rather paler. Sexes alike.

JUVENILE.—Like the adult, but rather darker and more reddish-brown on the upper-parts.

FIRST WINTER.—Apparently like the adult. Unfortunately no specimen moulting from the juvenile to first winter plumages has been available for examination.

* For previous Parts see Vol. IX, pp. 148, 167, 239, 314; Vol. X, pp. 11, 126 and 280.

PALLAS'S GRASSHOPPER-WARBLE (*L. certhiola*).

ADULTS.—Complete moult from August to December. Birds in May appear to have the body-feathers very fresh, and they are probably moulted in March and April, but no specimens in these months have been examined. The chin, throat and middle of the breast and belly are purer white in summer. Sexes alike.

JUVENILE.—Like the adult, but more narrowly streaked on the upper-parts and the under-parts suffused with pale yellow, the sides of the throat and the upper-breast with numerous short black-brown streaks (the adult has only minute black spots on these parts), the tips of the tail-feathers with less white than in the adults, the margins of the innermost secondaries duller and not so whitish.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts and sometimes (in any case) the tail-feathers are moulted from August to December, but not the wing-feathers or primary-coverts nor apparently the greater coverts. After the moult becomes like the adult, but the dark streaks of the upper-parts are slightly narrower and the pale edgings to the feathers rather broader, the under-parts are sometimes tinged with pale yellow and the margins of the innermost secondaries are as in the juvenile. No spring moulting specimens have been examined.

GRASSHOPPER-WARBLE (*L. n. navia*).

ADULTS.—Complete moult in August and September. In April specimens the feathers appear to be new and most probably another complete moult takes place in February and March, but no specimens collected between December and March are available for examination. In *L. navia straminea*, however, a complete moult takes place in March and April and it is very unlikely that one subspecies moults differently from another. Sexes and winter and summer plumages alike. Abrasion gradually makes the upper-parts less olive and more conspicuously streaked and the under-parts paler and less yellowish. The variation in the general colour and in the streaking of the under-parts is entirely individual.

JUVENILE.—Like the adult, but the upper-parts more reddish-brown with scarcely any olive tinge and the buff of the under-parts more dusky.

FIRST WINTER.—The juvenile body-feathers and tail-feathers and apparently the lesser and median wing-coverts are moulted from August to October, but not apparently the

greater wing-coverts nor the primary-coverts or wing-feathers. After the moult becomes like the adult, but the upper-parts are less olive and browner, though not so reddish as in the juvenile, the under-parts vary, as in the adults, both in colour and in the presence or absence of streaks on the throat and flanks.

LANCEOLATED WARBLER (*L. lanceolata*).

ADULTS.—Complete moult in October and November. In March and April another complete moult takes place. Sexes and winter and summer plumages alike.

JUVENILE.—Like the adult but with rather darker upper-parts and with the chin and throat considerably spotted.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts and tail are moulted from September to December (occasionally January), but not the greater or primary-coverts nor the wing-feathers. After the moult the bird becomes like the adult.

GENUS *Acrocephalus*.

The adults of the British species of this genus have a complete moult beginning in some species as early as June and in some extending to as late as November. From December or January to March or April there is another complete moult in most of the species, but in *A. dumetorum* this moult does not involve all the wing-coverts nor the wing- or tail-feathers, while in *A. aquaticus* it seems to be confined to the body-feathers. As is so often the case, more specimens in moult are required of some of the species in order to determine definitely the detail of some of the moults and sequences.

The moult from juvenile to first winter plumage is confined to the body-feathers and usually the lesser and sometimes the median wing-coverts, but in Blyth's Reed-Warbler the inner greater coverts and the innermost secondaries also moult.

In all the species the sexes are alike. There are usually small differences in the summer and winter plumages. The juveniles are much like the adults but can always be distinguished. First winter birds require very careful comparison to distinguish from adults, but there are slight differences except in the Aquatic Warbler, which appears to be indistinguishable from the adult in its first winter.

GREAT REED-WARBLER (*Acrocephalus a. arundinaceus*).

ADULTS.—Complete moult from August to November. From January to March another complete moult takes place.

There is no sexual difference in the plumage. The new spring plumage is like that of winter, but the streaks on the lower-throat and upper-breast are usually more numerous and more prominent. Abrasion makes the upper-parts greyer-brown and the under-parts whiter. In some individuals the wing- and tail-feathers do not appear to moult in autumn and in some they do not appear to moult in spring, so that it is possible that these feathers only moult once a year in each individual.

JUVENILE.—Much like the adult but more yellowish tawny-brown on the upper-parts and especially the rump; the tips of the tail-feathers and edgings of the secondaries and wing-coverts more tawny; the chin and throat more tawny-buff and less white than in the adult and without streaks.

FIRST WINTER.—The juvenile body-feathers and lesser wing-coverts are moulted from July to September but not the rest of the wings nor the tail. First winter birds differ from adults much as do the juveniles except that the chin and throat are white but without streaks.

FIRST SUMMER.—Complete moult as in the adult, after which they become like the adults.

REED-WARBLER (*A. s. scirpaceus*).

ADULTS.—Complete moult from June to September. In December and January another complete moult takes place. There is no sexual difference in the plumage and the winter and summer plumages are the same. Abrasion makes the under-parts whiter.

JUVENILE.—Upper-parts as in the adult but still more rusty, especially on the rump, wing-coverts and edgings of the innermost secondaries; chin and throat dusky-buff (not white); breast and flanks more dusky and not so clear a buff as in the adult; narrow rusty tips to the tail-feathers.

FIRST WINTER.—The juvenile body-feathers and apparently the lesser and median wing-coverts are moulted from July to September, but not the rest of the wings nor the tail. First winter birds are very difficult to distinguish from adults, but they appear to be usually more rusty-brown on the upper-parts and on the edges of the innermost secondaries and greater coverts, while the under-parts are rather darker buff, but abrasion tends to make these slight differences disappear.

MARSH-WARBLER (*A. palustris*).

ADULTS.—Apparently a complete moult in August and September and another complete moult in February and March, but unfortunately insufficient material is available to make certain of the moults. There is no sexual difference

in the plumage. The new spring plumage is like that of winter, except that the upper-parts are rather more olivaceous. Abrasion makes the upper-parts considerably paler and more greyish and the rump pale earth-brown tinged with olivaceous, so that in worn plumage the bird is more distinctly different from the Reed-Warbler, which does not become greyish and is always rusty-coloured on the rump.

JUVENILE.—I have not been able to examine a specimen the data of which proved without doubt that it belonged to this species, but juveniles stated to be Marsh-Warblers appeared to be indistinguishable from a series of juvenile Reed-Warblers.

FIRST WINTER.—No moulting example examined. First winter birds appear to be like adults, but this must be uncertain until moulting specimens undoubtedly belonging to this species are collected.

BLYTH'S REED-WARBLER (*A. dumetorum*).

ADULTS.—Complete moult from July to November. From February to April there is a moult involving the body-feathers, usually the lesser and median wing-coverts and occasionally some greater wing-coverts and the innermost secondary, but not the rest of the wings nor the tail. (In all the large series I have examined I can find no evidence of moult in the tail in spring as suggested by Dr. C. B. Ticehurst, *Scot. Nat.*, 1916, p. 33). There is no sexual difference in the plumage. The new spring plumage of the upper-parts is more olivaceous earth-brown and not so rich an earth-brown as in winter. Abrasion makes the upper-parts paler, but they are always darker than in the Marsh-Warbler and without the rusty tinge of the Reed-Warbler.

JUVENILE.—Upper and under-parts much like the adult winter Reed-Warbler, the fringes of the wing- and tail-feathers and upper tail-coverts especially of a decided rusty tinge. Not so rufous as juvenile or first winter Reed-Warbler.

FIRST WINTER.—The juvenile body-feathers, lesser, median and greater wing-coverts and innermost secondaries are moulted in August and September, but not the rest of the wings nor the tail. First winter birds can be distinguished from adults by the rusty fringes of the wing- and tail-feathers.

(To be continued).

NOTES

BLUE-HEADED WAGTAIL IN HERTFORDSHIRE.

IN a pasture bordering one of the reservoirs at Tring, on April 29th, 1917, my sister-in-law detected a Wagtail differing in colour from the Ray's Wagtails with which it was consorting. As we looked down from the top of the reservoir embankment on the birds running to and fro in the short grass, it was an easy matter to distinguish the stranger by its blue-grey crown and nape, the conspicuous whitish buff superciliary streak, the less distinct streak of the same colour through the ear-coverts, and the buff wing-bars. The upper-parts and ear-coverts were greyish-brown, the breast and belly pale yellowish-buff passing into bright sulphur-yellow on the under tail-coverts. I cannot say positively to which subspecies of *Motacilla flava* the bird, a hen, belonged, but the blue-grey crown and the pale ear-coverts point to *M. f. flava*, the subspecies, apart from *M. f. rayi*, most likely to occur.

CHAS. OLDHAM.

PRESENT STATUS OF NUTHATCH IN CARNARVONSHIRE AND ANGLESEY.

ON May 5th, 1917, Mr. F. H. Mills of Bangor sent me a specimen of the Nuthatch (*Sitta e. britannica*), which had been found dead at the foot of a tree in Vaynol Park. The species appears to be establishing itself along the Menai Straits for it has been recorded on the Anglesey side by myself in 1910, and Mr. R. W. Jones in 1914; while on the Carnarvonshire side it was noted in Penrhyn Park by Mr. C. Oldham in 1912, and at Llandwrog by Mr. S. G. Cummings in 1914. Prior to this the only record was a bird seen at Bodwyn, Carnarvon, in 1902. As a whole the evidence seems to indicate that the species has extended its range thus far westwards only within quite recent years. Around Llandudno it has become firmly established during the last ten years.

H. E. FORREST.

GREAT GREY SHRIKE IN WILTSHIRE.

MY friend, Miss Margaret Butterworth, saw a Great Grey Shrike (*Lanius excubitor*) on April 18th, 1917, about a mile and a half from Lechlade, on the road to Highworth on the borders of Wiltshire and Berkshire. She knows all our common birds well, including the Red-backed Shrike.

J. E. KELSALL.

UNUSUAL NESTING-SITE OF WILLOW-WARBLER.

THE extraordinary wet weather conditions of the later spring of 1916 were adverse to ground-breeding birds. On July 15th I watched a pair of Willow-Warblers (*Phylloscopus t. trochilus*) feeding young. The nest was well concealed in a climbing rose, where also ivy helped to make more cover, on the north side of a house (in Northumberland) some six feet from a path below which, again, was a drop of nearly four feet. The young birds, therefore, looked out on the world from a height of nearly ten feet, an unusual position for them.

The nest showed wisdom in choice of position, for brooding was then possible when the ground all around was a "waste of waters."

CATHARINE HODGKIN.

[Cf. *Zool.* 1868, p. 1294; 1872, p. 3228; 1899, p. 556. etc. — F.C.R.J.]

EARLY LAYING OF REED-WARBLER AND CUCKOO.

WITH reference to the notes which have appeared on this subject (*antea*, Vol. IX., p. 48; X., pp. 20 and 41), it may be worth while recording that in 1909 I have a special note of a nest of a Reed-Warbler on June 3rd with young a few days old in Berkshire, and the same day noted two pairs building on a private island previously undisturbed. As regards the Cuckoo, my experience is that between June 4th and 14th is the most favourable time for finding their eggs in the nests of the Reed-Warbler. Earlier dates noted are June 8th, 1916, when I found a Reed-Warbler's nest containing five eggs and a Cuckoo's egg, all just chipping, and on May 28th and 30th, two nests each containing a Cuckoo's egg, in the latter case the egg being fairly incubated. On several occasions I have found the nest quite high up, two in 1916 in elder trees could not have been less than 16 and 20 feet up respectively.

GWYNNE WITHERINGTON.

MORTALITY AMONG BARN-OWLS IN IRELAND.

THIS year (1917) some disease has attacked Barn-Owls (*Tyto a. alba*) over a great part of Ireland. During March and the first week in April I examined no less than one hundred and sixty examples all in the same condition. They were greatly emaciated, the body being so thin and wasted that little more than feathers, skin and bones, were left, the stomachs were entirely empty, but the plumage was in excellent condition. At first I thought that this condition might have been caused by the birds picking up poisoned vermin, but if this was the cause the Long-eared Owl would suffer similarly, and I have

only examined one Long-eared Owl in this emaciated condition. They are all common Barn-Owls, none as far as I can judge are of the continental form. I have heard from several correspondents through the country that they have found dead Barn-Owls about their farm buildings. The Barn-Owl is the commonest species in Ireland, but is scarce in the northern and western counties compared to the midland and southern parts of the country. W. J. WILLIAMS.

MARKED GANNET IN NORTHERN NORWAY IN WINTER.

MR. E. PETERSEN of Christianssund and Mr. T. Hegerdah have both very kindly written to inform me that a Gannet (*Sula bassana*) marked with a *British Birds* ring No. 100,034 was caught by a fisherman near Christianssund on January 28th, 1917. We are informed that the boat passed by "great masses" of Gannets which were "lying quietly at sea." This particular bird was apparently weak and was caught with a gaff. The bird was ringed as a nestling on July 30th, 1913, on the Bass Rock by the late J. M. Campbell, the light-keeper. That there should have been a number of Gannets so far to the north as Christianssund in the middle of winter would seem well worthy of record, and the fact that at least one of them was bred four to five hundred miles to the south should be noted. H. F. WITHERBY.

HERRING-GULLS DROPPING MOLLUSCS.

ON the beach at Blackpool on September 19th, 1916, I watched about a dozen Herring-Gulls (*Larus argentatus*) drop mussels on to the sand in order to break them. One bird dropped the same mussel from a height of ten to thirty feet no less than thirty-two times in quick succession. The fact that birds do drop shell-fish in this way is of course well known, but I thought the perseverance of this bird exceptional and worthy of record. J. FEW.

MOOR-HENS AND MALLARDS EATING FRUIT.

CONCERNING Moor-Hens eating fruit (*cf. antea*, Vol. X., pp. 251, 275 and 295), I might state that I have often watched them eating the berries of elder trees bordering the canal near Lancaster.

A friend of mine when wild-fowling on the Cheshire Dee a few years ago in early October, noticed a black juice oozing out of the beak of some Mallard (*Anas platyrhynchos*) which he had just shot, and on opening their beaks found that they had been feeding extensively upon blackberries.

H. W. ROBINSON.

SPREAD OF THE IRISH JAY.—Mr. G. C. May states (*Irish Nat.*, 1917 (March), p. 53) that about thirty *Garrulus g. hibernicus* appeared in the southern part of co. Dublin "within the last few months." Mr. W. J. Williams (*l. c.*, p. 88) states that in January, 1917, several were observed near Malahide and that the bird had appeared at Bray. Mr. Williams adds that it had also been seen recently at Mountbellew, co. Galway, and in this connection I may mention that I was told in 1914 that Jays were breeding not far from this place.

H. F. W.

GREAT GREY SHRIKE IN AYRSHIRE.—Mr. J. Ritchie, Jun., describes (*Glasgow Nat.*, 1916, pp. 42-45) a female *Lanius c. excubitor* (an irregular visitor to the west coast), which was caught on a limed twig by a Mr. Kennedy near Roughwood, Beith, in December, 1915. The bird, which was accompanied by another, was evidently attracted by a Redpoll decoy. Mr. Ritchie adds an account of three specimens of a trematode (*Leucochloridium macrostomum*) new to Britain, which he found in the intestine of the Shrike.

WAXWING IN IRELAND.—Mr. N. H. Foster records (*Irish Nat.*, 1917, p. 54) that an example of *Bombycilla garrulus* was shot at Hillsborough, co. Down, on February 1st, 1917. The species is an irregular visitor to Ireland.

SIBERIAN CHIFFCHAFF IN KIRKCUDBRIGHTSHIRE.—Mr. W. Begg records (*Scot. Nat.*, 1917, p. 33) that he obtained a *Phylloscopus c. tristis* at the Little Ross Lighthouse on December 3rd, 1916. This is the first record of the bird for south-west Scotland.

HYBRID SONG-THRUSH AND BLACKBIRD.—Mr. C. Crabb recently kindly showed me a male example of a hybrid between these two species bred in captivity. The upper-parts were darker than those in a Song-Thrush, but browner than in a male Blackbird while the under-parts were much like those of a Song-Thrush, but the spots on the breast were smaller and not so rounded, and the belly was cream-coloured rather than white and the under tail-coverts and axillaries darker and richer than in the Song-Thrush. The median wing-coverts had no golden-buff tips as in the Song-Thrush. The length of the wing was equal to that of the Blackbird measuring 123 mm., as against 111-121 in males of Song-Thrush and 120-132 in males of Blackbird. The tail measured 92 mm., which is longer than a Thrush's and short for a Blackbird. The sixth primary, was not emarginated as it is in the Blackbird and thus resembled the Song-Thrush. The

wing-formula, however, was more like that of the Blackbird, this being especially noticeable in the sixth primary which was 7 mm. shorter than the longest primary, whereas in the Song-Thrush it is 12-18 mm. shorter. H. F. WITHERBY.

LITTLE GULL NEAR GLASGOW.—Mr. D. Macdonald gives an account (*Glasgow Nat.*, 1916, pp. 36-7) of an example of *Larus minutus* (a rare visitor to west Scotland), which he saw on several occasions between May 16th and 21st, 1916, hawking for insects over a marsh between Bardowie and Summerston.

MEMORIAL TO THE LATE CAPTAIN F. C. SELOUS, D.S.O.—A strong Committee has been formed under the Chairmanship of the Rt. Hon. E. S. Montagu, M.P., to establish a national memorial to the late Captain F. C. Selous, D.S.O. The Committee has decided, with the permission of the Trustees of the British Museum, to erect a bas-relief, with suitable inscription, in the Natural History Museum, South Kensington, where many of the trophies of the great hunter's skill are exhibited. It believes, however, that there is a very general desire among Captain Selous's friends and admirers that some additional and less local form of memorial should also be established. Several forms have been suggested, of which the one that appears to find most general approval is the foundation of a Selous Scholarship at his old school, Rugby, on the basis that preference will be given at each election to the sons of officers who have fallen in the war.

There will be many readers of *British Birds* who will be glad to be associated with this movement to perpetuate the memory of Captain Selous, and subscriptions should be sent to the Honorary Treasurer, C. E. Fagan, Esq., Selous Memorial, Natural History Museum, Cromwell Road, London, S.W. 7.

EFFECTS OF THE RECENT ABNORMAL WEATHER ON BIRDS.—The arrival of migrants has evidently been erratic this spring, and we should be glad of information concerning abnormally late or early dates with a view to compiling a note on the subject.

Similarly we should be glad if our readers would send details concerning any diminution in the numbers of resident birds, which they have noticed. Such details should be as precise as possible and give an idea of the percentage of diminution. It should also be stated if no diminution is apparent in one district of a species, which is known to have suffered in another district.—THE EDITORS.

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THE SEVERE WINTER OF 1916-17 AND ITS
EFFECT ON BIRDS IN THE SOUTH OF IRELAND.

BY

C. J. CARROLL.

IN the south of Ireland, hard relentless frosts and unprecedented snowstorms began in November, 1916, and lasted—with interruptions—until the middle of April, 1917, causing the destruction of birds in incredible numbers. A continuous three weeks' frost was followed early in February by heavy snow, which drifted to a depth of over ten feet, rendering many roads quite impassable.

Birds were then dying everywhere, and a Brambling, one of the wildest of small birds, came several times beneath the window to feed with other pensioners. All species were very restless, ever on the move searching for unfrozen ground. Black-headed Gulls swung backwards and forwards in front of the windows to fetch up eventually beside the food which my wife spread daily near the house, while Curlews forced from the marshes became comparatively tame, and wandered through the open fields in little bands. White-fronted Geese were seen in unexpected places, and Snipe from all parts congregated on the river banks. Nevertheless, they quickly became mere atoms of fluffy skin and bone, and died in quantities. Numerous Woodcocks came down from the mountains to delve about in mossy hollows and under the shelter of thorn bushes. Unlike the Snipe they remained rather plump and well conditioned throughout, though what they found to eat goodness only knows.

The Thrush family fared badly, but Fieldfares less so than the other members. Redwings, always the first to collapse in hard weather, suffered dreadfully and were strewn around everywhere dead. For warmth at night, they stuffed themselves into every available hole, and when I was sawing timber I found their frozen remains tightly wedged into narrow cracks. Soon after that they all disappeared and I have not since seen any Redwings. Here, in the south, Blackbirds and Song-Thrushes were seriously thinned out, but in co. Mayo Mr. Ruttledge finds the former in their usual numbers now, while Song-Thrushes have been almost exterminated there, as they have been in co. Dublin, according to Canon Benson. Mistle-Thrushes quickly succumbed, and those left have been singularly silent. For a few weeks Fieldfares entirely disappeared, but in spring

they turned up again in flocks preparatory to leaving the country.

Underneath Starling roosts the ground was thickly littered with corpses, and Rooks in a semi-starved condition eked out an existence by drinking the blood of the feeble birds they slaughtered. All the *Corvidæ* seemed to win through, doubtless by indulging their natural carnivorous tendencies.

Lapwings even came into stable-yards - those individuals that were not starved or frozen. However, Golden Plover fared better and did not become the least tame, while I noticed little or no diminution of Coots or Waterhens.

Golden-crested Wrens have almost ceased to exist: I have not seen one since mid-winter and I doubt if more than one per cent. survives. The Tits obviously suffered, especially Long-tailed Tits and Coal-Tits; and Stonechats and Grey Wagtails are now quite scarce. The latter birds appear to be as delicate as they look and are always most susceptible to weather changes. Pied Wagtails, on the other hand, seem unaffected by weather, and are now as numerous as heretofore. Robins have decreased slightly, Wrens more so, and Meadow-Pipits paid a very heavy toll.

The winter had, of course, no effect on the hardy Crossbill, while Buntings and Finches came out of it well, especially Chaffinches, which are evidently exceptionally robust, and never once looked starved and miserable like almost everything else.

Throughout the whole of Ireland the mortality amongst the birds must have been desperately heavy, for even along the western seaboard there was no respite from the awful frost. I am told of Lapwings which lay dead in bunches in Kerry, a county which has often proved the assured refuge of the hordes fleeing there to escape the icy grip of winter.

In general, the spring migrants arrived punctually, the Chiffchaff being a notable exception. It is usually heard here about March 21st, however this season none appeared until the end of the first week in April, but, on March 27th, a comparatively mild day, I saw an unfortunate Willow-Wren feebly "trying over" a bar or two of its song. This bird could hardly have survived long, for two days later hail and snow began again, and on April 1-2 developed into a blizzard which beat all records here for depth and severity.

Altogether the nesting-season was ushered in amongst general chaos. Ravens began up to time, some in fact rather earlier than usual, bearing out Mr Walpole Bond's experience that "in hard springs Ravens are apt to be forward with

their domestic affairs, in open seasons backward." * I should think this is attributable to the increased amount of food in snowy weather when many more sheep are lost. Certainly this spring the mountains were "humming" with the smell of braxy mutton! Hooded Crows were normal, one bird sitting on six eggs on March 27th, but it was an unusual and somewhat trying experience to wade through snow to the foot of their nesting-trees and then climb up with cold numb hands. Magpies, however, were thrown into utter confusion. Instead of having complete clutches by April 19th, a capital date for them here, they were then only lining their nests and eggs were not general until May. The waders were mostly late, but Woodcocks in sheltered places were not affected and the ducks—Mallards, Teal and Shovelers—laid somewhat earlier than usual, which is surprising, but several young died soon after they emerged.

Dippers which, by the way, withstood the winter successfully, were almost a fortnight behind time in laying, and of other normally early breeders Crossbills maintained their reputation, while Herons were somewhat late. On the whole, Peregrines, whose food supply was, if anything, more abundant than usual, were very backward. This must have been due to the cold or in some instances, perhaps, to the eyries being surrounded, or even filled in, with snow.

Other coastal birds—including Choughs—were seemingly unaffected, and in two cases Shags, which breed in favoured nooks, had "chipping" eggs and newly-hatched young on April 17th.

Robins, Thrushes and Blackbirds were greatly delayed in their nesting operations, and some of the last-named birds sat on two eggs only.

Now, in May, the scarcity of grass, and the dried feathery remains which drift about wherever one goes, testify to the hardest winter in living memory.

* *Field Studies of Rarer Birds*, p. 96.

SOME NOTES ON THE BREEDING-HABITS OF THE MERLIN.

BY

E. RICHMOND PATON.

THE following extracts from my diary concerning some Merlins (*Falco c. aesalon*) which I watched in 1916 on a moor in Ayrshire, may be of interest.

April 29th. Merlin on the moor.

May 25th. Cock Merlin rose from deep heather on the high, flat ground. On walking up I found two fresh eggs by the side of a turf drain on a dry hag. The cock was not incubating, but was guarding the nest and sat close. The eggs were quite cold. The female was not seen at all. The bird flew straight away, low over the moss and never uttered a cry, settling on a wire fence two-hundred yards away where it remained until I was half a mile distant. The moor is open and any one approaching can be seen for one mile in all directions from the nest.

May 27th. Fine. Female Merlin rose off three eggs when I was ten to fifteen yards away, not appearing again and not uttering a note. Cock not seen.

June 1st. Very wet till 6 p.m. Female Merlin sitting very closely on three eggs, which must be the full clutch. She rose off flying low and uttered no sound.

June 9th. Wet. Female Merlin sitting closely. I made a point of being noisy as I approached the nest, but she did not rise, as usual, until I was within ten yards. Fifty yards distant from the nest I found a feeding knoll on which were feathers of small birds.

June 23rd. Visited Merlin. Male sitting now. The eggs are now very brown in colour and should be hatched in a day or so.

June 26th. Young hatched. Hen bird sitting, male away nowhere to be seen. One young bird is smaller than the other two. The eyes of the young are pitch black.

June 30th. Neither parent present, but the female appeared at once, calling sharply and later the male arrived, calling also I believe.

July 9th. Parent birds were away, but turned up later. The young were calling like the old birds and were feeding themselves, their beaks being covered with blood.

July 12th. Parents not seen at all to-day.

July 15th. Young are now black-faced and brown-eyed. The wing-feathers are starting.

July 17th. The Merlins were photographed by O. G. Pike, 400 feet of bioscope. The cock brought a Blackbird, the female a Lark. The young birds can now pluck for themselves.

July 18th. The cock brought a young Redshank to the nest and a Pipit (Meadow), the hen a Lark again. There was no sign of game-birds being killed. On 18th and 19th, a Lark sang all day over the Merlin's nest and was untouched, although Larks were the principal food, but they were brought from afar.

July 22nd. The young Merlins were trying to fly and went out of the nest on my approach. Remains of Starling, Meadow-Pipit and Thrush at the nest.

The Young Merlins remained near the nest until the end of July, but were absent by August 12th.

Although the nesting site was right between the butts of the best two Grouse-drives on the moor, there was never a game-bird killed. Of that I am certain. The cock hunted regularly in a wood half a mile away and killed Blackbirds and Thrushes, while the hen kept the moor and killed Larks, never hunting near the nest.

The eggs took thirty days to hatch and the Merlin did not commence to sit until three eggs were laid, the full complement in this case.

I never saw the male bird incubate until June 23rd and I am certain that this was a first clutch.

Both the birds were unobtrusive until the day of hatching and showed no concern for their eggs at any period even just prior to hatching.

I made a special point of being noisy when approaching the nest on several occasions to see if the female would fly off early, but she never did and always flew off clumsily, rolling an egg out or else knocking over a young one, although in each case she must have known of my approach.

There were Black-headed Gulls in the vicinity, but the Merlins never drove them away.

THE MOULTS OF THE BRITISH PASSERES,
WITH NOTES ON THE SEQUENCE OF THEIR
PLUMAGES.

BY

H. F. WITHERBY.

PART IX.

(Continued from Vol. XI., page 19.)

SEDGE-WARBLER (*A. schænobænus*).

ADULTS.—Complete moult in July and August. From January to April another complete moult takes place. There is no sexual difference in the plumage. The new spring plumage is like that of the winter, but the dark streaks on the mantle are less prominent and though there are occasionally a few spots at the sides of the throat, there are never any at the base of the throat or on the upper-breast as there sometimes are in winter.

JUVENILE.—Like the adult but the edgings of the feathers of the upper-parts paler and more yellowish-brown and the rump and upper tail-coverts more yellowish and less tawny; the sides and base of the throat and upper-breast more or less spotted.

FIRST WINTER.—The juvenile body-feathers are moulted from July to September, but apparently not the wing-coverts nor the wing- or tail-feathers. First winter birds have the dark streaks on the mantle more prominent than in the juvenile or adult; the brown of the upper-parts is not usually quite so pale and yellowish as in the juvenile but distinctly more so than in the adult; the base of the throat and the upper-breast are usually spotted but occasionally without spots.

FIRST SUMMER.—Moult as in the adult after which the bird is indistinguishable from the adult.

AQUATIC WARBLER (*A. aquaticus*).

ADULTS.—Complete moult from late June to September. In April there is a moult which is apparently confined to the body-feathers, the wing-coverts, wing- and tail-feathers not being moulted. There is no sexual difference in the plumage. The new spring plumage is much like that of winter, but the centre of the crown and the pale portions of the mantle and scapulars are more greyish and less yellowish, the under-parts are paler and the black streaks on the breast and flanks are much more prominent and more numerous and never absent as they often are in winter. In much worn plumage the upper-parts become less tawny and the under-parts white and the dark streaks more prominent.

JUVENILE.—Much like the adult winter but the edgings of the feathers of the crown and mantle more whitish and less yellowish and the black streaks on the mantle rather more prominent. With no streaks on the upper-breast.

FIRST WINTER.—The juvenile body-feathers are apparently moulted in autumn, but no specimen in actual moult has been available. First winter birds appear to be like adults.

GENUS *Hypolais*.

ICTERINE WARBLER (*Hypolais icterina*).

ADULTS.—Complete moult from July to September. In February and March another complete moult takes place, at all events in some individuals, but it is possible that the wing- and tail-feathers are not invariably renewed at this moult. There is no sexual difference in the plumage. The new spring plumage is like that of winter but the upper-parts are more olive and less tinged with brownish while the under-parts are of a decidedly deeper yellow.

JUVENILE.—Like the adult but the upper-parts brown with only a tinge of olive: the tail- and wing-feathers and wing-coverts fringed with brown: the sides of the breast and the flanks browner than in the adult and the rest of the under-parts pale yellow as the adult in winter.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts and innermost secondaries are moulted from August to November, but not the rest of the wings nor the tail. First winter birds are difficult to distinguish from adults but the under-parts are paler yellow and the upper-parts and wing-coverts browner and less olive.

MELODIOUS WARBLER (*H. polyglotta*).

ADULTS.—Moult as in the Icterine but the autumn moult rather later, viz., August to October. The two species cannot always be distinguished by coloration even after careful comparison, but usually the Melodious is browner and less olive on the upper-parts and of a deeper yellow on the under-parts.

JUVENILE.—Very nearly resembling the juvenile Icterine but the upper-parts rather more buffish-brown and the under-parts with a tinge of cream in the yellow.

FIRST WINTER.—The juvenile body-feathers are moulted in autumn but apparently not the wing-coverts. The upper-parts are darker brown and the under-parts more creamy-yellow than in first winter Icterine.

OLIVACEOUS WARBLER (*H. p. pallida*).

ADULTS.—Complete moult from July to October. From January to March another complete moult takes place.

There is no sexual difference in the plumage, and the winter and summer plumages are alike.

JUVENILE.—In coloration like the adult and only distinguishable by the looser structure of the feathers.

FIRST WINTER.—The juvenile body-feathers, median and lesser wing-coverts and innermost secondaries are moulted from July or October, but not the rest of the wings nor the tail. First winter birds are like adults.

GENUS *Sylvia*.

THE adults of all the British species of this genus have a complete moult usually from July to September, but in some cases extending to October and November, and even December. From January to March in most species there is another moult either complete or partial. In the Orphean, Garden-Warbler, and usually in the Whitethroat it is complete. In the Subalpine there is no moult, while with regard to the Dartford Warbler I cannot be definite owing to want of material. In all the other species the body-feathers moult, some moult all the wing-coverts, others only certain series, some moult some of the inner secondaries, and some the central and other tail-feathers.

The moult from juvenile to first winter always includes the body-feathers and lesser and median wing-coverts and in many of the species the greater wing-coverts and innermost secondaries also, but in none are the tail-feathers or other wing-feathers moulted. In all the species except the Garden-Warbler and Lesser Whitethroat the males and females differ in plumage. In the Barred, Orphean, and Garden-Warblers and Whitethroat there are differences in the summer and winter plumage, but in the other species there is no seasonal difference. The juveniles are more like the adult female than the adult male when there is a sexual difference in the adults. Broadly the juveniles are more uniform, browner and duller than the adults. First winter birds can generally be distinguished from the adults by small differences, and usually the male is more distinct from the adult male, than the female is from the adult female, but in the Subalpine Warbler the first winter female is the more distinct. First summer birds can be distinguished from adults only in the Whitethroat and Subalpine Warbler.

BARRED WARBLER (*Sylvia nisoria*).

ADULTS.—Complete moult in July and August. In April, and probably also earlier, a moult takes place which varies greatly individually. The body-feathers are mostly renewed and a varying number of tail-feathers, inner secondaries

and lesser, median and greater wing-coverts, but the primary-coverts and primaries are not moulted. The adult female in winter differs from the adult male in winter by the upper-parts being browner, not so greyish, the feathers with less noticeable pale tips, the tail-feathers browner with smaller and duller white tips; on the under-parts the barring is more restricted in the female, being confined to the sides of the breast and flanks and the bars are paler and less prominent; the wing-feathers and wing-coverts are browner and their tips less white. In summer the adult female becomes much like the adult *winter* male, while the male becomes more barred than in winter both on the upper- and under-parts, and the new tail-feathers are greyer and have more white at the tips.

JUVENILE.—Upper-parts brown, the feathers with rusty tips; the under-parts more buffish especially on the breast than in the adults and with no bars; the tail- and wing-feathers as in the adult winter female, the greater wing-coverts brown with buff edgings and tips, and the median and lesser wing-coverts uniform brown.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts and some inner greater coverts are moulted in July, but not the primary-coverts, wing- or tail-feathers. First winter birds of both sexes are like the adult winter female, but the males are perhaps slightly greyer on the upper-parts, wings and tail and the females usually have no trace of bars on the under-parts.

FIRST SUMMER.—Moult as in the adult after which there is no certain distinction between first summer and adults.

ORPHEAN WARBLER (*S. h. hortensis*).

ADULTS.—Complete moult from July to September. From February to April (sometimes May) another complete moult takes place. The female differs from the male in having a less dark crown, rather browner upper-parts, wings and tail, and the buff of the under-parts of a more brownish and less pinkish tinge. The winter and summer plumages are alike, except that in summer the crown is darker (in both sexes) than it is in winter.

JUVENILE.—Whole upper-parts including the crown, wing-coverts and innermost secondaries uniform and darker brown than in the adult female, the buff of the flanks and under tail-coverts a shade paler than in the adult female.

FIRST WINTER.—The juvenile body-feathers, wing-coverts, and innermost secondaries are moulted from June to August but not the primary-coverts, nor the rest of the wing-feathers nor the tail. First winter birds of both sexes resemble the

adult winter female, but the crown is browner and almost uniform with the rest of the upper-parts.

FIRST SUMMER.—Moult as in the adult after which they cannot be distinguished from adults.

GARDEN-WARBLE (*S. borin*).

ADULTS.—Complete moult from July to September. From December to March (occasionally April) another complete moult takes place. There is no sexual difference in the plumage. The new spring plumage is like that of winter, but the upper-parts are more earth-brown and less olivaceous than in winter. Abrasion both in summer and winter makes the upper-parts greyer-brown, and the under-parts paler.

JUVENILE.—Like the adults, but the upper-parts of a more yellowish-brown and often with a rusty tinge, the buff of the breast and flanks darker than in the adults and tinged olivaceous, the edgings of the wing-coverts and wing-feathers more rusty-brown.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts, inner greater coverts and innermost secondaries are moulted from July to September, but not the primary-coverts nor the rest of the wing-feathers nor the tail. First winter birds are like the adults, but can sometimes be distinguished by the rusty tinge on the edgings of the primaries, primary-coverts and outer greater coverts when not too abraded.

BLACKCAP (*S. a. atricapilla*).

ADULTS.—Complete moult from July to September. From January to March (occasionally April), the body-feathers, from one to four of the innermost secondaries and a varying number of inner greater wing-coverts are moulted, but not the rest of the wing-coverts or wing-feathers, nor the tail-feathers. The female differs from the adult male in having the crown bright red-brown instead of jet-black, and the upper-parts more olive-brown and less greyish, and the under-parts more tinged brownish. Summer and winter plumages are alike, but abrasion makes the upper-parts paler.

JUVENILE.—Much like the adult female, but in males the crown is more blackish-brown, and in females more yellowish-brown; the mantle and edges and tips of the wing-coverts are more rusty-brown (not so olive); the breast and flanks are considerably darker; the belly duller and the under tail-coverts and axillaries more buffish.

FIRST WINTER.—The juvenile body-feathers and wing-coverts (but usually not the outer greater coverts) are moulted from June to September, but not the primary-coverts, nor

the wing- and tail-feathers. First winter females are not to be distinguished from adults. First winter males are also sometimes indistinguishable from adult males, but usually the feathers of the crown have brown tips and sometimes the crown is a mixture of reddish-brown and black, while the nape is sometimes greyish olive-brown, instead of ash-grey as in the adult male. I have examined some undoubted first winter males with jet-black crowns and ash-grey napes exactly as in the adult, but I have never seen an undoubted adult male with brown in the crown.

FIRST SUMMER.—Moult as in the adult after which it becomes indistinguishable from the adult, but sometimes has brown on the crown.

WHITETHROAT (*S. c. communis*).

ADULTS.—Complete moult in August and September (occasionally October and November). In January and February (occasionally March and April), another complete moult usually takes place, but some individuals moult only partially. The female differs from the male in having a browner crown, brown (not tipped with grey) lesser wing-coverts, the breast brownish-buff with occasionally a slight tinge of pink, flanks without any pink tinge and the white of the outer tail-feathers duller and more brownish. In the summer plumage the crown of the male is of a purer grey than in winter and that of the female becomes greyish, but not so grey as in the male, while the pink tinge on the breast becomes more pronounced.

JUVENILE.—Like the adult winter female, but the upper-parts and breast and flanks are darker, the chin and belly dull white, the median and lesser wing-coverts more yellowish-brown and the white of the outer tail-feathers still duller.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts and some innermost secondaries are moulted from July to September (occasionally October and November) but not the rest of the wing-feathers nor the greater wing-coverts, primary-coverts or tail-feathers. Both sexes in first winter are like the adult winter female but without any tinge of pink on the breast and with the outer tail-feathers as in the juvenile.

FIRST SUMMER.—Moult as in the adult. The male then becomes like the adult female in summer, being less grey on the crown and ear-coverts and less pink on the breast than the adult male. The first summer female has no grey on the crown nor pink on the breast.

LESSER WHITETHROAT (*S. c. curruca*).

ADULTS.—Complete moult in July and August. In

January and February (occasionally March and April) the body-feathers, four innermost secondaries, the lesser and median wing-coverts, often the central pair of tail-feathers and rarely the whole tail are moulted but not the greater or primary coverts or the rest of the wing-feathers. There is no sexual difference in the plumage, and the summer plumage is like that of winter.

JUVENILE.—Like adults but the crown like the rest of the upper-parts of a dingy grey-brown, the feathers with slate-grey bases; the breast, flanks and under tail-coverts pale buffish-brown; the wing-coverts and fringes of the tail- and wing-feathers darker and less grey-brown.

FIRST WINTER.—The juvenile body-feathers and wing-coverts are moulted from June to August, but not the primary-coverts, wing- or tail-feathers. First winter birds are like the adults but the edges of the wing- and tail-feathers as in the juvenile are darker, while the upper-parts are a shade browner and less greyish-brown but these slight distinctions soon disappear as the plumage becomes worn.

RUPPELL'S WARBLER (*S. ruppelli*).

A full description of this species and its moults has recently been given (*Brit. B.*, VIII., pp. 95-96).

SARDINIAN WARBLER (*S. m. melanocephala*).

ADULTS.—Complete moult from September to November (occasionally December). From January to March the body-feathers and occasionally the central pair of tail-feathers are moulted but not the wing-coverts nor wing-feathers. The winter and summer plumages are alike. The female differs considerably from the male. The crown, lores and ear-coverts, instead of being glossy black are greyish, the feathers with dark (sometimes blackish) centres; the rest of the upper-parts are brown instead of grey; the flanks are pinkish-brown instead of ash-grey; the tail- and wing-feathers are of a browner black while the wing-coverts and fringes of the wing-feathers are brown instead of ash-grey.

JUVENILE.—The male is much like the adult female but with the crown and ear-coverts dark sooty-brown and the flanks paler and more buffish-brown than in the adult female. The juvenile female differs in having the crown and ear-coverts more uniform with the rest of the upper-parts and the wings and tail browner.

FIRST WINTER.—The juvenile body-feathers, wing-coverts and three or four innermost secondaries are moulted from July to December, but not the primary-coverts, tail-feathers nor the rest of the wing-feathers. The first winter male

differs from the adult male in being more tinged with brown on the upper-parts including the crown and nape, which are not so jet-black; the primary-coverts and wing-feathers are much browner than in the adult, and the fringes of the tail-feathers are not such a pure grey. The first winter female differs from the adult female by being browner on the crown, upper-parts, wings and tail.

FIRST SUMMER.—Moult as in the adult but sometimes the whole tail moults. After the moult the male is difficult to distinguish from the adult, but the wing-feathers are browner though not so distinctly different as in winter owing to the adults' wings becoming browner by fading. The female becomes practically indistinguishable from the adult.

Subalpine Warbler (*S. c. cantillans*).

ADULTS.—Complete moult from July to September. No moult in spring. The female is greyish-brown on the upper-parts instead of ash-grey as in the male; the white moustachial streak is not so distinct; the under-parts are much less pink and the wings and tail are browner.

JUVENILE.—Like the adult female but still browner on the upper-parts, and the under-parts buff with the chin and centre of the belly whitish; the fringes of the tail- and wing-feathers and wing-coverts more rusty-brown than in the adult female.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts and probably the greater wing-coverts and some innermost secondaries are moulted in August and September but not the primary-coverts, wing- and tail-feathers. The first winter male is very much like the adult male but the wing- and tail-feathers are browner and their fringes more rusty-brown. The first winter and summer female is browner on the upper-parts than the adult female and the under-parts are paler and with no pink, the lores, chin, throat and centre of the belly being buffish-white, the breast pale buff and the flanks rather brighter buff; the fringes of the wing- and tail-feathers are more rusty-brown. In this plumage the bird can easily be confused, especially in autumn, with unusually brown females of the Lesser Whitethroat. The latter, however, are slightly larger, have rather longer first primaries and darker lores and ear-coverts; moreover, close examination of the Subalpine shows the presence of a pure white moustachial stripe in contrast to the more buffish-white of the chin and throat.

Dartford Warbler (*S. u. dartfordiensis*).

ADULTS.—Complete moult from August to November. Apparently no moult in spring, but one specimen of

S. u. undata labelled February and one of *S. u. toni* labelled March were moulting in the body-plumage, so further material may reveal a spring moult. The female is like the male but has a browner (less slate) crown and the rest of the upper-parts are of a slightly paler brown than in the male. The under-parts are considerably paler and more brown and less pink than in the male. The tail and wings are browner and less blackish. Abrasion makes the male in summer greyer on the crown, while the white tips and edgings of the feathers of the under-parts gradually wear off, making the pink more uniform and richer.

JUVENILE.—Somewhat like the adult female but the upper-parts darker—more dark earth-brown to dark sooty-brown; under-parts brownish-buff without any tinge of pink.

FIRST WINTER.—The juvenile body-feathers, wing-coverts and innermost secondaries are moulted from August to November but not the primary-coverts, tail-feathers nor the rest of the wing-feathers. First winter birds are like the adults, but in the male the tail-feathers are rather browner and have brown instead of slate-grey edgings.

GENUS *Agrobates*.

RUFIOUS WARBLER (*Agrobates g. galactotes*).

ADULTS.—Complete moult in autumn beginning sometimes in July. No moult in spring. There is no sexual nor seasonal difference in the plumage.

JUVENILE.—Like the adults but the upper-parts rather paler and more sandy and less chestnut; the feathers of the throat, breast and sides with dark sandy tips giving a slightly-speckled appearance; tail-feathers with less black than in adults and usually with none at all on the outer-webs.

FIRST WINTER.—The juvenile body-feathers, apparently the wing-coverts and two or three innermost secondaries, are moulted from June to October, but not the rest of the wing-feathers nor the primary-coverts. The tail appears to moult also as in all the winter and summer birds examined, the tail-feathers had well marked black subterminal bands, but no examples actually moulting the tail have been available.

GENUS *Turdus*.

DR. C. B. TICEHURST has already fully described in this magazine (Vol. III., pp. 243-250, 321-326) the plumages and moults of the British Thrushes, with the exception of White's Thrush and the Dusky Thrush, so that it will be necessary only to give here details of these two species and a summary of the genus.

The adults of all the British species of *Turdus* have a complete moult from July to October. There is no

spring moult except in White's Thrush, in which some individuals at all events, moult their body-feathers; but I have been unable to examine sufficient spring examples to make sure as to whether this moult is regular or not. It may be remarked that the Mistle-Thrush, Dusky Thrush and Blackbird frequently moult a few body-feathers in spring, but this cannot be called a true moult as only a few feathers are renewed in a small proportion of individuals.

The moult from juvenile to first winter includes in all the species the body-feathers, lesser and median wing-coverts, and a varying number of the inner greater coverts, but in none are the wing- or tail-feathers moulted.

The sexes differ in plumage in the Fieldfare, Dusky and Black-throated Thrushes, Ring-Ouzel and Blackbird, but in the other species they are alike. There is no seasonal difference except that produced by wear, which is not very marked except perhaps in the Ring-Ouzel. The juveniles have well-marked differences from the adults. In all the species first winter, and in many first summer, birds can be distinguished from adults.

WHITE'S THRUSH (*Turdus d. aureus*).

ADULTS.—Complete moult in August and September. In March and April a moult of the body-feathers only takes place, at all events in some individuals; but insufficient material is available to determine the precise extent and regularity of this moult. The sexes are alike in plumage. The winter and summer plumages are also alike, but the upper-parts, become greyer and less olive-brown by abrasion.

JUVENILE.—Much like the adult, but the subterminal bands of the feathers of the upper-parts more yellowish, not so olivaceous, the feathers of the chin and under tail-coverts without black tips, the feathers of the rest of the under-parts with narrower black tips and deeper orange-buff subterminal bands than in the adult, the two central pairs of tail-feathers with yellowish-buff tips.

FIRST WINTER.—The juvenile body-feathers, lesser and median and inner greater wing-coverts are moulted in August and September, but not the outer greater coverts nor the primary-coverts, wing- or tail-feathers. First winter birds are like the adults except for the yellowish tips to the two central pairs of tail-feathers.

DUSKY THRUSH (*Turdus eunomus*).

ADULTS.—Complete moult from August to October. No regular moult in spring, but in some examples a number of body-feathers are renewed in March. The female differs

from the male in the crown and mantle being usually browner and not so black, the sides of the chin and throat more spotted, the breast and flanks browner not so black, edgings of wing-feathers and wing-coverts duller and less chestnut. Abrasion of the pale edgings and tips of the feathers of the upper-parts, breast and flanks makes these parts in summer darker.

JUVENILE.—The feathers of the upper-parts are brown-black with buff shaft-streaks, and those of the sides of the mantle and scapulars with most of their centres rufous-buff, rump buffish-brown with paler centres and dark tips, upper tail-coverts dark brown with pale shaft-streaks and narrow grey tips, the eye-stripe is much less distinct than in the adult and is spotted with black, the cheeks, sides of neck and throat are heavily spotted with brown-black, the feathers of the breast and flanks have roundish black tips instead of having the centres black as in the adult. The outer-webs of the wing-feathers and greater wing-coverts are less chestnut, the median, lesser and inner greater coverts have pale shaft-streaks. Females are browner on the upper-parts and have duller edgings to the wing-feathers and greater wing-coverts.

FIRST WINTER.—The juvenile body-feathers, lesser and median and varying number of inner greater wing-coverts are moulted from August to October, but not the rest of the greater wing-coverts, nor the primary-coverts, wing- or tail-feathers. First winter males are much like adult females, but the amount and richness of the chestnut on the wings is intermediate between the adult male and female. Some of the greater wing-coverts often have pale shaft-marks at the tip, and the median coverts usually have pale mesial lines. The first winter female is browner on the upper-parts than the adult female, the breast is more rusty-brown and less blackish, the sides of the belly and flanks are often spotted, the tail and wings browner and the edgings more buffish than in the adult: shaft-streaks on the greater and median wing-coverts.

GENUS *Monticola*.

ROCK-THRUSH (*M. saxatilis*).

ADULTS.—Complete moult from July to September. From December to March the body-feathers are moulted, and occasionally a few of the median and lesser wing-coverts, but not the rest of the wings nor the tail. In winter-plumage the sexes are not strikingly different, but the female is paler brown on the upper-parts and with scarcely any tinge of the slate-blue, which is present on the feathers of the male, though mostly concealed in fresh plumage by the brown and buff tips; in the female the feathers of the lower mantle

and back have buffish-white bases entirely concealed, whereas in the male these feathers and those of some scapulars have white bases, which show here and there even in fresh plumage, the chin and throat are more heavily marked with concentric bands than in the male and have none of the slate-blue feathers present here and there in the male, the rest of the under-parts are orange-buff rather than orange-chestnut as in the male, though in fresh plumage this is mostly concealed in both sexes by the whitish tips and blackish subterminal concentric bands. In summer the female does not greatly alter, though the under-parts are rather more chestnut, and in worn plumage the head and mantle show a certain amount of slate and the back some buffish-white. A great change, however, takes place in the male whose crown, nape, and throat become pale slate-blue, mantle and rump darker, scapulars and back white with dark slate tips and the under-parts below the throat bright orange-chestnut, the feathers with buff tips but without any black bands: all the colours become almost uniform as the narrow tips of the feathers wear off.

JUVENILE.—The male and female are alike. The upper-parts resemble the winter adult female, but are more buff and less brown and the feathers have dark brown tips as well as the penultimate band, the feathers of the under-parts are buff fringed with brown, those of the centre of the belly and under tail-coverts uniform buff, the wings and wing-coverts are browner and have buffer fringes and tips than in the adult and the median and innermost greater wing-coverts have buff mesial spots.

FIRST WINTER.—The juvenile body-feathers, lesser and median wing-coverts and occasionally one or two innermost secondaries and greater coverts are moulted from July to September, but not the rest of the wings nor the tail. First winter males are like the adult winter male, but the upper-parts are browner not so blackish and the bases of the feathers are not so blue, the bases of the scapulars have less white, the chin and throat are whitish with only occasional slate-blue feathers and the rest of the under-parts are rather paler chestnut than in the adult. First winter females are not distinguishable with certainty from adult females.

FIRST SUMMER.—Moult as in the adult after which the male becomes (especially when abraded) impossible to distinguish with certainty from the adult summer male, but usually the wings are noticeably browner, the feathers of the upper-parts have longer buff tips and some feathers of the under-parts have black concentric bands.

THE LATE ERIC B. DUNLOP.

THE war has claimed as a victim in the person of Mr. Eric B. Dunlop, who was killed in action on May 19th, 1917, at the age of 30 years, one of the most promising young ornithologists of the north of England.

The elder son of Arthur Brooke Dunlop, Esq., J.P., The Howe, Troutbeck, Windermere, he received his education, and concurrently his first lessons in Natural History, at Rugby and Carlisle. He was afterwards unofficially attached to the Carlisle Museum, Tullie House, where he did good work for local ornithology. His residence amongst the hills and dales of the Lake District gave him exceptional opportunities of observing the resident birds, and he made many useful notes on the habits of the Common Buzzard, Peregrine Falcon and Raven. He made a special study of the roosting habits of the *Corvidae* showing that the whole of the British members of this group of birds congregated for roosting at certain seasons. At the outbreak of the war he was engaged upon a study of the nesting habits and incubation of birds and was in northern Manitoba, Canada, pursuing his investigations into the extent and value of the ovitegous habit in birds. Prior to his leaving England he had practically completed an appendix to Macpherson's *Fauna of Lakeland*, bringing that work, published in 1892, up to the end of 1913, with much additional matter and new records. It is hoped that some means will be found of publishing posthumously this valuable addition to the Natural History of Lakeland.

In Canada he made numerous interesting observations, some of which have already appeared in these pages; he also collected an extensive series of birds' skins showing variation, changes and development of plumage, and a fine series of skins of the fur-bearing mammals of Canada, especial attention being given to seasonal changes and variation.

Although far from having finished his work in Canada, he decided, in 1915, to join the Army and enlisted in the 78th Canadian Grenadiers. He came to England with that Battalion but transferred in 1917 to the Border Regiment, and was in France barely a month before his death. A service to his memory was held in Jesus Church, Troutbeck, on June 10th.

L. E. H.

[Before leaving for the front Mr. Dunlop appointed the Rev. F. C. R. Jourdain his literary executor, and left directions for the manuscripts referred to above to be handed to him in the event of his death, so it is to be hoped that the valuable results of these researches will not be lost to science.—Eds.]

NOTES

STARLING NESTING IN A LAUREL BUSH.

It is perhaps worth being put on record that a Starling (*Sturnus v. vulgaris*) is nesting in a laurel bush here at Wadhurst, Sussex. The nest is a bulky open one with a deep cup. It is built of the usual materials near the top of the bush about nine feet from the ground, and until the eggs were laid was taken to be an unfinished House-Sparrow's nest. The eggs are normal. A large flock of Starlings, which was presumably checked on its way north by the wintry weather, seems to have disbanded here during the last week of April and competition for nesting-places has been most keen. There are several semi-open nests in ivy (fairly closely clipped) on the walls of the house.

T. M. SAVAGE ENGLISH.

[Mr H. S. Gladstone (*Birds of Dumfriesshire*, p. 107) refers to a similar case at Corrie Common, near Lockerbie, where half-a-dozen nests built of straw and rough litter, like a House-Sparrow's, may be seen in one clump of Portugal laurels. Semi-open nests in ivy are of fairly frequent occurrence. Mr. S. Lewis (*Zool.* 1899, p. 370) also records colonies of Starlings breeding on branches of fir trees in Burnt Wood, Emborough, near Wells.—F. C. R. JOURDAIN.]

NESTING OF THE MARSH-WARBLER IN DORSET.

I KNOW of no published record of the nesting of the Marsh-Warbler (*Acrocephalus palustris*) in Dorset, so the following facts are of interest:—Mr. A. W. Champernowne, of Sidbury, found three pairs of birds breeding in the River Yeo Valley, between Sherborne and Bradford Abbas, in 1897, and discovered two nests. This is probably the first record for Dorset. I have lately seen a nest and eggs of this species taken about the year 1908 in the south-west of Dorset. My informant found the species nesting in the same locality again the following year. This year, 1917, I went to this locality on June 8th and found the birds in two withy beds, the males singing their unmistakable song, and anxious and demonstrative when their haunts were invaded. The bed in each case contained a tangled mass of undergrowth, and I did not succeed in finding the nests which were almost certainly there.

F. L. BLATHWAYT.

RARE BIRDS IN SUSSEX.

I WISH to record the occurrence of the following birds in Sussex in 1916 :—

RED-BREASTED FLYCATCHER (*Muscicapa p. parva*).—A female was shot by J. Saunders at Rye Harbour, Sussex, on October 3rd, 1916. It was examined in the flesh by Mr. H. W. Ford-Lindsay.

DUSKY WARBLER (*Phylloscopus fuscatus*).—A bird of this species was shot at the old Brickfields at West St. Leonards, Sussex, on October 18th, 1916. It was examined in the flesh by Mr. Ruskin Butterfield. Mr. Bristow, who set it up, considered it a female by dissection, but Dr. Hartert, who examined it after being set up, thought it a male from its length of tail. This is the second British specimen, the first having been obtained at Auskerry (Orkney) on October 3rd, 1913.

ORPHEAN WARBLER (*Sylvia h. hortensis*).—A male shot at the old Brickfields, West St. Leonards-on-Sea, Sussex, on September 21st, 1916, was examined in the flesh by myself on September 22nd. This is, I believe, the fifth recorded English specimen.

AMERICAN GOLDEN PLOVER (*Charadrius d. dominicus*).—A female was shot by T. C. Relfe at Rye, Sussex, on September 22nd, 1916, and was examined in the flesh by myself on September 25th. The wing measures 81 mm.

J. B. NICHOLS.

DISPLAY OF THE STONECHAT.

ON June 7th, 1917, I for the first time noted a pair of Stonechats (*Saxicola t. hibernans*) in the King's Park, Edinburgh, and that under pleasing circumstances. I heard close by, an excited warbling and there was a male Stonechat displaying before a female. What was most noticeable was the extent of white he displayed. He crouched low before her with his primaries stiffly lowered, brushing the grass. The carpal joint was buried under the white collar puffing out the white feathers and making the white neck appear the size and shape of a shilling, and at the same time making the white of the neck continuous with the white of the wing-coverts. The tail was expanded fully and the white of the coverts was so spread over it as to make the proximal half of the tail appear white.

WILLIAM SERLE.

TWO CUCKOOS' EGGS IN NEST OF MEADOW-PIPIT.

ON June 9th, 1917, I found, on Buildon Moor, adjoining Shipley Glen, the nest of a Meadow-Pipit (*Anthus pratensis*) containing four eggs, one of which was a Cuckoo's

(*Cuculus canorus*). I did not visit the nest again until dusk on the evening of the 16th, when I found the nest contained one Cuckoo's egg, two eggs of the Meadow-Pipit and a newly-hatched young one which I never examined, and presumed was a young Pipit. On the early morning of the 17th the nest still had the same contents, the egg of the Cuckoo being unhatched. Having to go away from home on this date, I asked Mr. Fred Jowett, to whom I had shown the nest, if he would look at it in the evening. On the 18th, Mr. Jowett told me he had visited the nest and found all the eggs—one Cuckoo's and two Meadow-Pipit's—lying outside the nest, and that on his replacing the eggs in the nest they were thrown out again, so that it was evident that the newly-hatched young one, instead of being a Meadow-Pipit as we had assumed, was really a Cuckoo. Although it was now dusk, I determined to go and ascertain for myself, and on reaching the nest I immediately saw that the young bird, which had grown immensely in two days, was a Cuckoo. So it is evident that a second Cuckoo's egg had been laid between my finding the nest on the 9th and my visit to it on the 16th, and this egg must have been laid when the other Cuckoo's egg was in an advanced stage of incubation. I feel fairly certain both eggs were laid by the same Cuckoo, since the unhatched egg was very similar to the one in the nest on the 9th, which was of a type less broadly ovate than that usually found in this district.

E. P. BUTTERFIELD.

COMMON SCOTER IN WARWICKSHIRE.

RECORDS of the Common Scoter (*Oidemia n. nigra*) in Warwickshire, are, I believe, sufficiently uncommon to make the following occurrence worthy of noting:—On April 28th, 1917, I saw five, two males and three females, resting on the water in Sutton Park. Their visit was brief, as they had disappeared when I returned two hours later, and they were not there on the previous evening.

B. A. CARTER.

[The Scoter not infrequently occurs on inland waters in April when it is on passage, but there seem to be few records for Warwickshire. Mr. R. F. Tomes (*Vict. Hist. Warwick.*) states that he has met with it three times and that it has occurred at Sutton, and he gives the county status of the bird as "very rare."—EDS.]

"TWIN" NESTS OF LAPWING.

MR. WILLIAM BATES, of Macclesfield, writes me to say that whilst on Bosley Minns early this spring he found two nests of Lapwings (*Vanellus vanellus*), both perfectly built, the

edges of which were in contact and each of which contained two eggs. Before touching them he pointed them out to a friend who can also vouch for the accuracy of his statement.

Mr. Bates informed me that he has hunted for plovers' nests for nearly fifty years, but has never seen anything of the sort before.

T. SMITH.

SNIPER PERCHING ON A BARN.

On June 8th, 1917, I watched a Snipe (*Gallinago g. gallinago*) standing, apparently quite at ease, on the top of a high old barn in Shropshire. I was only thirty yards from the building when chancing to look up I was startled to see the Snipe clearly outlined against the sky. Being in a hurry I could not wait to see how long it remained on its lofty perch, but it did not look in any hurry to move.

I believe it is not so very uncommon for Snipe to alight on posts, etc., but do not know whether there are any records of them perching on buildings.

FRANCES PITT.

[For correspondence on Snipe and other waders perching on trees, bushes, posts, rails, etc. (a frequent occurrence), see Vol. III., pp. 59 and 89. Perching on buildings has very rarely been noticed we believe.—Eds.]

ARCTIC TERN IN SHROPSHIRE.

ON May 16th, 1917, an adult Arctic Tern (*Sterna paradisæa*) was brought to me, which had been found dead on a hill pasture at Ticklerton, Church Stretton, the previous day. This species only occasionally visits Shropshire at the times of spring and autumn passage.

H. E. FORREST.

EFFECTS OF THE SEVERE WINTER ON BIRDS.—We have received a number of interesting communications on this subject, but hope that many more readers will send us notes, especially regarding the diminution of "resident" birds. Some sort of comparison with the numbers in 1916 should be given to indicate as nearly as possible the proportion of decrease. It should also be mentioned in which species no decrease has been noticed as conditions appear to vary in different districts. The subject is of considerable importance, and the more information we receive the more reliable will be the detailed report which we propose to publish.—Eds.

POROUSNESS OF EGG-SHELLS.—In connection with the letter on this subject in Vol. X., p. 296, Mr. T. Smith writes that he had a recent experience with a Jay's egg, the contents of which oozed through the shell in many places before any hole had been made with the drill. This was the only egg

of the clutch which showed itself porous to any marked extent. It may be remarked that the shells of all birds' eggs are more or less porous, and during the process of incubation about one-seventh of the total weight of the shell and contents (or between 14-15%) is lost through evaporation. When the internal membrane is ruptured from any cause, the process is of course much more readily apparent. See N. H. Foster, *Irish Naturalist*, XI., p. 237; H. S. Gladstone, *Ibis*, 1904, p. 376, etc.—F. C. R. JOURDAIN.

INCUBATION-PERIOD OF SPARROW-HAWK.—Mr. A. Brook states (*Field*, 14, IV. '17, p. 559) that from his observation the incubation-period of *Accipiter n. nisus* is about twenty-eight days. In one case, however, thirty-one days elapsed from the laying of the last egg before the first young one hatched. This is a considerably shorter period than that recorded by other observers. Mr. S. E. Brock estimates it as 30-32 days. Messrs. E. W. H. Blagg, J. H. Owen and the Rev. F. C. R. Jourdain at 35 days, while in a nest watched by Prof. J. H. Salter the period lasted 37-38 days.

PALE AND DARK-BREASTED BRENT GEESE.—Considerable discussion, initiated by Miss E. V. Baxter and Miss L. J. Rintoul, has taken place in *The Scottish Naturalist* recently concerning these two forms of the Brent Goose. In quoting our *Hand-List* the authors mentioned have omitted to note that in our first list of "corrections and additions" (*Brit. B.* IX., p. 7) we stated that the two forms, which we had in the *Hand-List* considered as distinct sub-species, were apparently merely individual varieties, since they are now known to nest together in the Old World. We take this opportunity of stating more positively that No. 283 *Branta bernicla bernicla* and No. 284 *Branta bernicla glaucogastra* of our *Hand-List* are dimorphisms of one species and should both be called *Branta bernicla bernicla*.

RED-NECKED GREBES IN MORAY AREA.—Miss A. C. Jackson records (*Scot. Nat.*, 1917, p. 69) having satisfactorily identified two *Podiceps g. griseigena* in a northern firth on November 30th, 1916, and Mr. C. Oldham states (*l.c.*, p. 117) that he saw several birds of this species in Cromarty Firth on October 9th, 1912. Miss Jackson states that the species has not, hitherto, been recorded for the Moray area.

GREAT SKUA IN SUFFOLK.—Mr. W. H. Tuck states (*Trans. Norf. Norwich Nat. Soc.*, Vol. X., Part 2, p. 178) that an example of *Stercorarius s. skua* occurred near Ixworth, forty miles inland, in January, 1915.

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FIELD-NOTES ON THE NESTING OF THE
HOBBY.

BY

THE LATE CAPTAIN C. S. MEARES.

Abstracted and prepared for publication by LIEUT. D. H. MEARES.

ON June 17th, 1912, we visited a wood of two hundred and fifty acres in one of the north midland counties, in a district where many other large woods are found. The Hobby (*Falco s. subbuteo*) had been reported as breeding in this locality for many years. There were few nests of Crows or other large birds in these woods, which are well "kept," and only two or three Crows' nests of the year, from which the old birds had been shot, were left in the woods. One of these nests contained a Hobby's eyrie with a clutch of three eggs which were quite fresh. The site of the nest commanded a good view over the wood, and a narrow ride passed close by the tree. The undergrowth at this point was fairly thick. The eyrie was in a southern angle of the wood, where the birds have bred regularly for at least six years. The lining of the Crow's nest had not been removed, but some down from the falcon's breast was also clinging to the sticks in the nest. The nest was placed in the topmost fork of an oak, about forty feet high, and was well inside the wood. These eggs were removed for the purpose of ascertaining definite particulars of the second attempt of this pair of birds to rear a brood the same season, as the following narrative shows.

On July 4th, these same woods were again visited and the Hobbys were observed behaving in rather an excited and noisy manner in the vicinity of the nest selected as their second eyrie. This was an old nest of a Crow about thirty-five feet up an oak tree some fifty feet in height. The lining of the nest, which looked old and weather-worn, had not been removed, and some down from the falcon's breast and a few small feathers were mixed up with it. The nest contained the usual complement of three eggs, which were fresh, and were nearly identical with those of the first clutch, slightly redder and somewhat less marked. The site of the eyrie was well within the wood, and was just three hundred and sixty yards from the first nest, being incidentally the nearest available and suitable nest, and, as before, it was placed close to a small overgrown ride. The undergrowth around was thick and tall, but the nest commanded quite a good view.

On July 10th, the bird was sitting as we approached the eyrie at 3 p.m. The day was warm and sunny, and the tail of the falcon and the tips of her wings were visible over the edge of the nest. The wings apparently reached just to the end of the tail, as seen through glasses from about thirty yards away. The keeper now made a detour in order to frighten her off in our direction, and hearing his approach she sprang to the side of the nest and sat bolt upright, remaining in this position, alert for danger, and almost motionless for nearly a minute, affording us a grand view. She then dashed off, first dropping, then rising, with a few beats of her powerful wings, over the tree-tops right over our position and away out of view without uttering a single sound. We sat down to await her return, and not until an hour and a quarter had passed, at 4.15, did we see her sail by, settle for a moment and again vanish. Another three-quarters of an hour passed and we saw no more of her. On our rising, however, she sailed away from a neighbouring tree, where she had presumably been perched to watch events, without making a sound, and we then left the vicinity, without having seen the male all the afternoon. It must be borne in mind that the observation of these dashing little woodland falcons is extremely difficult, even at the eyrie, on account of the leafy shade of the wood, which is very thick and dense at this time of the year.

On June 23rd, we visited a large tract of woodland nearly a thousand acres in extent in the west midlands, situated on the slopes of a small hill, with many other large woods in the neighbourhood. A stream winds round this wood, which contains a heronry consisting of some sixty pairs of birds. The site of the old heronry is some distance from the present one, many of the trees having been felled, which caused the birds to desert their former haunts. Three very old Heron's nests still remained in the original site. In one of these a pair of Hobbys had made their home each year, and had usually reared their young in safety. On this occasion the eyrie contained three eggs incubated about one week, and laid on the bare sticks with no lining of any sort. The nest was at the top of a medium-sized oak, about thirty feet high, almost in the middle of the wood, which is fairly open here, and commands a wide range of view. As seems to be frequently the case, both with this falcon and the Sparrow-Hawk, a ride through the wood passed close to this nest. The falcons had been observed frequently during mid-May, chiefly round the outskirts of the wood, but during the

previous week or two they had not been observed round the outskirts, and only on one or two occasions in the wood itself.

On our approaching the trees containing the old Herons' nests and tapping them vigorously no Hobby was seen, and a thorough search of the vicinity produced no result. After watching these nests for about an hour, we neither saw nor heard anything of either Hobby. We therefore commenced a more prolonged and far-reaching search through other parts of the wood, and in the new heronry, but still without result. Thinking that perhaps she may have been off feeding, we returned to the old heronry, and again vigorously tapped and kicked all the trees, but as this produced no result, we decided to climb them, before proceeding further, in case the eyrie should contain fresh eggs. One of us had climbed about ten feet up the first tree, when with a single, short, high scream the Hobby darted off over the tree-tops down the hill and disappeared in a few seconds. Her breast showed up splendidly in the light as she flew away. This was 2.20 p.m. Descending the tree at once, we took up a position some distance off whence a good view of the nest could be obtained and waited for forty minutes without a sight or sound of the Hobby. Accordingly we decided to climb to the nest to make certain, and found a beautiful clutch of three eggs : large, and of a fairly uniform yellowish-brown.

We then again waited for the falcon to return. After a lapse of an hour and ten minutes, the cry of the Hobby " *Keek-keek-keek,*" or nearly " *Greeék*" rang out, and we saw her fly rapidly round in a half-circle, dart down over the wood and then back again, and sail across in front of us, her curved wings being very noticeable. She then settled on the dead branch of an oak about eighty yards away from us. She stayed here for about five minutes, and we had a magnificent view of her through our glasses. Suddenly now the male appeared, and the pair flew away together with remarkably rapid evolutions and turns of flight, and disappeared down the wood again, without visiting the eyrie. We waited another twenty minutes without either seeing or hearing anything more of the birds. Except for the two cries noted above, the birds were silent the whole of this day. The day was bright and warm, with a slight breeze.

On June 22nd, 1913, we visited a series of woodlands in one of the midland counties, and in particular a "brake" of about sixty-five acres, which had been a favourite resort of the Hobby for many years. It contained several old

Crows' nests, many of which were to be seen in the woods and hedgerows around. Adjoining this wood there was a small triangular spinney of about half an acre, and as we approached this down a hedgerow we noticed a Carrion-Crow's nest of the year placed in the fork of an elm about thirty-five feet up, forming the apex of the spinney, several fields away from the larger wood. Upon throwing up a stone, a Hobby darted down from the nest behind the tall hedge and disappeared without giving us more than a passing glimpse of her. On climbing the tree we found the nest contained a clutch of three eggs, more blotched (or rather "washed") and less speckled than usual. One egg was brought down to test the state of incubation in water. The egg sank, but just turned up on end, showing that incubation had progressed a day or two. We then retired to the cover of a hedge on the opposite side of the field to watch. The bird had left the nest at 4 o'clock, and at 4.10 she flew past a long distance away, but as she turned, the white on her breast showed up clearly as the sun shone directly upon her. At 4.20 she returned and settled on an elm in the hedgerow, about a hundred and fifty yards from the nest, and some two hundred yards from our retreat, where, with glasses, a very fair view of her could be obtained. The long wings reaching to the end of the tail were clearly visible, and her head and breast showed up very clearly as she preened her feathers and occasionally altered her position. At 4.50 she glided off and again settled on her eggs. Allowing her a few minutes grace to settle down we again approached the nest, and, as we neared the tree she left, passing quite close by, her curved wings in flight being very apparent from some points of view, but not from others. Up to this time she had not uttered a sound, nor had the male appeared. While a descent was being made from the eyrie for a second time, her scream "*Keek-keek-keek*" rang out once from the adjoining elm where she had previously stationed herself—a sharper note considerably than that of the Kestrel. Thence she flew off to the brake, and as we crossed the fields in that direction a Hobby glided past flying low, the blue back showing up conspicuously in the sunshine; this bird appeared rather small, and was probably the male. The nest contained no down or feathers, probably because the eggs were nearly fresh.

Two young Hobbys were seen around the brake during August, but on August 24th, the only date we were able to revisit this locality, we failed to see them or the old birds.

Note on the Egg of the Hobby.—The eggs of the Hobby which we have seen, only from nests which have been thoroughly authenticated by the observation of the birds at the nest, appear to be quite distinct from eggs of the Kestrel. From a large series of Kestrels' eggs in our collection there is not one which could be mistaken for a Hobby's egg. Contrary to the opinions expressed in most works on British birds' eggs, we have found that the eggs of the Hobby are invariably larger than Kestrel's eggs.* They are also generally more elongated, and not so round. Both in the manner of their markings and their shape they resemble more closely the common types of Merlin's eggs, but are considerably larger. We have not personally found the blotched type in Hobby's eggs, but all the eggs we have seen have been minutely freckled or dusted all over with brownish-yellow, reddish-brown or light brick-red markings, entirely obscuring the ground colour. Some irregular spots of a darker shade of colour and some washes of colour appear, as in eggs of the Peregrine Falcon, and a preponderance of markings is often observable either at the larger or smaller end of the eggs.

* This agrees with the measurements given by Seebohm, Dresser, Rey and others.—EDS.

THE MOULTS AND SEQUENCE OF PLUMAGES OF THE BRITISH WADERS.

BY

ANNIE C. JACKSON, HON. MEM., B.O.U.

I. INTRODUCTORY.

THE object of these notes is to give a brief account of the sequence of plumage and moults of the waders on the British List, which at the moment of writing number sixty-four species. I have endeavoured to interpret the facts correctly from the material at my disposal, but in some cases my notes are unfortunately incomplete owing to want of material, while in other cases the examination of larger series of skins may reveal new facts. I wish to express my gratitude to Lord Rothschild and Dr. Hartert for permitting me to utilize the Tring collection, also to the authorities of the Natural History Museum, South Kensington, for kind permission to work there, and to Mr. H. F. Witherby for the loan of his collection and for much valuable help. I should also like to thank Mr. W. Berry, Col. E. W. Horne and others who have assisted me in obtaining material I required.

Before detailing the result of my investigations, brief references to the literature already published on the moult of the waders will be of interest. The most important papers I am aware of are as follows: "On the Change of Colour in Birds through and irrespective of Moulting," from the Swedish of W. Meves, translated by H. E. Dresser (*Zoologist*, March, 1879). In this paper birds are divided into four groups according to the number and completeness of their moults. To the first group belong those which have a single and complete moult in autumn, and in this are included the following genera of waders: viz., *Scolopax*, *Numenius* and *Recurvirostra*. The second group deals with birds which have a double or spring moult and is further subdivided into those which in spring have: (a) entire, involving all or most of the body-feathers and sometimes also the two middle tail-feathers and three inner wing-quills as, for instance, *Hematopus*, *Charadrius*, *Streptilas*, *Tringa*, *Totanus*, *Phalaropus*, *Limosa* among the waders; (b) partial, involving only some feathers of the head and neck as, for instance, *Vanellus cristatus* among the waders. The third and fourth groups do not concern us.

"Notes on the Birds of Natal and adjoining parts of South Africa." by H. Seebohm, *Ibis*, 1887, page 338, in which it is stated that the *Charadriidae* moult their primaries in spring as well as in autumn. This paper will be referred to later.

"The Changes of Plumage in the Dunlin and Sanderling," by Frank M. Chapman, *Bull. Amer. Mus. Nat. Hist.*, Vol. VIII., 1896, pp. 1-8. This paper is a criticism of Herr Gätke's remarks in the *Birds of Heligoland* on colour-change without moult. Mr. Chapman points out that the breeding-plumage of both these species is acquired by a moult and not by a change of colour without moult as implied by Herr Gätke.

"On the Annual Molt of the Sanderling," by Witmer Stone, *Proc. Acad. Philad.*, 1897, pp. 368-372. The author of this paper confirms Mr. Chapman's remarks on the moult of the Sanderling, and gives more particulars of the autumn moult of this species.

"The Molt of the North American Shore Birds" (*Limicola*), by Dr. Jonathan Dwight, Junr., *The Auk*, 1900, Oct., pp. 368-385. In this comprehensive and important paper, Dr. Dwight divides the *Limicola* into two "classes"; in the first he places those in which the young birds retain "the juvenal plumage, modified only by wear, until a mid-winter or spring moult takes place"; in the second he includes those which assume "a distinct first winter plumage by an early postjuvenal moult, which involves only the body feathers, the tertiaries and a few of the lesser wing-coverts." In the first class he includes the following species which appear in the British List: Pectoral Sandpiper, Solitary Sandpiper, Spotted Sandpiper, Killdeer, Semipalmated Plover and Turnstone. Except for the Pectoral Sandpiper, of which I have examined very few juveniles in autumn, I find that all these species assume their first winter plumage by a partial moult, and therefore I cannot agree with Dr. Dwight that they should be placed in his first class. Dr. Dwight then goes on to discuss other questions of moult - I will refer to his conclusions later as occasion arises.

Besides the papers already referred to, the Rev. W. Whitear, Yarrell, Mr. N. Severtzoff, Mr. J. G. Millais ("Notes on the Changes of Plumage of *Calidris arenaria*," *Ibis*, 1896, pp. 455-457), Gätke ("Changes in the Colour of the Plumages of Birds without Moulting," in *The Birds of Heligoland*), Mr. F. W. Headley (in *The Structure and Life of Birds*) and others have written expounding the theory of a change of colour without moult and citing the assumption of certain

plumages in some waders as instances. Beyond saying that all the different plumages assumed by the waders are acquired by a moult and do not require the hypothesis of colour change without moult to account for them, I do not intend to enter into a discussion of this vexed theory, which the accumulation of facts I am confident will ultimately entirely disprove. I only wish here to emphasize the fact that colour change without moult, excepting of course effects due to abrasion and fading, plays no part in the sequence of plumages of the *Limicolæ*. I would refer those interested in the literature of this subject to Mr. J. A. Allen's paper on "Alleged Changes of Color in the Feathers of Birds without Molting," *Bull. Amer. Nat. Hist.*, 1896, Vol. VIII., pp. 13-44, which gives a most interesting summary and criticism of the papers written on this subject.

Before proceeding to a detailed discussion of each species, it may be well to give the following summary of the moults which I have found to occur in the British waders:—

MOUTL FROM JUVENILE TO FIRST WINTER PLUMAGE.

In apparently all the species of waders in the British List, the first winter plumage is acquired by a post-juvenile moult, but no first winter birds, and few or no juveniles in moult have been examined of the Stone-Curlew, American Pectoral Sandpiper, Buff-breasted Sandpiper, Red-necked Phalarope and Eskimo Curlew. In the Common and Black-winged Pratincoles, this moult involves the remiges, in the Cream-coloured Courser it would appear that in some individuals the remiges and their coverts are also renewed; in the rest of the waders the remiges are only exceptionally renewed, the moult being confined to the body-feathers, usually some or all of the tail-feathers, some innermost secondaries and coverts, and usually some median and lesser coverts. The moult of the tail-feathers, innermost secondaries and coverts, and median and lesser coverts varies individually in many species. In the following species, however, the tail does not appear to be renewed, viz. Semi-palmated Plover (not many specimens examined), Golden Plover, American Golden Plover, Asiatic Golden Plover, Lapwing (an odd tail-feather is exceptionally renewed), Bartram's Sandpiper, Dunlin, Baird's Sandpiper, Bonaparte's Sandpiper, Purple Sandpiper, Solitary Sandpiper, and Grey Phalarope. In the Purple Sandpiper and Grey Phalarope the innermost secondaries and coverts and median and lesser coverts are also not moulted, while in the Yellowshank the median and lesser coverts do not appear to be renewed.

First winter birds usually resemble adults, but are distinguished by the retained juvenile wing-coverts, except in the following species in which the first winter bird is indistinguishable from the adult, viz. Common and Black-winged Pratincole (not distinguishable unless some juvenile wing-coverts are retained), Killdeer (difficult to distinguish with certainty), Golden Plover, American Golden Plover, Asiatic Golden Plover, Common Sandpiper, Spotted Sandpiper, Green Sandpiper, Slender-billed Curlew (difficult to distinguish with certainty), Great Snipe (not distinguishable if all the tail-feathers are moulted), Common Snipe, Jack Snipe and Woodcock.

Exceptional Instances of Moulting of the Remiges in Winter in First Winter Birds. In the following species the remiges are not normally moulted in winter and occasional examples moulting their remiges must be looked upon as exceptional cases: Ringed Plover, Bonaparte's Sandpiper, Siberian Pectoral Sandpiper.

MOULT FROM FIRST WINTER TO FIRST SUMMER PLUMAGE.

This moult is usually the same as the pre-nuptial moult of the adult, though in some species, e.g. Greater Yellowshank, Redshank, and Black-tailed Godwit, the moult is less complete, a good many winter body-feathers being retained. In the Stilt, the spring moult of the first winter bird is more complete than in the adult and involves the tail-feathers, which are not moulted in the adult.

No examples in first summer plumage of the following species have been available for examination: Oystercatcher, Stone-Curlew, Semi-palmated Plover, Knot, Curlew-Sandpiper, American Pectoral Sandpiper, Bonaparte's Sandpiper, Buff-breasted Sandpiper, Broad-billed Sandpiper, Red-breasted Snipe, Solitary Sandpiper, Yellowshank, Greenshank, Red-necked Phalarope and Eskimo Curlew.

First summer birds are usually only to be distinguished from the adults when the retained juvenile wing-coverts are not too abraded. I have examined very few undoubted first summer specimens of any of the waders. This may to some extent be accounted for by the fact that in most waders, when the edges of the juvenile wing-coverts are completely abraded, the first summer birds are indistinguishable from the adults. In addition to those species in which the first winter and adult winter plumages are indistinguishable, first summer birds of the following species cannot be distinguished from the adult in summer: viz. Killdeer, Bartram's Sandpiper, Siberian Pectoral Sandpiper, Baird's Sandpiper, Terek Sandpiper, and Slender-billed Curlew.

Exceptional Moults of the Remiges in Spring of First Winter Birds. In the following species I have found instances of exceptional moult of the remiges in spring of first winter birds: Ringed Plover, Sanderling and Marsh-Sandpiper.

MOULT FROM FIRST SUMMER TO SECOND WINTER PLUMAGE.

The second winter plumage is acquired by a complete moult in autumn or early winter as in the adults, after which, with the exception of the Stilt, all the British waders become like the adults. In the Stilt the adult winter plumage is not acquired till the third year.

MOULT FROM ADULT WINTER PLUMAGE TO ADULT SUMMER PLUMAGE.

Waders may be divided into three classes according to the extent of the pre-nuptial moult: Class I., those in which the moult is very partial and confined to some of the body-feathers, an occasional innermost secondary or odd median and lesser wing-coverts. Class II., those in which most or all of the body-feathers are renewed, occasionally, in some usually, the central pair of tail-feathers or all the tail-feathers, the innermost secondaries and coverts, some median and lesser coverts. Class III., those in which the remiges as well as the rectrices and body-feathers are involved. To Class I. belong the Lapwing, Stilt and Woodcock. In Class II. are included the large majority of the waders; in some the tail-feathers are apparently not moulted, viz. Killdeer, Baird's Sandpiper, Purple Sandpiper, while in the Sociable Plover, Dunlin, Purple Sandpiper, Bonaparte's Sandpiper, Semi-palmated Sandpiper, the Red-necked and Grey Phalaropes, the median and lesser coverts are not renewed (in the Dunlin the central pair of tail-feathers or an odd tail-feather are very occasionally renewed), while in the Dunlin, Purple Sandpiper, and Bonaparte's Sandpiper the innermost secondaries and coverts are only occasionally moulted. To Class III. belong the Little and Temminck's Stints, and probably also the American Stint, but I have examined very few spring specimens of the latter, and the Common and Spotted Sandpipers. In the Stints, both adults and first winter birds moult the remiges in spring. In the Common and Spotted Sandpipers the first winter bird is indistinguishable from the adult and it is impossible to say whether the spring moult of the remiges is indulged in by young and old alike. In both these species adults in worn summer plumage just commencing body-moult occur in October and exceptionally in December or even January. Examples moulting the remiges occur in every month from

September to May. Those with wings in quill in January and February may be adults completing a late winter wing-moult and beginning to acquire at the same time the breeding plumage, or they may be birds of the previous year. Similarly, birds in April—May, with their outer primaries in quill, may be adults or first winter birds indulging in a spring moult.

Dr. Dwight states (*Auk*, 1900, p. 373) that there is abundant evidence that adults and young both undergo a spring moult in which the body-plumage is renewed, while in many species, in the case of the young birds, he believes the moult to be complete—namely, involving rectrices and remiges, except in some females, while in the adults he does not think the rectrices or remiges are involved. He believes this to be the case in the Spotted Sandpiper, Sanderling, Dunlin, American Golden Plover and Grey Plover, but the only definite instance given is one specimen of a Grey Plover (February 27th, Florida) which had renewed all but the two distal primaries. This is probably an instance of abnormal moult. Mr. Seebohm, in his paper, "Notes on the Birds of Natal and adjoining parts of South Africa," states that the *Charadriidae* moult their primaries in spring as well as in autumn, and says he found the Bay of Durban in March swarming with British species—Curllew, Whimbrel, Greenshank, Grey Plover, Ring Dotterel, Wood Sandpiper, Common Sandpiper, Sanderling—and that half the birds shot had evidently just finished moulting, judging by the bloom upon their remiges, while the other half consisted of birds in every intermediate stage between a partial and a complete moult, the new quills being rich in colour, the rest faded and worn; unfortunately no mention is made of the species with remiges in quill.

Except in the species mentioned in Class III. I have not found any evidence of a normal spring moult of the remiges, but it must be remarked that, in many waders, spring specimens are not so numerous as could be wished.

Exceptional Moult of the Remiges in Spring in the Adult. Occasionally spring specimens occur showing moult of the remiges in a species which normally does not appear to moult them at this season: I have found such instances in the following species: Common Pratincole, Turnstone, Terek Sandpiper, Grey and Red-necked Phalaropes and Whimbrel.

MOULT FROM ADULT SUMMER PLUMAGE TO ADULT WINTER PLUMAGE.

This moult, which is complete, involving all the feathers, usually commences in July or August, though in some

individuals not till much later, and while by October many birds have completed the moult and are in full winter plumage, yet others will be found with the moult still far from complete. As a rule the remiges are moulted in autumn with the body-feathers, but in the following species it would appear that the remiges are normally moulted in winter and early spring, viz. Bartram's Sandpiper, American Pectoral Sandpiper, Siberian Pectoral Sandpiper, Baird's Sandpiper, Bonaparte's Sandpiper, while I found specimens of the Wood-Sandpiper, Solitary Sandpiper and the Yellow-shank with remiges in quill from September to February or even March, the February—March specimens with the wing moult more or less complete, the second and the third primaries being in quill. In the American Golden Plover the wing-moult appears to take place in late autumn and at the same time winter body-feathers are often renewed, while of the Asiatic Golden Plover several examples with outer primaries in quill in January and February were examined.

Exceptional Instances of Winter Wing-Moult.—I have come across numerous cases of individuals of a species which normally moults the remiges in autumn, with one or more of the outer primaries in quill in winter or early spring. I consider these individuals are birds which for some reason or another have commenced to moult late in the autumn and in the months of January and February are only completing the wing-moult. Birds with the outer primaries in quill in March may be completing either a delayed winter wing-moult or an early spring one, which can sometimes be decided by examination. Only those birds with the *inner* primaries in quill in March, or with primaries in quill in April and May, I have regarded as genuine examples of a spring-moult of the remiges. Instances of winter wing-moult were observed in the following species in the months of January or February, 2nd and 3rd primaries being in quill in the latter month, the rest of the wing new : Ringed Plover, Sanderling, Curlew-Sandpiper, Semi-palmated Sandpiper, Red-breasted Snipe, Common Redshank, Greenshank, Ashy-rumped Sandpiper, Avocet, Grey Phalarope, Red-necked Phalarope, Whimbrel, etc.

Dr. Dwight remarks that he found specimens showing winter moult of the remiges "comparatively few." He gives the following instances : *Crymophilus fulicarius* one, February 21st ; *Tringa fuscicollis* one ♀, January 16th ; *Actitis macularia* one ♀, February 9th ; *Charadrius squatarola*, February 27th ; he believes these to be young birds.

IRREGULAR AND ABNORMAL MOULT.

I should like briefly to refer here to cases of irregular and abnormal moult.

Irregularity in moult concerns (1) the time, *i.e.* month of the moult: (2) the extent of the moult. Thus, juveniles normally moult in autumn into their first winter plumage, but some winter and spring examples of the following waders examined were still in worn juvenile plumage, *viz.* Ringed Plover, American Golden Plover, Sociable Plover, Yellow-shank, Greater Yellowshank, etc., while in some adults, as already mentioned, the moult into winter plumage is delayed and may not be completed till late winter or early spring. There are also many instances of irregularity in the extent of the moult; some young birds retain many juvenile feathers normally moulted in their first winter plumage and there is much individual variation in the amount of the first winter plumage acquired, especially noticeable in the moult of the tail-feathers and wing-coverts, while very exceptionally the moult may even involve the remiges. In some adults, *e.g.* Redshank and Black-tailed Godwit, there is considerable individual variation in the amount of the summer plumage acquired and exceptionally the wing-quills are renewed at the spring moult.

I have also examined numerous examples of adults in autumn, that had assumed some fresh winter feathers and yet had apparently stopped moulting, as no growing feathers could be found, *e.g.* American Golden Plover ♀, Toronto 15/9/96, with fresh winter feathers on breast but no growing feathers apparent; ♂ Truro, August 19th, acquired much winter plumage on under-parts, yet no moult apparent; also specimens of the following species: Asiatic Golden Plover, Curlew-Sandpiper, Little Stint, Temminck's Stint, Semi-palmated Sandpiper, etc. The same thing occurs in some juveniles, *e.g.* a Bonaparte's Sandpiper, North Truro, August 17th, had acquired many first winter feathers, but no moult was apparent; Dusky Redshank, two females, Amur Bay, September 27th and October 20th, with some winter feathers on mantle, but not in moult. In some adults the moult into breeding plumage seems to stop and then begin again, *e.g.* Little Stint ♀, Petchora, July 24th, getting a few summer feathers on head and neck, the rest of the summer plumage worn; Broad-billed Sandpiper ♂, Russian Lapland, 27/7/99, and another July 22nd, moulting head and neck only and getting summer feathers; Dusky Redshank ♀, April 29th, has acquired a little summer plumage, but is not in moult,

♂ Shanghai, March 20th, has acquired some summer plumage, but apparently is not in moult.

Abnormal Moults.—Under this heading come those individuals which, instead of moulting into their breeding plumage in normal fashion, either (1) retain the winter plumage and do not moult at all, or (2) moult in spring into winter, instead of summer, plumage. The following are some instances and it will be observed that those which are migrants are mostly from winter localities:—

Caspian Plover adult ♀, Russia, May, in worn winter plumage, no moult.

Golden Plover ♀, Tripoli, 9/4/44, in full moult into winter plumage; another (no sex) Sussex, 15/4/80, in full body-moult into winter plumage.

Asiatic Golden Plover, one, South Andaman Island, July 2nd, moulting into winter plumage and moulting primaries; ♂, Shanghai, 9/5/88, in winter plumage, but for a few scattered black feathers on under-parts.

Curlew-Sandpiper, two or three adult and first winter examples moulting into winter plumage in spring, or in winter plumage in summer, all from winter localities.

Semi-palmated Sandpiper, several June adults in winter plumage.

Yellowshank, one Ecuador, June, in worn winter plumage getting new winter feathers on the body (a bird of the previous year).

Redshank, some adults in summer in worn winter plumage with only a few scattered summer feathers.

Ashy-rumped Sandpiper, adults and birds of the previous year in worn winter plumage in summer, or in moult into winter plumage, in some cases moulting the remiges; all from winter localities.

Red-necked Phalarope, two from Amboyna and Formosa, apparently adult, collected in March, moulting into winter plumage.

Black-tailed Godwit, ♀, White Nile, 23/5/01 and ♀, Khartoum, May, apparently birds of the previous year in worn and abraded winter plumage and moulting into winter plumage.

These birds may be barren or they may lack the necessary constitutional vigour to enable them to participate in the spring moult, though the fact must not be overlooked that the assumption of the nuptial plumage does not in all cases indicate the breeding potentiality of an adult bird.

In the case of birds of the previous year, inability to assume the breeding dress probably indicates that the reproductive

organs are not mature, or that the birds, owing to lack of constitutional vigour, are backward and, being unable to breed, are not stimulated to assume the breeding dress. Then the question arises: do young birds breed in their first summer or not? In some waders, first summer birds apparently normally assume only a little of the breeding plumage, or moult into winter plumage, and it is doubtful whether they breed in their first year. Such birds are, as a rule, obtained in winter localities in the height of the breeding season. I have examined the following: Greater Yellowshank:—♂ and ♀, Chili, April and May in winter plumage, but for the underparts, new innermost secondaries and median coverts, as well as several other examples moulting in spring into winter plumage; in the Redshank, two from Orkney, June, had acquired some breeding plumage and may have been breeding, while a male White Nile, 23/5/01, is in abraded winter plumage with a few summer feathers on the upperparts; other spring examples are in full moult into winter plumage. Of the Bar-tailed Godwit I have seen no first summer birds in breeding plumage; four shot in Scotland in May and June were in worn winter plumage with no trace of breeding plumage, two were not in moult, but one May and one June specimen were in full moult into winter plumage. The flocks of Oyster-catchers, Turnstones, Bar-tailed Godwits, and Curlews, which may be seen all summer through on certain parts of our coasts, are doubtless made up largely of these young non-breeding birds. A collection of such birds and a careful anatomical examination in each case would no doubt throw some light on the question as to whether first summer birds breed or not. The subject requires more investigation.*

* Since writing the above, I have read Prof. Patten's article on the "Migratory Movements of Certain Shore Birds as Observed on the Dublin Coast" in the *Naturalist* (1909, page 83), in the course of which he gives particulars of flocks of Sanderlings, all apparently in nuptial plumage, being seen on the Dublin coast on several occasions during July; also flocks of Dunlin. He thinks it probable that these are immature birds and that Sanderling and Dunlin do not breed in their first year though assuming a plumage similar to the breeding plumage of the adult; an anatomical examination of some Sanderling, obtained in August, confirmed his views. Prof. Patten also refers to Bar-tailed Godwits in winter plumage being seen throughout the summer on the Irish coast. He concludes that the mature waders migrate straight to their breeding grounds, while those that remain in flocks round our coasts, whether in breeding plumage or not, are immature birds which do not breed in their first year. There is little doubt, I think, that such is the case; though the flocks probably contain as well a certain percentage of non-breeding adults.

NOTES

HAWFINCH IN ANGLESEY.

ON June 23rd, 1917, whilst watching a pair of Red-backed Shrikes feeding young in the nest at Wern, Red Wharf Bay, Anglesey, I heard the unmistakable call-note of a Hawfinch (*Coccothraustes c. coccothraustes*) and saw one flying over in the direction of the shore, where I lost sight of it. This part of the island is fairly well wooded and no doubt the bird was breeding somewhere in the neighbourhood. There appears to be but one previous record of the Hawfinch for Anglesey—Mr. H. E. Forrest informs me that one was shot at Trescawen, Tregaian, in June 1906.

S. G. CUMMINGS.

CURIOUS SITE FOR NEST OF CHAFFINCH.

ON May 14th, 1917, I was greatly surprised to find the nearly completed nest of a Chaffinch (*Fringilla c. caelebs*) built into the end of a straw stack near Felsted, Essex. By May 19th three eggs had been laid, but later on the nest was destroyed. The choice of site is made more extraordinary by the fact that the stack was in a field, far from any buildings, and close to a tall fence full of the usual kind of places Chaffinches utilize.

J. H. OWEN.

WHITE WAGTAIL NESTING IN WESTMORLAND.

AS I am not aware that the White Wagtail (*Motacilla a. alba*) has ever been recorded for Westmorland on migration, and certainly not as nesting in that country, it may be of interest to state that on June 23rd, 1917, I watched a pair feeding their young at a place between Grasmere and Thirlmere Lakes. I saw them again on June 30th, when the young had evidently flown. Macpherson, in his *Fauna of Lakeland*, says: "Whether the White Wagtail visits Westmorland or Furness on the vernal migration I cannot say." It certainly visits Furness and other parts of north Lancashire on the spring migration, as I see it nearly every year, but is far from plentiful. Mr. Thomas Jackson of Overton, in his long experience as an oologist, has yet to find the nest in Westmorland, Cumberland or Lancashire.

H. W. ROBINSON.

MARSH-WARBLER BREEDING IN HUNTINGDONSHIRE.

I DO not know whether the Marsh-Warbler (*Acrocephalus palustris*) has been previously recorded from Huntingdonshire. On July 1st, 1917, I found a nest with eggs built two yards on the Huntingdon side of the Hunts-Beds. border. The nest was in a bed of small osiers, very much overgrown with a mass of nettles, hops, bineweed, etc. Mr. W. Farren, of Cambridge, has been kind enough to confirm the accuracy of identification.

GEORGE T. ATCHISON.

[We know of no previous records for the breeding of the Marsh-Warbler in Huntingdonshire.—EDS.]

INCREASE OF WHINCHAT IN CUMBERLAND.

DURING the last few years the Whinchat (*Saxicola r. rubetra*) has become very rare in the three north-western counties, but I am glad to record that this year (1917), in mid-Cumberland, it is again nesting in considerable numbers, judging by the number seen on the telegraph wires during the last week in June, carrying food for their young. Last summer there was a very noticeable increase in mid-Lancashire.

H. W. ROBINSON.

ON A MIGRATION OF SWALLOWS IN NORFOLK.

ON April 29th and 30th, 1917, at Hunstanton, Norfolk, I was fortunate enough to see a considerable migration of Swallows (*Hirundo r. rustica*). There was a stiff breeze blowing from due west on the 29th, but hardly any wind on the 30th.

The Swallows were passing singly and in twos and threes, almost without cessation, from soon after daybreak till sunset on the 29th and in rather smaller numbers on the 30th. They were following the coast line from the east, and on passing Hunstanton turned south along the shore of the Wash. That is to say, they were following the identical route I have on several occasions called attention to, as being the favourite line of flight for late-autumn migrants (Rook, Starling, Lapwing, Skylark, etc.) arriving on the Norfolk coast (see *Brit. Birds*, Vol. VIII., p. 69).

Although the vast majority of these Swallows could be watched out of sight down the shore of the Wash, a few appeared to turn out to sea towards the Lincolnshire coast, but whether this was really their destination it was impossible to say, as a bird so small as a Swallow cannot long be kept in sight over the sea.

With them were a few House-Martins and Sand-Martins—in the proportion, I should say, of about 5 per cent.—while,

on the 29th, two Swifts went by. (Breeding pairs of Swifts did not arrive in Norfolk until May 13th.)

Some further light is thrown upon the route taken by these migrating Swallows by a letter I received on Friday, May 4th, from R. Pinchen at Cley (between twenty and thirty miles east of Hunstanton), in which he says: "At the end of last week large numbers of Swallows were flying west, past Cley, along the coast line all day."

They must, I think, be birds which, after crossing the channel, follow up the eastern coast-line of England, and, as in the case of the autumn migrants, reach their inland destinations *via* the Wash and the course of the rivers Ouse or Nene.

In conclusion, the following extracts from my notebook will serve to indicate the arrival of Swallows in the district around Norwich. April 15th, one. April 19th, one. April 24th, one. April 26th, five. April 28th, "a few about." May 1st, "Quite a number of nesting pairs." May 6th, "Full numbers—or nearly—of breeding pairs here now."

B. B. RIVIERE.

SWALLOW NESTING IN A DUG-OUT IN FRANCE.

My son, 2nd-Lieut. Eliot Wallis, writes to me that, seeing a Swallow (*Hirundo r. rustica*) come out of a deserted German dug-out in north-east France, he looked and found a nest "with four spotted eggs" about six feet six inches from the floor of the dug-out, and about on ground level, for it was approached by several steps down. As every chimney, house and shed had been levelled by the retreating enemy the birds had evidently returned to the usage of an earlier day, for few of us have seen a Swallow's nest in a cave.

H. M. WALLIS

LARGE PERCENTAGE OF FULL BROODS OF SWALLOWS IN LANCASHIRE AND WESTMORLAND.

JUNE 1917 showed, in north Lancashire and Westmorland, the largest percentage of full Swallow broods for the past nine years, viz. : 65·5 per cent. as compared with 50 per cent. in 1915 and 45 per cent. in 1911, the two next best years. The average per brood was 4·5 as compared with 4·65 in 1915 and 4·4 in 1911.

H. W. ROBINSON.

MORTALITY AMONGST GREAT CRESTED GREBES.

DURING the past two months (May and June, 1917) the Messrs. Sheals, taxidermists, Belfast, have received great

numbers of Great Crested Grebes (*Podiceps c. cristatus*) from all parts of the north of Ireland, including the suburbs of Belfast, in an emaciated condition, apparently suffering from acute diarrhoea. It would be interesting to know if this "epidemic" has been noticed in other parts of the country.

HERBERT T. MALCOMSON.

BONAPARTE'S SANDPIPER IN SUSSEX.

A MALE Bonaparte's Sandpiper (*Erolia fuscicollis*) was shot at Rye, Sussex, on April 14th, 1916. It was examined in the flesh by Mr. Ruskin Butterfield and Dr. Harrison and has been in my collection since April 27th, 1916, but I find that I have omitted to record it.

J. B. NICHOLS.

ALBINISTIC BLACK-HEADED GULL AND DESERTION OF A CHESHIRE NESTING-SITE.

WHILE watching the principal breeding station of Black-headed Gulls (*Larus r. ridibundus*) in Cheshire, on July 1st, 1917, I noticed one adult bird with a perfectly white head—even the spot behind the ear was absent—and with the wing white also except a streak at the upper part. Mr. T. A. Coward noted an albino when he had this colony under observation some years ago.

It is remarkable that this year the colony has abandoned the site it has occupied for about twenty years. From fifteen pairs reported by Coward and Oldham in 1899 the numbers had risen in recent years to perhaps 500 birds. The only explanation of the abandonment of their old home suggested so far is an extensive burning of the gorse surrounding the pool.

F. A. BRUTON.

ARCTIC SKUA IN SOMERSET IN JUNE.

ON June 4th, 1917, an Arctic Skua (*Stercorarius parasiticus*) was shot at the mouth of the river Axe, near Weston-super-Mare, and examined by me in the flesh. It was a fully adult bird and an example of the dark phase of plumage. There are but few records of this bird for Somerset—only some seven or eight altogether—which appear to have been mostly obtained in the autumn, and for an adult bird to make its appearance in early June, when it ought to have been at its breeding ground, is somewhat remarkable. Probably it was a belated bird on its way to the north.

J. WIGLESWORTH.

EFFECTS OF THE SEVERE WINTER ON BIRDS.—We have to acknowledge the receipt of much additional information on this subject since the publication of our last number. We hope that those who have not already responded to the invitation to forward details of any decrease they have noted in birds breeding in their district, will do so not later than August 15th.—EDS.

ALBIN'S "BLACK LARK."—Dr. W. E. Clarke draws attention (*Scot. Nat.*, 1917, pp. 49-50) to the plate and description of the "Black Lark" in Albin's *Natural History of Birds* (1738, Vol. III., p. 47 and Plate 51) and contends that this bird, which was got in Middlesex about 1737, was an example of *Melanocorypha yeltoniensis*. With this conclusion we cannot at all agree for the following reasons: The bill as drawn is not in the least like the very characteristic thick and heavy bill of *Melanocorypha*, but is exactly the size and shape of the much more slender bill of *Alauda*; the legs and feet are described (and coloured in the plate) as "dirty yellow," while those of *M. yeltoniensis* are black; the bird is described as "dark reddish-brown inclining to black," but in the plate is made jet black except for the wings, which are dark brown—the male *M. yeltoniensis* is jet black all over (with whitish tips to the feathers in fresh plumage) and is without any brown.

The colouring in Albin's plates is usually crude and exaggerated but the drawing of the bills in most of the plates is quite good.

We have no doubt whatever that the bird described and figured was a melanistic variety of the Skylark, and there are examples like it in many museums. As pointed out by Dr. Clarke, Latham, in 1782, considered it to be a dusky variety of the Skylark, a conclusion which Dr. Clarke "does not consider justifiable," though why, he does not state. We have given our reasons against its having been a *Melanocorypha yeltoniensis* and see no reason why it should not have been a melanistic variety of *Alauda arvensis*, such varieties being of not very rare occurrence.

WESTERN BLACK-EARED WHEATEAR OFF CO. WEXFORD.—Professor C. J. Patten, who has already recorded the fact that a bird of this species was obtained on the Tuskar Rock on May 16th, 1916 (*cf. Brit. B.*, Vol. X., p. 122), now contributes a long and detailed article on the subject to *Novitates Zoologicae* (Vol. XXIV., 1917, pp. 1-16). The bird was a male (black-throated) of the western race *Ænanthe h. hispanica*. It was caught on the rock by Mr. Glanville, the light-keeper,

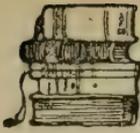
and had evidently previously struck the lantern, as the skull was indented. It is clear from Prof. Patten's description that the bird, as he suggests, was in first summer plumage, which is easily distinguished from the adult by its browner wings and tail, besides other less obvious differences. Prof. Patten misquotes Dr. C. B. Ticehurst regarding the moult of the Common Wheatear (*Brit. B.*, III., pp. 391-3). Dr. Ticehurst stated that the moult from juvenile to first winter involves all the plumage with the exception of the rectrices, remiges, primary and greater wing-coverts. That is to say at this moult the lesser and median wing-coverts are renewed instead of "none of the wing-coverts," as quoted by Prof. Patten, who has confused this moult with the first spring moult. In the Black-eared Wheatear the moult from juvenile to first winter is exactly the same as in the Common Wheatear except that a varying number of the inner greater wing-coverts are also moulted.

In spring, however, the Black-eared Wheatear has a very restricted moult, usually confined to the ear-coverts and chin but occasionally extending to some feathers of the crown and throat, while the Common Wheatear, as stated by Dr. Ticehurst, moults its body-feathers and occasionally the innermost greater wing-coverts and rarely the innermost secondary.—H. F. W.

NIGHT-HERON IN CO. DUBLIN.—Mr. F. W. Shaw records (*Irish Nat.*, 1917, p. 72) that in Easter week, 1916, a *Nycticorax nycticorax* appeared at Bushy Park, Terenure, and that the bird remained there until September. The bird was not at all wild and could easily be watched with glasses.

GREAT SKUA IN SUFFOLK.—With reference to Mr. W. H. Tuck's record of this species near Ixworth, in January 1915 (*Trans. Norf. and Norwich Nat. Soc.*, Vol. X., pt. 2, p. 178), referred to *antea*, p. 48, we are of opinion that this is probably the bird which was picked up in a dying condition at Hunston, near Ixworth, on December 3rd, 1914, and recorded by the Rev. G. Reginald Harrison in the *Field* (12.12.14, p. 980). It is desirable that the mistake in the date should be corrected, as otherwise it may lead to the duplication of the record.

HABITS OF THE COOT.—Mr. Henry Boase, in the *Scottish Naturalist* (1917, pp. 59-64), has an interesting article on habits of the Coot (*Fulica a. atra*). He deals in some detail with their movements, courting antics, call-notes, food, nest-building and care of the young, as well as the growth and habits of the latter.



REVIEWS



A Bibliography of British Ornithology from the earliest times to the end of 1912. By W. H. Mullens and H. Kirke Swann. Parts V. and VI. (1917, 6s. each net).

WE have now received the last of the six parts in which this useful work is issued. A list of Addenda and Corrigenda, extending from page 675 to 691, is conveniently printed on one side of the paper only, so that it can be cut up into slips and each addition inserted in its proper place in the work. We hope that a further supplementary list may be issued in which the corrections in critical notices of the parts under review can be incorporated. A list of Bibliographies is also appended, but we fail to understand on what principle Kelsall and Munn's *Birds of Hampshire* and Pidsley's *Birds of Devon* are the only local works mentioned. Many others, such as those by Ticehurst, Forrest, Gladstone and others, contain similar bibliographical chapters, and we think that the list should either have been confined to works treating of Bibliography alone, or else that all such works should have been included.

We may preface our notes by the insertion here of some supplementary remarks on Part IV. On page 446, under date 1864—[1907] for *Oothece* read *Oothece*—This work should be marked with an asterisk. Mr. J. P. Nunn has published a pamphlet entitled "Sixteen years with the Common Sparrow" (1903). Mr. Heatley Noble is not a member of the B.O.U. (p. 450), as he resigned in 1910.

Dr. M. H. C. Palmer's list of the Birds of Newbury (p. 456) is founded on a series of four articles on the *Birds of Newbury and district* contributed by him to the *Newbury Weekly News* for 1886. We do not see any reference to Prof. C. J. Patten's paper on *Rambles on Achill Island* (*Irish Nat.* XVII., pp. 189-203), published in 1908.

Mr. H. C. Playne, referred to in the Addenda on p. 689, is also the author of a small pamphlet of 49 pp., entitled "Some common Birds of the neighbourhood of Clifton" (1906).

Mr. R. H. Read has published a useful paper on the *Birds of the Lower Brent Valley* (1896), which originally appeared in the *Rep. and Trans. of the Ealing Nat. Sci. Society*, and has also contributed several notes to the *Zoologist*.

By some oversight all the papers contributed by Dr. J. H. Salter to the *Zoologist* while resident at Aberystwith are

omitted. He also wrote a letter on the preservation of the Kite in Wales, which was published in the *Bulletin of the B.O.C.* Vol. XIII. (1903), and has recently brought out a book on *Bird Life throughout the Year*. The following is a list of his contributions to the *Zoologist*: 1893, pp. 104, 269; 1895, pp. 129, 178, 221 and 249; 1896, p. 24; 1898, p. 198; 1900, p. 76; 1902, p. 1; and 1904, p. 94.

To the list of Dr. P. L. Selater's papers should be added, "Remarks on a supposed new British Tit of the Genus *Parus*" (*Brit. Birds*, I., pp. 23-24).

The notice of Dr. R. B. Sharpe's life omits all mention of the fact that he acted as President of the Fourth International Ornithological Congress at London in 1910, probably the crowning event of his life. The date of the founding of the British Ornithologists' Club is given on p. 528 as 1902 instead of 1892. Although obituary notices of ornithologists are not included as a rule in this work a special interest attaches to that written by Dr. Sharpe on Professor Newton (*Brit. Birds*, I., pp. 33-39,) as for a time they were much estranged, but at the Congress a "rapprochement" took place and more friendly relations were established.

The notice of H. Ecroyd Smith omits mention of a paper by him in the *Zoologist* for 1867, pp. 924-929. He also contributed to the *Liverpool Nat. Journal* for 1866. No reference is made to the plates contributed by Mr. A. Thorburn to Mr. J. G. Millais's *Natural History of the British Surface-feeding Ducks* (1902). Other coloured plates by the same artist may be found in W. H. Hudson's *British Birds* (1895), and recently to Mr. Millais's large work on the Diving Ducks.

On p. 588 it is stated that "At Crowley's death in 1901, it was directed that the whole of his collection of eggs should be presented to the British Museum." As this apparently refers to the Crowley collection and not to any part of it, it should be stated that Mr. Crowley directed that the Museum authorities should be allowed to select two sets of each species only. The rest of the collection was sold by auction.

Apparently reviews of ornithological works are omitted from this work, yet it happens not infrequently that reviews contain much matter indispensable to the student of a local fauna, and we are of opinion that references to them would have increased the value of the work.

Our congratulations are due to the authors on the completion of their arduous task, and we shall look forward with great interest to the appearance of the promised County Index in which all faunal notes will be included.—F. C. R. JOURDAIN.

"British Birds" Book Department.

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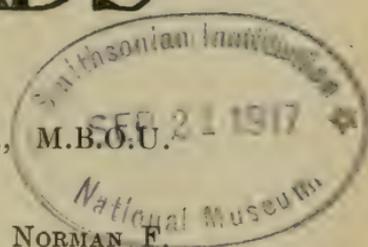
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NOTES ON ZONAL DISTRIBUTION IN THE MOUNTAINS OF LATIUM, ITALY.

BY

C. J. ALEXANDER, B.Sc. (AGRIC.).

To an ornithologist accustomed to the south-east of England, where the differences of altitude are not sufficient to cause any differences in the bird population,* it is naturally of great interest to be able to study a region in which an altitudinal range of more than 2,000 metres (nearly 7,000 feet) occurs within a distance of fifty miles. Though I was in Latium for nearly five years (June, 1911 to February, 1916), it was rarely that I could get away from Rome or Albano (where I lived for the last three years) except on Sundays: the only occasion on which I visited the higher mountains was in June and July, 1913, when my brother, H. G. Alexander, and I spent a fortnight in the Monti Simbruini. Considering how little has been published on zonal distribution in Europe I believe that the observations here given may be of value.

As birds are so obviously dependent on vegetation, it is natural to study their altitudinal distribution in connection with the zones of vegetation which have been established. In Latium the following are recognized:

1. *Mediterranean*, extending from sea-level to between 300 and 500 m. according to aspect and distance from the coast.
2. *Submontane* (or *Chestnut Zone*), up to 800-1,000 m.
3. *Montane* (or *Beech Zone*), up to 1,700-1,850 m.
4. *Subalpine*, to the tops of most of the mountains.
5. *Alpine*, represented on exposed peaks from 2,000 to 2,150 m., the latter being the highest point attained here (M. Viglio, on the Abruzzi border).

THE MEDITERRANEAN ZONE covers large areas; it should be noted that the sclerophyllous vegetation, so characteristic of it, is here confined to certain stations (the neighbourhood of the coast, slopes facing the sun, etc.), while the majority of the low ground belongs to deciduous formations—woods of elm, oaks of several species, poplars, etc. A great part of it is now pasture or under the plough. In this zone a number of our British residents are only winter visitors—Mistle-Thrush, Song-Thrush, Golderest, Hedge-Sparrow, Coal-Tit, Meadow-Pipit, Hawfinch, Bullfinch, Yellowhammer,

* With the possible exception of Nightingale.—See N. F. Ticehurst, *A History of the Birds of Kent* (1909), p. 32.

Rook ; while others remain to breed only on certain types of ground—Blackbird, Robin, Wren, Chaffinch, Wood-Lark—showing that they are nearing their climatic limit. Again, four of our summer visitors are here resident: Blackcap, Chiffchaff, Wryneck, Kentish Plover ; while a larger number occur only on migration : Wheatear, Whinchat, Redstart, Garden-Warbler, Willow-Wren, Wood-Wren, Tree-Pipit (once met with in winter), Pied Flycatcher.

Consideration of the breeding-grounds of the local species just mentioned suggests that dryness in summer is the factor which, directly or indirectly, makes this zone unsuitable for the breeding of a number of species. In this connection it is interesting to note that the Wheatear does not breed below about 1,000 metres, hardly reaching below the limits of the montane zone, where the grass remains more or less fresh all the summer ; yet about the middle of August, Wheatears appear in numbers on the parched Campagna on their way southwards ; hence we may suppose that it is only for the nestlings that this zone cannot produce the right kind of food.

Several of the species belonging to the Mediterranean fauna are nearly or quite confined to this zone. These are : Calandra Lark, Short-toed Lark, Lesser Grey Shrike, Penduline Tit, Cetti's Warbler, Fan-tailed Warbler and Bee-eater, and probably Black-eared Wheatear and Spectacled Warbler (very local species).

The arrival of the migratory breeding species in this zone is naturally earlier than in the south of England, but the divergence is not the same in different species. Thus the Swift, of which the first few arrive in Rome about the 21st of March, while some numbers are present by the 1st of April and nearly all by the 10th, may be said to be thirty-five or forty days ahead ; while the Nightingale, arriving about the 1st of April, and the Spotted Flycatcher, about the 20th, are some fifteen days ahead. Most species arrive in this zone when vegetation (and insect life also, to judge by the butterflies) is more advanced than on their arrival in the south of England.

The departure of several species is also earlier than in England, a fact which much surprised me. Swifts leave between the 15th and 25th July, except for a few stragglers ; though passing flocks, presumably from north of the Alps, are to be seen almost throughout August. Whitethroat, Spotted Flycatcher, Swallow and Martin all leave a little earlier than with us ; but the Nightingale seems to be an exception, not leaving till the second half of September :

as it also sings much later than in England (to about the 10th or 15th July), I think it is probably double-brooded here.

The passage of species on their way to and from higher latitudes or higher zones is too large a subject to be dealt with here. But it may be of interest to remark that I have notes of individuals staying as many as three days (Redstart, Willow-Wren, Wood-Wren) and even five days (Pied Flycatcher) on their way north in spring.

THE SUBMONTANE ZONE comprises most of the volcanic hills to the north and south of Rome, as well as the lower parts of the Apennine, here almost entirely limestone. On the volcanic soils, chestnut woods (generally as twenty-year coppice) cover most of the slopes, though there is a certain amount of arable and grass land, and some fruit. On the limestone the woods are chiefly of deciduous oaks (of several species), but the steepest slopes generally bear a mixture of deciduous trees; most of the more accessible slopes are cultivated.

No species seems to be confined to this zone (unless it be the Orphean Warbler, which I have met with only once), though the Rock-Thrush and Ortolan Bunting reach only from the upper part of it into the lower part of the montane, and the Dipper and Grey Wagtail hardly range out of it owing to scarcity of suitable haunts at higher and lower levels. The following species may, however, be said to reach their greatest abundance here: Whitethroat, Golden Oriole, Red-backed Shrike, Crag-Martin, Cuckoo.

The arrival of the migratory breeding-species becomes later on ascending through the zone, but I have no observations yet as to their departure.

Migration through the zone* is still considerable; in spring Wood-Wren, Willow-Wren, Garden-Warbler and Tree-Pipit are species frequently noted, and I have also seen Redstart, Pied Flycatcher, Rock-Thrush and Honey-Buzzard; in autumn Wheatear, Tree-Pipit and Wood-Wren are plentiful and other species noted include Yellow Wagtail (? subsp.), Bee-eater, Bonelli's Warbler, Swallow.

Blackcap, Wryneck and Chiffchaff leave this zone for the winter; I believe that the Chiffchaffs from the upper parts of the Alban Hills descend only to the sheltered basins of the Lakes of Albano and Nemi, often not leaving till early November and moving up again early in March; possibly Blackcaps do the same. At the same time the submontane

* These observations refer almost exclusively to the Alban Hills, south of Rome.

forms suitable winter quarters for some mountain or northern species, such as Alpine Pipit, Bullfinch, Yellowhammer, Mistle-Thrush, Song-Thrush, Meadow-Pipit, Redwing, Brambling.

THE MONTANE ZONE consists chiefly of beech forest and grass. So far as I know, no coniferous woods occur in this zone. Wheat is grown in some of the plateau valleys up to 1,300 m., ripening here about the middle of August. The lower limit of this zone appears to represent approximately the climate of the south of England, though the late summer is certainly finer and warmer and the winter snowfall rather heavier: this last no doubt accounts for the absence of Robins and the Thrushes in winter.

A number of species seem to be confined to the montane in the breeding-season: Song-Thrush, Redstart, Wood-Wren, Hedge-Sparrow, Coal-Tit, Tree-Creeper (*C. familiaris*), Collared Flycatcher, Bullfinch, Yellowhammer; while Mistle-Thrush, Bonelli's Warbler and Tree-Pipit reach only a little below it. It may thus be said to be the best characterized ornithologically of the three woodland zones.

I have not yet been able to make any observations on migration at this height.

THE SUBALPINE ZONE consists almost entirely of grassland, more or less rocky except on some shoulders; but scrub of *Juniperus nana* and *Arctostaphylos uva-ursi* occurs in places, giving shelter to the ubiquitous Wren. The characteristic species is the Alpine Pipit, which does, however, reach down to some of the montane grassland. The Chough (on the cliffs) also probably belongs to it; the only other species we met with were Wheatear, Black Redstart and Linnet.

THE ALPINE ZONE is represented only on a few of the highest peaks, where mountain-top detritus and rock exposures bear a purely alpine vegetation: here occur Alpine Accentor and Snowfinch, in company with Wheatear and Black Redstart; Alpine Pipits may also be heard singing, but their breeding-grounds are the neighbouring grassy slopes on which the vegetation is subalpine.

The Black Redstart is unique: for you may hear its song from the cliffs above as you go out of Terracina along the Appian Way cut by the Romans through the rocks beside the Tyrrhenian Sea, where green peas and carnations are in flower in January and the reeds by the spring are perpetually green; and again you may hear it as you stand on the wind-swept top of Monte Viglio, where a few diminutive tufts of *Androsace* and *Thlaspi rotundifolium* share the loose stones with lichens

ZONAL DISTRIBUTION OF SPECIES BREEDING
IN LATIUM.

- RAVEN (*Corvus c. corax*).—Mediterranean to montane.
- HOODED CROW (*Corvus c. cornix*).—Mediterranean to lower montane.
- JACKDAW (*Colæus m. spermologus*).—A local species, hardly entering the submontane zone; apparently it does not extend up the Aniene valley above Tivoli, where it nests in the rocks.
- MAGPIE (*Pica p. pica*).—Mediterranean and submontane.
- JAY (*Garrulus g. glandarius*).—Mediterranean to montane: local in the Mediterranean, like Robin and Chiffchaff.
- CHOUGH (*Pyrrhocorax pyrrhocorax*).—Subalpine or alpine: apparently the cliffs which it inhabits belong to the former zone.
- STARLING (*Sturnus v. vulgaris*).—Mediterranean. This species, breeding near the coast, is an exception to the rule that northern species seek the higher zones: it occurs as a winter visitor in the submontane zone.
- GOLDEN ORIOLE (*Oriolus o. oriolus*).—Mediterranean and submontane.
- HAVFINCH (*Coccothraustes c. coccothraustes*).—Submontane and montane.
- GREENFINCH (*Chloris ch. chloris*).—Mediterranean to montane.
- GOLDFINCH (*Carduelis c. carduelis*).—Mediterranean to montane.
- LINNET (*C. c. mediterranea*).—Mediterranean (here almost confined to the coast), submontane and montane.
- SERIN (*Serinus c. serinus*).—Mediterranean to montane, reaching the tree-limit (1850 m.) on M. Autore.
- BULLFINCH (*Pyrrhula p. europæa*).—Montane.
- CHAFFINCH (*Fringilla c. œlebs*).—Mediterranean to montane.
- SNOWFINCH (*Montifringilla n. nivalis*).—Alpine zone.
- TREE-SPARROW (*Passer m. montanus*).—Mediterranean and submontane.
- ITALIAN SPARROW (*P. italiae*).—Absent from Vallepietra (800 m.), but plentiful in Filettino (1,000 m.) and Guadagnolo (1,200 m.), the latter being the highest village in the Province.
- ROCK-SPARROW (*Petronia p. petronia*).—Mediterranean to lower montane.
- CORN-BUNTING (*Emberiza c. calandra*).—Mediterranean to lower montane.
- YELLOW BUNTING (*E. c. citrinella*).—Montane.
- CIRL BUNTING (*E. cirrus*).—Mediterranean to lower montane.
- ORTOLAN BUNTING (*E. hortulana*).—Submontane and lower montane.
- ROCK-BUNTING (*E. cia*).—Submontane and montane.
- CALANDRA LARK (*Melanocorypha c. calandra*).—Mediterranean.
- SHORT-TOED LARK (*Calandrella b. brachydactyla*).—Mediterranean.
- CRESTED LARK (*Galerida c. cristata*).—Mediterranean and submontane.
- WOOD-LARK (*Lullula arborea*).—Mediterranean (local in the lower parts), submontane and montane.
- SKY-LARK (*Alauda arvensis* ? subsp.).—Mediterranean to montane: seen up to 1,600 m.
- TAWNY PIPIT (*Anthus c. campestris*).—Mediterranean and submontane.
- TREE-PIPIT (*A. t. trivialis*).—Montane, reaching just into the top of the submontane.

ALPINE PIPIT (*A. s. spinoletta*).^{*}—Upper montane and subalpine.

ASHY-HEADED WAGTAIL (*Motacilla f. cinereocapilla*).—Mediterranean: very local, and, near the Tiber mouth, apparently confined to salt-marshes.

GREY WAGTAIL (*M. c. cinerea*).—Mediterranean (upper part) to montane.

WHITE WAGTAIL (*M. a. alba*).—Mediterranean to lower montane.

TREE-CREEPER (*Certhia familiaris macrodactyla*).—Montane.

SHORT-TOED TREE-CREEPER (*C. brachydactyla ultramontana*).—Mediterranean and lower submontane: I have never met with this species above 700 m. in Latium.

WALL-CREEPER (*Tichodroma muraria*).—Only met with in winter.

NUTHATCH (*Sitta e. caesia*).—Mediterranean to montane: very local below montane, owing to scarcity of large timber.

LONG-TAILED TIT, GREAT TIT and BLUE TIT (*Agithalos caudatus italicæ*, *Parus major*, *P. cæruleus*).—All range from the Mediterranean to the montane.

COAL-TIT (*Parus a. ater*).—Montane zone: like the Firecrest, this species here breeds in deciduous forest (beech).

MARSH-TIT (*P. p. italicus*).—In the Mediterranean zone I have met with this species only in elm-wood, in a secluded valley on the Campagna: in the submontane it is only found in the damper places, while in the montane it becomes general and numerous.

PENDULINE TIT (*Anthoscopus p. pendulinus*).—Mediterranean.

FIRECREST (*Regulus i. ignicapillus*).—Mediterranean to montane; in the two lower zones it seems to be confined to evergreens, generally *Quercus ilex*.

LESSER GREY SHRIKE (*Lanius minor*).—Mediterranean.

WOODCHAT (*L. s. senator*).—Mediterranean and submontane.

RED-BACKED SHRIKE (*L. c. collurio*).—Mediterranean to lower montane.

SPOTTED FLYCATCHER (*Muscicapa s. striata*).—Mediterranean to lower montane.

COLLARED FLYCATCHER (*M. collaris*).—Montane.

CHIFFCHAFF (*Phylloscopus c. collybita*).—Like Robin, it is only found in certain damp woods on the lower ground; abundant in the submontane and montane.

WOOD-WREN (*Ph. sibilatrix* subsp. ?).[†]—Montane.

BONELLI'S WARBLER (*Ph. b. bonelli*).—Upper submontane and montane.

CETTI'S WARBLER (*Cettia c. cetti*).—Mediterranean, reaching just into the submontane up the river Aniene below Jenne (450 m.): here it actually occurs in the haunts of the Dipper.

REED-WARBLER and GREAT REED-WARBLER (*Acrocephalus s. scirpaceus* and *A. a. arundinaceus*).—So far I have found these only in the Mediterranean zone: they both occur round the Lake of Nemi (320 m.), as well as near the Tiber mouth, but I have not visited the higher lakes.

* The Meadow Pipit (*A. pratensis*) seems to be absent from this part of the Apennine, though it is recorded as nesting in Calabria (Arrigoni, *Manuale di Ornitologia Italiana*, p. 352). It is an abundant winter visitor in the submontane and Mediterranean zones.

† The absence of the Willow-wren (*Ph. trochilus*) from apparently suitable country, in which the three other species are plentiful, is curious. It may be of interest to record that in the Simbrivio valley and near Filettino we noted sixty Chiffchaffs to twenty-seven Bonelli's Warblers and eight Wood-warblers; the latter had perhaps already begun to stop singing.

ICTERINE WARBLER (*Hypolais icterina*).—Mediterranean and submontane.

MELODIOUS WARBLER (*H. polyglotta*).—Mediterranean (local).

ORPHEAN WARBLER (*Sylvia h. hortensis*).—Only once met with, upper submontane.

BLACKCAP (*S. a. atricapilla*).—From the Mediterranean (where it is not quite general) to the limit of trees.

WHITETHROAT (*S. c. communis*).—Mediterranean (almost confined to river banks) to montane.

SARDINIAN WARBLER (*S. m. melanocephala*).—Mediterranean and submontane, occasionally just within the montane.

SPECTACLED WARBLER (*S. c. conspicillata*).—Mediterranean.

SUBALPINE WARBLER (*S. s. subalpina*).—Mediterranean and submontane, reaching the transition to the montane.

DARTFORD WARBLER (*S. u. undata*).—Mediterranean: probably also higher up, as I have found it in winter in the upper submontane.

FAN-TAILED WARBLER (*Cisticola c. cisticola*).—Mediterranean and lower submontane.

MISTLE-THRUSH (*Turdus v. viscivorus*).—Upper submontane and montane.

SONG-THRUSH (*T. ph. philomelus*).—Near the upper limit of the montane.

BLACKBIRD (*T. m. merula*).—Mediterranean to montane.

ROCK-THRUSH (*Monticola saxatilis*).—Upper submontane and lower montane.

BLUE ROCK-THRUSH (*M. s. solitarius*).—Mediterranean and submontane, hardly reaching into the montane.

WHEATEAR (*Enanthe æ. ænanthe*).—Montane to alpine.

BLACK-EARED WHEATEAR (*E. hispanica* subsp. ?).—Mediterranean.

STONECHAT (*Saxicola t. rubicola*)*.—Mediterranean to montane.

REDSTART (*Phœnicurus ph. phœnicurus*).—Montane.

BLACK REDSTART (*Ph. o. gibraltariensis*).—Mediterranean (local) to alpine.

NIGHTINGALE (*Luscinia m. megarhyncha*).—Mediterranean and submontane.

ROBIN (*Erithacus r. rubecula*).—Mediterranean to montane: confined to damp deciduous woods in the Mediterranean zone.

ALPINE ACCENTOR (*Prunella c. collaris*).—Alpine zone.

HEDGE-SPARROW (*P. m. modularis*).—Montane zone: we found this species in small numbers near the top of the zone.

WREN (*Troglodytes t. troglodytes*).—Mediterranean to montane and occasionally subalpine.

DIPPER (*Cinclus c. meridionalis*).—Submontane.

SWALLOW (*Hirundo r. rustica*).—Here found only near water; Mediterranean and lower submontane.

MARTIN (*Delichon u. urbica*).—Mediterranean to lower montane.

CRAG-MARTIN (*Riparia rupestris*).—Mediterranean to montane.

SWIFT (*Apus apus*).—Mediterranean to montane: a large colony in the cliffs of the Trinità, near Vallepiedra, at about 1,400 to 1,600 m.; plentiful in Filettino (1,000 m.), but very few at Subiaco; very numerous in all the lower towns.

ALPINE SWIFT (*A. m. melba*).—Mediterranean (Terracina), and probably somewhere in the submontane near Mandela and Subiaco.

NIGHTJAR (*Caprimulgus europæus meridionalis*).—Submontane.

BEE-EATER (*Merops apiaster*).—Mediterranean.

HOOPOE (*Upupa e. epops*).—Mediterranean and submontane.

* Probably these mountains are too dry for the Whinchat (*S. rubetra*), which we nowhere met with.

ROLLER (*Coracias g. garrulus*).—Mediterranean.

KINGFISHER (*Alcedo i. ispida*).—No suitable haunts above the submontane.

GREEN WOODPECKER (*Picus viridis pronus*).—Mediterranean and submontane.

GREAT SPOTTED WOODPECKER (*Dryobates major pinetorum*).—Mediterranean to montane.

LESSER SPOTTED WOODPECKER (*D. minor buturlini*).—Mediterranean to montane.

WRYNECK (*Jynx torquilla tschusii*).—Mediterranean to lower montane.

CUCKOO (*Cuculus c. canorus*).—Submontane and montane.

As regards the birds of prey, neither Buzzard (*Buteo b. buteo*) nor Kite (*Milvus milvus*) was met with much above the lower limits of the montane; the Kestrel (*Falco t. tinnunculus*) was seen on the plateau at 1,500 m., and the Sparrow-Hawk (*Accipiter n. nisus*) (which I have not seen in summer in the lower zones) in a beechwood still higher; the Hobby (*Falco s. subbuteo*) only in one place in the mountains (near Tivoli, submontane zone), though it occurs lower down; the Black Kite (*Milvus m. migrans*) reaches the submontane in the Alban Hills. The Marsh-Harrier (*Circus ceruginosus*) and the Serpent-Eagle (*Circaetus gallicus*) seem to be confined to the coast marshes, while the Honey-Buzzard (*Pernis a. apivorus*) also occurs in the submontane (Alban Hills). A pair of Lanners (*Falco biarmicus feldeggii*) used to breed on a cliff at about the upper limit of the Mediterranean near Albano, and others in the Monti Lepini are probably at about the same level.

The Turtle-Dove (*Streptopelia t. turtur*) appears not to reach into the montane, but Quail (*Coturnix c. coturnix*) reach towards the top of that zone, and Partridge (*Perdix perdix*) also to within its limits.

Such marsh species as the Purple Heron (*Ardea p. purpurea*), Little Bittern (*Ixobrychus minutus*), Water-Rail (*Rallus a. aquaticus*), Coot (*Fulica a. atra*) and Dabchick (*Podiceps r. ruficollis*) find no suitable haunts in the mountains. As far as I know, the Kentish Plover (*Charadrius a. alexandrinus*) is the only Limicole breeding in the Province, though possibly the Little Ringed Plover (*Ch. d. curonicus*) may do so; the former is plentiful wherever there are sandhills along the coast.

NOTE.—In the case of the following species, my observations appear to extend the information given by Count E. Arrigoni Degli Oddi in his *List*, published in 1913 :—

1. YELLOW BUNTING (*Emberiza c. citrinella*).—"Nests on the mountains of the northern and perhaps the central provinces" (No. 232). This species we found to be rather local in the Mi. Simbruini, occurring generally where a few bushy beeches or other shrubs grew in the grassland of the plateau. The following are my notes: several about Morra Menti, 1,400 to 1,450 m., and a few thence to near M. Autore, 1,700 m.; one at R. Ceuta, 1,500 m.; a fair number in the valley above Filettino and up the adjacent slopes, 1,080 to 1,150 m.

2. TREE-PIPIPIT (*Anthus t. trivialis*).—"Summer visitor, nests on the high mountains of the Po Valley, while in the southern provinces and in the islands it is a winter visitor"

(No. 207). We met with this species singing and evidently at its nesting-stations as follows: Cliffs on the edge of the plateau above Subiaco (June 27, 1913), 1,250 m.; wood east of M. Calvo, 1,550 m.; by M. Livata, 1,400 m.; several along ridge between the Faito and M. Tarino (June 29), 1,600 to 1,850 m.; near Morra Menti, 1,450 m.; near M. Autore, and at the wood-limit on that mountain, 1,650 to 1,850 m.; edge of Campo della Pietra, 1,450 m.; at limit of wood south of M. Viglio, 1,750 m., and south of M. Cotento, 1,800 m. (July 4).

3. ALPINE PIPIT (*A. s. spinoletta*).—“Not equally distributed, less abundant in the southern parts” (No. 210). This species was plentiful on all the higher pastures of the Mi. Simbruini; we found a nest with four eggs at about 1,900 m. on M. Tarino, on June 29, 1913.

4. TREE-CREEPER (*Certhia f. macrodactyla*).—“I have also had it from the Tuscan Apennine, but do not know whether it is resident there” (No. 114). We met with a family party on the eastern slope of M. Cotento (about 1,650 m.) on July 4, 1913. I have also seen the species in winter and early spring in two of the beechwoods near Guadagnolo (Mi. Prenestini), at about 1,000 m., but am not certain that it spends the summer there.

5. ITALIAN MARSH-TIT (*Parus p. italicus*).—“Specie più distribuita nell’alta Italia, scarsa nel rimanente” (No. 108), which may perhaps be translated: “More general in Upper Italy, infrequent in the remainder.” The latter should certainly not be applied to the Monti Simbruini and Prenestini, where it is common in all the beechwoods, always outnumbering *P. ater ater*.

6. COLLARED FLYCATCHER (*Muscicapa collaris*).—Of this species (No. 85 in his *List*) Arrigoni states: “Nests in the Alps, in the Tuscan Apennine and in Liguria”; in his *Manuale di Ornitologia Italiana* (Milano, 1904) he adds: “and perhaps in Calabria.” We met with this species in the Monti Simbruini, between June 28 and July 5, 1913, as follows: Family down slope below Trinità, 1,050 m.; pair close to Trinità, 1,330 m.; pair in wood west of M. Autore, 1,750 m.; male at edge of wood on M. Autore, 1,820 m.; male at top of wood below M. Tarino, 1,850 m.; in bushes among the rocks near Filettino, 1,100 m.; in tall beech wood on east slope of M. Cotento, c. 1,650 m.

7. KENTISH PLOVER (*Charadrius a. alexandrinus*).—“Fairly frequent in Venetia, Tuscany, Apulia and Sardinia” (No. 327). Latium should certainly be added, as the species is quite numerous on the suitable parts of the coast, especially near the Tiber mouth.

THE MOULTS AND SEQUENCE OF PLUMAGES OF THE BRITISH WADERS.

BY

ANNIE C. JACKSON, HON. MEM., B.O.U.

PART II.

GENUS *Hæmatopus*.

OYSTER-CATCHER (*Hæmatopus o. ostralegus*).

ADULTS.—Complete moult from July to December. From January to May, there is a partial moult involving the body-feathers, (not all the scapulars) sometimes the central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts but apparently not the rest of the tail-feathers and not the rest of the wings. There is little difference in coloration between the winter and summer plumages; in winter the black chin is more or less interspersed with white feathers, while a broad white band extends across the middle of the throat narrowing considerably as it passes on to the sides of the neck; in early autumn the feathers of this throat-band have black tips which are soon worn off; in summer, the chin and throat are black, the feathers of the throat with white bases. The sexes are alike in plumage, but the bills of the females average longer.

JUVENILE.—*Male and female.*—The juvenile much resembles the adult in summer plumage, but the mantle and scapulars, deep black in the adult, are tinged brown in the juvenile, the feathers mostly margined warm buff: sometimes some of the white feathers of the back and rump are faintly tipped dusky; the upper tail-coverts are washed subterminally with buff and narrowly tipped black, in some with two or three dusky black bars or markings: (in the adult the upper tail-coverts lack the buff tinge and the blackish-brown tips and markings are often absent); in some juveniles the black chin is intermixed with white and the feathers of the black throat are white towards their bases and more or less broadly tipped black; the white bases only partially concealed and forming an imperfect white throat band, in others the chin and throat are black as in the adult in summer; the black feathers of the upper-breast bordering the white lower-breast have buff edgings in the juvenile, otherwise the under-parts are as in the adult in summer; the tail and the wings are the same as in the adult, but the black innermost secondaries, inner greater, median and lesser coverts are tinged brown, and the innermost secondaries and many of the wing-coverts (not the lesser) are tipped light or warm buff, some with a terminal dusky black line. The juvenile has the bill orange-yellow, brownish-horn towards the tip, feet greyish-white, iris brown, instead of bill orange-red, tip reddish-horn, feet pale pink, iris vermilion as in adult in summer.

N.B. The buff tips to the feathers of the upper-parts are soon more or less lost by abrasion.

FIRST WINTER.—*Male and female.*—The juvenile body-plumage, (not all the scapulars, nor, in some, all the upper tail-coverts), sometimes the central pair of tail-feathers, usually some innermost secondaries and their coverts and usually some median and lesser coverts are moulted from August to December, but apparently not the rest of the tail-feathers, nor the rest of the wings. After this moult the birds resemble the adults, but are always distinguishable by some retained worn brown juvenile scapulars, innermost secondaries

and median coverts with worn buff edges, also by one or two remaining juvenile upper tail-coverts. The bill is as in the juvenile, but the feet are pale pink and the iris reddish-yellow.

FIRST SUMMER.—(Not examined.)

From February and March specimens handled it would appear that the first summer bird resembles the adult, but for the worn brown juvenile innermost secondaries and wing-coverts, but, owing to absence of material, it is impossible to say whether the first summer bird has as black a throat as the adult or not. Of two specimens in my collection, one 9/3/14 ♂ has the chin black, new feathers of throat black with white bases, while the other 28/4/15 ♀ is in full body-moult, but has the chin intermixed with white, the throat white, some feathers tipped black, while the new feathers coming in are white.

GENUS *Burhinus*.

STONE-CURLEW (*Burhinus æ. œdicnemus*).

ADULTS.—Complete moult from August to October. From March to May, there is a partial moult involving the body-feathers (not all the scapulars), the tail-feathers, innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. There is no distinction between the winter and summer plumages. The sexes are alike.

JUVENILE.—*Male and female*.—Much like the adult, but the upper-parts are paler, centres of the feathers sepia, not black-brown, and narrowly margined light, instead of warm, buff; the black-brown or sepia streaks on the head and nape are narrower; upper tail-coverts as in the adult, but the central ones marked with obsolete bars of sepia; under-parts as in the adult, but the lower throat and breast with narrower mesial streaks of sepia; the juvenile tail-feathers are like those of the adult, but the ground-colour is browner and more broken up with pale buffish obsolete bars, the outer feathers barred and marked dark brown and white and washed buff and with broad black or fawn tips (the markings and coloration of the tail-feathers vary considerably individually both in adults and juveniles); wing as in the adult, but greater coverts ash or fawn-brown fringed and notched light buff or white and more or less shaded sepia towards the tip; (in the adult the greater coverts are dark ash-brown shading into greyish-white or white towards tip, with black shafts, and with the tips of the outer-webs, sometimes both webs, black or black-brown forming a narrow black wing-bar absent in the juvenile); median coverts with central streaks and markings of sepia and fringed light buff and with greyish-white bases, the upper series greyish-white or light buff (forming an indistinct greyish-white or light buff wing-bar) with an oval sepia marking towards the tips of the feathers which are light buff; (in the adult the lower series of median coverts are pale grey narrowly edged buff with black-brown shaft-lines clouded towards the centre with black-brown, basal halves white, the upper series with basal halves uncovered forming an irregular white wing-bar, and distal halves black-brown, tipped grey or buff and with black-brown shafts).

FIRST WINTER AND SUMMER.—(Not examined.)

GENUS *Cursorius*.

CREAM-COLOURED COURSER (*Cursorius g. gallicus*).

ADULTS.—Complete moult from March to November. From December to February there is a partial moult involving the body-feathers, some scapulars, occasionally the tail-feathers, sometimes

some innermost secondaries and coverts, and apparently sometimes some median and lesser coverts, but not the rest of the wings. There is no difference in coloration between the winter and summer plumages and the sexes are alike.

JUVENILE.—*Male and female.*—Like the adult, but the crown, nape and rest of upper-parts and innermost secondaries and coverts isabelline-buff, the feathers with irregular wavy sepia markings: (in the adult the upper-parts, innermost secondaries and coverts, are uniform isabelline, while the hinder part of the crown and the nape are deep gull-grey, concealing a black patch on the nape): eye-stripe light buff, some of the feathers spotted sepia (in the adult the eye-stripe is white); below the eye-stripe from the back of the eye to the nape, a black-brown line more pronounced in some than in others, the feathers with buff tips (in the adult this line is black); cheeks buffish-white as in the adult, but some of the feathers spotted sepia: under-parts pale isabelline or light buff as in adult, but some of the feathers of the upper-breast with irregular V-shaped sepia markings; central pair of tail-feathers in some with two or three irregular wavy bars of sepia; primaries black as in the adult, but broadly tipped buff (in the adult the primaries are without, or have only very narrow, buff tips); greater, median and lesser coverts isabelline-buff instead of isabelline as in adult, and with irregular V-shaped subterminal sepia markings and edged buff. In some the sepia markings on the greater coverts are ill-defined or absent.

FIRST WINTER.—*Male and female.*—The body-feathers (not all the scapulars, nor usually all the feathers of the back and rump), apparently occasionally the two central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted from May to November, but not the rest of the tail-feathers and apparently not usually the rest of the wings. After this moult the birds are like the adults, but distinguished by the retained juvenile feathers of the back and rump, by the broad buff tips to juvenile primaries and by the retained juvenile wing-coverts.

N.B.—In some examples it would appear that some remiges and their coverts are also renewed at this moult or at the pre-nuptial moult, though in the specimens examined none of these feathers were actually found in quill; the new primaries are like those of the adult and are without the broad buff tips.

FIRST SUMMER.—*Male and female.*—The body-feathers (but not all the scapulars or all the feathers of back and rump), sometimes the central pair of tail-feathers, some innermost secondaries and apparently their coverts and some median and lesser coverts are moulted from December to March. The first summer bird is like the adult, but can be distinguished by the retained juvenile body-feathers, remiges and wing-coverts as in the first winter bird.

(To be continued.)



NOTES

LATE NESTING OF RAVENS.

WHILE showing an eyry of a Raven (*Corvus c. corax*) to some friends on July 9th, 1917, I was surprised to find it still occupied by "ravelets," the date being more than two months beyond their regular time of fledging. Thus, in another nest this spring, the young were quite ready to fly on May 6th, and I have other records a week or more earlier than that. The shepherd explained the unusual lateness of these young by telling me that a previous brood had been "perished" by the severe weather in April, snow and hard frost continuing throughout the whole month in the hill-country. If this explanation was correct, it is an occurrence quite outside all previous experience, for so hardy are young Ravens by nature that no severity of climate seems to affect them. For example, I remember in 1915 seeing a brood newly-hatched on March 18th and during the same afternoon there set in one of the most severe snow-blizzards we have experienced for many years at that season. Locally two human lives (besides countless sheep) were lost: yet the little naked Ravens survived it all right. The degree of frost this year, however, was quite exceptionally great for April. The maximum of 26° was recorded during that month and that at only 350 ft. above sea-level. At the altitude of the Ravens' eyry (about 2000 ft.) the temperature would presumably have been well below zero.

ABEL CHAPMAN.

ROCK-PIPITS INLAND IN NORD, FRANCE.

ON November 3, 1916, I was surprised to see a Rock-Pipit in a low-lying meadow at Nieppe, near Armentières, Nord, France. A few days later I met with the species again near Meteren, west of Bailleul. Both these places are some 35 miles from the nearest point of the coast. Of course I cannot say whether they were *A. s. petrosus* or *A. s. littoralis*.

C. J. ALEXANDER.

WAXWINGS IN SOMERSET.

Two Waxwings (*Bombycilla garrulus*) were shot on the main road between Westbury and Easton, in the Cheddar Valley, Somerset, by Mr. Arthur Phelps on February 12th, 1917. The occurrence of this species in Somerset is rare.

STANLEY LEWIS.

CURIOUS NESTING SITES OF SPOTTED
FLYCATCHER.

IN June 1916 I saw a nest of the Spotted Flycatcher (*Muscicapa s. striata*) built almost on the end of a branch of a cedar and some ten feet from the ground. The nest held five eggs and a brood was reared. I have often seen nests flat on branches and well away from a trunk, but never in such a swaying position as this one was.

Flycatchers seem to have quite a liking for using old nests for a foundation, and at the present time I have three under observation which are built in nests of Robin, Blackbird and Pied Wagtail, and which have already had broods reared in them by their builders this year. I have also seen an old Chaffinch's nest in a small standard fruit tree used by Flycatchers quite soon after the Chaffinches had flown.

J. H. OWEN.

THE habit of building upon nests of other species of birds is sufficiently common in the case of the Spotted Flycatcher to deserve fuller notice than the brief reference to a single case in Saunders's *Manual* (2nd Edit. p. 158).

Mr. H. S. Davenport has recorded the use of a Hawfinch's nest containing eggs as the site of a Spotted Flycatcher's nest (*Field*, July 7, 1900), and Mr. O. V. Aplin mentions two instances of the use of a Goldfinch's nest (*Zool.* 1906, p. 448 and 1907, p. 324). Greenfinch's nests are recorded by Miss E. L. Turner (*Brit. Bird Book*, II., p. 267) and myself. Besides the case mentioned by Mr. J. H. Owen, Mr. H. S. Davenport mentions another occasion on which a Chaffinch's nest was used (*Victoria Hist. of Leicester*, I., p. 125), one is also referred to by Miss E. L. Turner (*Brit. Bird Book*, II., p. 267), and Mr. J. A. Harvie-Brown actually records a Flycatcher's nest built on the top of an occupied Chaffinch's nest, from both of which young were reared! (*Vert. Fauna of Tay*, p. 106). The nest of the Song-Thrush has been utilized on a good many occasions, and cases are on record in the *Birds of Essex*, p. 108, the *Fauna of Lakeland*, p. 123, the *Brit. Bird Book*, II., p. 267, the *Vertebrate Fauna of Cheshire*, I., p. 184, the *Victoria History of Yorkshire*, I., p. 329, and the *Birds of Ireland*, p. 47, while other instances have been recorded from Derbyshire by Mr. A. Cox (*Field*, Sept. 1, 1900), and from Wales by Mr. J. Walpole Bond.

In *Brit. Birds*, X., p. 117. Captain W. M. Congreve mentions a case in which a Mistle-Thrush's nest was adapted, and Mr. O. Grabham refers to another instance in which an old nest of this species was used yearly (*Vict. Hist. of Yorkshire*, I.

p. 329). The same writer also includes the Blackbird among those species whose nests he has known to be used, and Mr. H. S. Gladstone gives another instance in the *Birds of Dumfriesshire*, p. 59 (cf. also *Field*, Aug. 18, 1900). The late Lieut. E. B. Dunlop also mentions breeding in nests of Blackbird and Thrush (MSS. notes).

Mr. Grabham (*loc. cit.*) also gives a single instance of a Hedge-Sparrow's nest being occupied, while Swallows' nests have been recorded by Captain W. M. Congreve (*B.B.*, X., p. 117), Mr. C. R. Haines (*Birds of Rutland*, p. 44), twice by Mr S. Lewis (*Zool.*, 1898, p. 429 and 1899, p. 556), the late A. G. Leigh, (*B.B.*, IV., p. 120) and the Rev. C. Wolley Dod (*Field*, Aug. 14, 1897). This last case is that referred to by Howard Saunders.

An attempt to breed in a House-Martin's nest is mentioned in the *Vert. Fauna of Cheshire* (I., p. 184), while Mr. S. P. Gordon met with a nest built on the top of that of the Dipper (*Hill Birds of Scotland*, p. 262). Including the Pied Wagtail and Robin, as recorded above by Mr. Owen, the nests of no fewer than thirteen species are now known to have been used by Spotted Flycatchers as breeding-sites, and probably the list might be still further extended. F. C. R. JOURDAIN.

BREEDING-HABITS OF WILLOW-WARBLER AND NESTING-SITES AT CONSIDERABLE HEIGHTS FROM GROUND.

On the morning of June 20th, 1917, a Willow-Wren (*Phylloscopus t. trochilus*) was observed from one of the house-windows here (High Ackworth, Yorkshire), seeking, at the foot of an ivy-clad wall in the garden, a place in which to build its nest. A building-site was very soon selected between the stems of the ivy and the wall, at a measured height of three feet six inches from the ground, and at a distance of about ten yards from the window.

From the time of fixing upon the position for the nest, through the afternoon, until dusk, the bird was busily engaged in nest-building, the material for which, largely composed of peat-fibre, it found in the garden-beds close to the site. The nest was in an advanced state in the evening, having been roofed in.

Building operations were continued on June 21st, and on the morning of June 22nd I thought I saw the bird's mate, but, from previous and subsequent observations, I think I must have been mistaken. Feathers were carried to the nest on June 22nd. The feathers had to be fetched from a distance,

and only one bird was seen carrying a feather at one and the same time. The nest was practically completed and lined with feathers by the evening of June 22nd. The bird was seen to take one feather to it on the morning of June 23rd.

The first egg was deposited in the nest on the morning of June 24th, and another egg was added each succeeding morning until the nest contained five eggs, the fifth and last egg being produced on June 28th, and on the morning of the same day the bird began to sit. Nothing was seen or heard of the bird from the time it was observed taking a feather to the nest on June 23rd until it began to incubate on June 28th. None of the eggs were hatched at nine o'clock in the evening of July 9th, but at nine o'clock in the morning of July 10th three were hatched, and at nine o'clock in the evening of the same day another egg was hatched, and the remaining egg—the fifth—was hatched between nine o'clock in the morning and nine o'clock in the evening of the following day, July 11th. The bird commenced feeding the brood on July 10th, the day on which the first four eggs were hatched. The feeding of the young birds was continued each day until about half-past nine o'clock in the evening, when the parent-bird retired to the nest, covering her brood.

I had the nest and its environs under observation for about half-an-hour in the morning and an hour in the evening, and frequently for varying periods at other times of the day throughout the operations: and I made close inspections of the nest about nine o'clock in the morning and nine o'clock in the evening. At these times the sitting-bird voluntarily left the nest for a few minutes and I took the opportunity, when it was away, of looking at the nest.

On approaching the nest in the late afternoon of July 21st, one of the young birds flew out of the nest, and the other young birds must have shortly afterwards followed it, for in the evening of the same day the nest was found to be empty. One of the young birds was caught and replaced in the nest. The parent-bird was on the nest after nightfall the same day, July 21st, and it uttered a hissing sound when the nest was then visited. Probably the brood would have remained a day longer in the nest had they not been disturbed. The young birds, when they left the nest, took cover under thick herbaceous plants growing in close proximity to the nest, where they apparently remained all the following day, July 22nd, being fed by the parent-bird with a small greenish-coloured caterpillar which it found feeding upon Rose-bay Willow-herb, *Epilobium angustifolium*. The nest was unoccupied on the night of July 22nd. The next day, July 23rd,

the young birds had evidently moved some distance away, where the parent-bird was heard calling. The young birds (four were counted) appeared in the kitchen-garden on July 29th, when they were being fed by the parent-bird. They then seemed strong on the wing and to be capable of looking after themselves.

From the commencement of the construction of the nest on June 20th to the young birds leaving it on July 21st involved a period of thirty-one completed days of twenty-four hours each; and the following operations or processes occupied the periods stated—a day being reckoned as twenty-four hours:—

Nidification, June 20th to 23rd—3 days.

Laying of eggs (five), June 24th to 28th—4 days.

Incubation of four eggs, June 28th to July 10th—12 days.

The fifth egg was hatched on July 11th.

Fledging of young birds. Four nestlings, July 10th to 21st—11 days. One nestling, July 11th to 21st—10 days.

I am convinced that one bird only—the female—performed the whole of the work of building the nest, producing the eggs and incubating them, and the rearing of the brood. With the exception of the doubtful appearance of its mate on June 22nd, nothing whatever was seen or heard in the vicinity of the nest, during the proceedings on question, of any other Willow-Wren than the one bird—the female—which alone and unaided accomplished the undertaking.

As is well known, the Willow-Wren usually places its nest on the ground, and this is only the second example I have personally come across of this species having built its nest at any appreciable distance from it. The other instance referred to was a Willow-Wren's nest I found in June 1899, in a compact wild rose-bush in a wood. This nest was four feet six inches above the ground, and was placed on a branch of a spruce-fir which was growing through the rose-bush.

Howard Saunders (*Illustrated Manual of British Birds*, 2nd edn., p. 70) says the Willow-Wren's nest is exceptionally placed up to four feet from the ground, or even in a hole in a wall, and he told me, since the *Manual* was published in 1899, that four feet still remained his highest record, but several much greater altitudes have been recorded.

WALTER B. ARUNDEL.

ON June 23rd, 1917, we found here (Northumberland) a Willow-Wren's nest built against the trunk of a young spruce-fir at a vertical height of 13½ ft. sheer. These

nests are often built in bushes and low shrubs, and even ivy, but usually within a couple of feet or so from the ground. I have an indistinct recollection of the point being discussed in the *Field* long ago and in which discussion my late brother Alfred took part. Some considerable altitudes were recorded, but none, if I remember aright, so high as 13 ft. This must have been a considerable time ago, since my brother died in 1896.

ABEL CHAPMAN.

A PAIR of Willow-Warblers built a nest last year, 1916, in some ivy growing against a wall in my garden in Westmorland. The nest was about 2 ft. from the ground. This year a nest was built among ivy on the top of the wall, which is about 5 ft. 6 in. high. In both cases the young were successfully reared.

E. U. SAVAGE.

[It is scarcely credible that Howard Saunders can have overlooked the numerous instances of nests of the Willow-Warbler placed at heights exceeding four feet, and possibly the statement was due to some misapprehension or lapse of memory. A nest built in 1904 in trellis on the wall of my house at Clifton was nearly five feet from the ground, and another seen by me at Burton-on-Trent in Mr. H. G. Tomlinson's garden was also five feet from the ground. Similar instances have frequently been recorded, and in some cases this height has been greatly exceeded. Mr. H. Noble states (*Zool.* 1899, p. 556) that the highest nest seen by him was quite twelve feet from the ground in ivy on a house. Mr. J. P. Thomasson found this species breeding on the top of an old nest in a dead fir, about fifteen feet from the ground (*Zool.*, 1868, p. 1294 and *Ornithologist*, p. 187), and Baron A. von Hugel (*Zool.*, 1872, p. 3228) describes a nest seen by him on a branch of a fir tree fully sixteen feet above the ground. It will be noticed that at least two of these records were published long prior to the issue of the second edition of the *Manual*.

The late Lieut. E. B. Dunlop records in his MSS. notes two nests built in ivy against walls at 7 and 8 ft. from the ground in the Lake district.

With regard to the question of the share of the sexes in incubation and rearing the young, there is no doubt that the greater share of incubation at any rate is performed by the hen. It is perhaps worth noting that Naumann states that the cock relieves her during part of the afternoon. Mr. H. E. Howard (*Brit. Warblers*, "Willow Warbler," p. 25) states that during incubation "the male has nothing to do except to find food for himself." He also states that incubation lasts

from twelve to thirteen days, that both parents feed the young, and that the young leave the nest on the 11th or 12th day. Mr. S. E. Brock (*Zool.*, 1910, p. 117) gives incubation period as twelve to thirteen days and fledging-period thirteen to fourteen days. In all the nests which have come under my observation the male has helped to feed the young and has shown great anxiety when the nest was approached, but in the case of the bird watched by Major Arundel, it is possible that some accident may have happened to him during the time of incubation.—F. C. R. JOURDAIN.]

SWALLOWS AND MARTINS SETTling AND FEEDING ON FLOWERS.

ON the evening of July 29th, 1917, at 8.45. I was watching a large flight of Swifts (*Apus a. apus*), Martins (*Delichon u. urbica*) and Swallows (*Hirundo r. rustica*) over a small grassy knoll at Grasmere. On the top of the knoll there were tall plants of ragwort and thistle plainly to be seen standing out against the sky; the birds were flying low over the plants and sometimes hovering like a moth at the flowers, and now and again Swallows and Martins would settle for a few seconds on the flat heads of the ragwort and pick off the insects. On examining the plants I found a quantity of little black flies. The Swifts were never observed to perch. The flight lasted about 15 minutes. I have never previously seen Swallows or Martin feeding in this way.

HERBERT MASSEY.

MARTIN FEEDING YOUNG SWALLOWS.

A PAIR of Martins (*Delichon u. urbica*), this summer, 1917, built a nest outside a farmhouse, near here (Cheadle, Staffordshire), on an iron bracket underneath a spout running under the eaves. House-Sparrows evicted the Martins and partly demolished the nest, leaving only the lower portion, which formed a cup, well protected from rain by the spout above. A pair of Swallows (*Hirundo r. rustica*) then took possession of the remaining portion of the nest, lined it with feathers, and duly hatched off four young ones. A boy, who is a good observer of birds, told me, when I went to "ring" the young birds that a few days before he had distinctly seen a Martin go to the nest and feed the young Swallows. The old Swallows appeared to be much annoyed, and tried to drive away the Martin. I have several times myself seen more than one pair of Martins feeding the young in one nest and I have no reason to doubt the boy's observation.

JOHN R. B. MASEFIELD.

[A good many cases of more than one pair of Martins feeding the same brood of young have been noted (*e.g.*, *cf.*

Brit. Birds, V., pp. 136, 190). The same thing has been reported in the case of the Long-tailed Tit (*t.c.*, I., pp. 32, 62). There are also a number of observations of birds of one species feeding the young of another species: instances recorded in this magazine will be found in Vol. I., p. 93, Vol. VII., p. 234, and Vol. X., p. 119.—Eds.]

LARGE CLUTCH OF EGGS OF LITTLE OWL.

I WAS recently shown a clutch of seven eggs of the Little Owl (*Athene n. noctua*) found near Bedford. This bird not only is greatly on the increase in this neighbourhood, but seems to be becoming much more prolific. A few years ago three eggs formed a normal clutch, sometimes four and very rarely five. Now four seems the usual number. The seven eggs in this nest were exactly similar and were probably the produce of one hen.

GEORGE T. ATCHISON.

[Although Newton, Saunders, Seebohm and Dresser agree in giving five or six as the maximum number of eggs laid by the Little Owl, it is an undoubted fact that clutches of seven are occasionally met with in England, as stated by me in the *British Bird Book*, Vol. I., p. 391. Most of the previous records have been from Northamptonshire, where Mr. C. E. Wright took at least five clutches of seven eggs up to the year 1905. Mr. G. H. Lewin has also recorded a nest with this number from the same country. There is also strong evidence that a brood of nine young was hatched out in Holbrook Park, Derbyshire, in 1912. I have also in my possession a clutch of seven eggs of the southern race of this species (*A. noctua glauca*) taken by Lieut.-Colonel Sparrow in Egypt in 1909.—F. C. R. JOURDAIN.]

ROSEATE TERN IN DORSET.

MR. A. W. CHAMPERNOWNE lately informed me that on June 22nd, 1901, when he was visiting a colony of Common Terns (*Sterna hirundo*) in Dorset, he identified an example of the Roseate Tern (*S. d. dougallii*) among the other Terns. Bearing this in mind, I visited the colony, which is a very large one, on June 8th and 26th and July 12th, 1917, in order to find out whether any Roseates were present. During my first visit I occasionally got my glass on to some birds with, apparently, black bills, but I could prove nothing satisfactorily. Mr. Champernowne was with me on June 26th, and we both were puzzled by certain doubtful-looking birds, and once we thought we heard the harsh note of the Roseate, but again nothing definite was proved, though our suspicions were aroused, that one or two Roseates were about.

Dr. Frank Penrose accompanied me on my third visit, and, armed with very powerful glasses, we made a thorough examination of the colony. To our great delight we eventually quite clearly identified an adult Roseate Tern, and possibly a pair were about, but we never clearly saw more than one at a time. All the points of distinction were clearly noted, *i.e.* black bill, red legs, rosy breast, and much paler and more slender appearance when on the wing, and once as the bird passed me it uttered the harsh croak, so unlike the notes of the Common Terns. We could not discover whether the bird had a mate and was breeding, or whether just a straggler, but there is no reason why it should not have been one of a breeding pair. The ternery consists of some thousand pairs, more or less, of Common Terns (I made no attempt at exact estimation) and the identification of the birds is somewhat difficult, as they settle down on their nests among a luxuriant growth of *Lathyrus maritimus* and *Silene maritima* and are almost or quite lost sight of. The Roseate in question kept company more particularly with the Terns which gathered in large parties on the shingle between the nests and the sea, but it also at times joined the crowds fluttering above the eggs and young, where it was soon lost sight of. None of the young Terns could fly on June 26th, but on July 12th many were on the wing, some flying strongly. I noticed both on June 26th and July 12th that there was a great mortality among the young birds, numbers lying about, dead, from no apparent cause. I have heard it suggested that the parents cannot obtain sufficient food for the young.

When scanning the crowds of Terns with my glasses, on the lookout for black bills, I saw birds with dark bills and distinct white foreheads apparently breeding with the rest; these, I take it, were Common Terns hatched in 1916, and apparently breeding in the immature plumage. These were fluttering above the nests with the adult-plumaged birds, and were most certainly not birds hatched in 1917, as all these were still quite small by June 26th. Is this species known to breed in the immature plumage? The Sandwich Tern seems to attain adult plumage and breed when a year old (*v. British Birds*, IV., p. 88), and it will be interesting if observers will state whether it is usual to find the Common Tern in immature plumage, *i.e.* with distinct white forehead and darker bill, in a colony of nesting birds, before the end of June.

F. L. BLATHWAYT.

[The record of the Sandwich Tern referred to above was not at all conclusive proof of breeding when one year old. The watcher at Ravensglass distinctly saw a metal ring on

the leg of a nesting bird, and no ringing had taken place at this colony previous to the year before, but the ring was not examined and the bird may have been ringed elsewhere. There is proof that certain *Passeres* with a distinctive first summer plumage do breed when one year old; there is also proof that some species of waders, ducks, gulls, skuas and the Gannet do not, but little is known and the whole subject would well repay careful investigation.—H. F. W.]

WILLIAM WELLS BLADEN, who died at Stafford, on April 12th, 1917, was for many years secretary of the North Staffordshire Field Club and President in 1895, and was born at Wolverhampton, May 9th, 1847. He is best known to ornithologists by his address on "The Cuckoo and its Foster Parents" (*Rep. and Trans. of the N. Staff. Field Club* 1896, pp. 23-39), with a list of fosterers in whose nests the eggs had been found, comprising 122 European species, while twenty-three additional Asiatic forms are added on pp. 38-39. He published a translation of Dr. Rey's paper on the variation of Cuckoo's eggs in the *Zoologist* (1899, pp. 176-178) and contributed some notes on birds to the *Report and Trans. of the N. Staffs. Field Club* from 1906 onwards. He had been in failing health for some time past and had been obliged to give up all active work.

ERRATUM.—*antea*, p. 72, line 13, for 1910 read 1905.

EGGS MENTIONED IN *Ootheca Wolleyana* AS TAKEN IN HOLLAND.—*Ardea* (Vol. VI., 1917, pp. 21-32) contains a paper by A. A. van Pelt Lechner on the eggs of Dutch origin mentioned in *Ootheca Wolleyana*. The spelling of place names is corrected in several places, and attention is called to the fact that an egg of the Kite (*Milvus milvus*) obtained by Newton from Newcombe in 1852 is apparently the only known specimen of Dutch origin. The White-eyed Duck (*Nyroca nyroca*) was only proved definitely to breed in Holland in 1914 by Dr. van Oort, but it is interesting to note that Newton possessed four specimens taken by J. Baker at Ouderkerk in 1856, which agree closely with eggs from Algeria and Hungary.

BITTERN IN LEWIS, OUTER HEBRIDES.—Mr. D. MacKenzie states (*Scot. Nat.*, 1917, p. 70) that an example of *Botaurus s. stellaris* was found in an exhausted condition at Carloway, Loch Roag, on the island of Lewis, on January 30th, 1917. The bird has very rarely been noted in the Outer Hebrides.



LETTERS

CORRECT PRONUNCIATION OF CHOUGH AND POCHARD.

To the Editors of BRITISH BIRDS.

SIRS,—I think I am correct in stating that the generally accepted pronunciation of the word Chough is like the word rough. The other day, however, when talking to a Cornishman, he spoke of the Choughs, pronouncing the word in the same way as plough. On reflection, it seems to me that this may be the original and correct pronunciation since, as is the case in the names of many of our British birds, the name would then be onomatopœic.

As regards the word Pochard, I have heard competent ornithologists pronounce the first syllable as in pock, in poke, in poach and as in potch: a definite ruling as to the correct pronunciation of this word would be welcome.

HUGH S. GLADSTONE.

LONDON,

August, 13, 1917.

[*The New English Dictionary* (Vol. II., p. 385), which adopts the ordinary pronunciation of the word Chough, gives numerous forms of the word, some of which (Chowe, cowe, kowe) must have been pronounced to rhyme with plough. Chaucer (1381) writes Chowgh (var. readings crow(e), chough(e), choghe, chowhe, clough); Trevisa (1387) chouzhe; Caxton (1481) chowe; Horman (1519) chowghis, etc. Holme in 1688 writes "The Jack Daw . . . is called a Caddesse or Choff." As restricted to *P. pyrrhacorax* and not used generally for a Jackdaw or *Corvus* sp. the first quotation is from Withals Dictionary (1566): "A Cornish Chough; *pyrrhacorax*." Some of the variant forms seem to be rather obscurely related. Mr. W. S. D'Urban, in the *Vict. Hist. of the County of Devon*, gives both "Chuffe" and "Chow" as colloquial names for the Jackdaw, so that both forms seem to have survived to the present day.

With regard to the name Pochard the same authority (Vol. VII., p. 1035) states that "the pronunciation seems quite unfixed. Prof. A. Newton makes the *ch=k*, but Johnson made it as in *poacher*." Among the variant forms are pocharde, poachard, pocard, pocker, pockard, and poker. (It may be noted that Evelyn, in 1667, wrote "potcher" for the word now universally written "poacher.")

In this case there seems to be no generally accepted pronunciation, and the supporters of both long and short *o* and hard and soft *ch* can derive some authority for their usage.—F. C. R. JOURDAIN.]

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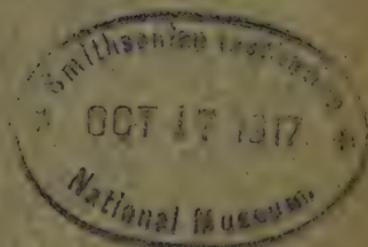
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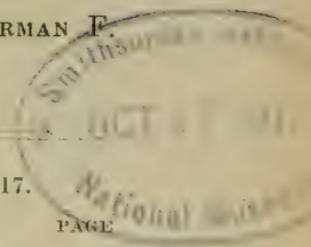
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OBSERVATIONS ON BIRDS SINGING IN THEIR
WINTER QUARTERS AND ON MIGRATION.

BY

C. J. ALEXANDER, B.Sc. (AGRIC.).

I.—SINGING OF BIRDS IN THEIR WINTER QUARTERS.

In an article on "Early Drumming of the Snipe" (*Brit. Birds*, Vol. VI., pp. 354-359), Capt. Lynes suggested that "winter-songsters are those *individuals* which are sedentary or perform comparatively short migration journeys." During five years in Rome, I was able to make extensive notes on the singing of a number of species which occur there as winter visitors; it should be stated that the vegetation in many localities in or near Rome (including the Villa Umberto I., where a large part of my observations was made) is not very different from that of the more northern countries from which several of the species come. This may afford some explanation of the difference between my experience and that of Capt. Lynes in the Mediterranean region (*l.c.*, p. 358).

The following is a list of most of the singing birds met with as winter visitors, either generally or locally:—

STARLING (*Sturnus vulgaris*).—Large flocks winter in the hills; they frequently sing, especially towards evening.

HAWFINCH (*Coccothraustes c. coccothraustes*).—Resident in the hills, but in Rome a winter visitor, sometimes in considerable numbers. The wintering birds sing freely from the end of January to near the time of their departure about the middle of March.

SISKIN (*Carduelis spinus*).—A regular winter visitor to the alders round the Lake of Albano and other suitable localities. Frequently sings from about Christmas onwards, leaving in the second half of March. It is interesting to note that I have heard Goldfinch, Siskin and Serin all singing together in olive trees.

BULLFINCH (*Pyrrhula p. europæa*).—Winters in the hill woods, and sings occasionally in early spring; breeds in the mountains from about 1,000 m. (3,000 ft.).

CHAFFINCH (*Fringilla c. cælebs*).—Only present in winter (mid October to early April) near the Tiber mouth; never heard singing there.

ROCK-BUNTING (*Emberiza cia*).—Winters in the Alban Hills and near the coast; never heard singing in its winter quarters.

WOOD-LARK (*Lullula arborea*).—Only a winter visitor to Rome and the Tiber delta, where it stays from October to early March. Never heard singing, though resident in-

dividuals in the hills sing to the end of October and begin again in late January.

MEADOW-PIBIT (*Anthus pratensis*).—Abundant winterer in all open country to 3,000 ft. or more, according to the snow: arrives in October and remains to the beginning of April. Never heard singing.

ALPINE PIPIT (*A. s. spinoletta*).—Winters on the lower mountains (2,000 to 3,000 ft.), as well as in damp places on the lower ground, arriving in late October and staying till the end of March or early April. Never heard singing in winter quarters. Breeds on the pastures of the Apennine from 5,000 ft. upwards.

GREY WAGTAIL (*Motacilla c. cinerea*).—Abundant winterer in Rome (late September to early March). Sings almost throughout its stay, though not much in December and early January.

COAL-TIT (*Parus a. ater*).—This species breeds in the beechwoods of the Apennine. In 1913-14 there was a considerable winter immigration (mid October to end of March) in Rome and the neighbourhood: these individuals sang almost throughout their stay, showing a marked preference for sunny days.

GOLDCREST (*Regulus r. regulus*).—A winter visitor to Rome, the coast and the hill woods (end of October to early March). Rarely sings before the new year, but does so frequently from early February to its departure. The song is generally rather mixed and the finishing note is rarely heard.

CHIFFCHAFF (*Phylloscopus c. collybita*).—Plentiful as a winter visitor in the parks and gardens of Rome and wherever there are trees in the country round. It is resident in the damper woods from sea-level up to about 300 m., but only a summer visitor in the higher woods. In Rome the winterers arrive towards the end of September and depart in March; they settle down in territories much like Robins, but are not quite exclusive. They sing a little in October and early November, chiefly in the early morning, but otherwise are rarely heard till after the middle of January, from which time they sing vigorously till their departure. The residents near the Lake of Albano begin singing towards the middle of September, but do not sing nearly as freely in autumn as the ones in England; they also seem to be nearly silent in mid-winter.

MISTLE-THRUSH (*Turdus v. viscivorus*).—I have heard this species singing in the hills in December, January and February, at places no great distance below its summer range; as a winter visitor along the coast it is not numerous and I have not heard it sing.

SONG-THRUSH (*T. ph. philomelus*).—Abundant from early October to late March, a few staying to early April. The winter residents in the Villa Umberto occupy more or less definite territories, and sing throughout their stay except in case of cold winds: but they never sing really vigorously and only rarely might be said to sing cheerfully: moreover, they never keep on late in the evening as do the residents in England. Besides these "resident" birds, others appear to occur on passage and do not sing.

REDWING (*T. musicus*).—I have never heard this species make attempts at song in Italy as it often does towards spring in England.

BLACK REDSTART (*Phenicurus o. gibraltariensis*).—Winters in Rome and on the coast: several times heard singing in spring, but not with the vigour usual in its mountain haunts.

ROBIN (*Erithacus r. rubecula*).—The winterers arrive in Rome from the middle of September through most of October, and depart mostly in the first half of March. They settle down at once in definite territories: my observations during four winters show that these territories are much the same year after year, and that to some extent the same territories receive their tenants early or late as the case may be; it seems reasonable to suppose that the same individuals return to them as far as possible. On arrival they soon break into full song, but become less vigorous during November; in mid-winter they often hardly sing at all, in spite of the absence of severe cold; in early spring they are again fairly vigorous. Like the Thrushes, they never keep on singing till they go to roost, though in suitable weather they sing as soon as they wake in the morning.*

HEDGE-SPARROW (*Prunella m. modularis*).—Fairly numerous winterer in bushy places, arriving in late October and leaving about the middle of March. Sings occasionally in late autumn and more frequently in spring; near Albano I have heard it sing quite normally, though usually the song is feeble.

WREN (*Troglodytes t. troglodytes*).—Only a winter visitor in the woods and scrub near the Tiber mouth, where it is met with from the end of October to the end of February.

* I may mention here that the last note in the evening is not nearly so late about Rome as in England, 30 minutes after sunset being almost the limit; in the morning the time varies between 45 and 32 minutes before sunrise, while in England 55 (or even 60) to 45 is the range. Notes on an individual bird show that the variation depends on light alone (temperature being without effect), though possibly the whole range is changed slightly at different seasons.

The only occasion on which I heard these winterers sing was on Feb. 19, 1916, when three different individuals sang.

WRYNECK (*Jynx t. torquilla*).—This species, also, occurs only in winter in the "macchia" by the coast; I have heard it call at the end of November and beginning of December, as well as in spring.

Of the species which sing more or less regularly, Siskin and Golderest must come from a considerable distance, while Coal-Tit, Thrush and Hedge-Sparrow are far below their breeding zone on the mountains. Hawfinch, Bullfinch and Starling all nest within a short distance, but I doubt whether the wintering individuals come from the near-by mountains. The early date of arrival of some of the Robins also suggests that they may come from the high north. There remain Grey Wagtail, Chiffchaff and Wryneck, which are practically within their own summer range.

On the other hand, among species which rarely or never sing, Wren, Chaffinch and Wood-Lark are found as residents close by, while Rock-Bunting, Black Redstart and Alpine Pipit live on the mountains at different heights; Meadow-Pipits must have come from some distance, and Redwings from a great distance.

I think, therefore, that it cannot be maintained that distance from the breeding-ground is the main factor determining the amount of winter song.

II.—SINGING OF BIRDS ON MIGRATION.

In correspondence following the article already mentioned, Mr. F. W. Headley mentions Nightingale, Willow-Warbler, Whitethroat and Cuckoo as singing while stopping on migration in spring (Vol. VII., pp. 29 and 30); while Dr. C. B. Ticehurst adds Golden Oriole (p. 64).

A large number of species occur on passage in Latium, and the following are my observations concerning them:—

The Tree-Pipit (*Anthus trivialis*) occasionally sings rather feebly (and while settled) on the spring migration. I have never heard any of the three Flycatchers (*Muscicapa striata*, *M. collaris* and *M. hypoleuca*) sing at either season, though the last named I have heard utter its harsh note in spring.

All four species of *Phylloscopus* (*Ph. c. collybita*, *Ph. trochilus*, *Ph. bonelli* and *Ph. sibilatrix*) sing freely in spring—indeed, I should say that all the males must sing; I have heard the two latter also in autumn, but only on a few occasions, and *Ph. sibilatrix* I think not later than early August (the passage lasts from about the 20th of July to near the end of September).

Of the genus *Acrocephalus* I have not often seen individuals stopping on the way in spring, but once I found a Great Reed-Warbler (*A. arundinaceus*) singing in a hedge in dry country: I have not heard *A. scirpaceus* or *A. aquaticus* sing in autumn.

Whitethroats (*Sylvia communis*) stop in large numbers near the coast on the spring migration, but (apart from a few remaining to nest) sing rather little: the Garden-Warbler (*Sylvia borin*) is the only other member of the genus met with regularly, and I have not heard it sing at either season.

The Rock-Thrush (*Monticola saxatilis*) is frequently seen near the coast in spring, but seems not to sing.

The Wheatear (*Oenanthe oenanthe*), Whinchat (*Saxicola rubetra*) and Redstart (*Phoenicurus phoenicurus*) are all abundant in spring, but I have never heard any of them sing, and they are generally quite silent; the same may be said of *O. hispanica*. In autumn Redstarts are often noisy.

Nightingales (*Luscinia megarhyncha*) of course breed in the neighbourhood; but during the spring migration I have often heard them singing in the coast macchia in places where none remain to nest. On the other hand, late Robins (*Erithacus rubecula*), stopping on passage after the winter residents have left, seem usually to be silent.

I have heard Sand-Martins (*Riparia riparia*) singing in numbers near the Tiber mouth on their spring passage.

The flocks of Swifts (*Apus apus*) which stop to feed during the autumn migration, after the local birds have gone, seem always to be silent; but once in spring I heard screaming from a flock which, from their behaviour, appeared to be passers. The Alpine Swifts (*A. melba*), which stop near Albano in the autumn, are also silent.

Cuckoos (*Cuculus canorus*) seem to call only occasionally. I have a note of ten met with on the Isola Sacra on April 12th, 1914, of which three were red and one brown: two sang in a hoarse voice. On the following day seven seen (one red), two or three of which sang. On May 3rd, four grey and three red seen and one other heard. I cannot be sure whether I heard a red one call.

It is evident that the Warblers (particularly of the genus *Phylloscopus*) are much more inclined to sing on migration than the Chats or Flycatchers. With this question, as with that of singing in winter quarters, the tendencies of certain groups seem to play more part than distance from breeding-grounds.

EVIDENCE FOR THE BREEDING OF THE GREEN SANDPIPER IN WESTMORLAND IN 1917.

BY

H. W. ROBINSON, M.B.O.U.

As there is no authentic record of the Green Sandpiper (*Tringa ochropus*) nesting in Great Britain, the following details regarding the breeding of a pair of these birds in Levens Park, Westmorland, during the past summer (1917), will be of interest. On June 24th, Waterhouse the gamekeeper, a first-class field naturalist, observed a wader in the Park which he could not name. He saw it there practically every day until about the third week in July, after which he thought that it had departed. It was very wild and never uttered a call of any sort. He described it to me as something like a Redshank but very dark on the back, and with a large white patch on the rump like a House-Martin. On August 5th, whilst in company with Waterhouse, the Rev. E. U. Savage (a fellow-member of the B.O.U.) and others, I was able to identify the bird, which flew close past us uttering the characteristic call of the species twice, as a Green Sandpiper.

Up to this time the pair had never been seen together and I hardly expected them to be nesting there, but on the morning of August 11th I received a wire from Mr. Savage: "Sandpiper has nested, young running." On the afternoon of August 10th Waterhouse saw both birds together for the first time, calling loudly whilst flying close round him in a great state of excitement, and, looking on the gravel bed, he discovered, running about, two young, almost fully feathered. On Sunday, August 12th, they were so far advanced as to take jumps into the air in their first attempts at flight, and were still there on the 15th. The young birds with the parents were seen several times by Waterhouse and the landlord of the hotel at Heversham, and on one occasion by another, whose name I am not at liberty to mention. As the young could not fly they must have been hatched in the Park or thereabouts. The River Kent where it flows through Levens Park is typical Green Sandpiper ground, one bank consisting of marshy hanging woods.

Saunders, in his *Illustrated Manual of British Birds*, states with regard to this species (2nd ed., p. 609): "From some of our streams it is indeed seldom absent, except during June and July; and even in those months single birds, pairs, or small parties have been noticed in Sussex, Norfolk, Suffolk

Yorkshire, Breconshire and other counties; indeed, there is a possibility, though as yet no proof, that it may occasionally breed with us." *The Hand-list of British Birds* (1912) states: "Occasionally observed throughout summer, and breeding often suspected but never proved." In the new B.O.U. List (1915), we find under Green Sandpiper: "A Bird of Passage and a Winter Visitor. It is not uncommon in England and Wales and is occasionally observed throughout the summer, but has not been proved to breed." The same authority gives its breeding-range as follows: "Northern Europe and Asia, from the Arctic Circle southwards to Germany, Poland, Central Russia and the great mountain ranges of Central Asia," while Saunders states that it breeds as far west as Holstein.

As is now well known, the nesting-habits of the species are curious in that it shows a preference for old nests of Thrushes, Blackbirds, Jays and Ring-Doves, or even Squirrels' dreys, in which to lay its eggs.

[Had one of the young birds been taken and its skin preserved in some public museum, lasting and incontrovertible proof would have been afforded, and it seems to us a great pity that the opportunity of obtaining such proof was missed.—EDS.]

THE MOULTS AND SEQUENCE OF PLUMAGES OF THE BRITISH WADERS.

BY

ANNIE C. JACKSON, HON. MEM., B.O.U.

PART III.

IN the descriptions of plumage in these articles I have adopted some of the colour names from Ridgway's *Color Standards and Color Nomenclature* where I have judged these names would be intelligible to the reader to whom Ridgway's book is not accessible.

GENUS *Glareola*.

COMMON PRATINCOLE (*Glareola p. pratincola*).

ADULTS.—Complete moult in autumn, in some prolonged into winter. From December to June there is a partial moult involving the body-feathers (not all scapulars, nor all tail-coverts), occasionally the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. There is little difference in coloration between the winter and summer plumages. In summer plumage the feathers of the crown, nape and sides of neck are without tawny edges, the chin and throat are light buff deepening to warm buff at the sides, without sepia streaks as in winter plumage; a well defined black line (faintly edged white) extends from the anterior corner of the eye and encircles the throat; in the male the lores are black instead of warm buff as in winter, and a very narrow black line, absent in winter plumage, extends from the lores along the upper mandible almost to the external opening of the nares; in the female the line is absent and the lores are olive-brown. The sexes are alike in winter plumage.

N.B.—One April specimen examined was moulting the primaries, another May specimen had half the secondaries new.

JUVENILE.—*Male and female.*—Resembling the adult in winter plumage, but the upper-parts, innermost secondaries and coverts (not upper tail-coverts which are as in the adult) olive-brown, the feathers shaded centrally or subterminally with sepia or black-brown, and tipped and notched creamy or light buff, instead of being uniform olive-brown; feathers of crown and nape with narrow tawny edges as in the adult; from the front of the eye to the opening of the nares a warm buff streak, some of the feathers spotted sepia; immediately in front of, and passing below, eye a black-brown or sepia line, continuous with a series of more or less pronounced sepia or black-brown streaks encircling the throat as in adult; chin and throat as in the adult but streaks narrower and in some absent; feathers of upper-breast fawn or pale olive-brown with black-brown or sepia marks towards tip and edged white or buff, the rest of the breast warm or light buff (in the adult the breast is fawn, the feathers faintly tinged buff and narrowly edged tawny, lower breast buff); tail-feathers darker olive-brown than in the adult and usually with subterminal black-brown markings and edged light buff, the two outer pairs shorter and broader, not so long and tapering as in the adult, with rounded tips and only slightly emarginated on the inner webs, the olive-brown tips of the tail not so extensive as in the adult and the white bases proportionately greater;

primaries tipped buff: white tips to secondaries in some suffused buff; greater, median and lesser coverts olive-brown with a subterminal bar of sepia or black-brown and edged cream or light buff, instead of uniform olive-brown as in the adult.

FIRST WINTER.—*Male and female*.—The juvenile body-plumage, tail-feathers and wing-quills and wing-coverts are moulted from August to November. After this moult the birds are like the adults and can be distinguished only when one or two juvenile greater, median or lesser coverts are retained.

BLACK-WINGED PRATINCOLE (*G. nordmanni*).

ADULTS.—Complete moult from autumn to December. In spring there is a partial moult, which involves the body-feathers (not all the tail-coverts), sometimes the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. There is little difference in coloration between the winter and summer plumages. In summer plumage, the feathers of the crown, nape, ear-coverts, cheeks and sides of neck are without buff edges, the chin and throat are light buff deepening to warm buff at the sides and without the black-brown streaks (in some specimens the chin is white), in front of the eye is a small black patch from which a black line passes and encircles the throat as in *G. p. pratincola*; in the male a black line broader than in *G. p. pratincola* passes from the anterior corner of the eye and across the lores to the opening of the nares; in the female this black line (absent in female *G. p. pratincola*) extends only a little way beyond the corner of the mouth. In winter plumage this black line is absent, a buff line, minutely spotted with dusky, passing from a small black patch in front of the eye to the opening of the nares. The sexes are alike in winter plumage.

JUVENILE.—*Male and female*.—Similar to juvenile *G. p. pratincola* but the axillaries and under wing-coverts black, the latter tipped chestnut; in *G. p. pratincola* the axillaries are bay, the under wing-coverts bay and black (the amount of bay varies individually); as in *G. p. pratincola* the tail-feathers are edged light buff and the two outer pairs are much shorter, rounder and broader than in the adult and not so sharply emarginated: the dark olive-brown tips of the tail-feathers are not so extensive as in the adult, the white bases being proportionately greater; secondaries black with a dull violet-green gloss as in the adult, but narrowly tipped light buff or cream (not deep olive-brown tipped white or white washed buff as in juvenile *G. p. pratincola*).

FIRST WINTER.—*Male and female*.—Moult as in *G. p. pratincola*. After this moult the birds are like the adults, but the black patch in front of the eye is apparently smaller in the male and smaller and ill-defined in the female. In some specimens, some retained juvenile wing-coverts offer a further distinguishing character.

GENUS *Charadrius*.

THE members of this genus have a complete moult in autumn, prolonged into mid-winter in the American Golden Plover and the Asiatic Golden Plover, and a partial moult in spring involving the body-feathers, in some all the tail-feathers or only the central pair, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. The majority have a distinct winter and summer plumage; the exceptions are the male Ringed Plover, male and female

Little Ringed Plover and the Killdeer Plover, in which the coloration of the summer plumage is the same as that of the winter. The sexes are alike in plumage in the Dotterel (except in summer plumage when the female on the whole is the more brilliant), Caspian Plover, Ringed and Semi-palmated Plover in summer plumage, Little Ringed Plover and Killdeer Plover, and in the winter plumages of the Golden Plovers. The juvenile plumage resembles that of the adult winter, but is distinguishable from it. The first-winter plumage, which usually resembles the adult winter plumage, is acquired by a moult in autumn involving the body-feathers, in some the tail-feathers, some innermost secondaries and coverts, and some median and lesser coverts. The first-winter bird is not to be distinguished with certainty in the Killdeer Plover, and the three Golden Plovers: in the Little Ringed Plover the first-winter bird is easily distinguished from the adult by the absence of the black band on the forepart of the crown, in the Kentish Plover both sexes resemble the adult female, but are distinguished by the retained juvenile wing-coverts, a character by which the first-winter birds of the remaining members of this group may be recognized from the adults, which they otherwise resemble.

The spring-moult is practically the same as that of the adult, and first summer birds can only be distinguished when the edges to the juvenile wing-coverts are not too abraded.

DOTTEREL (*Ch. morinellus*).

ADULTS.—Complete moult from July to November. From March to June there is a partial moult involving the body-feathers (occasionally one or two odd white winter feathers are retained in the centre of the breast), sometimes the central pair of tail-feathers, some innermost secondaries and coverts, some median and lesser coverts, but not all the scapulars nor the rest of the tail or wings. Winter and summer plumages are distinct. The female is slightly larger than the male and in summer plumage is usually more brilliant, in winter plumage the sexes are alike in coloration.

JUVENILE.—*Male and female*.—The juvenile resembles the adult in winter plumage, but the crown is blackish instead of dark sepia, and the feathers are plentifully margined with sandy-isabelline instead of pinkish-cinnamon as in the adult; mantle, scapulars and innermost secondaries blackish-brown, instead of ash-brown, and the feathers fringed sandy-isabelline and cream, instead of pinkish-cinnamon as in the adult; cheeks, throat and sides of neck creamy or warm buff narrowly streaked dusky, not streaked sepia as in the adult; ash-brown feathers of breast fringed paler buff than in the adult, feathers with central streaks and shadings of sepia or subterminal sepia bars, most pronounced at sides of breast, while the belly is buff or buffy-white, not white as in the adult; median coverts sepia edged sandy or light buff, not ash-brown edged pinkish-cinnamon as in the adult.

FIRST WINTER.—*Male and female*.—The body-feathers, sometimes the central pair of tail-feathers, some innermost secondaries and

coverts, and some median and lesser coverts are moulted from September to November: but not all the scapulars nor all the feathers of the back and rump, nor the rest of the tail or wings. After this moult the birds are like the adults, but distinguishable by the retained juvenile median coverts, which differ from those of the adult as already described.

FIRST SUMMER.—Plumage as in adult summer and moult as in adult. First summer birds may only be distinguished from adults when the faded buff edges of the retained juvenile median coverts are not too abraded.

CASPIAN PLOVER (*Ch. asiaticus*).

ADULTS.—Complete moult in autumn. From December to May there is a partial moult involving the body-feathers (not all the scapulars), apparently sometimes the tail, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. Winter and summer plumages are distinct and the sexes are alike.

JUVENILE.—*Male and female*.—Much like the adult in winter plumage, but the upper-parts olive-brown, the feathers plentifully edged creamy and sandy-buff (in the adult the upper-parts are buff-brown, the feathers edged sandy-buff but without the creamy edges); in some juveniles the eye-stripe, cheeks, chin and throat and sides of neck are warm buff, in others cream-buff as in the adult, which has, however, the chin and throat cream-white; wings as in the adult, but the innermost secondaries and coverts, median and lesser coverts edged cream, not sandy-buff as in the adult.

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (but not all the scapulars, and apparently not the feathers of the back and rump), sometimes the central pair of tail-feathers, some innermost secondaries and coverts, and some median and lesser coverts are moulted in autumn, but apparently not the rest of the tail or wings. The birds now become like the adults, but may be distinguished by the worn cream edges (least abraded on the innermost median coverts) of the retained juvenile wing-coverts.

FIRST SUMMER.—Moult as in the adults, after which they apparently become like the adults, but may be distinguished by the edges of the retained juvenile median coverts when not too abraded. (*N.B.*—No first summer female examined.)

RINGED PLOVER (*Ch. hiaticula*).

ADULTS.—Complete moult from August to November. From March to May there is a partial moult, involving the body-feathers, (not all the scapulars), occasionally the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. The winter and summer plumages are alike in coloration in the male: in the female in winter the black band below the white nuchal collar is less defined and intermixed in some with hair-brown feathers, while the feathers at the base of the upper mandible, the lores and feathers around and below the eye and the band on the forepart of the crown are not black as in summer plumage, but hair-brown intermixed with black or blackish-brown feathers with or without narrow buff tips, while the pectoral band, which is black in summer plumage, is composed of black, sooty-brown and ash-brown feathers mostly with white or buff tips. In summer plumage the female is like the male.

N.B.—In some summer males (possibly old birds) the white and black bands across the forepart of the crown and the black pectoral

gorget are broader than in others, while the black patch below the eye is more extensive. In some females, on the other hand, the black and white bands across the forepart of the crown and the black pectoral gorget are narrower than in others, while the patch below the eye may be intermixed with hair-brown feathers.

Two adult winter males in my collection have the black band on the forepart of the crown and the black pectoral band intermixed with a few hair-brown and sooty-brown feathers, those of the pectoral band with broad tips of paler brown, buff or white. One female, Grand Canary, January 10th, apparently adult, was moulting the primaries; the body-plumage was much worn.

JUVENILE.—Male and female.—Resembles the adult female in winter plumage, but the feathers of the upper-parts, innermost secondaries and coverts, and median and lesser coverts (uniform hair-brown in the adult), have creamy or sandy-buff margins, while some feathers have a sub-terminal shading of darker brown. There is no black on the forepart of the crown and the feathers at the base of the upper mandible and lores are hair-brown with sandy-buff margins; the band under the eye is hair-brown (in some intermixed with black-brown): pectoral gorget almost incomplete towards the centre of the upper breast, which is white washed buff; while the feathers of the sides of the gorget are hair-brown (in some intermixed with sooty-brown) with light buff, and in some white, tips.

FIRST WINTER.—Male and female.—The body-feathers (not all the scapulars), the tail-feathers, innermost secondaries and coverts, and some median and lesser coverts, are moulted from August to January, but not the rest of the wings. In first winter plumage both sexes resemble the adults, but may be distinguished by the worn buff edges of the retained juvenile wing-coverts.

N.B.—Some birds of the year examined were moulting primaries and details of some of these are given below. They may be considered as abnormal both as regards the extent and season of their moult.

♂, 23/2/12, Grand Canary, with second primary in quill, rest new, and acquiring some first winter body-feathers. ♂, 24/4/71, Gibraltar, only now acquiring first winter feathers, moulting tail-feathers and with the second primary in quill, the median and lesser coverts worn. One (no sex), Accra, April, with second primary in quill and moulting tail, with a few black feathers on forepart of crown and gorget, but the body-moult seems to have started and stopped.

FIRST SUMMER.—Moult as in the adult, after which both sexes resemble the adults and are only to be distinguished when the buff edges to the wing-coverts are not too abraded.

N.B.—One or two specimens examined were moulting the primaries.

SEMI-PALMATED RINGED PLOVER (*Ch. semipalmatus*).

ADULTS.—Complete moult from July to December. From January to May there is a partial moult, involving the body-feathers, not all the scapulars nor all the feathers of the back and rump (in some the back and rump does not appear to be moulted), apparently occasionally the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts but not the rest of the wings. The male in winter plumage has the narrow line at the base of the upper mandible from eye to eye drab [not black as in ♂ *Ch. hiaticula*]; crown drab, black band on forepart of crown [present in *Ch. hiaticula*] absent (in some specimens the forepart of the crown is intermixed with some black-brown feathers); black nuchal collar ill-defined and in some absent; patch below eye and pectoral band drab more or less intermixed with black-brown feathers [not black as in *Ch. hiaticula*]. The

female is like the male, but the nuchal collar is absent, and the patch below the eye and the pectoral band are drab. The summer plumage is like that of *Ch. hiaticula* and the sexes are alike: in some females the patch below the eye and the pectoral band are intermixed with drab feathers.

N.B.—One male, Cozumel Island, Yucatan, January, had the 4th primary of each wing in quill.

JUVENILE.—*Male and female.*—Similar in plumage to juvenile *Ch. hiaticula*, but the inner secondaries (not long innermost secondaries) as in adult *Ch. semipalmatus*, *i.e.* drab or dusky-brown slightly marked with white: in *Ch. hiaticula* the inner secondaries are more or less white.

N.B.—This species is distinguished from *Ch. hiaticula* in all plumages by the pronounced webbing between the toes.

FIRST WINTER.—*Male and female.*—The body-feathers (not all the scapulars), not the tail-feathers in the few specimens examined, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings, are moulted in late autumn and early winter. After this moult the birds are like the adults and are only to be distinguished by the buff tips to the retained juvenile wing-coverts.

FIRST SUMMER.—(Not examined.)

Three specimens (♀ Florida, April 15th, ♂ Peru, May 18th, ♂ Coquimbo, June), were in worn first winter plumage with one or two new body-feathers, but no moult apparent.

LITTLE RINGED PLOVER (*Ch. d. curonicus*).

ADULTS.—Complete moult from July to November. From February to May there is a partial moult involving the body-feathers (not all the scapulars), occasionally the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts (the median and lesser coverts are not always moulted), but not the rest of the wings. There is no difference in coloration between the winter and summer plumages, and the sexes are alike. *N.B.*—In some females the black patch on the ear-coverts is smaller and more or less intermixed with drab-brown feathers in some, black feathers more or less absent.

JUVENILE.—*Male and female.*—Like the adult but has no black on the forepart of the crown; the feathers of the crown, mantle and scapulars, instead of being almost uniform drab-brown as in the adult, have sandy-buff edges and subterminal sepia borders; the black nuchal collar is narrower and black-brown rather than black; the ear-coverts and the band under the eye are drab-brown or sepia, the feathers edged buff, not black as in the adult: the pectoral band (black in the adult) is drab-brown narrowing and almost incomplete towards the centre, the feathers tipped buff: the tail-feathers are more or less washed buff at tip, while the innermost secondaries and coverts and median and lesser coverts (drab-brown, narrowly edged white in the adult) have sandy-buff fringes with faint subterminal sepia borders.

FIRST WINTER.—The body-feathers (but not all the scapulars, and apparently not the feathers of the back and rump), the tail-feathers, innermost secondaries and coverts, some median and lesser coverts are moulted in autumn, but not the rest of the wings. After this moult the male resembles the adult, but there is no black on forepart of crown; the forehead is cream-buff and the rest of the crown drab-brown, the feathers edged sandy; the black band below the white nuchal collar is in some less defined and intermixed with drab-brown feathers: the lores are black tipped buff, the ear-coverts dusky brown, not black as in the adult: the black pectoral band is narrower towards the centre than in the adult, and intermixed with drab-brown feathers,

and the feathers are broadly edged buff or white: except for the retained juvenile median and lesser coverts, the wings are the same as in the adult. The female resembles the male, but the black collar on the nape is not so well defined and is plentifully intermixed with drab-brown feathers; lores and ear-coverts dusky brown; pectoral band ash-brown with broad buff edges and decreasing in width towards the centre, where it is all but incomplete.

FIRST SUMMER.—*Male and female.*—The body-feathers (but not all the scapulars and not the feathers of the back and rump), tail-feathers, innermost secondaries and coverts and occasionally some median and lesser coverts are moulted in spring. After this moult the birds are like the adults and can only be distinguished with certainty when the sandy-buff edges to the juvenile feathers of the back, rump and wing-coverts are not abraded and can be recognized. In the female, the lores and ear-coverts are browner and the pectoral band narrower and not so black as in the adult female, some ash-brown juvenile feathers remaining.

KENTISH PLOVER (*Ch. a. alexandrinus*).

ADULTS.—Complete moult from July to November. From March to May there is a partial moult, involving the body-feathers (not all the scapulars), occasionally the tail-feathers, some innermost secondaries and coverts and some median and lesser coverts, but not the rest of the wings. The winter and summer plumages differ slightly in coloration. The female differs from the male in winter and summer plumages in having no black band on the forepart of the crown; in summer the female has the crown ash-brown with more or less pronounced tawny edges instead of orange-cinnamon as in the male; the lores, the band below the eye and the ear-coverts are pale ash-brown in winter, tawny in summer instead of more or less black as in the male; the patch on either side of breast is ash-brown instead of black as in the male.

JUVENILE.—*Male and female.*—Like the adult female in winter plumage, but the feathers of the upper-parts (except those of the white collar) broadly margined with sandy, instead of faintly edged sandy as in the adult; lores ash-brown, feathers tipped buff, or white washed buff, ear-coverts and eye-stripe more or less washed buff (in the adult female the eye-stripe is white, faintly washed tawny towards the nape, and the lores, band below eye and ear-coverts are pale ash-brown); the patch at sides of breast ash-brown, the feathers edged sandy; tail-feathers, except three outer pairs which are white as in the adult, sepia edged buff; (in the adult the tail-feathers are without the buff tips, the central pair only is sepia, the rest pale brown); wing as in the adult, but the innermost secondaries and coverts and median and lesser coverts ashy-brown, broadly fringed sandy-buff or cream (in the adult the median and lesser coverts, when not abraded, have narrow sandy edges).

FIRST WINTER.—*Male and female.*—The juvenile body-feathers, (but not all the scapulars), the tail-feathers, some innermost secondaries and coverts and some median and lesser coverts are moulted from September to November, but not the rest of the wings. Both sexes now resemble the adult female, but are distinguished by the broad sandy-buff edges to the retained juvenile wing-coverts, especially the innermost median coverts.

FIRST SUMMER.—Moult as in the adult, after which both sexes become like the adults, but are distinguished by the sandy-buff edges to the retained juvenile wing-coverts when not too abraded.

KILLDEER PLOVER (*Ch. vociferus*).

ADULTS.—Complete moult from July to November. From February to June there is a partial moult, involving the body-feathers (not all the scapulars and apparently not all the feathers of the back and rump), some innermost secondaries and coverts, some median and lesser coverts, but apparently not the tail-feathers and not the rest of the wings. (The spring moult in this species is slow and prolonged and in some is not completed.) The winter and summer plumages are alike in coloration. The sexes are alike.

N.B.—Before the spring moult the upper-parts and wings are uniform sepia owing to abrasion of the tawny edges.

JUVENILE.—*Male and female*.—Like the adult, but the black band on the crown narrower and that on the nape ill-defined; feathers of crown, mantle, scapulars, innermost secondaries and coverts sepia edged sandy-buff not edged tawny as in the adult; band from lores to ear-coverts sepia, intermixed with a few black-brown feathers, instead of intermixed with black feathers as in the adult; black pectoral bands narrower; median and lesser coverts as in the adult, but edged sandy-buff, instead of tawny.

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (not all the scapulars and not the feathers of the back and rump), apparently the tail-feathers, some innermost secondaries and apparently their coverts, some median and lesser coverts, but not the rest of the wings, are moulted from August to October. One specimen examined (dated Aug. 13th) was in full body moult, but still had down filaments adhering to the central pair of tail-feathers. After this moult the birds resemble the adults and are difficult to distinguish with certainty. In early winter, the presence of some juvenile median and lesser coverts with narrow worn and faded edges as compared with the uniformly new wing-coverts of the freshly moulted adult, afford a temporary, but not very satisfactory, means of identifying the first winter bird.

FIRST SUMMER.—Moult as in the adult after which the birds are not to be distinguished from the adults.

GOLDEN PLOVER (*Ch. apricarius*).

ADULTS.—Complete moult from July to November. From February to June there is a partial moult involving the body-feathers (not all the scapulars and in some specimens not all the body-feathers, some winter feathers being retained), sometimes the central pair of tail-feathers, occasionally an odd tail-feather, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the tail-feathers, nor the wings. The winter and summer plumages are distinct. The sexes are alike in winter plumage, but in summer the female has the ear-coverts, cheeks and sides of neck more richly washed golden, the feathers less plentifully marked sooty-brown, the white band down sides of neck absent, sides of breast golden, the feathers spotted sepia, the black of the under-parts usually more intermixed with white and golden feathers.

N.B.—It would appear that the Golden Plovers breeding in the British Isles never acquire such rich nuptial plumage as those breeding on the Continent: but as the series examined of sexed British and Continental Golden Plover from breeding localities was small, I merely wish to point out this apparent difference in breeding plumage, which a larger series of specimens may or may not confirm. In all the males from British breeding localities I have examined, the black band at the base of the upper mandible was absent or only faintly indicated, the lores were white, more or less spotted dusky

and tinged golden, instead of black as in Continental males; the white forehead and eye-stripe were usually more or less washed golden and spotted black-brown, the ear-coverts and cheeks black or dusky brown, the feathers with the white bases imperfectly concealed and tinged golden, in some the ear-coverts, cheeks and sides of neck were more or less washed golden and streaked and spotted dusky brown (in Continental males the ear-coverts, cheeks and sides of neck were black or sooty-black); in British males the white band passing from the eye down the sides of the neck to the breast was absent or only imperfectly indicated, while the white patch at the sides of the breast was more or less plentifully intermixed with golden feathers, spotted and marked sepia. In some specimens the under-parts were also intermixed with golden feathers, spotted with sepia, while the vent was more or less white intermixed with golden feathers and an odd black feather, instead of black as in the Continental male. The British breeding female differs from the Continental breeding female in having no white band down the sides of the neck; in having the sides of the breast golden, the feathers spotted sepia; while the under-parts are not of such a uniform black, but are plentifully intermixed with white and golden feathers marked with sepia.

JUVENILE.—*Male and female.*—Very like the adult in winter plumage, but the golden tips to the feathers of the upper-parts and wing-coverts paler; the sides of the face, neck, lower throat and breast paler golden and the feathers with triangular dusky-brown spots and markings (in the adult the sides of the face and neck are bright golden, the feathers with narrow central streaks of dusky-brown, while the feathers of the breast are clouded or streaked drab-grey, edged and notched golden); flanks dusky-white, tinged pale golden and barred, streaked and marked, in some tipped, dusky (in the adult the flanks are white, more or less shaded, or barred drab-grey and notched and tipped golden); belly and vent white as in the adult or dusky-white, the feathers sometimes barred or tipped dusky.

FIRST WINTER.—*Male and female.*—The juvenile body-feathers (not all the scapulars and apparently not the feathers of the back and rump), some innermost secondaries and apparently their coverts, some median and lesser coverts, but apparently not the tail-feathers and not the rest of the wings are moulted from September to November. After this moult, the birds cannot be distinguished with certainty from the adults, though in early winter the presence of some faded and worn wing-coverts and one or more worn scapulars, as compared with the uniformly fresh wing-coverts and scapulars of the newly moulted adult, afford a temporary, but somewhat uncertain distinguishing character.

AMERICAN GOLDEN PLOVER (*Ch. d. dominicus*).

ADULTS.—Complete moult from August to February. From March to July there is a partial moult involving the body-feathers (not all the scapulars, nor all the feathers of the back and rump), usually the central pair of tail-feathers, occasionally an odd tail-feather and exceptionally all the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. (In some specimens some winter body-feathers are retained.) The winter and summer plumages are distinct. The sexes are alike in winter plumage, but in summer the female has the black of the under-parts usually intermixed with white, and the under tail-coverts are white with brown or black-brown markings, not black, barred or marked with white as in the male. *N.B.*—The moult of the remiges appears to take place in late autumn and winter.

JUVENILE.—*Male and female.*—Resembles the adult in winter plumage but the upper-parts brown-black or dark sepia, notched and tipped golden, much as in juvenile and adult winter *Ch. apricarius*, instead of fulvous-brown with the feathers slightly margined golden as in the adult *Ch. d. dominicus*; breast fulvous, more or less streaked or barred darker fulvous or sepia, the feathers notched at the tip with pale yellow or cream, instead of edged white as in the adult; flanks pale fulvous, tipped and barred darker fulvous and barred white or cream; belly washed pale fulvous and in some barred darker fulvous; (in the adult the flanks are pale fulvous tipped white and the belly is white); tail-feathers sepia, indistinctly barred darker and notched and tipped golden (not notched and tipped white as in the adult); innermost secondaries and coverts as mantle; median and lesser coverts black-brown or sepia slightly notched creamy-white, or golden; (not fulvous-brown narrowly tipped dusky white or pale yellow as in the adult, in which the innermost secondaries are fulvous-brown shaded with bars of black-brown and very faintly edged white).

FIRST WINTER.—The juvenile body-plumage (not all the scapulars), some innermost secondaries and apparently their coverts, some median and lesser coverts, but apparently not the tail-feathers and not the rest of the wings, are moulted in autumn and winter. After this moult the birds cannot be distinguished with certainty from the adults.

ASIATIC GOLDEN PLOVER (*Ch. d. fulvus*).

ADULTS.—Complete moult from August to February. From March to May there is a partial moult involving the body-feathers (not all the scapulars), the central pair of tail-feathers (in some the three central pairs), some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings or tail. A few winter body-feathers are sometimes retained. The winter and summer plumages are distinct. *Ch. d. fulvus* is smaller than *Ch. d. dominicus* and may also be distinguished by having the upper-parts in winter black-brown, the feathers notched, tipped and barred old gold, not fulvous-brown, with the feathers slightly margined golden as in *Ch. d. dominicus*. In summer *Ch. d. fulvus* has the upper-parts more plentifully spangled with golden and the under tail-coverts in both sexes are white barred with black. The sexes are alike in winter plumage, but in summer the female has the under-parts of a browner black, some feathers tipped, or more or less white, and plentifully intermixed with new or old white feathers; in the male, the under-parts are sometimes interspersed with new or old white feathers.

JUVENILE.—*Male and female.*—Like juvenile *Ch. d. dominicus*, but has the upper-parts notched and tipped with paler golden; breast golden, the feathers streaked fulvous (instead of fulvous, more or less streaked or barred darker fulvous or sepia, the feathers notched and tipped pale yellow or cream as in *Ch. d. dominicus*); flanks white streaked fulvous, in some notched and tipped golden, belly and vent white in some with the feathers notched golden; (in *Ch. d. dominicus* the flanks are pale fulvous or white, tipped and barred darker fulvous and barred white or cream, and the belly is washed pale fulvous and in some barred darker fulvous); tail-feathers and wing-coverts as in *Ch. d. dominicus*.

FIRST WINTER.—The juvenile body-plumage (not all the scapulars) innermost secondaries and coverts, some median and lesser coverts, but apparently not the tail and not the rest of the wings, are moulted from September to January. After this moult the birds are not to be distinguished with certainty from the adults.

GENUS *Squatarola*.GREY PLOVER (*Squatarola squatarola*).

ADULTS.—Complete moult from July to December. From February to May there is a partial moult involving the body-feathers (not all the scapulars nor all feathers of the back and rump), usually the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings. A few winter body-feathers are sometimes retained on the upper- and under-parts especially in females. The winter and summer plumages are distinct. The sexes are alike in winter plumage, but in summer the female has very small, and the male broad, white tips to the feathers of the upper-parts; in the female the black under-parts are largely intermixed with white feathers, many of the feathers have brownish-black, instead of black, tips, while the white bases of the feathers are more extensive than in the male; the wing-coverts are more narrowly tipped white than in the male.

JUVENILE.—*Male and female*.—The upper-parts are distinct, but the under-parts resemble the adult in winter plumage. Upper-parts and innermost secondaries and coverts dark sepia or blackish-brown, the feathers notched and edged with pale gold or cream; lower throat and breast white, or light buff, in some washed pale golden, the feathers with median streaks, barrings and shadings of sepia or dusky-brown, some with faint terminal dusky-brown tips; (instead of pale ash-brown, with the feathers fringed white, or white with the feathers marked and shaded ash-brown, those of throat streaked dusky-brown as in the adult); flanks white or pale brown with pale sepia bars and markings and shaded same; (in the adult the flanks are white, more or less washed ash-brown and with dark shafts, without the bars and markings of the juvenile); tail-feathers washed golden and barred white and sepia; (instead of barred white and blackish-brown bars decreasing and irregular on outer pairs, central pair often washed ash-brown, as in the adult); wing as in the adult, but greater coverts more narrowly edged white than in the adult, white tips incomplete towards centre of tip of feather and white notches larger and more pronounced: (in the adult the greater coverts are edged all round and slightly notched white); median and lesser coverts pale sepia or dusky-brown, notched white, cream or golden; (instead of ash-brown edged and notched white as in the adult); innermost median coverts notched at the tip or side of feather with golden or creamy-white (in the adult these coverts are tipped and notched white).

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (not all the scapulars and not feathers of back and rump) occasionally the tail-feathers, usually some innermost secondaries and coverts, some median and lesser coverts, are moulted from September to January, but not the rest of the wings. After this moult the birds are like the adults from which they are distinguished by the pale golden tips, which later fade to white and abrade, to the retained juvenile feathers of the rump; (in the adult the rump is ash-brown, the feathers tipped white); also by the spear-like shape of one or more very abraded juvenile innermost secondaries, which are notched in a peculiar manner owing to the abrasion of the creamy-coloured portions; and by the retained juvenile wing-coverts.

FIRST SUMMER.—Apparently like the adult, and only to be distinguished by the innermost median coverts. Only one male and one female were examined, and in both a good many winter body-feathers had been retained. The moult is apparently as in the adult: in one specimen the tail-feathers were old and worn, in the other one of the central tail-feathers appeared to be new.

GENUS *Chettusia*.SOCIALE PLOVER (*Chettusia gregaria*).

ADULTS.—Complete moult from July to December. In spring there is a partial moult involving the body-feathers (not all the scapulars), occasionally the central pair of tail-feathers, usually most innermost secondaries and their coverts, but apparently not the median or lesser coverts and not the rest of the tail-feathers nor the wings. In some specimens some winter feathers are retained on the head, upper- and under-parts. The winter and summer plumages are distinct. The sexes are alike.

N.B.—The following females examined were not in full breeding plumage, viz. : ♀ adult, South Altai, June 4th, with no black on the belly, which was hair-brown ; ♀ adult, Feb. 28th, in full body-moult and getting hair-brown feathers on the belly, no black feathers apparently coming in. A ♂, May, South Russia, had the inner primaries of both wings in quill.

JUVENILE.—*Male*.—Resembles the adult in winter plumage, but many feathers of the olive-brown crown are heavily spotted blue-black and notched at sides light buff ; (in the adult, those of forepart of crown and, in some, some feathers of hinder crown, usually have small spots or streaks of black towards the tips of the feathers, otherwise the crown is olive-brown, the feathers narrowly tipped warm buff) ; mantle, scapulars, back, rump, innermost secondaries and coverts olive-brown, the feathers edged sandy, some of the feathers shaded blackish olive-brown subterminally ; (in the adult these parts are olive-drab, the feathers with broad fringes of ochraceous-buff) ; throat and breast cream, heavily streaked sepia, with V-shaped marks or central shadings of same ; (in the adult the breast is suffused palest drab, the feathers tipped white or light buff and some of the feathers with V-shaped markings, shadings or narrow streaks of olive-drab or olive-brown) ; median and lesser coverts olive-brown, broadly edged sandy ; (not pale olive-drab, tipped light or ochraceous-buff as in the adult).

N.B.—No female examined.

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (not all the scapulars), occasionally the central tail-feathers, some innermost secondaries and coverts, some median and apparently some lesser coverts are moulted in late autumn, but not the rest of the wings or tail-feathers. The birds now resemble the adults in winter and are only to be distinguished by the retained olive-brown juvenile median and lesser coverts, with worn sandy edges as compared with the uniform fresh pale olive-drab wing-coverts of the adult.

FIRST SUMMER.—Moult as in the adult, but sometimes some median and lesser coverts are moulted. The birds are like the adults, from which they are distinguished by the narrow, sandy, or creamy edges of the retained juvenile wing-coverts least abraded on the innermost median and lesser coverts, and by the worn and faded appearance of the juvenile median coverts.

(To be continued.)

NOTES

RAVEN WITH ONLY ONE EYE.

IN July, 1917, Mr. George Bolam sent me from Alston, Cumberland, a Raven (*Corvus c. corax*) which was moulting from the juvenile to the first winter plumage. The bird was considerably emaciated and the under mandible was twisted from right to left. On skinning the bird I found that the right orbit was contracted by the bone of the skull to about half its normal size : it contained no trace of an eye, and the skin covering this orbit was entirely closed and appeared never to have had an opening. The left eye was normal. Such a case must, I think, be rare in a wild bird, and seems worth putting on record.

Dr. N. F. Ticehurst thinks that the congenital absence of the eye was the cause of the contracted orbit, as there would be nothing to keep it expanded during ossification. He also suggests that unilateral vision, leading to one-sided movements during feeding, may have influenced the deviation of the bill by causing unequal development or rate of growth.

H. F. WITHERBY.

CROSSBILL BREEDING IN KENT.

ON July 8th, 1917, I saw, near Hever, three young Crossbills (*Loxia c. curvirostra*) being fed by their parents. The young ones were quite small and could only just fly, so that they must have been bred in the near neighbourhood. The date is also exceptionally late and perhaps worthy of note.

E. G. B. MEADE-WALDO.

CROSSBILLS IN CO. ANTRIM.

LAST year I recorded Crossbills (*Loxia curvirostra*) in County Antrim (Vol. X., p. 116). This year (1917) I have pleasure again in recording them from Fernhill, Belfast. On June 27th I first saw a flock of about a score feeding on the Scotch firs, the next day I saw them again, but this flock went north and was not succeeded till July 20th and this time by only half a dozen birds. They then stayed till July 27th and I have not seen any since. They were always on the Scotch firs and seem to have had plenty to eat. There were very few adult males amongst them, in fact I only saw one and that was in the first flock ; most of the others were young ones.

J. CUNNINGHAM.

BREEDING-HABITS OF WILLOW-WARBLER
AND NESTING-SITES AT CONSIDERABLE
HEIGHTS FROM GROUND.

WITH reference to this subject (*antea*, pp. 88-92) some notes on a nest I had under observation at Windermere in 1914 may be of interest.

When first found, on May 10th, the bird was sitting on six eggs, which hatched on the 19th. One of the young died on the 24th and all the rest left the nest on June 1st, making the time of fledging thirteen days.

I visited the nest between 12 and 1 p.m. each day, but though the hen became greatly excited and did not go far from the nest, I never saw the cock. Nor did he take any part in feeding the young when, on two or three days, I spent some time in photographing the birds. MARJORY GARNETT.

ON June 17th, 1898, I found a Willow-Warbler's nest built amongst woodbine on an oak tree 8 ft. from the ground. The nest contained five eggs.

On May 20th, 1917, Mr. George Bolam and I found a Willow-Warbler's nest built inside a squirrel's drey near the top of a larch tree *over* 30 ft. from the ground. The nest contained two eggs. Both nests were found in the Stocksfield-on-Tyne district. J. S. T. WALTON.

MALE REDSHANK INCUBATING.

ON May 1st, 1917, while crossing a bit of waste land near Lurgan, Co. Armagh, I picked up a Redshank (*Tringa totanus*) which I saw accidentally killed on a nest of four eggs; it sat very close indeed, but the eggs were quite fresh. On being dissected it proved to be a male. J. CUNNINGHAM.

SPOTTED REDSHANK IN NORFOLK.

IT may be of interest to record that on September 7th, 1917, I saw a Spotted Redshank (*Tringa erythropus*) standing beside a dirty pond on the main road between Syderstone and Docking, practically in the village of Syderstone. I stopped my car and watched the bird for about five minutes, during which time it flew round the pond once or twice, settled again and fed round the edge, and eventually flew off in a straight line for the sea, in the direction of Wells-next-the-Sea.

Though a regular visitor to this coast, this is the first time I have seen this species, though I know the birds well, having had them in confinement. The sun was very bright at the time I saw the bird, and I could not be sure whether it was adult or immature, although it was only ten yards from me, but I think it was immature. HUGH WORMALD.

BLACK-TAILED GODWITS IN NORFOLK.

A FLOCK of eight to ten Black-tailed Godwits (*Limosa limosa*) has been on the Salthouse Marshes, near Cley, for some weeks. I first heard of them on March 9th, 1917, when I believe one bird was obtained but I did not see it myself. On July 16th I received one and was told that there were six or seven more, and a fortnight after this date I heard that the birds were still there. This is the first time I have had a Black-tailed Godwit from this district for preservation.

H. N. PASHLEY.

LITTLE GULL IN LANCASHIRE.

MR. W. H. HEATHCOTE informs me that, whilst on a launch in the Ribble Estuary, in September, 1916, he had under observation, for some time, a Little Gull (*Larus minutus*). This makes the tenth record for Lancashire. Mitchell, in his *Birds of Lancashire*, mentions only four. Saunders adding a fifth in the second edition. In *British Birds*, Vol. VII., p. 235, I added a sixth, and in an editorial the 7th and 8th were recorded, whilst Mr. F. W. Smalley, in Vol. VIII., p. 199, recorded the ninth.

H. W. ROBINSON.

ABNORMAL GOLDEN EAGLE'S EGGS.—At the meeting of the British Ornithologists' Club on June 13, 1917, Mr. R. W. Chase exhibited a clutch of three eggs of the Golden Eagle (*Aquila chrysaëtus*), taken in Sutherland, measuring 88.3×52.8 , 80.5×52.5 and 81.5×54.8 mm. Only one of the three eggs showed traces of reddish-brown markings. Clutches of three are of rare occurrence in Scotland, though Professor Newton has recorded four sets, three of which were taken from the same nest in consecutive years. The average measurement of 100 Scotch eggs is 76.7×59.4 mm., so that the eggs exhibited were not only exceedingly elongated in shape but also unusually narrow.

CLUTCH OF DWARF EGGS OF BLACK-HEADED GULL.—At the same meeting Mr. Chase also showed a set of three dwarf eggs of Black-headed Gull (*Larus r. ridibundus*) taken in Cumberland, which measured 34×26.8 , 34.5×25.7 , and 35.8×26.5 mm., all of which were infertile. Dwarf eggs are not uncommonly found in clutches together with normal eggs, but a clutch of dwarf eggs is very unusual. The late Major H. Trevelyan, however, took a set of three blue eggs in Ireland in 1908 (cf. *Br. Birds*, II., p. 64), but gives the measurements in inches. In millimetres they would be 35.5×27.9 , 40.6×30.4 and 43.1×30.4 , all much below the average, but larger than Mr. Chase's set.

LETTERS

"SOME NOTES ON THE BREEDING-HABITS OF THE MERLIN."

To the Editors of BRITISH BIRDS.

SIRS,—With reference to my notes under the above heading (*antea* pp. 29-30) it may be interesting to state that on July 10th, 1917, three young Merlins were again in a nest within ten to fifteen yards of the 1916 site. The feathers were just sprouting and the birds would appear to have been in the same stage as those of last year at the



corresponding time, and thus the eggs must have been laid about May 25th. As usual, one bird was larger and more active than the other two and there was no sign of a fourth egg ever having been laid.

Around the nest were remains of young Larks and Pipits, but no sign of game being taken. The female parent bird was flying in the distance, but never came near or showed any sign of alarm.

Again, the birds were absent by the middle of August.

I enclose a photograph of the young in the nest.

E. RICHMOND PATON.

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- 29a. Sharpe, Second Collection from Fao, Ibis, 1891, pp. 103-116.
30. Milne Edwards (A.), "Remarques sur le genre Mesitis, 1878." (Compt. Rend., April, 1878.)
31. Milne Edwards (A.) "Resemblances qui existent entre la faune des îles Mascareignes." (C. R. Séances du Troisième Congrès Intern. de Zool., Leyde, 1896, p. 75.)
32. Milne Edwards (A.), "Animaux éteints de Madagascar," 1898.
33. More (A. G.), Science & Art Museum, Dublin, Guide to the Natural History Department. Mammals & Birds. (Natural History Museum, Dublin, 1897.)
34. Musschenbroek (S. C. J. W. van), "Dagboek van H. A. Bernstein's laatste Reis van Pernate naar Nieuw-Guinea, Salawati en Batanta, 1883."
36. Waterhouse (F. H.), "Dates of Publication of the parts of Sir A. Smith's Illustrations of the Zoology of S. Africa, 1880."
37. Wells (J. G.), "Catalogue of the Birds of Grenada, W. Indies, 1886." (Proc. U.S. Nat. Mus., 1886, p. 609.)
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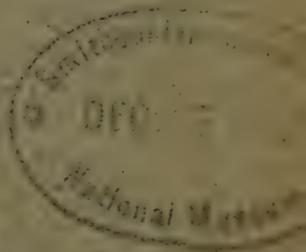
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ON THE BRITISH LIST

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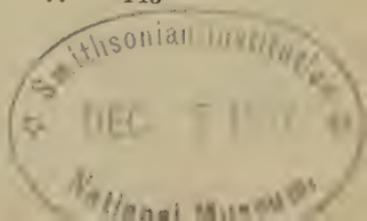
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ON NEWLY DISCOVERED IRISH COLONIES OF
ROSEATE AND SANDWICH TERNS.

BY

C. J. CARROLL.

IN the course of various trips through Ireland I have reached, from time to time, the breeding haunts of several rare species, but my red-letter day occurred this season when, with great good fortune, I discovered a large new Irish colony of Sandwich Terns (*Sterna s. sandvicensis*), together with a small colony of Roseate Terns (*Sterna d. dougallii*).

On reaching a ternery very early in July, 1917, a cloud of birds arose, and above the general babel I was delighted to hear the harsh, unmistakable calls of the Roseate Tern. Several of this beautiful species then came over my head, their characteristics being so plainly discernible in the brilliant sunshine that there was no difficulty in picking them out from the other Terns. They showed considerable anxiety at one spot, so I put a mark there, and walked on to explore the ground generally.

More luck was in store, as shortly afterwards I came right up to a Sandwich Tern settlement. Situated on a slope, it was divided into four groups, only one of which was any real distance away. The first group contained eighteen lots of young and ten sets of eggs, and the next five lots of young and fifty-eight sets of eggs. Forty or more old birds hovering in a cluster over another place evidently had young, while the last and farthest-off group had fourteen sets of eggs. Thus I examined over one hundred nests of this fine species, and probably quite one hundred and fifty pairs were breeding. In sixty-two instances the "clutch" consisted of two eggs, and in eighteen instances of a single egg only, but two nests held three eggs each.

It was an unusual date for this early Tern to have so many eggs unhatched, but no doubt the very severe spring had affected them. Anyway, some days later almost all the young had emerged and moved into hiding.

After making some notes I turned back towards the Roseate Terns and found four pairs were nesting a little to the right of the mark I had erected. They had selected a site on the extreme outskirts of, and somewhat lower than, the general Tern colony, and were almost completely screened from the gaze of the other birds. The ground, too, was broken up into little shelves or ridges, and the eggs were tucked away under lee of these. Indeed, the greater part of one bird was

invisible from any direction, as she sat brooding far in beneath an overhanging sod. Further on, in a rather similar position, two other pairs had eggs. These six clutches were considerably incubated—in fact, two were already “chipped.” At an entirely different part of the ground, but again on the outskirts away from the general din, two more little parties of Roseates had begun to lay. Eventually in these two colonies, some thirty yards apart, eight and nine clutches respectively were laid.

In one the eggs were beside some flowering plants, the sprays of which arched over the sitting birds, and a particular egg was so deeply infringed that I passed it by several times and only located it at last when the owner “ran in.” In the other, the Roseates laid in deep herbage, a favourite site being between two tufts of grass, when the blades meeting above left the bird’s head exposed at one end and the tail at the other. Some eggs were in little bowers approached by a run. Frequently, to avoid disturbing the canopy, the owners would creep in with neck and breast almost touching the ground. Although breeding thus in batches each pair was somewhat exclusive, and in most cases the nests were at least two and frequently from four to six feet apart. Almost all the Roseate Terns showed a marked preference for the extreme outside edge, the limit of their territory being reached only when the ground descended abruptly to the shingle.

Apparently the desire to conceal their eggs and themselves when sitting was due to the intense hostility of the Common and Arctic Terns. During the days I spent at this haunt the Roseates were buffeted about continually. While high in the air they were comparatively unmolested, but the moment they swung down or attempted to alight, the others, principally Arctics, attacked them viciously. The Sandwich Tern, on the other hand, never interfered; in fact two pairs of Roseates had eggs right up alongside a Sandwich colony. Once when an Arctic Tern settled near a Roseate’s egg, the owner, which was off at the time, immediately swept in and drove the intruder away helter skelter. Otherwise these beautiful birds showed no fighting propensities.

The eggs were generally long and pointed—an extreme exception was remarkably rounded—with the ground colour ranging from light stone to warm buff, freely speckled with rich and dark brown. The underlying markings were of blue-grey. High up on some eggs blotches occurred and, together with large spots, occasionally formed handsome wreaths. The eggs were so characteristic that I was able

to determine them correctly before allowing the birds on to verify the identification. Of the twenty-three nests examined, three contained clutches of two eggs, all the remainder one egg each. Two or three eggs were banked up with the withered stems of plants, but these were the only times that any nesting material was used.

Details which might indicate the locality are omitted, as I am anxious for both these species to thrive in their new home, especially as the Roseate Terns have almost deserted the other Irish breeding-place. It will be remembered that when Mr. G. R. Humphreys discovered it, in 1913, some eighty birds were present and twenty to twenty-five nests with eggs or young were found (*antea*, Vol. VII., pp. 186-9). The following year only five Roseates were noticed in June, and these had left in July without attempting to breed (Vol. VIII., p. 77). In 1915 two pairs arrived "and of these one pair certainly nested and reared their young" (*Report, Irish Soc. Protection of Birds*, p. 4). In 1916 my wife and I spent more than a week there, and we had the Roseates, six altogether, under daily observation. They were decidedly bullied, and, possibly owing to that, were exceedingly wild, sometimes remaining in the air for two hours at a stretch. On July 11th, however, a pair showed signs of nesting, and by July 14th a single egg had been laid. At the termination of our visit, some days later, the other four birds were still dashing around together. This year only a pair returned and bred.

Probably Roseate Terns are not naturally erratic, but are often compelled to shift their quarters owing to the domination of commoner species.

JOHN HUNT.

1777-1842.

BY

CAPT. HUGH S. GLADSTONE, M.A., M.B.O.U.

PART I.

MR. W. H. MULLENS, in his recently published *Bibliography of British Ornithology*, states that "little is known of the life of John Hunt." The following notes can only claim to be an amplification of Mr. Mullens's biography, and in their compilation I have been assisted by memoranda inserted in copies of Hunt's *British Ornithology* in the libraries of Mr. Russell James Colman, Lord Lilford, and The Newton Library, Zoological Laboratories, Cambridge. I must also acknowledge the help given me by Mr. Harry Hunt, a great-grandson of John Hunt, Mr. George A. Stephen, City Librarian, Norwich, Mr. J. H. Gurney, and Mr. W. H. Mullens, who has received several letters about the Hunt family from Mr. Alfred Robert Grand, whose mother, Eliza Hunt, was a daughter of the subject of these notes.

Nothing is known as regards the parents of John Hunt, and the only data available for reckoning his natal year are his obituary notices in 1842, some of which give his age as 67 and others as 65. His grandson, Mr. A. R. Grand, states that the latter is correct, so that we take 1777 as the date of his birth. A pencil note in Mr. Colman's copy of Hunt's *British Ornithology* states that "John Hunt [was] born in the parish of St. Augustine's, Norwich," but Mr. A. R. Grand believes that his grandfather "was possibly born at Wymondham in Norfolk." Search, however, amongst the baptismal registers of these parishes does not corroborate either of these statements, and he is said to have been "a Native of Norwich."* As to Hunt's boyhood there is no information, but it is known that in 1800, or earlier, he married a Norwich woman whose maiden name was Elizabeth Harper and who was a cousin of Sir John Harrison Yallop; † she had a dowry on her marriage day of £3,000, and her brother sailed with

* *A General History of the County of Norfolk . . . Printed by and for John Stacy*, Vol. I, 1829, p. lviii.

† Sir John Harrison Yallop; *b.* 1763; Mayor of Norwich in 1815 and 1831; Knighted 1831; *d.* at Brighton, 14th June, 1835; buried at Norwich. His portrait, by George Clint, A.R.A., hangs in St. Andrew's Hall, Norwich. A mural tablet is erected to his memory in St. Peter Mancroft Church, Norwich. An obituary notice is given in the *Norwich Mercury* of 20th June, 1835.

Captain Cook as a missionary but never returned. The official list of Freemen of Norwich shows that John Hunt, described as a "stationer," not as an apprentice, took up his freedom of the city on 24th February, 1801, and at this period a John Hunt, probably the subject of this article, was living at 12, Red Well Street, where he ran a circulating library.* It is interesting to note that this house, now known as 2, Redwell Street, was opposite to the Church of St. Michael at Plea, where Hunt's first two children were baptized.

The family Bible, now in the possession of Mrs. Kett, a great-granddaughter of John Hunt, gives the dates of birth of his children as follows: John, *b.* 11th March, 1801; † Samuel Valentine, *b.* 14th February, 1803; ‡ Charlotte, *b.* 5th September, 1804; Eliza, *b.* 1st December, 1806; George, *b.* 18th June, 1809; Mary Anne, *b.* 3rd April, 1811; Alfred, *b.* 6th August, 1813; and Julia Eliza, *b.* 23rd October, 1815. About 1809 John Hunt, with his family, was living at Beccles, where he carried on a seminary for young ladies, but a bad type of ringworm making its appearance in the school, he gave it up and came to Norwich.

From the title-page of his *British Ornithology*, dated 1815, it appears that John Hunt's residence at this period was in Rose Lane. This is confirmed by Henry Stevenson, § who states that, on the authority of Hunt's son, his father lived "in Rose Lane, and his garden occupied the present [1866] site of Lloyd's stonemason's yard" || Stevenson, in his copy of the *British Ornithology*, which was afterwards bought by the late Lord Lilford, has added a note: "Hunt's son, cashier at the Norwich Post Office, told me his father lived in Fisher's Lane, close to the Ecclesiastical Stone-Mason's yard (1872), opposite the corner piece of ground at the Thorpe end of the Prince of Wales' Road, and here in his garden he used to see the little Woodpeckers which had crossed the river near the Foundry Bridge from the then Thorpe Woods." Stevenson's reference to "Fisher's Lane" must be an error for Saint Faith's Lane, which, according to Fuller's *Map of Norwich*, 1871, crosses Rose Lane; at the junction of these lanes was situate Foundry Bridge Tavern, near which, if not actually

* Peck's *Norwich Directory*, 1802.

† Baptized 8th January, 1804; registered at the Church of St. Michael at Plea, Norwich.

‡ Baptized 8th January, 1804; registered at the Church of St. Michael at Plea, Norwich.

§ Henry Stevenson, *b.* 1833; *d.* 1888: Author of *The Birds of Norfolk*.

|| *The Birds of Norfolk*, Vol. I, 1866, p. 294.



John Hunt

adjoining, was the stonemason's yard of Thomas Lloyd. John Hunt, in his *British Ornithology*, mentions that he had frequently seen the Little Woodpecker "on some willow trees at the extremity of our garden." * That he changed his address, while publishing his book, is shown by the cover of part xiii, where Hunt's address is given as Red Lion Street, Norwich.

A most interesting letter is also preserved in the copy of the *British Ornithology* formerly belonging to Henry Stevenson and now in Lord Lilford's library. This letter is from Joseph Clarke, † to Stevenson, and reads as follows: "I recollect the man Hunt perfectly well. I met him at Mr. Griffin's, ‡ a surgeon; I understood he was a weaver: he was below the middle height, thin, pale, 'consumptive looking.'" The statement that he was "a weaver" is not, I think, worthy of any serious attention, for it will have been noticed that it was as a stationer that John Hunt became a freeman of Norwich and that he later ran a seminary for young ladies at Beccles. That he now regarded himself not only as an engraver but as a taxidermist is evidenced by the wrapper of Part XI of his work (preserved in the copy of the *British Ornithology* in the Newton Library), where he describes himself as an "individual moving in an humble sphere of life" and adds an advertisement: "Arms, Crests, Ciphers, Fac-similes, Cards, Bill-Heads, &c., &c., Engraved and printed by J. Hunt, Rose Lane, near the Foundry Bridge, Norwich. Birds &c., Preserved, warranted equal to those done in London." Hunt has, indeed, been classed with Butcher, Hall and John Smith as a "professional taxidermist," § and some of the specimens collected by John Henry Gurney the elder were stuffed by him. Mr. J. H. Gurney tells me that he still has an old case of his father's containing an Egret and a Night-Heron which he believes were stuffed by John Hunt: the background of the case, presumably his handiwork, is most cleverly painted to represent a river scene. Several cases of birds, originally collected by Mr. Jehosaphat Postle of Colney, and set up by Hunt, are now in the Norwich Castle Museum. One of

* *British Ornithology*: Vol. II, p. 125.

† Joseph Clarke, a Quaker, lived at Saffron Walden in Essex; he collected nearly all the birds in the Walden Museum.

‡ Dr. Richard Griffin was secretary, in 1827, to the Norwich Museum, to which, in 1839, he presented a collection of birds' skeletons prepared by himself.

§ See Thomas Southwell's "Memoir of the late John Henry Gurney," in *Transactions of the Norfolk and Norwich Naturalists' Society*, Vol. V, p. 158.

these cases contains a Golden Oriole, shot at Hethersett in April, 1824, recorded by John Hunt in his "List of [Norfolk] Birds." * In this "List of Birds," † Hunt says, under "Honey Buzzard," that "in the course of the last three years I have had five or six specimens of this rare and beautiful bird pass through my hands." That he was also a collector is shown in the same "List," under "Peregrine," where he mentions his collection, and again at the end of the "List," where he offers his "large collection" for sale. As the author of *British Ornithology* John Hunt ranks as an ornithologist, and besides being the correspondent of Messrs. Sheppard & Whitear, the compilers in 1826 of the "Catalogue of the Norfolk & Suffolk Birds," ‡ he undoubtedly supplied the "List of Birds," a praiseworthy compilation in the *General History of Norfolk*, published by Stacy in 1829.

His address is given at the end of this "List" as St. Stephen's Norwich, and in 1829 his name appears, with Thomas Cruso, as a mace bearer of the City of Norwich, § part of his duties being the custody of the golden chain of dignity worn by the Mayor. In the Norwich Poll book for 1830, under the heading "Wymer Ward, Saint Andrew [Parish]," there is an entry "Hunt, John, engraver," who voted for Richard Hanbury Gurney and Robert Grant, and at this period Hunt lived in Bridewell Alley. His name does not appear in the Poll Book for 1832 under the parish of Saint Andrew, but, under the heading "Saint John Timberhill" there is an entry "Hunt, John, top of Orford Hill," who voted for Gurney and Ker. In these days, when party feeling at times ran high, he is said to have been a "keen supporter of the Old Whigs and a pretty warm member."

From the above notes it will have been gathered that John Hunt had tried several different professions and that he was "thin, pale and consumptive looking," though his portrait belies this description. Whether it was in search of health or fortune that he left his native land, is not known, but on August 1st, 1834, he sailed from England and arrived at New York on September 21st. He was accompanied by his wife, his son Samuel Valentine Hunt, his daughters Mary Anne and Julia Eliza, and at a later date was joined by his son Alfred.

* *A General History of the County of Norfolk*. . . Printed by and for John Stacy, Vol. I, 1829, p. lxi.

† *Tom. cit.*, pp. lix-lxxii, and Vol. II, p. 1352 h.

‡ *Transactions of the Linnæan Society*: 1826: Vol. XV, part I, pp. 1-62.

§ *The Norfolk and Norwich Gentleman's, Merchant's, Tradesman's, and Farmer's Complete Memorandum-book*: 1829.

Two months after his arrival in America he wrote a letter, subsequently printed and sold at two pence in pamphlet form, to his friend Mr. John Skippon, of Orford Hill, Norwich, in which he dealt chiefly with the economic conditions then prevailing in New York. He apparently took up teaching again, and Mr. A. R. Grand possesses a letter dated Huntington, Long Island, 2nd June, 1837, in which Hunt says: "When I first took the school at which I am now situated I had very near 70 scholars, the largest number ever known in this place, and 20 of the boys as large as myself, but willing to do all I could I fagged myself too much, however take all together I have enjoyed better health than for years previously till the last winter, and am now recovering from a violent Inflammation in my chest and bowels which have [*sic*] reduced me just 40 pounds and have left me excessively weak as you may judge from my writing." Joseph John Gurney, the philanthropist, had been a constant visitor to the house of John Hunt when he lived in Norwich, so it is not surprising that, while travelling in America in 1837, he should have visited Hunt. The following extracts from a letter, written by John Hunt to his son George, dated 9th June, 1840, are of interest: "You will see that I am again got into the Town of Huntington and have rented one of the neatest Cottages near the Harbour . . . I have been so ill that I have scarce been able to crawl about, but I am now leading a Gentleman's life and these last two or three days I feel as if I had taken a new leaf. I am not quite the colour of the Indians but a few shades lighter and have lost since I left Norwich about 50 lbs. of good flesh; previous to this attack I have experienced better health than for years before and, if I have not saved a fortune, I have lived well and I now hope the exercise in my garden and a little rest from fatigue will soon renovate me; I do not despair. . . . I could wish you would dispose of the Birds and the Copperplates I left behind . . . I do not regret that I have not to work for the Great Paupers & Pampered Priests." . . . The allusions to the "Birds" and "Copperplates" doubtless refer to his ornithological collection and to the plates of his *British Ornithology*, for which, from the last extract from his letter, it would seem that the Norfolk Gentry & Clergy had either owed him money or had not been generous supporters in his enterprise. Beyond the fact that Hunt's family circle was enlarged by several grandchildren born in America, nothing more is known of his life, and the next items of information concerning him are his obituary notices. These appeared in the *Brooklyn Daily Eagle* (published at Brooklyn, New York) of 18th June, 1842, and in the *Long Island Farmer*

(published at Jamaica, L. I.) of 21st June, 1842 : "Died : in Huntington, on the 14th inst., John Hunt, aged 67 years." A notice of his death is also given in the *Brooklyn Evening Star* of 18th June, 1842, but without mention of the date of death. A pencil note, in Mr. Colman's copy of the *British Ornithology*, gives the place of Hunt's death as "Jersey City near New York," but this is probably inaccurate. The *Norfolk Chronicle* for July 9th, 1842, contains the announcement : "Died on the 14th ult., age 65, at Long Island, United States, Mr. John Hunt, engraver, formerly of this City : He was the author of a work on British Ornithology." As will have been seen, there is a discrepancy both in Hunt's age and in his place of death as recorded in the American and English newspapers, but Mr. A. R. Grand has stated that his grandfather's correct age at the time of his death was sixty-five.

The foregoing notes, though very scrappy and by no means satisfactory, comprise all the details I have been able to collect regarding the life of John Hunt. For his portrait I am indebted to Mr. W. H. Mullens ; this picture is from a drawing made by R. Jean in 1813, now in the possession of the widow of Edward George Grand, of which a photograph was sent to Mr. Mullens in 1911 by Mr. A. R. Grand. Hunt's autograph has been reproduced from a letter, dated 9th June, 1840, which has been quoted above.

Of John Hunt's Ornithological writings by far the most important is his *British Ornithology*, of which the following is a transcript of the title-page : *British—| Ornithology ;| containing Portraits of all the |British Birds,| including those of Foreign Origin,| which have become domesticated ;| Drawn, Engraved and Coloured| after Nature,| by| J. Hunt,| with descriptions compiled from the| works of the most| Esteemed Naturalists,| and arranged according to the| Linnæan Classification. | Vol. I [II. III] Inscribed by Permission| To Sir J. E. Smith, M.D., F.R.S. | and President of the Linnæan Society. | Norwich ; 1815 [Vol. II, also dated 1815 but Vol. III, 1822] Printed by Bacon and Co. | for the Proprietor & may be had of the Booksellers | Hunt & Co., Rose Lane, Norwich (3 vols. 8vo.).*

Mr. W. H. Mullens describes this work as "of the greatest rarity," he "having only seen five copies,"* and the late Professor Newton regarded it as "a very scarce book even in an imperfect condition." As additional evidence of its rarity it is worthy of note that in the copy of the *British Ornithology* which formerly belonged to Professor Newton and which

* W. H. Mullens and H. Kirke Swann's *Bibliography of British Ornithology* : 1917 : pp. 305-6.

was presented by him to the library of the Zoological Society of London, certain pages which are missing have actually been supplied in print closely resembling the original. Recent enquiries in America show that there are no copies in any of the public libraries of the United States, and Hunt's *British Ornithology* would appear to be non-existent in that country, unless perhaps there may be copies in the hands of booksellers or in private collections.

The subsequent notes have been compiled after a careful collation of my own copy and the copies in the libraries of Mr. W. H. Mullens; Mr. Russell James Colman; Lord Lilford; Mr. J. H. Gurney; The British Museum; The Newton Library, Zoological Laboratories, Cambridge; Zoological Society of London; Zoological Library, Natural History Museum, Cromwell Road, London; The Linnæan Society, London; The Public Library, Norwich, and one or two other copies which are so imperfect as to be of comparatively little value. The only complete copies which I have seen are my own and those in the libraries of Mr. Colman, Lord Lilford, and Mr. Mullens, who possesses two such copies.

The following advertisement in the *Norwich Mercury* of 30th December, 1815, proves that, although the title-page of Vol. I of the work is dated 1815, it was not published in that year:—

“ On Monday, January 1, 1816, will be Published, Price 2s. 6d., No. 1, of A CHEAP AND ELEGANT EDITION OF BRITISH ORNITHOLOGY, inscribed by Permission to Sir J. E. SMITH, M.D., F.R.S., and President of the Linnæan Society. The Work will contain PORTRAITS OF ALL THE BRITISH BIRDS—Drawn, Engraved, and Coloured after Nature. By J. HUNT. Each Number will be embellished with four coloured Portraits; or it may be had in *Parts*, containing 12 Plates. The first part will be ready for publication on the 1st of March. As but few Copies are printed more than are subscribed for, the remaining Copies will be advanced to Three Shillings each Number, after the Day of Publication. Norwich: Printed by Bacon, Kinnebrook, and Co., and Published by J. Hunt, Engraver, near the Foundery Bridge. It may also be had at the Booksellers.”

A prospectus issued with Part III (bound up in the *British Ornithology* in the Newton Library) shows that the book was published quarterly in Parts, “embellished by twelve Coloured Portraits . . . Price Nine Shillings.” I have only seen the wrappers of Parts II, XI, XII, XIII and XIV, but probably fifteen parts in all were published. It is remarkable that on all these wrappers, except those of Parts II and XIV, a space has been left for the price to be inserted by hand and that the price was 7s. 6d.; the wrapper of Part II is entitled “Subscriber's Copy” and priced 7s. 6d. in print, and only the

wrapper of Part XIV is priced, in manuscript, 9s. In an undated notice to subscribers (preserved in the copies of *British Ornithology* in Mr. Colman's library and in the library of the Zoological Society of London) it is stated that the author's "severe and dangerous illness" had interrupted the regular publication of his book; "he, however, trusts that he shall be able to complete the Twelve Numbers in the course of the Year, as originally proposed." It was intended that the parts should be bound in three volumes, and three title-pages were issued for this purpose, but the book was never completed, the text ending abruptly in the middle of a sentence on p. 138 of Vol. III. Professor Newton has added a note in his copy of the *British Ornithology* (now in the Newton Library, Cambridge) that "Joseph Clarke of Saffron Walden (25/v/81) tells me he believes this book was intended to be in six vols., as he has a plate of a Gull which is marked in pencil 'for Vol. 6'." It can, at this date, only be a matter of speculation as to how many volumes were originally intended. Hunt, in the title-page of his *British Ornithology*, announces that it will contain "portraits of all the British Birds, including those of Foreign Origin, which have become domesticated . . . with descriptions . . . arranged according to the Linnean Classification," and on p. [1], Vol. I, he states that "The Generic and Specific characters are quoted from Turton's translation of Sir Charles [Linnæus's] works."* It is remarkable that Hunt's text, up to that dealing with *Larus glaucus*, where Vol. III of the *British Ornithology* unexpectedly terminates, closely follows the arrangement set forth in Turton's translation; it therefore seems unlikely that any "plate of a Gull" could have been intended for so late a volume as "Vol. 6." Turton's translation indicates with an asterisk some two hundred and eighty birds as British, so that, as Hunt's letterpress only deals with about three-sevenths of that number, it is obvious that his work was far from being finished. The fact also that seventy-eight plates were published without any text relating to them is additional proof that the book came to a premature end; why is not known and it can only be conjectured that it did not prove a commercial success. It has already been shown that although the title-page of Vol. I of the *British Ornithology* is dated 1815 it was not published till later; Vol. III is dated 1822, but it is remarkable that so late as 1829 the book should

* *A General System of Nature . . . Translated from Gmelin's last edition of the celebrated Systema Naturæ by Sir Charles Linné . . . by William Turton . . . Vol. I: 1802: pp. 131-637.*

be referred to as "a work on British Birds, with 200 coloured engravings, now in the course of publication." *

It may be noted that, in Vol. II, two pages, in sequence, are numbered 352, and that, in Vol. III, p. 115 is wrongly numbered 151. There are several other typographical errors in the book: e.g. Vol. I, p. 157, line 11: Tawy for Tawny; Vol. II, p. 325, line 4: sits for sets; and Vol. III, p. 9, line 15: companionous for companions. The tallest uncut copy which I have seen is that in the Norwich Public Library, which measures $8\frac{1}{6}$ in. by $5\frac{1}{2}$ in.; the plates, however, are about $\frac{3}{4}$ in. less in length than the text.

It has been suggested that Hunt did not write the letterpress of his *British Ornithology*, but I do not agree with this suggestion. The statement that Archdeacon Coxe wrote the text—on the authority of a note by Professor Newton (in his copy of the *British Ornithology* now in the Newton Library, Cambridge) that Joseph Clarke of Saffron Walden had been told this by Griffin or Hunt himself—is manifestly absurd, since the Archdeacon could only have been a boy of fifteen when the book was published. Moreover, Mr. A. R. Grand has stated that his grandfather was always beforehand with the text, but was delayed by the trouble and expense of producing the plates. It is known that Hunt undoubtedly supplied the "List of Birds" in the *General History of Norfolk*, and personally I believe that he was wholly responsible for the letterpress of his *British Ornithology*. This opinion is strengthened by the fact that the same literary style is traceable in both these works and also in his pamphlet, *A Letter . . . to his friend Mr. John Skippon*, which he wrote from America in 1834. It may here be stated that Hunt's *British Ornithology* displays no little originality and shows a good knowledge of the contemporary ornithological works. Many of the alternative English names given for the birds are very curious and testify in themselves to the research of the author. It is curious to note that in 1815 (the date on the title-page of Vol. I of the *British Ornithology*) another work on Birds was published, anonymously, in East Anglia, viz.: *The Natural History of Birds, from the works of the best authors, antient and modern: . . . In two volumes: printed at Bungay*. The work is manifestly a mere compilation and the coloured plates are very inferior to those by Hunt, but it is remarkable that it contains passages very similar to those in Hunt's work and that in both works the same quotations from other writers on birds have been made.

* *A General History of the County of Norfolk . . . Printed by and for John Stacy, Vol. I., 1829, p. lviii.*

The illustrations of the *British Ornithology* are accurately coloured, pictorially pleasing, and lack that gaudiness and extravagance of colour which so often mar similar pictures of the period. The plates were engraved by John Hunt himself on copper, some of them being coloured by him, and some by his son, S. V. Hunt, who was an artist.* The prospectus issued with Part III, to which I have already alluded, states: "J. H. pledges himself that every Portrait introduced into the Work shall be from an *original Drawing*, made either from the living Bird, or from a specimen in a high state of preservation." It is therefore disconcerting to find that many of Hunt's plates very closely resemble those by Bewick † and that some of them only differ in that they face the reverse way (e.g. White-tailed Eagle, Black-headed Gull). At the time when the *British Ornithology* was published "cribbing" was held as of little or no account, but it is the more inexplicable that this plagiarism should be most conspicuously traceable in the case of birds which no doubt Hunt had in his own collection or could have easily procured.

To Hunt, however, must be given the credit of having been the first writer to figure and record the Red-crested Pochard as a British bird, and it may be observed that his plate of the Sedge-Warbler was undoubtedly taken from a specimen of the Aquatic Warbler. His plate of the Coal-Titmouse appears to represent the continental race, and that of the Red-necked Grebe merits attention on account of the bird depicted being in immature plumage. The plate of the "Red Godwit, *Sco. Lapponica*," more closely resembles the Black-tailed Godwit, while that of the Spotted Crake, from the markedly dark chin and forehead of the bird portrayed, suggests that this plate may have been drawn from a Carolina Rail. Joseph Clarke, in a letter to Newton, dated 17th March, 1885 (preserved in the copy of the *British Ornithology* in the Newton Library, Cambridge), says the plate of the Great Auk was "the last plate Hunt executed . . . which he did not live to colour and publish," and Newton has added a note in this copy that "the uncoloured plate representing the Great Auk, in E.

* Samuel Valentine Hunt, second son of John Hunt, engraver and artist, born at Norwich 14th February, 1803, baptized at the Church of St. Michael at Plea, 8th January, 1804, emigrated with his father in 1834 to America, lived at Bay Ridge, Long Island, died a few years prior to 1897, leaving a wife surviving him. A picture by him is in the Norwich Castle Museum, and several of his etchings are in the library of Mr. Colman.

† *History of British Birds: 1797-1804: and subsequent editions.*

Lombe's collection,* can hardly have been drawn before 1832." The plate is not dated but it is unquestionably referred to in the letterpress of *British Ornithology* (Vol. III, p. 9), the title page of which is dated 1822; possibly Professor Newton's note originated in a mistake, and Joseph Clarke's statement that Hunt "did not live to colour and publish it" is certainly erroneous. The copy of the *British Ornithology* in the British Museum, which was only acquired from the widow of Mr. E. G. Grand, a grandson of Hunt, on 14th May, 1914, is remarkably rich in duplicate plates and may possibly have been John Hunt's own copy. It is, however, incomplete, and is only mentioned here because it contains an unsigned water-colour sketch of a hybrid Black Grouse \times Capercaillie, with a faded pencil note which appears to read: "Foreign Spec. Hybrid the only specimen." This sketch was never reproduced and is not referred to in the letterpress of the *British Ornithology*.

The collation of the book has been one of considerable difficulty, as no two copies have been found to be bound alike. Moreover, the text occasionally refers to plates which I have no reason to believe were ever published; an example of this is to be found in the footnote in Vol. III, p. 114, where a "portrait" of the Kittiwake in mature and immature plumage is referred to. Engelmann collates the book as containing 180 plates, as also does Wood (1832); Coues gives 189 plates, and Mullens, in his *Bibliography of British Ornithology*, gives 191 as a maximum. Henry Stevenson, in his copy of the *British Ornithology* (now in the library of Lord Lilford), has noted that this copy "is as complete as the work was left by the author, who never finished the letterpress, and contains the [8] unfinished plates . . . in the first stage, uncoloured, and now very scarce!!" My researches confirm this note and I give the collation of this particular copy with every confidence that it represents a complete collation of the book as published—

Vol. I. Title+pp. 183+34 col. pls.

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anatomical
pls.

Vol. III. Title+pp. 138+17 col. pls.+4 uncol. pls.

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180 col. pls.+8 uncol. pls.+4 uncol.

anatomical
pls.,

making 192 plates in all.

* This specimen of the Great Auk was bought from Benjamin Leadbeater by E. Lombe, and given by his daughter, Mrs. E. P. Clarke, to the Norwich Museum in 1873.

I have made an index of the birds mentioned or figured in the book, and this forms Appendix I to these notes. It must be added that in my copy, from which this index was mainly compiled, the supplementary plates are arranged in the alphabetical order of the English names of the birds which they represent. Many of the alternative names used by John Hunt are very curious and I have therefore drawn up a list of them. This list may be of interest to philologists as well as ornithologists, and forms Appendix II.

(To be concluded.)

NOTES

GARGANEY IN ANGLESEY.

ON August 2nd, 1917, I shot a Garganey (*Anas querquedula*) in a bog near Valley, Anglesey. It was a male in eclipse plumage, and was identified at the British Museum. The skin is now at the Grosvenor Museum, Chester. It is, I believe, a rare bird in the west of England, and I thought I ought to record its occurrence. J. A. POWNALL.

[In his *Vertebrate Fauna of North Wales*, Mr. H. E. Forrest gives four instances of the occurrence of the Garganey in Anglesey, and considers it a rare visitor to North Wales. We believe that it has not been recorded from Anglesey since 1905.—EDS.]

SHAGS IN CHESHIRE AND LANCASHIRE.

AT least three immature Shags (*Phalacrocorax g. graculus*) were captured or observed in Cheshire and Lancashire during September, 1917. The first bird was caught on September 8th by Mr. J. S. Schofield, in a stretch of the Manchester and Huddersfield Canal which passes through Cheshire at Mossley. It was kept alive by the Mossley Natural History Society, and at first described as a Cormorant, but my friend Mr. Fred Taylor, of Oldham, went to see it on my behalf, and identified it.

The second, I learn from Mr. J. W. Cutmore, was caught in the Gladstone Dock at Liverpool, and taken alive to the Free Public Museum.

The third I saw myself at Rostherne Mere, Cheshire, eleven miles south of Manchester. On September 29th, when I first noticed the bird, it was at some distance from the shore, swimming very low in the water, with its neck gracefully curved, and its bill held at an angle of about 50 degrees with the water-level. I failed, however, to get it in a satisfactory light, or indeed to get near enough to see any detail of plumage. On the 30th, however, I found it standing on a mooring-stake close to the border of the mere, and under cover of the trees and bushes got to within ten yards, with a bright sun well behind me. It was, I should say, a bird in the second autumn, but I have failed to find any full account of the changes of plumage in the species. The best, and the only one which indicates when the bird is really adult, appears to be that in Mr. Ogilvie-Grant's *British Museum Catalogue*, 1898.

The head, nape and back of neck were dark green, much darker than the mantle. The feathers of the back and wing-coverts were distinctly "oil-green" with darker margins, and dark shafts: the flanks dark—greener than brown—and the under-surface pale, almost white on the chin and upper throat, brown on the neck, and greyish with brown mottles on the breast and belly. The bill was dark on the upper mandible; pale—yellowish-brown—on the lower, with a yellow patch at the gape. The legs were black or nearly black; the iris distinctly emerald-green. When the bird stretched a wing and expanded its tail, so that the tips of the feathers stood apart, I could distinctly count twelve rectrices.

After looking up the description of the plumage of the Shag in various books, the only conclusion that I can arrive at is that most writers have had no real knowledge of the changes of dress, or how long the bird takes to mature. The general idea—though not expressed—seems to be that the bird is adult and ready to breed in twelve months; indeed, Sharpe, in his *Handbook*, says, "the black plumage is assumed in the first spring."

Mr. Ogilvie-Grant alone amongst the authorities which I consulted gives any suggestion of three distinct autumn plumages prior to one of spring maturity.

Mr. W. P. Pycraft, in the *British Bird Book*—one of our recent works—states that in the juvenile plumage "the breast is never white," but Dresser (*Birds of Europe*) describes and figures a young bird with a brown back and white breast. He says: "chin, upper-throat, and under-parts generally pure white, neck brownish-white." This individual, caught on the coast of Sicily, is in the Manchester Museum and certainly has a white breast. MacGillivray, though not entering fully into any changes of juvenile dress, says: "the lower-parts brownish-grey; the throat and part of the breast inclining to white." Is the Sicily bird abnormal, or is the first plumage always white on the under-surface?

My bird, so far as it was possible to see it, though it persisted in keeping its breast more than half turned away from me, appeared to agree with Mr. Ogilvie-Grant's second autumn dress, but the under-parts seemed to me to be almost white in ground colour. In one particular, however, it certainly did not agree, for he says: "Iris pale brownish-white," and the iris of my bird was distinctly emerald-green—as green as in an adult bird.

Dr. Hartert, in *The British Bird Book*, comments upon the reluctance of this bird to pass overland, and no doubt during

summer this is perfectly correct, but the frequency of its occurrence inland, as indicated by the many notes in *British Birds*, rather suggests an autumn immigration which at times, at any rate, partakes of a cross-country nature.

T. A. COWARD.

[The bird from Sicily referred to above evidently belonged to the Mediterranean race *P. graculus desmaresti* (Peyr.). The under-parts of the young birds of this race always have the breast and under-surface white. I have seen scores of them in this plumage in May. Dresser (Vol. VI.) did not distinguish the two races.—F. C. R. JOURDAIN.]

GOLDEN PLOVER PERCHING ON A WALL.

It is not a very uncommon sight to see many species of waders perching on walls, posts, etc., in their breeding haunts; particularly is this the case with the Common Sandpiper, which can perch with great facility. During August, 1917, as one of my sons and I were leaving Barden Moor, in Wharfedale, a pair of Golden Plovers (*Charadrius apricarius*) followed us for a considerable distance, alighting on a stone wall from time to time until we had nearly arrived at the highway leading to Skipton. Both the Curlew and Dunlin in their breeding-haunts also occasionally perch on walls.

E. P. BUTTERFIELD.

“TWIN” NESTS OF REDSHANK.

REFERRING to Mr. T. Smith's note (*antea*, p. 46) on twin nests of the Lapwing, it may be worth recording that I have found similar “twin” nests of the Redshank (*Tringa totanus*).

E. P. BUTTERFIELD.

REEVE IN CORNWALL IN MARCH.

ON March 21st, 1917, a friend, who is interested in birds, shot for the purpose of identification a Reeve (*Machetes pugnae*) at a marshy pool near the Great Western Goods Station at Penzance. He sent the bird to me in the flesh and it is now in my collection.

The Ruff appears to be an occasional visitor to Cornwall during the autumnal migration, but its occurrence in winter or spring is very exceptional. Couch (*Cornish Fauna*, Part I., 1838, p. 23) records the killing of a Reeve near Truro in March, 1829, and Rodd (*Birds of Cornwall*, 1880, p. 249) states that two specimens of the Reeve were procured in the Land's End district on the property of John Symons, Esq., of Mayon House, at the end of April, 1868.

L. A. CURTIS EDWARDS.

BLACK TERN IN KENT IN OCTOBER.

ON October 15th, 1917, I saw an immature Black Tern (*Hydrochelidon n. nigra*) at Sandwich, Kent. It was flitting about at a small pond near our camp. This is, I believe, a late date for the appearance of this species, and on this account, perhaps, worthy of record. J. VINCENT.

CARRION-CROW NESTING OFF CO. DUBLIN.—Mr. G. C. May reports (*Irish Nat.*, 1917, p. 140) the breeding of *Corvus c. corone* at Ireland's Eye in the summer of 1917. Mr. J. E. Brunker reported to Mr. May that there were two Crows on the island and that they were nesting in May. On June 4th Mr. May paid a visit to the place and had a good opportunity of watching the bird on the nest, which was in a cliff. When the bird flew off, the nest, as seen from the top of the cliff, appeared to be empty, and subsequently the birds disappeared, for no apparent reason. The Carrion-Crow is generally regarded as a rare straggler to Ireland, though it has once been reported as breeding (co. Mayo, 1890). It is interesting to note that Mr. May has previously recorded having seen birds on Ireland's Eye which he believed to be the Carrion-Crow, viz. in April 1914 and June 1916.

ABNORMAL VARIETIES OF ROOK AND CUCKOO.—Mr. J. Cunningham writes us that a young Rook (*Corvus f. frugilegus*) of a light chocolate colour (including the bill and legs) was shot in co. Wexford in August, 1917. A few dark brown feathers on the breast and back were evidently new ones of the first winter plumage. Mr. H. N. Pashley, of Cley, informs us that he received, in August 1917, for preservation, a young male Cuckoo (*Cuculus c. canorus*), which was cream-coloured, showing markings of a slightly darker shade and the tail still darker. The gizzard contained 125 whole caterpillars of various sizes and many remains of others.

WOOD-WARBLER IN CO. ANTRIM.—Prof. Patten records (*Irish Nat.*, 1917, p. 156) that a male *Phylloscopus s. sibilatrix* struck the Maidens Lighthouse on May 10th, 1917.

LESSER WHITETHROAT IN BERWICKSHIRE.—On May 28th, 1917, Mr. T. G. Laidlaw was able to identify satisfactorily an example of *Sylvia curruca* in Duns public park (*Scot. Nat.*, 1917, p. 214).

CUCKOOS' EGGS IN NESTS OF SONG-THRUSH.—At the meeting of the British Ornithologists' Club held on June 13th, 1917, Mr. C. G. Lambert exhibited a clutch of five eggs of the Song-Thrush (*Turdus ph. clarkei*) with one egg of the Cuckoo (*Cuculus c. canorus*), taken by himself at Bookham,

Surrey. Mr. J. H. Owen informs us that he has also taken a Cuckoo's egg in a Song-Thrush's nest during the present season.

CUCKOO IN SHETLAND.—Mr. W. H. Greenaway reports (*Scot. Nat.*, 1917, p. 217) that on May 25th, 1917, he was told that a *Cuculus canorus* had been heard calling on Foula, and on the following day he saw two of these birds, which have been rarely recorded from the Shetlands except from Fair Isle, where they appear both in spring and autumn.

PURPLE HERON IN BERWICKSHIRE.—Mr. T. G. Laidlaw records (*Scot. Nat.*, 1917, p. 214) that on April 8th, 1917, he saw an example of *Ardea purpurea* near Duns. He managed to get within twenty yards of the bird and had no difficulty in identifying it, having frequently seen the species in the Camargue.

LITTLE BITTERN IN SHETLAND.—Dr. T. Edmondston Saxby states (*Scot. Nat.*, 1917, p. 214) that an adult female example of *Ixobrychus minutus* was captured alive at Burrafirth, Unst, on May 29th, 1917. The bird had been mobbed and severely punished by Herring-Gulls. This appears to be the third occurrence of the species in Shetland.

SANDWICH TERN BREEDING IN CO. GALWAY.—Prof. C. J. Patten states (*Irish Nat.*, 1917, p. 155) that Mr. J. Glanville, the light-keeper, informs him that small numbers of *Sterna s. sandvicensis* were breeding in 1917 on Mutton Island, Galway.

CLUTCH OF DWARF EGGS OF BLACK-HEADED GULL.—With reference to the note on this subject (*antea*, p. 119), Mr. R. E. R. Sanderson (Surg. Prob. R.N.V.R.) writes us that he possesses a clutch of three dwarf eggs of *L. ridibundus*, taken at Scoulton Mere, Norfolk, in June, 1911, which measure 40×29 , 42×30 , and 41×29 mm. One egg differs widely in colour and markings from the other two, and thus furnishes strong evidence that the same hen does not always lay a constant type of egg. All three eggs were infertile, and the shells were thicker than is normal in this species.

INCREASE OF QUAIL IN WEXFORD IN 1917.—Mr. C. B. Moffat states (*Irish Nat.*, 1917, p. 155) that in the summer of 1917 there was an unusually large number of *Coturnix c. coturnix* in the Ballyhyland district of co. Wexford. He considers they were more numerous than in any year since 1893, when there were a great number, though in 1899 many also appeared.

REVIEWS

Report on Scottish Ornithology in 1916, including Migration.

By Leonora J. Rintoul and Evelyn V. Baxter. Forming the July and August, 1917, issues of *The Scottish Naturalist*.

THIS annual Report has suffered much less than one would have expected by the war, though the effects of loss of observers and restrictions of all kinds are to be seen in the smaller number of observations, and perhaps more especially in the records of occurrences of rarities.

Nevertheless, the report is full of interesting material brought together by Miss Rintoul and Miss Baxter in the excellent and careful manner which their previous reports have led us to expect. In our notice of last year's report we asked that the whereabouts of localities, obscure to the map-maker, might be indicated, and this has now been done to a great extent, for which we, and doubtless many other readers, are duly grateful.

The following observations of special interest, which have not been noted previously in our pages, are culled from the report.

CARRION-CROW (*Corvus c. corone*).—Two at the Butt of Lewis (Outer Hebrides) on April 2nd, and four at North Ronaldshay (Orkneys) on October 25th. It was also frequently seen on the Isle of May in March, and again on October 28th and November 4th, which point to migratory movements.

HAWFINCH (*Coccothraustes c. coccothraustes*).—One, Skerries (Shetland) on July 7th. Uncommon visitor to Shetland.

MEALY REDPOLL (*Carduelis l. linaria*).—One or two in Wigtownshire in February. The bird is a scarce and irregular visitor to western Scotland.

GRASSHOPPER-WARBLER (*Locustella n. naevia*).—One at Fair Isle (Shetlands) on April 21st. Has occurred on three previous occasions at Fair Isle, but not elsewhere, we believe, in the northern isles.

GARDEN-WARBLER (*Sylvia borin*).—Passage migrants at Lerwick on May 30th and from June 7th to 13th, several in September at Cromarty and one at Sule-Skerry (Orkney) on October 22nd.

LESSER WHITETHROAT (*S. c. curruca*).—One at the Little Ross lantern (Kirkcudbrightshire) on May 8th.

MISTLE-THRUSH (*Turdus v. viscivorus*).—Several reported from the Orkneys both in spring and autumn.

BLACK REDSTART (*Phœnicurus o. gibraltariensis*).—One at Swona (Orkney) on October 27th.

CONTINENTAL REDBREAST (*Erithacus r. rubecula*).—Emigration is reported from the northern isles between April 19th and 28th, and a large number of Robins passing through the Isle of May at this time were also probably continental birds. On October 9th one was seen in Fife, and during November a number arrived in the northern isles.

HOOPOE (*Upupa c. epops*).—One at Inverewe (West Ross-shire) on April 26th.

ROUGH-LEGGED BUZZARD (*Buteo l. lagopus*).—Five seen coming in to roost in the Lauderdale woods on January 29th.

RED-NECKED GREBE (*Podiceps g. griseigena*).—Two seen on a firth in the Moray area, on November 30th, are said to constitute the first record for Moray. One in Fife on September 28th.

BLACK-TAILED GODWIT (*Limosa limosa*).—One seen near Arbroath (Forfar) on September 7th.

BLACK TERN (*Hydrochelidon n. nigra*).—Two in Luce Bay (Wigtownshire) on May 20th.

LESSER BLACK-BACKED GULL (*Larus fuscus*).—One seen in Wigtownshire on February 22nd is not described, but another in the same county on November 9th is stated to have had a "black back" and was doubtless *L. f. fuscus*.

IVORY-GULL (*Pagophila eburnea*).—One at Galson (Outer Hebrides) on February 15th, and one at N. Ronaldshay (Orkneys) on November 8th.

LITTLE AUK (*Alle alle*).—Numbers were driven ashore between February 18th and March 19th, during a spell of stormy weather with heavy seas.

H. F. W.

Handbook to Lord Lilford's Coloured Figures of the Birds of the British Islands. By Hugh S. Gladstone, M.A. F.R.S.E., F.Z.S., etc. London (Bickers): 1917. Roy. 8vo., pp. 69. Price 12s. 6d.

POSSESSORS of a copy of the late Lord Lilford's *Coloured Figures of British Birds* will welcome Captain Gladstone's *Handbook* as a means of readily ascertaining the differences between the first and second editions of the work, for few are likely to possess both editions. Hitherto all bird-lovers have known that there *are* two editions of the work and that several artists were employed, while in the second edition some of the parts and plates were reprinted.

Captain Gladstone's compilation details in table A, in parallel columns, the exact difference between each part of each edition; in table B the equivalents of the differently numbered parts in the two editions are shown; in table C the contents of each part in each edition; in table D the whole of the species are enumerated alphabetically, with their volume, page, plate, artist and lithographer, and any differences in the plates occurring in the second edition; while, finally, table E enumerates the "suppressed plates" and the difference between them and the approved plates. Much information of interest is also introduced, and from a summary we learn that of the 421 coloured plates 15 are unsigned, 268 are drawn by Thorburn, 125 by Keulemans, 6 by G. E. Lodge, 5 by E. Neale, 1 by W. Foster and 1 by J. Smit.

As a compilation the *Handbook* is, even if a trifle overweighted, a remarkable piece of work, and deserving of the highest praise.

H. K. S.

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| <p>29. Sharpe, "Birds from Fao and Bushire, Persian Gulf," Ibis, 1886, pp. 475-499.</p> <p>29a Sharpe, Second Collection from Fao, Ibis, 1891, pp. 103-116.</p> <p>30. Milne Edwards (A.), "Remarques sur le genre <i>Mesitis</i>, 1878." (Compt. Rend., April, 1878.)</p> <p>31. Milne Edwards (A.), "Resemblances qui existent entre la faune des îles Mascariques." (C. R. Séances du Troisième Congrès Intern. de Zool., Leyde, 1896, p. 75.)</p> <p>32. Milne Edwards (A.), "Animaux éteints de Madagascar," 1898.</p> <p>33. More (A. G.), Science & Art Museum, Dublin. Guide to the Natural History Department, Mammals & Birds. (Natural History Museum, Dublin, 1897.)</p> <p>34. Musschenbroek (S. C. J. W. van), "Dagboek van H. A. Bernstein's laatste Reis van Pernate naar Nieuw-Guinea, Salawati en Batanta, 1883."</p> <p>36. Waterhouse (F. H.), "Dates of Publication of the parts of Sir A. Smith's Illustrations of the Zoology of S. Africa, 1880."</p> <p>37. Wells (J. G.), "Catalogue of the Birds of Grenada, W. Indies, 1886." (Proc. U.S. Nat. Mus., 1886, p. 609.)</p> | <p>38. Baird, Brewer & Ridgway, "Water Birds of N. America."</p> <p>39. Blandford & Oates, "Fauna of British India: Birds," 4 vols.</p> <p>40. Ridgway's Colour Code, new edition.</p> <p>43. "Condor," complete set, bound or unbound.</p> <p>46. Ibis, 1859, January, April, July parts. 1860, October part. 1866, January, April, July. 1870, January, April, October or the plates belonging to these parts.</p> <p>47. J. R. Forster, "Descriptiones animalium quae in itinere ad maris australis terras per annos 1772, 1773 et 1774 suscepto collegit." Berolini, 1844.</p> <p>48. E. L. and E. L. C. Layard, Notes on the Avifauna of New Caledonia. A Catalogue of the Birds of the Island known to (Ibis, 1882, pp. 493-546).</p> <p>49. Legge, "The Zoogeographical Relations of the Ornis of the various Subregions of the Australian Region with the Geographical Distribution of the principal Genera therein." (Austr. Assoc. for the advanc. of Sc. Presid. Addr., 1904.)</p> <p>50. Gray's "Birds of Ayrshire and Wigtownshire."</p> <p>51. "Birds of Glamorgan," by Committee of Cardiff Nat. Sc., 1900.</p> |
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Stevenson's "Birds, Norfolk," 3 vols., £3 5s.
Anderson's "Birds of Damara Land," 1872, 30s.
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A PERSONAL NOTE. BY THE EDITOR.

As I have accepted a commission as Lieutenant, R.N.V.R., for some work which will involve my absence from England, I must, with great regret, temporarily relinquish the editorship of *British Birds*. The Rev. F. C. R. Jourdain has very kindly agreed to act as editor in my absence, and Dr. N. F. Ticehurst will give him as much assistance as his present heavy duties will allow. I need hardly assert that in leaving the conduct of the Magazine in such capable hands, I have the utmost confidence that the standard of accuracy and scientific value at which we have always aimed will not in any way be relaxed.

All MSS. for publication, and all correspondence relating to Editorial questions, should be addressed in future to the Rev. F. C. R. Jourdain, Appleton Rectory, near Abingdon, Berks, and it is particularly requested that such matters only should be addressed to Mr. Jourdain. Correspondence on all other matters, including the *British Birds* Marking Scheme, should be addressed to the Publishers, at 326, High Holborn, London, W.C.1. H. F. WITHERBY.

OCCURRENCE OF THE BUFF-BACKED HERON
(*ARDEOLA IBIS IBIS*) IN NORFOLK.

BY F. W. SMALLEY, M.B.O.U.

ON October 24th I received a letter from Mr. E. C. Saunders, of Great Yarmouth, asking me to go over to see a locally killed bird which had been brought to him for identification and preservation, and which he considered to be an example of the Buff-backed Heron (*Ardeola ibis ibis*). I, therefore, at once hastened over to Yarmouth, where I saw the bird in the flesh in Mr. Saunders' shop, and found his identification to be correct. The body was, by request, sent to Mr. J. H. Gurney, in order that the sternum might be preserved, and Mr. Gurney writes me that the stomach of the bird contained two good-sized water newts, the larva of a noctuid moth and an example of the fish known as the Miller's Thumb (*Cottus gobio*). The newts, which were sent to me, I submitted to my friend Dr. William Eagle Clarke, of the Royal Scottish Museum, Edinburgh, from whom I learn that they belonged to the species known as the Smooth Newt (*Molge vulgaris*).

The bird in question was shot by one Dan Banham, on Breydon Marshes, on the Norfolk side of the river, on October 23rd, 1917. It was first observed by two boys, who reported a small white bird feeding amongst the cattle on the marsh. All three procured guns, and, surrounding the bird, it fell to the second barrel of Banham's gun.

After being mounted, I took the bird over to Norwich, where Mr. Gurney and I compared it with skins in his collection, but were unable to say definitely whether the bird was an adult or a bird of the year in first winter plumage; the whole of the plumage being white with the exception of the head, which is tinged with buff on the crown. Whilst the primaries, secondaries and tail appear freshly moulted, the rest of the plumage on the wings and back shows considerable abrasion, from which I personally am inclined to consider the bird an adult. There were no signs of any active moult.

The "powder-down puffs" were four in number, one on each flank and one on each side of the breast. It proved to be a ♂ on dissection, and careful measurements taken by me at the time gave: *Length*, 520·5 mm. (20·5 inches); *wing*, 248 mm. (9·75 inches); *culmen*, 56 mm. (2·2 inches); *tarsus*, 82 mm. (3·25 inches). Mr. E. C. Saunders gives the colour of the soft parts as follows: *Beak*, chrome yellow, with a brownish tinge at the base and tip of the upper mandible; *eyes*, golden



BUFF-BACKED HERON (*Ardeola i. ibis*).

♂. Shot on Breyton Marshes, Norfolk, October 23rd, 1917.
(Photo. by A. W. Yallop, Great Yarmouth.)

yellow, skin round eyes a duller yellow inclined to grey, edge golden yellow; *legs and feet* brown-black, tibio-tarsal joints and soles greenish cast, toe-nails black.

I believe this bird to be only the second authentic occurrence of the Buff-backed Heron in Great Britain: the first being the immature female from near Kingsbridge (Devon), shot towards the end of October, 1805 (Yarrell, IV., p. 187; Saunders, p. 375), as I do not look upon the evidence for the bird said to have been shot at Martock (Somerset), January 28th, 1909, reported by Mr. Stanley Lewis (*Zool.*, 1915, p. 318; cf. *British Birds*, Vol. X., p. 70) as being satisfactory.

JOHN HUNT.

1777-1842.

BY

CAPT. HUGH S. GLADSTONE, M.A., M.B.O.U.

PART II.

APPENDIX I.

INDEX.

REFERENCES are given both to the text and to the plates ; many of the latter have only a Latin title ; in such cases the English name is printed in square brackets [].

* Indicates that the plate is uncoloured ; the following birds are thus figured : Great Auk, King-duck, Black Guillemot, Black-headed Gull, Lesser black-backed Gull, Red-breasted Merganser, Razorbill and Shieldrake.

The tracheæ of certain ducks are figured, uncoloured, on plates numbered i, ii, iii, to face p. 179, and iv, to face p. 180 in Vol. II.

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	TEXT.	PLATE.		TEXT.	PLATE.
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	TEXT.	PLATE.		TEXT.	PLATE.
Petrel, Leach's..	iii.	33	iii.	7	[Stilt, Black-winged] <i>C. Himantopus.</i>
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† The plate of the Sedge Warbler was undoubtedly taken from a specimen of the Aquatic Warbler (*cf. Mullens's Bibliography of British Ornithology, p. 305*).

APPENDIX II.

INDEX OF THE ALTERNATIVE NAMES
USED BY JOHN HUNT.

- Ailsa Cock = Puffin.
 Alk = Razorbill.
 Allamotti = Petrel, Stormy.
 Annett = Kittiwake.
 Arsefoot = Grebe, Little.
 Assilag = Petrel, Stormy.
 Attile Duck = Pochard.
 Awl-bird = Woodpecker, Green.
 Bald Buzzard = Osprey.
 Bald Goose = Goose, White-fronted.
 Bald Hawk = Buzzard, Moor.
 Bargander = Shieldrake.
 Bass-cock = Puffin.
 Bawkie = Razorbill.
 Birch-Magpie = Roller.
 Black Diver = Scoter.
 Black Duck = Scoter.
 Black-necked Crow = Crow, Carrion.
 Black Owl = Owl, Tawny.
 Black Wigeon = Duck, Tufted.
 Blue-backed Falcon = Falcon, Peregrine.
 Blue Hawk = Harrier, Hen.
 Blue-headed Poker = Pochard.
 Blue Poker = Pochard.
 Blue-winged Shoveler = Shoveler.
 Blue Woodpecker = Nuthatch.
 Bottlenose = Puffin.
 Bowger = Puffin.
 Broadbill = Shoveler.
 Brougie = Corvorant.
 Bunting Crow = Crow, Hooded.
 Burgomaster = Gull, Great black-backed.
 Burrow Duck = Shieldrake.
 Cadaw = Jackdaw.
 Caloo = Duck, Pintail.
 Cape Goose = Goose, Guinea.
 Capped Buzzard = Buzzard, Honey.
 Cargoose = Grebe, Crested.
 Cat Diver = Diver, Red-throated.
 Chauk Daw = Chough.
 Chough-Daw = Jackdaw.
 Church Owl = Owl, Barn.
 Cinereous Eagle = Eagle, White-tailed.
 Claik Goose = Goose, Bernacle.
 Clakis = Goose, Bernacle.
 Clattergoose = Goose, Brent.
 Clucking Duck = Duck, Bimaculated.
 Coal and Candle Light = Duck, Pintail.
 Cobb = Gull, Great black-backed.
 Cobble = Diver, Great Northern; or Red throated.
 Cockandy = Puffin.
 Coddy Moddy = Gull, Common.
 Cole Goose = Corvorant.
 Colk = Duck, Eider.
 Common Duck = Duck, Wild.
 Common Falcon = Falcon, Peregrine.
 Cornish Chough = Chough.
 Cornish Daw = Chough.
 Cornwall Kae = Chough.
 Coulterneb = Puffin.
 Cracker = Duck, Pintail.
 Crank-bird = Woodpecker, Lesser spotted.
 Creeper = Nuthatch.
 Cricket Teal = Garganey.
 Cuckow's guide = Wryneck.
 Cuckow's mate = Wryneck.
 Didapper = Grebe, Little.
 Dipper = Grebe, Little.
 Diving Goose = Goosander.
 Diving Pigeon = Guillemot, Black.
 Dobchick = Grebe, Little.
 Double Scoter = Duck, Velvet.
 Dove-coloured Falcon = Harrier, Hen.
 Down Goose = Eider.
 Duck Hawk = Buzzard, Moor.
 Dunbird = Pochard.
 Dun Crow = Crow, Hooded.
 Dun-cur = Pochard.
 Dunter Duck = Eider.
 Elk = Swan, Wild.
 Embergoose = Diver, Great Northern.
 Emmet hunter = Wryneck.
 Falk = Razorbill.
 Fen Goose = Goose, Grey Lag.
 Fishing Eagle = Osprey.
 Fishing Hawk = Osprey.
 Flusher = Shrike, Red-backed.
 Fork-tailed Kite = Kite.
 French Pie = Shrike, Great Cinereous.
 Gairfowl = Auk, Great.
 Gan = Gannet.

- Gaunt = Grebe, Crested.
 Gentil Falcon = Falcon, Peregrine.
 German Parrot = Roller.
 German Swan = Swan, Wild.
 Gillihawter = Owl, Barn.
 Glead = Kite.
 Golden Thrush = Oriole, Golden.
 Gor Crow = Crow, Carrion.
 Great Black Cormorant = Cor-
 vorant.
 Great Black Duck = Duck, Velvet.
 Great Butcher Bird = Shrike, Great
 Cinereous.
 Great Corbie Crow = Raven,
 Cinereous.
 Great Doucker = Diver, Great
 Northern.
 Great Eared Owl = Owl, Eagle.
 Greater Dobchick = Grebe, Crested.
 Great Erne = Eagle, White-tailed.
 Greatest Speckled Diver = Diver,
 Red-throated.
 Greatest tailed Diver = Diver,
 Red-throated.
 Great Grey Gull = Gull, Great
 black-backed.
 Great headed Wigeon = Pochard.
 Great horned Owl = Owl, Eagle.
 Green Cormorant = Corvorant, *or*
 Shag.
 Grey Owl = Owl, Tawny.
 Grissard = Gull, Great black-backed.
 Guilderhead = Puffin.
 Haggard Falcon = Falcon, Pere-
 grine.
 Hagister = Magpie.
 Harle = Merganser, Red-breasted.
 Hawk Owl = Owl, Short-eared.
 Hew-hole = Woodpecker, Green.
 Hickwall = Woodpecker, Lesser
 Spotted.
 High-hoe = Woodpecker, Green.
 Hissing Owl = Owl, Barn.
 Hook-billed Duck = Duck, Wild.
 Hooper = Swan, Wild.
 Hooting Owl = Owl, Tawny.
 Horia Goose = Goose, Brent.
 Horie Goose = Goose, Brent.
 Horned Owl = Owl, Long-eared.
 Howlet = Owl, Barn; *or* Owl,
 Tawny.
 Icebird = Auk, Little.
 Imbrim = Diver, Great Northern.
 Ivy Owl = Owl, Tawny.
 Jack Baker = Shrike, Red-backed.
 Jacksaw = Goosander.
 John Down = Fulmar.
 Kentish Crow = Crow, Hooded.
 Kiddaw = Guillemot.
 Killigrew = Chough.
 King of the Auks = Auk, Great.
 Kishifaik = Kittiwake.
 Lanner Falcon = Falcon, Peregrine.
 Lavy = Guillemot.
 Lesser Butcher-bird = Shrike, Red-
 backed.
 Lesser Toothed Diver = Merganser,
 Red-breasted.
 Little Petrel = Petrel, Stormy.
 Long-tongue = Wryneck.
 Loon = Grebe, Little; *or* Diver,
 Great Northern.
 Lunad Bougar = Puffin.
 Lungy = Guillemot.
 Lyar = Shearwater.
 Lyre = Shearwater.
 Lyrie = Shearwater.
 Madge-howlet = Owl, Barn.
 Mallduck = Fulmar.
 Mallemock = Fulmar.
 Malmock = Fulmar.
 Manks Petrel = Shearwater.
 Market Jew Crow = Chough.
 Marrot = Puffin; *or* Razorbill; *or*
 Guillemot.
 Mason Woodpecker = Nuthatch.
 Mattages = Shrike, Great Cinereous
 May Woodpecker = Nuthatch.
 Mellet = Puffin.
 Minden Crow = Crow, Carrion.
 Mitty = Petrel, Stormy.
 Morillon = Goldeneye.
 Mother Cary's Chicken = Petrel,
 Stormy.
 Mountain Magpie = Shrike, Great
 Cinereous.
 Mouse Hawk = Owl, Short-eared.
 Murdering Pie = Shrike, Great
 Cinereous.
 Murre = Guillemot; *or* Razorbill.
 Nine-killer = Shrike, Great Cinere-
 ous.
 Norie = Corvorant.
 Northern Doucker = Diver, Great
 Northern.
 Northern Penguin = Auk, Great.
 Nun Goose = Goose, Brent.
 Nutracker = Nuthatch.
 Nutjobber = Nuthatch.
 Oke = Razorbill.
 Pandle-whew = Wigeon.
 Pianet = Magpie.
 Pick-a-tree = Woodpecker, Green.

- Pied Wigeon = Garganey; *or* Goldeneye.
 Pied Yaffler = Woodpecker, Middle-spotted.
 Piranet = Shieldrake.
 Poker = Pochard.
 Pope = Puffin.
 Poppingjay = Woodpecker, Green.
 Puffinet = Guillemot, Black.
 Puttock = Buzzard; *or* Kite.
 Pynot = Magpie.
 Quink Goose = Goose, Brent.
 Rainbird = Woodpecker, Green.
 Rainfowl = Woodpecker, Green.
 Rain Goose = Diver, Red-throated.
 Rat Goose = Goose, Brent.
 Rattlewing = Goldeneye.
 Red-breasted Goosander = Red-breasted Merganser.
 Red-legged Crow = Chough.
 Red-throated Loon = Red-throated Diver.
 Ringtail = Harrier, Hen.
 Roach = Auk, Little.
 Rodge = Gadwall.
 Rood Goose = Goose, Brent.
 Rouen Duck = Duck, Wild.
 Routheroock = Goose, Bernacle.
 Royston Crow = Crow, Hooded.
 Saddleback = Gull, Great black-backed.
 Saint Cuthbert's Duck = Eider.
 Saint George's Duck = Shieldrake.
 Scare Crow = Crow, Hooded.
 Scarfe = Shag.
 Scout = Guillemot, *or* Razorbill.
 Scraber = Guillemot, Black.
 Screech Owl = Owl, Barn.
 Sea Crow = Corvorant; *or* Razorbill.
 Sea Dove = Auk, Little.
 Sea Eagle = Osprey.
 Sea Hen = Guillemot.
 Sea Magpie = Roller.
 Sea Mall = Gull, Common.
 Sea Mew = Gull, Common.
 Sea Parrot = Puffin.
 Sea Pheasant = Duck, Pintail.
 Sea Swallow = Petrel, Stormy.
 Sea Turtle = Auk, Little.
 Serula = Merganser, Red-breasted.
 Sharp-tailed Duck = Duck, Long-tailed.
 Sheldrake = Shieldrake.
 Shreek = Shrike.
 Shrite = Shrike.
 Skart = Corvorant; *or* Shag.
 Skeel Duck = Shieldrake.
 Skeel Goose = Shieldrake.
 Skeeling Goose = Shieldrake.
 Skeldrake = Shieldrake.
 Skrabe = Shearwater.
 Skreek = Shrike.
 Skuttock = Guillemot.
 Slight Falcon = Falcon, Peregrine.
 Slygoose = Shieldrake.
 Small Doucker = Grebe, Little.
 Small Grey Goose = Goose, Bean.
 Snake-bird = Wryneck.
 Solan Goose = Gannet.
 Spanish Goose = Goose, Guinea.
 Sparling Fowl = Goosander.
 Speckled Loon = Red-throated Diver.
 Spency = Petrel, Stormy.
 Spoon-billed Duck = Shoveler.
 Spotted Galley-bird = Woodpecker, Middle spotted.
 Sprat Loon = Diver, Red-throated.
 Stannel = Kestrel.
 Stannel Hawk = Kestrel.
 Steingall = Kestrel.
 Stock Duck = Duck, Wild.
 Stock Owl = Owl, Eagle.
 Stone Falcon = Merlin.
 Stonegall = Kestrel.
 Strany = Guillemot.
 Strasburg Jay = Roller.
 Summer Teal = Garganey.
 Taiste = Guillemot, Black.
 Taminora = Puffin.
 Tinkershire = Guillemot.
 Tommy = Puffin.
 Tomnoddy = Puffin.
 Tomnorry = Puffin.
 Toyst = Guillemot, Black.
 Tree-climber = Creeper.
 Tree Goose = Goose, Bernacle.
 Tyste = Guillemot, Black.
 Tystey = Guillemot, Black.
 Vare-headed Wigeon = Pochard.
 Wagtail = Nuthatch.
 Water Raven = Corvorant.
 Whewer = Wigeon.
 Whilk = Scoter.
 Whim = Wigeon.
 Whistling Duck = Wigeon.
 Whistling Swan = Swan, Wild.
 White-headed Harpy = Buzzard, Moor.
 White Owl = Owl, Barn.

White Whiskey John = Shrike,	Wirwall = Oriole, Golden; or
Great Cinereous.	Woodpecker, Middle spotted.
Wierangle = Shrike, Great Cine-	Witch = Petrel, Stormy.
reous.	Woodcracker = Nuthatch.
Wigeonpoker = Wigeon.	Wood Owl = Owl, Tawny.
Willock = Guillemot; or Puffin:	Woodspite = Woodpecker, Green.
or Razorbill.	Woodwall = Woodpecker, Green.
Windfanner = Kestrel.	Yaffle = Woodpecker, Green.
Windhover = Kestrel.	Yaffler = Woodpecker, Green.
Winter Duck = Duck, Pintail.	Yappingale = Woodpecker, Green.
Winter Guillemot = Guillemot.	Yellow-pole = Wigeon.

As above mentioned, besides being the author of *British Ornithology*, Hunt supplied the "List of Birds," already referred to, which appears on pp. lix-lxxii of Vol. I, and p. 1352 h, of Vol. II, in *A General History of the County of Norfolk, intended to convey all the information of a Norfolk Tour*, (etc. 7 lines) — / Vol. I. [II] — / (Quotation from Drayton, 6 lines.) — / Norwich: / Printed by and for John Stacy. / London: / Sold by Longman, Rees, Orme, Brown, and Green. / MDCCCXXIX. This list enumerates some two hundred and thirty species, and, considering the somewhat crude knowledge of certain species at the period when it was compiled, it reflects great credit on the discretion and acumen of the writer. Perhaps the most interesting record is that of the "Caspian Tern . . . recently killed near Yarmouth. It is the only specimen recorded as having been killed in this kingdom." * Hunt was a correspondent of Messrs. Sheppard & Whitear, the compilers of the "Catalogue of the Norfolk and Suffolk Birds" in the *Transactions of the Linnæan Society* (1826: Vol. XV, part I, pp. 1-62), in which catalogue he is cited on pp. 11, 13, 30, 40, 41, 50, and 60.

Hunt was also the author of a scarce pamphlet of 12 pages, measuring $7\frac{1}{2}$ by $4\frac{1}{2}$ inches. Mr. George A. Stephen, City Librarian, Norwich, kindly lent me this pamphlet, the title-page of which is as follows:—

AMERICA. / COPY OF A LETTER / JUST RECEIVED FROM / MR. JOHN HUNT, / LATE / ONE OF THE MACE OFFICERS IN THE / CORPORATION OF NORWICH, / Who Emigrated to America in August last; / TO HIS FRIEND, / MR. JOHN SKIPPON, ORFORD HILL, / GIVING AN ACCOUNT OF / HIS VOYAGE, THE

* Mr. J. H. Gurney, in his paper "On the occurrence in England of the Caspian Tern" (*Zoologist*, 1887, p. 457), gives the first occurrence of the species in England as 4th October, 1825, at Yarmouth, or Breydon Broad; this doubtless refers to the specimen recorded by John Hunt.

STATE OF THE COUNTRY, / PRICES OF PROVISIONS, HOUSE RENT, &C. AND / MANY OTHER INTERESTING PARTICULARS, / WORTHY OF PERUSAL. / 1835. / PRINTED BY JOHN JUDD SHARPE, ST. GEORGE'S COLEGATE, / NORWICH. / PRICE TWO-PENCE. / The Letter is dated "New York, November 25, 1835," but 1835 must be a misprint for 1834. In my copy, of the "second edition" of the Letter, the figure 5 has been erased and the figure 4 has been printed in its place. J. Quinton, in his *Bibliotheca Norfolciensis*, citing the third edition of the Letter, gives the entry as follows: "Hunt, John, Copy of a letter dated New York, Nov. 25. 1834, just received from Mr. John Hunt, etc., 3rd ed., pp. 12, Norwich: J. J. Sharpe, 1835." It is also most unlikely that a letter from New York, written on 25th November, 1835, could arrive in Norwich and that three editions of it could be printed in 1835.

I am not aware of any other books written by John Hunt, who, at one time or another, appears to have been stationer, schoolmaster, engraver, taxidermist, bird-collector, ornithologist and emigrant, but who will ever be famous as the author of *British Ornithology*, which is now one of the scarcest books on the subject.

I cannot conclude these notes on John Hunt and his works without thanking the owners, or custodians, of the various copies of Hunt's *British Ornithology* for the cordial assistance they have rendered in allowing me to collate their precious copies, and I should like to repeat my thanks to Mr. George A. Stephen, whose intimate knowledge of Norwich and its worthies has proved invaluable to me.

RECOVERY OF MARKED BIRDS.

THE following have kindly sent in subscriptions towards the expenses of the Marking Scheme since the last acknowledgment was made: Miss C. M. Acland, Messrs. J. Appleby, C. F. Archibald, R. Oswald Blyth, Dr. F. A. Bruton, Mr. D. A. J. Buxton, Miss B. A. Carter, Messrs. W. Davies, K. Fisher, Miss M. H. Greg, Major H. S. Greg, Messrs. R. P. Greg, E. W. Hendy, Mrs. C. Hodgkin, Mr. F. W. Holder, Commodore H. Lynes, R.N., Major W. F. Mackenzie, Mr. A. Mayall, Miss E. Mellish, Dr. H. J. Moon, Mr. J. H. Owen, Mrs. Rait Kerr, Messrs. R. L. Russell and T. Smith.

ROOK (*Corvus f. frugilegus*).—32587, nestling, marked by Mr. A. Mayall near Shrewsbury, Shropshire, on Feb. 16th, 1913. Reported by Mr. B. Humphreys at the same place on May 3rd, 1917.

STARLING (*Sturnus v. vulgaris*).—46233, immature, marked by Mr. W. E. Suggitt at Cleethorpes, Lincs., on July 30th, 1913. Reported by Mr. J. Chatburn at Grimsby on May 7th, 1917.

46766, adult, marked as 46233 on Oct. 24th, 1913. Reported by Mrs. A. M. Thompson at Cleethorpes, in Sept., 1916.

46788, adult, marked as 46233 on Jan. 18th, 1914. Reported at Stord, near Bergen, Norway, on June 29th, 1917.

19056, nestling, marked by Mr. J. R. B. Masefield at Cheadle, Staffs., on May 24th, 1913. Reported by Mr. B. Owens at Castlereæ, co. Roscommon, on Jan. 29th, 1917.

18796, nestling, marked by Miss Blyth at Skelmorlie, Ayrshire, on May 14th, 1914. Reported by Mr. A. J. Black at the same place about March 7th, 1917.

84166, adult, marked by Mr. T. C. Hobbs at Gosforth, Northumberland, on Dec. 30th, 1914. Reported by Mr. C. Anderson at the same place on Feb. 10th, 1917.

83897, 83986, 83746, 83777, 84090, adults, marked by Mr. R. Burnier at Bradfield, Berks., on Oct. 14th, Nov. 18th, 22nd, and 24th, 1914, and Feb. 12th, 1915. All recovered at the same place Oct. 1916, Feb. 5th, Mar. 15th, and June 26th, 1917.

83837, nestling, marked by Mr. R. Burnier at Bradfield, Berks., on June 20th, 1913. Caught again and released at the same place on Feb. 8th, 1915. (*cf.* Brit. B., Vol. IX, p. 20.) Reported in *Cage Birds* as caught at Redruth, Cornwall, in Feb. 1917.

46968, adult, marked by Mr. C. F. Archibald at Leeds, Yorks., on Feb. 16th, 1915. Recovered at the same place on May 8th, 1917.

85795, adult, marked as 46968 on Feb. 29th, 1916. Found nesting about a mile away on May 20th, 1917.

89578, adult, marked by Mr. S. Kendall Barnes, at Orpington, Kent, on Dec. 14th, 1916. Reported by Mr. S. Rogers at Newton, near Cambridge, on Feb. 4th, 1917.

89163, 89174, 89895, adults, marked by Mr. A. Mayall at Shrewsbury, on Dec. 8th and 11th, 1916, and Feb. 13th, 1917. Recovered at the same place in June and August, 1917.

GREENFINCH (*Chloris ch. chloris*).—AN24, AN54, nestlings, marked by Mr. J. Bartholomew at Torrance, near Glasgow, on June 1st and 7th, 1915. Both reported near Glasgow, on Mar. 12th, and in August, 1917.

BULLFINCH (*Pyrrhula p. pileata*).—CQ44, adult female, marked by Mr. S. Kendall Barnes at Chelsfield, Kent, on June 6th, 1916. Recovered near the same place on Jan. 6th, 1917.

- CHAFFINCH (*Fringilla c. caelebs*).—AD42, adult, marked by Mr. P. A. Buxton at Tonbridge, Kent, on April 6th, 1915. Recovered at the same place on Feb. 16th, 1917.
- REED-BUNTING (*Emberiza s. schœniclus*).—U927, nestling, marked by Dr. H. J. Moon at Lytham, Lancs., on May 29th, 1914. Reported by Miss M. Williams at Carnarvon, North Wales, on April 2nd, 1917.
- SKY-LARK (*Alauda a. arvensis*).—Z608, Z793, nestlings, marked by Mr. F. W. Sherwood at St. Annes-on-Sea and Lytham, Lancs., on May 9th and June 27th, 1915. Both recovered at Blackpool in February, 1917.
- Z827, nestling, marked as Z608 on June 8th, 1915. Reported by Mr. D. Bentley at Southport, Lancs., during Sept., 1917.
- TREE-PIPIP (*Anthus t. trivialis*).—W110, nestling, marked by Mr. A. Mayall near Shrewsbury, Shropshire, on June 11th, 1914. Reported by Senor M. J. Lopez de Carvallo per Mr. W. C. Tait, at Barbudo, near Villa Verde, District Braga, Portugal, on Sept. 29th, 1916.
- MEADOW PIPIT (*A. pratensis*).—CD96, nestling, marked by Messrs. Moon and Sherwood at St. Annes-on-Sea on June 12th, 1916. Reported by Mrs. A. L. Topping at Lytham, Lancs., on Aug. 27th, 1917.
- PIED WAGTAIL (*Motacilla a. lugubris*).—AZ81, nestling, marked by Mrs. Patteson at Limpsfield, Surrey, on May 19th, 1916. Reported by Mme. Osmin on the river Garonne, Gironde, France, in March, 1917.
- DT100, adult, marked by Mr. F. E. Blagg at Petersfield, Hants., on Dec. 17th, 1916. Caught again nesting in the same place on Aug. 5th, 1917.
- BRITISH SONG-THRUSH (*Turdus ph. clarkei*).—6790, nestling, marked by Mr. A. H. M. Cox at Plymouth, on May 18th, 1910. Reported by Mr. T. D. Deeble at the same place, on Jan. 29th, 1917.
- 82408, immature, marked by Miss C. M. Acland at Banstead, Surrey, on July 5th, 1914. Recovered at the same place on July 2nd, 1917.
- AO75, nestling, marked by Mr. J. Bartholomew at Torrance, near Glasgow, Stirlingshire, on July 1st, 1915. Reported by Mr. B. Owens at Castlereas, co. Roscommon, on Jan. 29th, 1917.
- CK46, nestling, marked as AO75 on June 18th, 1916. Reported by Mr. W. J. Smith at Cardross, Dumbarton, on Sept. 9th, 1917.
- 44963, nestling, marked by Dr. H. J. Moon at Marton, Lancs., on April 19th, 1914. Reported by Miss I. Stone near Weymouth, Dorset, on Feb. 10th, 1917.
- 48957, nestling, marked by Dr. H. J. Moon at St. Annes-on-Sea, Lancs., on July 7th, 1914. Reported by Mr. A. Desborough at the same place on Oct. 13th, 1917.
- 47599, nestling, marked by Mr. F. W. Sherwood at Lytham, Lancs. on May 2nd, 1915. Reported by Mr. H. Talbot at Cahirciveen, co. Kerry, on Dec. 1st, 1916.
- 49608 and 86968, nestlings, marked by Messrs. Moon and Sherwood at Lytham, Lancs., on May 8th and 21st, 1916. Reported near Southport, Lancs., and Shrewsbury, Shropshire, in March 1917.
- 88749, nestling, marked by Mr. F. E. Blagg at Petersfield, Hants., on June 21st, 1916. Recovered at the same place on Feb. 8th, 1917.

- 85498, nestling, marked by Mr. S. K. Barnes at Orpington, Kent, on April 14th, 1916. Reported by the Editor of *Cage Birds* at Green Street Green, Kent, on Aug. 11th, 1917.
- 86813, nestling, marked by Mr. T. C. Hobbs at Riding Mill, Northumberland, on May 7th, 1916. Reported by Mr. T. Cairns at Loch Ryan, near Stranraer, on Feb. 5th, 1917.
- 86716, nestling, marked by Mr. A. Mayall near Shrewsbury, Shropshire, on May 28th, 1916. Reported by Mr. D. Martin at Wellington, Shropshire, on Mar. 10th, 1917.
- 46975, adult, marked by Mr. C. F. Archibald at Leeds, on Mar. 18th, 1915. Recovered and again released at the same place on Dec. 20th, 1916, and May 3rd, 1917.
- BLACKBIRD** (*T. m. merula*).—6612, nestling, marked by Mr. J. Murray (Gamekeeper to Capt. H. S. Gladstone) at Tynron, Dumfriesshire, on May 12th, 1910. Reported by Mr. J. McCreight at Crumlin, co. Antrim, on Dec. 25th, 1912.
- 2762, adult, marked by Mr. W. E. Suggitt at Cleethorpes, Lincolnshire, on Aug. 21st, 1910. Reported by Mr. J. M. Barnard at the same place on June 4th, 1917.
- 11272, nestling, marked by the London Natural History Society at Chingford, Essex, on May 7th, 1911. Reported by Mr. M. A. Hopwood at the same place on Feb. 16th, 1917.
- 40719, adult, marked by Mr. A. Mayall near Shrewsbury, Shropshire, on Dec. 27th, 1912. Recovered at the same place on Feb. 10th, 1917.
- 87741, adult, marked by Mr. J. R. B. Masefield at Cheadle, Staffs., on May 28th, 1916. Recovered at the same place on Mar. 28th, 1917.
- AK23, nestling, marked by Mr. Smith Whiting at New Milton, Hants, on June 20th, 1916. Reported by Mr. J. Kitching Matterson at the same place on April 18th, 1917.
- 83608, nestling, marked by Mr. E. W. Hendy at Llansannan, Abergele, Denbigh, on June 11th, 1916. Reported by Corporal J. Chapman at Dyffryn, Merionethshire, on Oct. 9th, 1917.
- 10977, adult, marked by Mr. T. C. Hobbs at Riding Mill, Northumberland, on July 1st, 1916. Reported by Mr. W. E. Anderson at Wylam-on-Tyne in Sept., 1917.
- 82698, adult, marked by Mr. S. K. Barnes at Orpington, Kent, on July 23rd, 1914. Recovered at the same place and again released on Dec. 6th, 1916.
- 87813, nestling, marked as 82698 on May 25th, 1916. Recovered at the same place and again released on Dec. 12th, 1916.
- WHINCHAT** (*Saxicola r. rubetra*).—88959, nestling, marked by Messrs. Moon and Sherwood at Blackpool, Lanes., on June 13th, 1916. Found nesting by Dr. H. J. Moon about two hundred yards from where it was hatched on June 19th, 1917, and ringed again with No. DT96.
- BRITISH REDBREAST** (*Erithacus r. melophilus*).—Z423, adult, marked by Mr. T. C. Hobbs at Gosforth, Northumberland, on Dec. 5th, 1914. Reported by Mr. K. P. White at the same place on Feb. 14th, 1917.
- S271, nestling, marked by Mr. J. R. B. Masefield near Longton, Staffs., on May 12th, 1914. Recovered at Blythe Bridge, Staffs., on Jan. 16th, 1917.
- BW81, adult, marked by Mr. J. A. Anderson at Milngavie, Stirlingshire, on April 24th, 1916. Recovered at the same place on Mar. 18th, 1917.

- Four adults, marked by Mr. S. K. Barnes at Orpington, Kent, Dec. 31st, 1915, Feb. 27th, and April 13th, 1916. All recovered at the same place and again released in Dec. 1916.
- CV8, nestling, marked by Mr. S. K. Barnes at Orpington, Kent, on June 18th, 1916. Recovered at the same place on Feb. 10th, 1917.
- 88349, nestling, marked by Mr. F. E. Blagg at Headcorn, Kent, on June 19th, 1916. Reported by Mr. E. Bowles near Staplehurst, Kent, in March, 1917.
- Three adults, marked by Mr. C. F. Archibald at Leeds, in Feb. and Mar., 1916. All recovered and again released at the same place on Mar. 5th and May 2nd, 1917.
- HOUSE-MARTIN (*Delichon u. urbica*).—BX40 and CW74, adults, marked by Mr. F. E. Blagg at Petersfield, Hants., on July 8th and May 13th, 1916. Both recovered and again released at the same place on May 20th, 1917.
- WRYNECK (*Jynx t. torquilla*).—AY90, adult, marked by Mr. F. E. Blagg at Petersfield, Hants., on June 28th, 1915. Found nesting by Mr. Blagg at Steep, Hants., on June 17th, 1917.
- LONG-EARED OWL (*Asio o. otus*).—37049, nestling, marked by Mr. F. W. Holder at Southport, Lancs, on May 17th, 1916. Recovered at the same place on May 14th, 1917.
- MALLARD (*Anas p. platyrhyncha*).—34831, 36690, adults, marked by Mr. J. Law at Leswalt, Stranraer, Wigtownshire, on Feb. 27th, 1915. Recovered at the same place on Nov. 10th and Dec. 25th, 1916.
- Six adults, marked as 34831 in Nov. 1915 and Feb. and Mar. 1916. All recovered at the same place in Nov. and Dec. 1916 and Jan. 1917.
- 34836, adult, marked as 34831 on Feb. 27th, 1915. Reported by Miss J. Murray at New Luce, Wigtownshire, on April 25th, 1917.
- GADWALL (*A. strepera*).—34121, nestling, marked by Mr. W. Meech (gamekeeper to Lord W. Percy) at Alnwick, Northumberland, on Aug. 27th, 1915. Reported by Mr. J. Wilson at Holy Island, Northumberland, on Feb. 20th, 1917.
- TEAL (*A. c. crecca*).—34857, adult, marked by Mr. J. Law at Leswalt, Stranraer, Wigtownshire, on Nov. 25th, 1914. Recovered at the same place on Feb. 28th, 1917.
- 67055, adult, marked as 34857 on Nov. 18th, 1916. Recovered at the same place on Jan. 10th, 1917.
- WIGEON (*A. penelope*).—36920, adult, marked by Mr. E. de Hamel at Tamworth, Warwickshire, on Oct. 27th, 1915. Reported by Mr. E. Y. R. Bedford at Lichfield, Staffs., on Feb. 3rd, 1917.
- SHOVELER (*Spatula chlypeata*).—36704, adult, marked as 36920 on Jan. 10th, 1915. Reported by Mr. J. H. Caton Haigh at Penrhyndeudraeth, Merionethshire, on Jan. 29th, 1917.

(To be continued.)

NOTES

LONG NESTING-SEASON OF THE MARTIN.

ABOUT May 10th, 1917, the Martins (*Delichon u. urbica*) began to build and reconstruct their old nests at Jesmond, Newcastle-on-Tyne, and on May 28th one nest contained three eggs. On October 14th I noticed a Martin apparently feeding young in one of these nests, and on the following morning I examined the nest with the help of a ladder, and found that it contained four young, which I had some difficulty in persuading to remain after my inspection. On October 19th I saw two young Martins on the roof of a house opposite, and both the old birds flying about.

ISAAC CLARK.

[For other instances of October broods see O. V. Aplin, *Birds of Oxfordshire*, p. 110; *Zool.*, 1883, p. 124 (Kircudbright): *t.c.*, 1887, p. 194 (Yorks): *t.c.*, 1908, p. 28 (Yorks) and *Br. Birds*, X, p. 186 (Kent), etc. In the *Zool.*, 1907, p. 328, a case is recorded of young being apparently fed in the nest on November 19th (Oxon).

F. C. R. J.]

CUCKOOS' EGGS AND NESTLINGS IN 1917.

ALTHOUGH Cuckoos (*Cuculus c. canorus*) were very numerous round Felsted in 1917, only fourteen nests were found which contained cuckoos' eggs or nestlings. This is a far smaller number than usual. Probably it is partly due to the great decrease in the number of our resident birds, but in a greater measure to the fact that the intense heat rendered prolonged searching very exhausting.

I had great hopes that, as birds were so scarce, some very unusual foster-parents would be found, but except that I found a Cuckoo's egg in a Song-Thrush's nest, I was disappointed. In this case unfortunately a storm of wind and rain tilted the nest very much, and the Thrush deserted it before beginning to sit. The same Cuckoo had victimized six Hedge-Sparrows within a radius of about a hundred yards of this nest. The first egg of this series was laid about May 13th, and I found what was probably the last in the Thrush's nest on June 29th. It was then quite fresh, but was deserted on June 30th.

The first young Cuckoo I had under observation left the nest on June 15th, and the last on July 9th. I had no time to search for nests in July. Cuckoos ceased calling here after

June 28th. The species victimized were Hedge-Sparrow (11), Pied Wagtail (2) and Song Thrush (1).

I had nine nestlings under observation and of these three did not survive the nestling period, *i.e.* 33·3 per cent. died (*cf.* *Br. Birds*, Vol. VI, pp. 330-3; VII, pp. 233-4; VIII, p. 118; IX, pp. 96-7; X, p. 141-2). Two out of the three were removed from the nest, probably by rats, while the third died during the night. In this case the bird was 19-20 days old and the Hedge-Sparrows had ceased to brood it at night, when the temperature fell suddenly to 38°, and the young bird was dead and stiff in the nest by the morning.

In one case I found a Hedge-Sparrow's nest in an unfinished state, and kept it under observation, visiting it at least twice a day, in the morning and evening. The Hedge-Sparrow began to sit on four eggs, and two days later a Cuckoo's egg was deposited and one of the Hedge-Sparrows' eggs removed.

J. H. OWEN.

COMMUNAL LAYING BY THE SHELD-DUCK.

THE Common Sheld-Duck (*Tadorna tadorna*) is a numerous breeding species on the coast of Somerset, and amongst other places it nests plentifully on Steep Holm, in the Bristol Channel, which island I was enabled to visit early last June through the kindness of Mr. J. Sleeman, the lessee of the place. The birds nest there not only in rabbit burrows, but also in holes and crevices in the rocks and cliffs, and beneath thick bramble bushes which clothe certain portions of the island. These bushes, which are somewhat favourite nesting-sites, are very dense, with much dead stuff in the centre, and are by no means easy to penetrate. I saw several nests in these situations. The eggs from some of these are collected daily for food, and an interesting fact has thus been ascertained, *viz.* that two, three, four, and occasionally even five ducks will lay in the same nest. I visited one of these nests in company with Mr. Sleeman, jun., and it was found that four eggs had been laid in it since the previous day. I also saw five eggs brought in from another nest, which I was told had all been laid during the previous twenty-four hours. Mr. Sleeman, jun., informed me that it was common enough to find two eggs which had been laid in one day, and by no means uncommon to find four, though it was rare to find five. It has, of course, long been supposed that the large clutches of eggs sometimes found in nests of this bird were the produce of two females, but that as many as four and even five ducks should lay in the same

nest has not, I think, been hitherto recorded. The facts just given, however, point clearly to such a communal laying on the part of this bird in many instances.

J. WIGLESWORTH.

LEACH'S AND STORM PETRELS IN NORTH LANCASHIRE AND WESTMORLAND.

DURING the stormy weather of the last week in October, 1917, a number of Petrels occurred in North Lancashire and Westmorland, some of them a long way inland. Scores were seen near Carnforth and several were captured alive. Of those I have seen, three were Leach's (*Oceanodroma leucorhoa*) and two Storm (*Thalassidroma pelagica*). The last large "wreck" of Petrels in this district occurred in November, 1908 (*British Birds*, II, p. 282), but in this case they were all Leach's Petrel, which is much the commoner of the two on this coast.

H. W. ROBINSON.

A NOTE ON THE BRITISH PUFFIN.

IN *British Birds* for June last (*antea*, p. 5) the authors of the *Handlist of British Birds* propose to recognize the Puffin which breeds on the coasts of the British Islands, including the Færoes, as a distinct form under the name of *Fratercula arctica gratae* (Brehm). They state that the British form is *very much* smaller than the typical form, the wings measuring 158-166 in British birds as against 160-177 in a large series of *F. arctica arctica*.

In order to test these conclusions we have recently examined and measured the examples of Puffins in the British Museum. I will here give our results of the measurements of the wings of adults in millimetres—

- (1) Six adults from Spitsbergen: ♂ 181; ♀ 188, 185; ♂ 185, 184, 177. Average 183·3.
- (2) Four adults from N. Norway: ♂ 161, 158; ♀ 157, 156. Average 158.
- (3) Seven adults from the Færoes: ♂ 163, 160, 158; ♀ 156; ♂ 162, 155, 153. Average 158·5.
- (4) Four adults from Orkney, Shetland and St. Kilda: ♂ 157, 153; ♀ 163; ♂ 160. Average 158·2.
- (5) Six adults from Yorkshire coasts: ♀ 157, ♂ 163, 160, 161, 156, 151. Average 158.
- (6) Ten adults from Pembrokeshire and Man: ♂ 158, 157; ♀ 159, 156, 155, 154, 152, 152, 148; ♂ 160. Average 156.
- (7) Six adults from N. America (Greenland to Fundy): ♂ 172, 167; ♀ 170; ♂ 175, 174, 163. Average 170·2.

From these measurements we conclude—

- (1) That the Spitsbergen bird, as has already been noticed by Ogilvie-Grant (*Cat. Birds B.M.*, xxvi., p. 618), is distinctly larger and may be recognised as a distinct race under the name *F. a. glacialis*.
- (2) There is no distinction between the Norwegian and British birds worth recording.
- (3) The American birds are intermediate in size with the Spitsbergen and Norwegian races.

With regard to the type locality of the Linnæan species, the *Handlist* gives: "N. European Ocean. Restricted typical locality: Sweden." But although Linnæus's first reference is to the *Fauna suecica* it seems very doubtful whether the bird breeds on the Swedish coasts. When Linnæus spoke of the north European Ocean he was probably thinking of the northern coasts of Norway, where the Puffin is known to breed in abundance, and this should probably be regarded as the type locality.

Anyhow, so far as the birds in the British Museum go there is no evidence of the alleged smaller size of British as compared with Scandinavian Puffins, and we prefer to continue to regard our breeding form as typical *Fratercula arctica arctica* (Linn.).

W. L. SCLATER.

C. W. MACKWORTH PRAED.

The conclusions arrived at by Messrs. Selater and Praed are, in my opinion, hasty and valueless, because they are based on quite insufficient material. The fact is that they had only *one* adult Norwegian Puffin to judge from, two of their supposed adults being young, and one having the tips of the wings damaged! It would have been wiser if the authors had asked me for further information, before rushing to print with their note. Mr. Selater, at least, knows that I have recently worked through all Palæarctic water-birds, and that I do not come to hasty conclusions, but base my deductions on as much material as I can gather, and as a rule after weeks, months or years of study and consideration, especially when I split forms hitherto united. Fortunately, we have at Tring four adult Puffins from Norway. As Messrs. Selater and Praed point out correctly, it is the Norwegian bird which matters most of all, because it is that which must be regarded as topo-typical. By an oversight I have, in the *Handlist*, p. 208, given Sweden as the typical locality for *Alca arctica*, but Linnæus, in the *Syst. Nat.*, refers to his *Fauna Svecica*, where he says: "Habitat in rupibus et præcipitiis montium maris atlantici, præsertim in insulis."

As, however, only the five specimens are in our hands (one in London, four in Tring), we must look to other sources of information, and of these may be mentioned the following: In 1831 Brehm described "*Mormon grabæ*," from the Færoes, saying that it was the smallest of all forms—not having seen British or Breton examples.

In the *Ibis*, 1875, p. 267, Léon Olphe Galliard declares that "*Mormon grabæ*" must be re-established, but it might be objected that he only compared his French specimens with Greenland ones, not with the topo-typical form from Norway.

In 1876, in the *Bull. Soc. Zool. France* (p. 4), Jules Vian explains the constant difference of French Puffins, of which he appears to have compared more than 150, and he calls it "*grabæ*," but, unfortunately, does not say which material he compared.

In 1879 (*Bull. Soc. Zool. France*, p. 18-28), Dr. Louis Bureau also separates, under the new name *armoricana*, the birds from the coasts of France, which are "absolument semblables" with those from the British Isles and the Færoes, but he also includes Norwegian birds, though probably from single specimens only.

In 1914, Jordans (*Die Vogelfauna Mallorcas*, p. 144-153) discusses the races of the Puffin but, while admitting the existence of the small race, he thinks that a final decision about the number of forms can hardly yet be made, and he doubts if *armoricana* and *grabæ* are fully identical.

Zedlitz (*Journ. f. Orn.*, 1911, p. 302) identifies the birds from Bear Island with the Norwegian ones, having collected in both localities.

Otto le Roi (*Avifauna*, pp. 262, 263) gives measurements of thirteen specimens from Bear Island, which he identifies with the Scandinavian form, while, of course, separating the Spitsbergen form.

Other measurements have been given by Norton (*Proc. Portland Soc. Nat. Hist.*, 1901), by Herluf Winge, and by Hantzsck.

It is, from all these publications and from the material examined by me, quite evident that the birds from the Færoes, Great Britain, the Channel Islands, and from the coast of western France, are quite alike, and different from those from Bear Island, Iceland, Greenland, and from the east coast of North America. But, unfortunately, the terra typica is Norway, and from there only five useful examples could be measured. Now the Tring specimens, one may say from the "terra typica," namely, the Væsteraal Islands

Norway, collected by A. E. Brehm in June, 1860, have wings measuring as follows: ♂♂ 168·5, 177, ♀♀ 166, 167 mm. With these I can compare: eight skins collected by me on the rocky islets near Herm, Channel Islands, on May 3rd, 1899: ♂♂ 155, 155, 157, 163, 164 mm., ♀♀ 155, 157·5, 165 mm. Belmullet, County Mayo, Ireland. May to July, 1863: ♂ 160, ♀♀ 157, 159, 160·5. Staffa, June (sex?), 162. St. Kilda (sex?), 156, 157, 157, 157 mm. Færoes: ♂♂ 157, 163; sex?: 157, 158, 158 mm.

The wing of the one useful specimen from Norway in the British Museum measures, as correctly stated by Messrs. Selater and Praed, 161 mm., in fact, I only made it 160·5 mm. Certainly this is less than my measurements from Tring specimens, but we cannot throw over a subspecies because one specimen stands out from the rest. Now the wings of Bear Island birds, specially identified by several good ornithologists and said to be identical with Norwegian ones, have, according to le Roi, wings of 160 to 176 (average 168) in eight males, 158 to 168 mm. in five females (average 163·6), thus being obviously larger than British and French Puffins.

Messrs. Selater and Praed do not mention the bills. It is true that they are variable, but at the same time—apart from the general, but not constantly larger size of Iceland and South Greenland, as well as Labrador birds—the bills of Norwegian specimens measure in length 45-51, height 31-41 mm., while British and Herm birds have the length 43-48, height 34-37 mm.—even here generally, though not constantly, smaller dimensions in *grabæ*.

In my unpublished MS. I have unquestionably separated:—

1. *Fratercula arctica naumanni* Norton (*glacialis* auct.) from Spitsbergen. This form is apparently also found on Nova Zemlia, and it is said to inhabit Jan Mayen and northern Greenland, while "*arctica*" is found in southern Greenland; these latter statements require, however, confirmation, especially as in Jan Mayen smaller and larger birds are said to occur!
2. *Fratercula arctica arctica* (L.) Norway, Bear Island and Sweden. With this form I have provisionally and doubtfully united the birds from Iceland, southern Greenland to Ungava and Fundy Bay, but I have given careful measurements and said that possibly the birds from Iceland to Labrador might form another, intermediate subspecies, which would then be called *F. a. deleta*. This form is

for the present doubtful, because many individuals are not separable from Norwegian ones, and because the material available is too small.

3. *Fratercula arctica grabæ* Brehm.
4. The doubtful *F. arctica meridionalis* Jordans, based on birds wintering in the Mediterranean, the breeding place of which is unknown.

This is the state in which I should like to leave these birds at present. The three forms *F. a. arctica*, *naumanni* and *grabæ* are, in my opinion, certainly distinct, but it seems better to hesitate and not to split any more at present: no doubt I shall be accused of being over-hesitating and anxious to "lump," and someone else will think that he can see more and know better than I, but reckless splitting is not advisable. On the other hand, if a form is, by comparing series with series, different, we must separate it, *i.e.* express this fact by the short formula of giving it a name. It is not a question whether one "*prefers*" to regard the British form as typical *arctica*, but whether it *is* the same or not.

I may add that it is not at all "doubtful whether the bird breeds on the Swedish coasts," but that there are at least two breeding colonies on the Swedish coasts, both in Bohus. According to Mr. Jourdain's measurements, eggs of *grabæ* average less than those of *arctica*.—ERNST HARTERT.

[The distinctive characters of the Spitsbergen Puffin were clearly recognized by that very cautious and conservative ornithologist, the late Professor Newton, who was then editor of the *Ibis*, as far back as 1865. In the *Ibis* for that year, not only are tables given showing the different dimensions of this form (p. 522), but it is also figured as a distinct species (Pl. VI). Over thirty years later Mr. Ogilvie-Grant, in the *Cat. Birds*, XXVI., pp. 616-620, though aware of these differences, refused to recognize any subspecies of *Fratercula arctica*, but lumped Spitsbergen, American, Iceland and British birds under this name, remarking that "The Spitsbergen birds can only be regarded as a larger Northern race," and quoting all citations of *Fratercula glacialis* as synonyms of *F. arctica*. In the same volume, however, Mr. Grant admits the principle of subspecific distinction in the case of *Phalacrocorax graculus* and other species, so that to ascribe the recognition of the Spitsbergen Puffin to him is misleading, to say the least of it. As the Iceland Puffin is well represented in the British Museum, it is strange that no specimens were measured by Messrs. Sclater and Præd.

F. C. R. JOURDAIN]

MOORHEN EATING FRUIT.

ON October 22nd, 1917, I observed a Moorhen (*Gallinula c. chloropus*) eating some crab apples which had been washed on to the bank of the Swift, in Warwickshire, from an overhanging tree. This fruit was unusually plentiful this year. Most of the apples were eaten straight across the middle, and the pips were all taken out, while the remains were scattered about all round.

H. J. VAUGHAN.

[For previous notes on this subject see *Brit. Birds*, Vol. X, pp. 251, 275 and 295.—EDS.]

SPOONBILLS IN DORSET. — Lieut.-Colonel J. W. Evans states in the *Field* (Oct. 27, 1917) that on October 15th, 1917, a Spoonbill (*Platalea l. leucorodia*) was brought to him for sale, which had been shot that morning in Poole Harbour. On the same day four others, two old and two young birds, were killed at the same place, the whole of the small flock being thus wantonly destroyed. We commend these facts to the notice of the Society for the Protection of Birds, in the hope that some action may be taken in the matter.

GLOSSY IBIS IN PEMBROKESHIRE.—In the *Field* (Nov. 3 1917), Mr. W. H. Montagu Leeds, states that he picked up a Glossy Ibis, *Plegadis j. jalcinellus*, in a dying condition, about four miles from Tenby, on October 23, 1917. This species has only once been recorded previously from Pembrokeshire, as far back as 1834.

GREAT SKUA IN OXFORDSHIRE.—Mr. W. J. Polley, of Buitford, Oxon, sent a specimen of the Great Skua (*Stercorarius s. skua*) to the office of *Land and Water*, which was said to have been picked up dead after a gale at the end of September, 1917. Mr. O. V. Apin informs us that the correct date on which this bird was found was October 8th, 1917. It was a young bird, in good condition, and differs from the ordinary type in being dark brown instead of the usual chestnut brown. A similar variety from Yarmouth, in Mr. Gurney's collection, is figured in Dresser's *Birds of Europe*, VIII, pl. 609. This is the first record of this species for Oxfordshire, and the bird, now in the British Museum (cf. *Land and Water*, Nov. 1, 1917), was exhibited at the British Ornithologists' Club Meeting on November 14th, 1917, by Mr. W. L. Sciater.



LETTERS



EVIDENCE FOR THE BREEDING OF THE GREEN SANDPIPER.

To the Editors of BRITISH BIRDS.

SIRS,—Concerning my article on the Breeding of the Green Sandpiper in Westmorland, in your October issue (*amea*, p. 103), you state in an editorial that: "Had one of the young birds been taken, and its skin preserved in some public museum, lasting and incontrovertible proof would have been afforded, and it seems to us a great pity that the opportunity of obtaining such proof was missed." When I recorded the first nesting of the Eider Duck in Ireland in your issue of September, 1912 (Vol. VI, p. 106), where the eggs were taken in ignorance by my friend, who did not know the species was so rare in that country, your editorial was as follows: "This is a most interesting extension of the known breeding range of the Eider, and we think it was a great pity that the eggs were taken. Careful diagnosis of the bird, and a piece of the down from the nest, would have been amply sufficient for identification. Any action which tends to check a natural extension of breeding-range, or which is liable to endanger the successful rearing of its young by a rare breeding bird, is to be greatly deplored."

With this editorial I thoroughly agree, as I also regretted that the eggs were taken by my friend, although he did it in ignorance. Had I destroyed one of these Green Sandpipers in cold blood, simply to convince sceptical fellow ornithologists, I should never have been forgiven.

Surely, sirs, when the young, quite unable to fly, are seen with their parents, it is proof enough of their having been hatched there, without having to slaughter one or all of them to prove it!

H. W. ROBINSON.

[In our view there is no inconsistency in the remarks quoted by Mr. Robinson. In the case of the breeding of the Eider, identification could have been made certain by taking a sample of down or by the removal of a single egg, while by taking the whole clutch a serious risk was run of making the birds desert their breeding-place. In the case of the Green Sandpiper, no competent ornithologist saw the old birds and young *together*, and probably not one of those who saw the young birds was capable of distinguishing a young Common Sandpiper from a young Green Sandpiper. The taking of a single young bird would have afforded absolute proof without causing any risk of the desertion of the breeding-place or the loss of the whole brood. Mr. Robinson has certainly avoided the risk of remaining unforgiven from a purely sentimental point of view, but not altogether from a scientific one.—EDS.]

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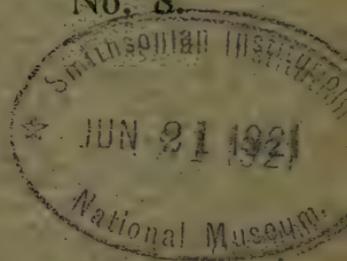
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NOTES AND OBSERVATIONS ON THE MOOR-HEN.

BY

FRANCES PITT.

THE most striking characteristic of the Moor-Hen (*Gallinula c. chloropus*) is its strict regard for territorial rights and the promptitude with which each pair of birds ejects strangers invading their particular piece of water. There are several ponds close to my home, and each pool has its tenants, which live on fairly good terms with each other all winter, but on the first hint of spring become intensely quarrelsome and suspicious. As the result of three seasons' watching I have come to the conclusion that it is the young birds of the previous spring that cause the trouble, for as soon as the winter is a thing of the past the parents chase off the young ones which have hitherto lived with them, and these birds, wandering about homeless, continually invade, and are as often chased away from, already occupied water, until at last they find some uninhabited pool and are able to settle down in peace.

The beginning of this activity is a good deal influenced by the weather. In 1915 I did not see any fighting before March 15th, but in 1916 I witnessed a great battle on February 3rd. My notes for that day run: "This afternoon I saw the Moor-Hens that live on the garden pond driving off two others. The bigger of the pair, which I presume to be the cock, was chasing the larger of the two strangers, which took to flight, followed by its mate, and made off to the big pool. My cock then returned to his hen and displayed before her, walking round with his head down, neck stretched out, and his tail spread like a fan."

After this there were no more combats for a month, for the wintry weather had returned, and cold has always a great effect on them. For instance, the severe winter of 1916-17 was a decidedly retarding factor, and in 1917 Moor-Hen affairs were quiet until March 26th, when the first duel of the season was fought; after that there was daily excitement, but I saw no combat to equal the one fought on the same pool in the previous spring (1916). That was indeed a fight, beginning in the early hours of the morning. I heard the war-cries while it was yet dark, and as soon as it was light I got up and looked out of the window, when I saw several Moor-Hens running about the lawn, and swimming up and down the pond. I came to the conclusion that "my pair" were repelling a double invasion, there being two pairs of strangers involved. This was at 5.40. From 6.0 to 6.30 it was most exciting. Both cock and hen went for the invaders.

but it looked to me as if cock fought with cock and hen with hen. I watched the bigger one swim down the pond after a large stranger, which swam away as hard as it could go, whereupon the pursuer, half swimming, half flying, increased his speed, and drove the other out at the end of the pool over the railings, and into the meadow. Here the stranger turned upon No. 1: for a moment they faced each other with extended necks, exactly—except that they had no hackles to stand on end—like two game-cocks, then they sprang into the air, only to drop back into their respective positions, whence they menaced each other again; once more they sparred, when suddenly No. 2 turned tail and ran. But he was not really running away; with his determined foe close on his heels he ran in a circle, fled over the railings, and was back in the pond. Here he swung round, faced the other Moor-Hen, and “hammer and tongs” they went at it once more. The water splashed as they bounced up and down, clawing at each other with their feet, and sometimes rolling right over. At last No. 2 broke away and fled across the meadow. The victor flew some way after him, but alighted when he saw that the invader had really gone, and came running back, calling loudly to his mate, who had been quite as busily employed with the strange hen. The latter had just beaten a retreat after her vanquished husband. The pair met with extended necks, and strutted round each other with drooping wings and tails spread fan-ways, but before the display was finished they caught sight of the second of the invading pairs. There was another furious fight, and when at last they were driven away the other pair had come back! But the Moor-Hens to whom the pond belonged seemed untirable; they fought on, racing and chasing, nearly all day, and finally vindicated their right to the pool.

Watching these duels convinced me that “right” as well as “might” had a good deal to do with the result, for the invading birds did not fight with half the determination of the Moor-Hens that were in possession. Several times I saw strange birds approaching the pond, and the stealthy, not to say sneaking, manner in which they crept along had a decidedly guilty look—they appeared to know that they were doing wrong.

So far as I could see and judge, hen always fought with hen and cock with cock, though I saw the hen help her mate in driving off a single stranger, but he did not appreciate the help, turning upon her, pecking her, and driving her back to the neighbourhood of the nest.

The weather has a retarding or accelerating effect on the preparations for nesting. In 1916 I found two nests begun on

March 20th, but it was April 15th of the following spring before I saw any signs of material being gathered. The behaviour of the two birds which I kept under the closest observation was noteworthy, for they had become quite tame during the winter, but the minute they had chosen their nesting-site (which was the identical bough of a weeping willow on which there had been a nest the previous season) they became exceedingly shy, diving and swimming away under water whenever any one went near. I put up a tent to try and get some photographs of the nest-building, and from its shelter was able to watch them more effectively. The hen stopped near the scanty platform of twigs and rushes which at this stage represented the nest, seldom going thirty yards away from it, but the cock spent most of his time out in the meadow, announcing his return by a loud cry, when he would swim past the hen—which invariably hurried to meet him—bowing and spreading his tail, and swim on in front of her to the nest. He usually stepped on to it, rearranged one or two of the bits, while his mate watched, then slipped off, and swam away about his business. I did not see the nest used for any more decided form of courtship than this, conjugal attentions taking place on the bank of the pond. As a rule the hen stayed near the nest, but twice I saw her swim forty yards or so to meet her mate, but he evidently disapproved of her coming so far from home, for he chased her back with pecks. As time went on she became more actively interested in the nest, arranging and rearranging the materials, which as yet were scanty. One morning, while thus engaged, two "Call" ducks came near and, balancing on their heads, began to feed just in front of the nest. The Moor-Hen fluffed out her feathers indignantly, and, leaning forward, caught hold of one drake by his curly tail-feathers, and gave him a sharp tug! He came "right side up" immediately, and swam away with a startled look.

The first egg was laid on April 29th, and incubation began on May 3rd, two eggs being laid subsequently. It appears to be the rule for Moor-Hens to begin to sit before the clutch is complete (in this district it is generally seven in number) as all those I have watched have done so, and in at least one case the bird began to sit when the third egg was laid, though she subsequently laid four more. This accounts for the erratic manner in which the chicks often hatch. There is frequently a week, and sometimes more, between the eldest and the youngest, and they will differ in size as much as the young of the Tawny Owl. The most curious case of which I have notes was that of a nest found with two eggs in it on June 1st. By the 6th there were seven eggs. Ten days

later a chick was out of the shell! Another hatched the following day, but no more appeared until the 24th and 25th, when three more hatched. The two remaining eggs were clear. I can only conclude that the eggs which gave rise to the first chicks must have been laid some ten days prior to the rest, for as a rule incubation takes with this species between twenty and twenty-two days.

In the case of the pair on the pool in the garden the first chick appeared on the twenty-third day, having apparently been hatched the previous evening. The young ones hatched out one after the other, and the old birds were kept very busy carrying food to them, insects chiefly, in the nest, which they did not leave at once. The nest was now a considerable structure, for it had been added to daily while sitting was in progress. By the way, I saw no evidence of the male bird giving any help with incubation, though most attentive to the family. As for the nest, fresh green rushes, " flags," and dead leaves had been piled upon it, until now that the young ones were ready to venture upon the water it was quite a high erection. To begin with it had only been a few inches above the water level, but the nest had risen considerably, and the pond had dried up a little, so the baby Moor-Hens had a drop of eighteen inches or more to face. But that did not matter, it was the question of getting back which was really serious. It was a stiff climb even for Moor-Hen chicks, which, with the claw on the rudimentary joint of their tiny flipper-like wings, have an aid which makes them marvellous at climbing up seemingly impossible places. All the same, the parents often rely too much on the climbing abilities of their offspring, placing the nest so high above the water that it is impossible for the young ones to get home again when once they have tumbled out. If a sudden alarm sends the chicks headlong into the water they cannot climb back into a nest on an overhanging branch of a tree! Yet many a nest is built in such a situation. The highest I have found was in an old pollard willow, and was fully twelve feet above the water. Once they had left it the young birds could never have got back into this nest. I am convinced that the bad choice of nesting-sites is a fruitful cause of mortality among the young Moor-Hens, for the old birds try and get the young home again; the hen sits in the nest and calls, but the chicks, striving in vain to climb up, soon die of cold and exhaustion.

Provided they are not disturbed, the young birds remain in the nest for the first day or two, and are fed in it by their parents. The black mites then begin to swim about after their parents, both of which take a keen interest in the welfare of the family. I witnessed a curious incident one day when

I disturbed two Moor-Hens, which were feeding with their seven young ones, the latter about a week old, in the middle of a pond. The old birds gave the danger call and splashed off with a great deal of fuss in one direction, followed by two of the chicks, but the rest swam quietly away in the *opposite direction* to their parents and hid under a bush. For the first few weeks of their lives the young birds make the nest their headquarters, returning to it to rest in the daytime and to sleep at night, and the old birds continue to bring material, so the structure still grows. I have seen a nest piled with freshly picked ferns and marsh-marigold leaves, and when it is made among reeds the birds will go on improving it by pulling down and bending over the surrounding leaves and stems. It is wonderful how a pair of Moor-Hens will cover up a nest if situated among yellow flags, bending down and pulling over the leaves until the nest is quite roofed in and hidden—a necessary precaution here, for there is a large rookery close at hand, the inhabitants of which are most determined thieves of eggs.

Very often, as a rule, indeed, the Moor-Hens are not contented with one nursery, but make a second nest especially for the use of the young, sometimes even two or three, and these supplementary nests are in all respects identical with the nests used for incubation, the best specimens being carefully lined with leaves, rushes, and grass. One that I examined was finished with bits of hay that must have been brought some yards. Being such indefatigable nest-builders they usually make an entirely fresh nest for the second clutch of eggs (laid at the end of June and hatching the middle of July), but I have lately met with a case of the old nest being thoroughly done up and used again, despite the fact that the owners had made a "nursery nest" for the use of the earlier family. The incubation nest that was used twice became quite a large pile of sticks, leaves, and rushes, but as soon as the last young ones were fairly active the old birds made a new nursery nest for them.

To return to the appearance and behaviour of the young birds—every one knows the bizarre colouring of a baby Moor-Hen, coal-black down, red shield and beak, and the semi-bald head showing pinky-yellow at the top and blue above each eye. In consequence of a question asked me by Mr. J. R. B. Masfield I kept careful note of the colour changes of the beak and shield, for the brilliant scarlet disappears comparatively soon, and is not reassumed until the bird is full grown. I found it began to fade at about the third week, and Mr. Masfield has suggested to me that this startling colouring must serve as a recognition mark while the young are being

fed by their parents, enabling the old birds to see and find them quickly among the water-side vegetation. But after careful watching I cannot say I have obtained any evidence confirmatory of this ingenious theory. The little ones follow the old birds about closely, and if they do get lost among the water-side undergrowth it is their shrill persistent squeak which brings their parents back to them. But certainly the brilliant colouring persists while the chicks are dependent on the old birds for food, and vanishes when they can look after themselves. In the case of two young that I reared under a hen the bright hues began to disappear on the eighteenth day. A dark line which divided the yellow tip from the red of the upper part of the beak grew broader. By the thirty-first day a dark patch had appeared on the shield, and the two areas spread and met, so that by the time the dull greyish plumage was assumed the scarlet had disappeared. In the case of a bird I kept under observation during the winter 1916-17 it was not regained until the end of February, but the severe weather may have had a retarding effect.

Judging both from the behaviour of young wild birds I have watched and of the chicks reared under a hen, they do not pick up any food for themselves for the first few days—the latter had to be hand fed—and for some little time longer are dependent on the old birds to find it for them. When anxious to be fed they squeak and quiver their little wings, the few bits of fluff on their semi-bald heads lying flat to the skin, but when satisfied these scraps of down stand upright. By three weeks old they can find food for themselves, but still go about with the old birds and expect to be fed. I have seen a quite big bird, clad in the dull grey-brown plumage, swimming after an old one and imploring with piteous squeaks to be given food. This livery seems to be the badge of independence and is assumed at about five weeks old. They are full grown and can fly well at seven weeks. During the autumn the rusty grey colour is gradually lost, and by November the adult plumage is assumed, though as I have already mentioned the scarlet shield, together with the red band round the leg, may not be acquired until later.

The time of the reappearance of the scarlet is subject to considerable variation, for a bird hatched on July 1st, 1917, had the full adult colouring by the end of the following October. Once regained, the bright colouring persists in its full intensity even during the moult.

During the winter young Moor-Hens remain with their parents, old birds and the young of different clutches living in perfect harmony. Being almost omnivorous feeders Moor-Hens are not seriously inconvenienced by even the hardest

weather. Under the most adverse circumstances they can generally find something to eat, the only thing that does upset them is, when frozen out, the absence of any means of bathing. For instance, when the thaw came last winter they revelled in the water. On February 20th it rained all day, and, though the ponds were still covered with ice, water stood about on the paths in puddles. As soon as it was light the Moor-Hens were trying to wash in these shallow places, but the attempt was not satisfactory, so, having been up to the house for food—the cold had made all the birds pitifully tame—they spent the rest of the morning standing on a piece of wood on the lawn with their wings spread out catching the rain. They were from 8.30 to 12.30 preening and dressing their feathers and spreading out their wings to let the rain-drops run into them.

Undoubtedly they had suffered from the cold during the worst weather, but not as much as the majority of birds. Those which did not leave when the severe weather set in had a very bad time, and the Moor-Hens, too, felt it, but there was no indication of any migratory movement among them, though such movements take place in many localities every year, the breeding-ponds being left for running streams and rivers. All my birds remained in their autumn haunts, and the tamer ones came up to the house to be fed. They followed the example of the ducks, warming their feet at every opportunity by sitting down and drawing them up into their feathers. They even ate in this attitude, and if disturbed would run off a little way, only to sit down again in the snow as soon as they could. But if they felt the cold it did not always depress their spirits, for one morning I watched a young bird have a sparring match with a cock Pheasant which wanted to eat with it. The Moor-Hen drew itself up, looking no match for its opponent, but a moment or two later the Pheasant had beaten a retreat, leaving the Moor-Hen in possession of the food.

Considering what highly successful birds they are in most respects, it seems strange that Moor-Hens are not more numerous. Probably the heavy mortality which befalls the chicks in the first fortnight of their existence is the most powerful factor in keeping the numbers of the species within reasonable limits. Of course, pike, rats, etc., take toll. And their quarrelsomeness in the spring may also have some effect, for, after all, the number of suitable nesting-sites in any given area is not unlimited!

THE MOULTS AND SEQUENCE OF PLUMAGES OF THE BRITISH WADERS.

BY

ANNIE C. JACKSON, HON. MEM. B.O.U.

PART IV.

GENUS *Vanellus*.LAPWING (*Vanellus vanellus*).

ADULTS.—Complete moult from August to December. From February to May there is a very partial moult involving the feathers of the head, some feathers of the nape, throat and breast, apparently some scapulars and innermost secondaries and some median and lesser coverts, but not the rest of the body-feathers, not the tail and not the rest of the wings. The summer plumage differs slightly from the winter plumage. The chief differences in the male are that in summer the feathers of the upper-parts are without buff edges; the crown is deep black, glossed green, not tinged brown as in winter, while the lores, the patch in front of, and below the eye, the band across the ear-coverts and chin and throat are deep black, in some intermixed with one or two worn white winter feathers: in winter the chin and throat are white (some feathers spotted dusky-black in some).

The female in summer has the crown intermixed with new black feathers, glossed green: eye-stripe white or light buff streaked black-brown and dusky; lores, patch in front of, and below, the eye and the ear-coverts blackish-brown, some of the feathers with white bases and more or less intermixed with white feathers; chin and throat intermixed with new black feathers. *N.B.*—In the female the moult of the feathers of the head, throat and neck is apparently not so complete as in the male, many of the winter feathers being retained: in many examples the white feathers of the sides of the neck do not appear to be renewed. One female, Tring, Herts, April 20th, had almost completely moulted the feathers of the crown, which resembled that of the male, while the feathers of the chin and throat, except for one or two worn white winter ones, had been completely renewed and the chin and throat were as black as in the male.

In winter plumage, the female differs from the male in having the forehead and crown browner with less gloss, the crest shorter, the upper-parts more olive-green, not so metallic green, the patch in front of, and below the eye browner-black and not so extensive, many of the feathers with buff bases, while the median and lesser wing-coverts have less violet-purple gloss.

Adult males may be distinguished from adult and young females by the shape of the wings. In adult males the 5th primary (the bastard-primary being counted as the 1st) is longer than, or equals, the 4th, while the succeeding primaries decrease gradually in length, making the tip of the wing rather rounded in shape. In adult and young females as well as young males the 5th primary is shorter than the 4th and the succeeding primaries decrease in length more sharply and thus give the tip of the wing a more pointed appearance. Young females may be distinguished from young males and adult females by having the 2nd primary longer than the 5th instead of below the 5th as in young males and adult females. There is considerable individual variation in the wing formula of each sex, but the following abbreviated formulæ appear to be constant.]

ADULT MALE.—2nd primary comes between 7th and 8th or 8th and 9th primaries; 4th or 5th primaries are longest; 6th above 2nd.

ADULT FEMALE AND YOUNG MALE.—2nd primary comes between the 5th and 6th; 3rd or 4th primaries are longest, in some equal; 6th below 2nd.

YOUNG FEMALE.—2nd primary comes between 3rd and 4th or 4th and 5th; 3rd usually longest, in some 3rd and 4th equal, otherwise 4th shorter than 3rd; 6th below 2nd.

Mr. F. W. Frohawk, in the *Ibis*, 1904, pp. 446-451, gives a more detailed wing formula for each sex, but owing to individual variation his formulæ do not always hold good. He also seems to have overlooked the fact that the wing of the young male is like that of the adult female in shape, while that of the young female is different to both.

JUVENILE.—Like the adult female in winter, but the crown dark sepia, the feathers edged light buff and the crest shorter: nape below nuchal collar ash-brown, the feathers edged warm buff; (in the adult the nape is tinged green and the feathers lack the buff edges): upper parts, including innermost secondaries and coverts, dull green more or less tinged brown (in some the brown tone predominating), the feathers plentifully edged, and some notched, warm buff: patch in front of the eye smaller, that below eye less extensive and browner: gorget narrower and dull brownish-black, faintly glossed dull-green, the feathers tipped light buff or white: under tail-coverts paler pinkish-cinnamon: tail-feathers (except outer pair) tipped warm buff: primary and greater coverts dull black with little or no gloss, the greater coverts narrowly tipped warm buff, median coverts dull or metallic green with broad warm buff edges (in the adult, only a few of the median coverts have sandy-buff tips); lesser coverts dull brownish-green, some with a metallic green sheen and most with warm buff tips, which are absent in the adult.

The juvenile body-feathers are softer and looser in structure than in the adult. The sexes are alike, but the upper-breast in males appears to be more greenish-black and in females more brownish-black with or without a greenish gloss, in some males some of the median coverts are glossed, and the distal lesser coverts are tinged with violet-purple.

N.B.—In the juvenile the outer pair of tail-feathers are often entirely white with no black marking. I have not yet examined an undoubted adult with a pure white outer tail-feather.

FIRST WINTER.—The juvenile body-plumage (not all the scapulars), very occasionally an odd tail-feather, some innermost secondaries and coverts, some or most median and lesser coverts, but not the rest of the wings, are moulted from July to December. After this moult the birds are very like the adults, but may be distinguished by the shorter crests, the worn buff edges to the tail-feathers, when not too abraded, and the duller wing-coverts: the primary and greater coverts are as in the juvenile, but the sandy-buff tips to all, except the inner greater coverts, are usually worn off. In the male the median coverts have usually less violet-purple gloss and the light buff edges are more numerous than in the adult; the lesser coverts distally are metallic green, more or less glossed violet-purple (not deep violet-purple as in the adult), while proximally they are brownish tinged dull green without, or with only a faint indication of, the violet or greenish-purple sheen of the adult, the innermost with a slight violet gloss, a few edged warm buff (in the adult these edges are absent). In the female the median coverts are like those of the adult female, but more plentifully edged warm buff, innermost brownish-green with brownish bases.

exposed and tipped warm buff (in the adult these coverts are more metallic green and the buff edges are less numerous): proximal lesser coverts as in first winter male but with little or no indication of violet gloss (in the adult female these feathers are metallic green with a violet gloss and without buff tips).

FIRST SUMMER.—Only a few spring specimens were examined. Apparently first summer birds are like the adults but distinguished by duller wing-coverts as in first winter.

N.B.—Males collected in summer often have the 5th primary worn down and equalling the 4th in length (in very worn specimens shorter than the 4th), so that it is not always possible to identify a first summer male by the relative length of the 4th and 5th primaries. One ♂, Northern Manchuria 22/5, however, had the 5th primary well below the 4th (wing only slightly worn), otherwise was like the adult; one ♂, Scotland April 25th, the same and like the adult, but the crest shorter.

When the wing quills are not too abraded, first summer females may be distinguished from adult females by the relative length of the second primary.

GENUS *Arenaria*.

TURNSTONE (*Arenaria i. interpres*).

ADULTS.—Complete moult from July to October. From February to June there is a partial moult, involving the body-feathers (not all the scapulars nor all the feathers of the back and rump, nor all the upper tail-coverts), usually the tail-feathers, innermost secondaries and coverts, usually some median and lesser coverts (in some specimens most of the median and lesser coverts), but not the rest of the wings. The winter and summer plumages are distinct. The sexes are alike in winter, but in summer the female has the crown black or black-brown, the feathers narrowly edged warm buff and apparently never edged white as in many males; nape white more or less washed with buff, the feathers spotted and marked with dusky-brown or black (in some the distal portions of the feathers are more or less sooty-brown); in the male the nape is white, in some the feathers tipped dusky and washed with russet; in the female the mantle and scapulars are blacker, the feathers with fewer russet edgings and markings than in the male, while the black patch below the eye is less extensive and the black band across the sides of the neck narrower; innermost secondaries and coverts black-brown glossed olive, or olive-brown narrowly margined, and in some with one or two irregular markings of, russet, instead of more or less russet or plentifully marked with it as in the male; median coverts as in the male, but with less russet and more black, in some intermixed with pale drab feathers (sometimes tinged russet) with black-brown centres.

N.B.—The lesser coverts only occasionally appear to be renewed in spring in the female, while usually fewer new median coverts are acquired than in the male.

One adult male, May, Scotland, has the 2nd primary of each wing in quill, the remaining primaries new; an unusual occurrence in spring: the specimen is in full moult including axillaries and under wing-coverts.

JUVENILE.—*Male and female.*—Much like the adult in winter plumage, but the dark sepia or black-brown feathers of the upper-parts and innermost secondaries and coverts tipped light buff (not shading at the tip into ashy-brown, dusky or buffish-brown, as in the adult, in which some of the feathers also are faintly tipped white); pectoral gorget narrower than in the adult and in some tinged browner,

in some the feathers faintly edged light buff: patch on sides of the breast usually lighter and washed buff, some of the feathers streaked and marked dusky-black (in the adult the sides of the breast are ashy-brown, some of the feathers tipped white); tail-feathers as in the adult, but usually tipped light buff: median coverts dusky-brown, some white as in the adult, but, except white ones, edged warm or light buff, instead of edged buffish-brown (or tawny in some specimens) as in the adult; lesser coverts as in the adult but in some with buff tips.

FIRST WINTER.—*Male and female*.—The juvenile body-plumage (not all the scapulars), usually the tail-feathers, innermost secondaries and coverts, a few median and lesser coverts are moulted from August to November, but not the rest of the wings. After this moult the birds are like the adults, but are distinguished by the buff edges to some retained juvenile scapulars, innermost secondaries and median coverts.

FIRST SUMMER.—Moult as in the adult, after which the birds are like the adults in summer plumage, but are distinguished by the worn buff edges to the retained juvenile wing-coverts, especially the innermost median coverts; the male also differs from the adult male in having the crown more heavily streaked black-brown or black, the feathers narrowly edged warm buff, in some white; the black band from eye to eye narrower and often incomplete; nape more or less streaked dusky; mantle, scapulars and innermost secondaries and new wing-coverts with less russet than in the adult male, and usually with rather more, or about the same, amount of russet as in the adult female. The female resembles the adult female but has less russet on the upper-parts, innermost secondaries and new wing-coverts.

N.B.—Only a few median and lesser coverts and one or two innermost secondaries had been renewed in the female specimens examined.

GENUS *Bartramia*.

BARTRAM'S SANDPIPER (*Bartramia longicauda*.)

ADULTS.—Complete moult from July to January. The body-moult appears to commence in July or August while the moult of the remiges is deferred till later; several specimens examined were moulting primaries in December and January and one in December and two in January the body as well. Only two spring specimens examined were in moult; one February 6th was moulting the body-feathers, tail-feathers and innermost secondaries and coverts but not the rest of the wings, another labelled "Spring" was moulting the same and in addition some median and lesser coverts. There is no difference in coloration between the winter and summer plumages, and the sexes are alike.

JUVENILE.—*Male and female*.—Very similar to the adult, but the feathers of the mantle and scapulars darker, being black-brown edged all round with buff, the feathers practically with no barring, except for some notches of black-brown on the outer edge of the scapulars (in the adult the mantle and scapulars are sepia glossed olive and feathers of mantle shaded black-brown or with subterminal black-brown barrings and edged sandy-brown and buff, and the scapulars with ill-defined black barrings): median coverts sepia or ash-brown broadly tipped and notched with buff or cream and with a subterminal shading, approximating in shape a semicircle, in some a round patch, in some an incomplete barring, notching or bordering of dark sepia (in the adult the median coverts are sepia with broad buff tips and edges and have two or three transverse bars of black-brown, not always well defined).

FIRST WINTER.—*Male and female.*—The juvenile body-feathers, innermost secondaries and coverts, some median and lesser coverts, but not the tail-feathers nor the rest of the wings are moulted from early autumn to winter. After this moult the birds resemble the adults, but are distinguished by the retained juvenile median and lesser coverts.

FIRST SUMMER.—Apparently not to be distinguished with certainty from the adult.

GENUS *Machetes*.

RUFF (*Machetes pugnax*).

ADULTS.—Complete moult from July to December. From March to June there is a partial moult involving the body-feathers (not all the scapulars, not all, and in some not any, of the feathers of the back and rump), usually the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts but not the rest of the wings. A varying number of winter feathers are retained on the upper- and under-parts. The male, as is well known, has a striking summer plumage which is subject to great variations in colour and is characterised by the assumption of a tippet and ruff. The female lacks the tippet and ruff of the male, and as compared with the latter has a sombre breeding plumage. In winter the sexes are alike in plumage, but the female may always be distinguished by her smaller size.

JUVENILE.—*Male and female.*—The upper-parts are distinct but the under-parts are much like the adult in winter plumage. Upper-parts sepia or blackish-brown, the feathers fringed warm or ochraceous-buff, nape pale ashy-brown, the feathers fringed warm buff (in the adult the upper-parts are pale sepia, the feathers with dark shafts and lighter edges, in some the feathers with central shadings of black-brown); lower throat, sides of neck, breast and flanks warm buff (in the adult the lower throat and sides of neck and breast are pale ashy-brown, the feathers broadly edged white; in some the lower throat and sides of neck faintly spotted sepia; flanks white, some tinged ashy); tail-feathers ash-brown bordered and marked blackish and fringed buff (the buff fringes are absent in the adults); wing as in the adult, but innermost secondaries as upper-parts, not pale sepia with one or two irregular black marks as in the adult; greater, median and lesser coverts ash-brown or pale sepia bordered with darker brown and fringed warm or ochraceous-buff (in the adult these coverts are sepia, broadly tipped white, the inner greater coverts in some with a subterminal black patch on each web, the median and lesser coverts pale sepia with dark shafts and lighter edges and faintly tipped white). The sexes are alike in plumage but the female is smaller.

FIRST WINTER.—*Male and female.*—The juvenile body-feathers (not all the scapulars), sometimes the tail-feathers, some innermost secondaries and coverts, some median and lesser coverts are moulted from August to December, but not the rest of the wings. The birds now resemble the adults in winter plumage, but are distinguished by the juvenile median and lesser coverts and one or two worn juvenile innermost secondaries and scapulars.

FIRST SUMMER.—Moult as in the adults, and only to be distinguished from the adults when the buff edges to the juvenile wing-coverts have not become completely abraded.

GENUS *Calidris*.

THE SANDERLING. (*Calidris alba*).

ADULTS.—Complete moult from July to November. From March to June there is a partial moult involving the body-feathers (not all the scapulars, not all, and sometimes not any, of the feathers of the back

and rump, and not all the upper tail-coverts), sometimes the central pair of tail-feathers, usually some innermost secondaries and coverts, some median and lesser coverts, but not the rest of the wings nor of the tail-feathers in the specimens examined. In some individuals some winter body-feathers are retained on the upper- and under-parts. The winter and summer plumages are distinct and the sexes are alike in winter plumage, but in summer plumage the female has the upper-parts greyer, the feathers more plentifully edged with greyish-white instead of pinkish-cinnamon, the cheeks, sides of neck, chin, throat and breast as in the male but usually washed paler pinkish-cinnamon (in some examples these areas are white without any pinkish-cinnamon tinge), new innermost secondaries and wing-coverts broadly edged and tipped white, pinkish-cinnamon markings in some more or less absent.

N.B.—Four adults, all from Cozumel Island, Yucatan, all February specimens, had the 2nd primary in quill and were acquiring winter-feathers on the body, one or two worn summer-feathers still remaining on the back and rump. I was unable to find any spring birds moulting all the tail-feathers, though Mr. F. M. Chapman, in his article on the "Changes of Plumage in the Dunlin and Sanderling" (*Bull. Amer. Mus. Nat. Hist.*, Vol. VIII., page 1), observed one specimen with the outer pair of tail-feathers in quill and thought it probable that all the tail-feathers were moulted.

JUVENILE.—*Male and female.*—The upper-parts are distinct from the adult but the under-parts much resemble the adults in winter plumage. Crown, mantle, scapulars, innermost secondaries and coverts black-brown, the feathers edged and notched creamy-yellow; feathers of back, rump and upper tail-coverts ash-brown with light buff or creamy-yellow tips terminating in a narrow dusky line; ear-coverts streaked dark sepia, feathers edged buff at sides, not white narrowly streaked dusky as in the adult; cheeks and sides of neck in some washed buff; sides of breast creamy-yellow, the feathers faintly tipped dusky and some with sepia marks towards the tip; (in the adult, the sides of the breast are white, some of the feathers sullied with ash-grey and with sepia shafts); central pair of tail-feathers sepia, darker on inner webs and tipped creamy-yellow (not blackish-grey, narrowly edged white as in the adult); wing as in the adult but median coverts light sepia shading into creamy-yellow with a terminal line of dusky, in some with a subterminal spot or bar of dark sepia (not ash-grey edged white with darker shafts as in the adult); lesser coverts dark sepia, a few tipped cream instead of blackish-grey, some tipped white as in the adult.

FIRST WINTER.—*Male and female.*—The juvenile body-feathers (not all the scapulars nor all the feathers of the back and rump), the tail-feathers, some innermost secondaries and their coverts, some median and lesser coverts, but not the rest of the wings, are moulted from September to December. After this moult the birds resemble the adults in winter plumage, but are distinguished by one or more worn spear-shaped juvenile innermost secondaries and scapulars and by the retained juvenile median coverts.

N.B.—One specimen, Durban, March 29th, had the 3rd primary of each wing in quill and the inner remiges new, but was not moulting the body-feathers or tail.

FIRST SUMMER.—Moult as in the adult and the birds are like the adults and only distinguished by the faint dusky terminal border when not too abraded, to the faded creamy edge of the innermost median coverts.

(To be continued.)

THE HOODED CROW (*CORVUS CORNIX CORNIX*)
IN WARWICKSHIRE.

BY

THE LATE A. GEOFFREY LEIGH.

THE Hooded Crow (*Corvus c. cornix*) is a regular passing migrant in very small numbers in the extreme north-western corner of Warwickshire, but this condition would appear to have obtained only during the past decade, for previously it was very seldom reported, and though it would seem incredible that its visits should be only of such recent date and confined to so small an area, records of its appearance elsewhere in the county are exceedingly scanty.

The late R. F. Tomes, in the *Victoria History of Warwickshire*. Vol. I., p. 197, makes the bare statement that "it is an occasional visitor," without adding details as to the locality or season, and the only previous instance of its occurrence with which I am acquainted is of an adult male killed at Weston-on-Avon, October 8th, 1847, and now in the Worcester Museum.

On May 21st, 1883, a nest and eggs of this species, now in Mr. R. W. Chase's collection, were taken from a tree in Sutton Coldfield Park. This, the only instance of the Hooded Crow attempting to breed in the county, has been made the subject of several records, very varying dates having been assigned to it. In the *British Association Handbook*, 1886, it is given as 1883; in the *Zoologist*, 1894, p. 344, as about 1887; in the *Vict. Hist. Warwick* as 1883 and 1894, while Mr. Steele Elliott, in the only account in which full details are given (*Journal of the Birmingham Nat. Hist. and Philosophical Society*, II., p. 34), gives 1882 as the date. With this exception I am acquainted with only two records of its occurrence, both at Sutton Coldfield, prior to October 22, 1905, on which date one is reported to have been seen at Earlswood (*Birmingham Daily Mail*, November 4, 1905).

In marked contrast to this paucity of previous records is the fact that during the period from 1908 to 1914 I met with the species on no fewer than eight occasions in the Hampton-in-Arden and Packington districts, and it is somewhat curious that of the total number of fourteen birds seen, ten occurred within the boundaries of Packington Park and one just outside. Miss B. A. Carter informs me that since 1911 she has seen the Hooded Crow on three occasions at Sutton Coldfield, whilst during the winter of 1914-15 I saw it three times in the same district, on two occasions

associating with Carrion Crows : the species usually occurs singly, but I have twice seen pairs of birds and twice parties of three.

Treating the records from both districts together, during the autumn migration the earliest occurrence is October 5th (1911, Sutton), and all other autumn appearances have been during November, with the exception of one as late as December 1st (1912, Hampton). The spring passage usually takes place during February (January 12, 1915, Miss Carter), the earliest date being February 7 (1909, Packington), whilst the latest date I have for the species is March 3rd (1913, Packington).

RECOVERY OF MARKED BIRDS.

- TUFTED DUCK** (*Nyroca fuligula*).—33483, nestling, marked by Mr. W. Meech (gamekeeper to Lord W. Percy) at Alnwick, Northumberland, on Aug. 4th, 1913. Reported by Lord Armstrong at Rothbury, Northumberland, on Aug. 9th, 1917.
33461 and 65069, adults, marked as 33483 on Aug. 19th, 1913, and Aug. 26th, 1914. Reported by the Right Hon. W. Runciman at Chathill, Northumberland, on Dec. 28th, 1916.
67535, nestling, marked as 33483 on Aug. 27th, 1915. Reported by Professor J. A. Palmén at Kuusamo, north Finland, early in June, 1917.
- CORMORANT** (*Phalacrocorax c. carbo*).—100646, nestling, marked by Miss A. Pease at Farne Islands, Northumberland, on Aug. 2nd, 1913. Reported by Mr. S. Allison about two miles away on May 5th, 1917.
100688, nestling, marked as 100646. Reported by Mr. J. Harvey near Parkstone, Dorset, on Feb. 15th, 1917.
- SHAG** (*Ph. g. graculus*).—100788, nestling, marked by Mr. A. O. Whitehead at Handa Island, Sutherland, on June 18th, 1914. Reported by Mr. S. Macleod, at Portree, Isle of Skye, on March 11th, 1915.
- GANNET** (*Sula bassana*).—100034, adult, marked by the late J. M. Campbell at Bass Rock, Haddingtonshire, on July 30th, 1913. Reported by Mr. A. Fanske, near Aalesund, Romsdal, Norway, on Jan. 28th 1917. (*vide antea*, p. 22).
- LAPWING** (*Vanellus vanellus*).—6833, nestling, marked by Mr. J. Bartholomew at Torrance, Stirlingshire, on May 14th, 1910. Reported by Mr. R. A. Daniell at Falmouth, Cornwall, in Feb., 1917.
10484, nestling, marked as 6833 on June 5th, 1910. Reported by Mr. M. D. Fox at Athleague, co. Roscommon, on Jan. 16th, 1917.
84853, nestling, marked as 6833 on June 10th, 1915. Reported by Mr. J. A. Anderson at Milngavie, Stirlingshire, on Oct. 10th, 1917.
48142, nestling, marked by Mr. M. Portal at Loch Leven, Kinross, on May 13th, 1914. Reported by J. P. Hill near Plymouth, Devon, on Jan. 17th, 1917.
45281 and 80353, nestlings, marked by Miss M. H. Greg near Ayr, on June 6th, 1914. Reported from Donemana, co. Tyrone, in Dec., 1916, and Ballycarry, co. Antrim, on Feb. 8th, 1917.
82337, nestling, marked by Miss A. Blyth at Pitlochry, Perthshire, on June 2nd, 1916. Reported by Mr. R. Barkeley at Killane, Ballymoney, co. Antrim, in Jan., 1917.
19401, nestling, marked by Miss S. Mounsey-Heysham at Rockcliffe Marsh, Cumberland, on May 23rd, 1912. Reported by Mr. T. L. Johnston at Grimsdale, near Carlisle, on July 3rd, 1917, but had been dead for some time.
85111, nestling, marked as 19401 on June 2nd, 1915, by Mr. J. L. Johnston. Reported by Mr. M. Kelly in co. Kilkenny, on Jan. 29th, 1917.
47947, nestling, marked as 19401 on May 27th, 1916. Reported by Mr. J. O'Leary at Cashel, co. Tipperary, on Jan. 15th, 1917.
17026, nestling, marked by Mr. W. T. Blackwood at Broughton, Peeblesshire, on June 8th, 1912. Reported from the same place in May, 1916.

17427, nestling, marked by Mr. A. Bankes near Harrogate, Yorks, on May 30th, 1912. Reported by Mr. B. L. Jolly at Probus, Cornwall, on Feb. 7th, 1917.

17405, nestling, marked by Mr. A. Bankes near Salisbury, Wilts, on May 8th, 1912. Reported by Mr. F. J. Fishleigh near Lympstone, Devon, on Jan. 29th, 1917.

81437, nestling, marked by Mr. B. H. Fell at Hornby, Lancs, on June 1st, 1914. Reported by Mr. B. Watkins at Newport, Mon., on Feb. 3rd, 1917.

80371, nestling, marked by Miss M. H. Greg at Styal, Cheshire, on June 22nd, 1914. Reported by Mr. F. H. Healing at Tewkesbury, Glos., on Dec. 29th, 1916.

49250, nestling, marked by Dr. H. J. Moon at Ingleton, Yorks, on June 10th, 1914. Reported by Mr. W. Harvey at Bere Ferrers, Devon, on Jan. 26th, 1916.

49283, nestling, marked as 49250 on June 13th, 1914. Reported by Mr. M. Lagadee at Cap Coz par Fouesnant, Finistère, France, in Jan., 1917.

COMMON REDSHANK (*Tringa totanus*).—18989, nestling, marked by Miss M. H. Greg at Budle Bay, Bamburgh, Northumberland, on June 29th, 1913. Reported by Mr. L. Parker at Boston, Lincs, in Nov., 1916.

WOODCOCK (*Scolopax rusticola*).—16921, 16922, nestlings of same brood, marked by Mr. J. H. Milne-Home at Langholm, Dumfriesshire, on April 26th, 1912. Both recovered at Tarras Water, near Langholm, on Jan. 23rd, 1917.

BLACK-HEADED GULL (*Larus r. ridibundus*).—21588, nestling, marked by Mr. R. O. Blyth at Loch Thom, Renfrewshire, on July 22nd, 1911. Reported by Mr. A. Campbell at Kilmacollm, Renfrewshire, on May 12th, 1917.

60109, nestling, marked by Mr. P. A. Buxton at Swanage, Dorset, on July 9th, 1913. Recovered at Portsmouth on Mar. 29th, 1917.

25967, nestling, marked by Mr. A. W. Boyd at Delamere Forest, Cheshire, on June 9th, 1912. Reported by Mr. F. Jackson near Birkenhead, on Feb. 8th, 1917.

63770, marked as 25967 on June 21st, 1914. Reported by Mr. R. Lamplugh at Bridlington, Yorks, on Jan. 9th, 1917.

Four nestlings, marked by Messrs. Robinson and Smalley at Ravenglass, Cumberland, on June 11th, 13th and 25th, 1910. Recovered in Lancashire (Dec., 1916 and Jan., 1917), Cornwall (Feb., 1917) and Ravenglass, Cumberland (May, 1917).

Three nestlings, marked by Mr. H. W. Robinson at Ravenglass, Cumberland, on June 11th and 19th, 1911. Reported from Merionethshire, Cumberland, and Somerset in Feb., 1917.

Eight nestlings, marked by Mr. H. W. Robinson at Ravenglass in June, 1912. Reported from Cumberland (Feb. and May, 1917), Lancashire (Dec., 1916), Lincolnshire (Feb., 1917), Carmarthen (Jan., 1917), Anglesey (Feb., 1917), Devon (Mar., 1917), and Scilly Isles (Jan., 1917).

Ten nestlings, marked by Messrs. H. W. Robinson, F. W. Smalley and B. Pickard, in May and June, 1913. Reported from Cumberland (May, 1916, and May, 1917), Lancashire (Dec., 1916, Feb. and March, 1917), Hants. (Feb., 1917), Glamorgan (Dec., 1916), Devon (Feb., 1917) and Portugal (Mar., 1917).

85716, nestling, marked by Mr. R. E. Knowles in Anglesey, on June 16th, 1916. Reported by Mr. L. Mindren at Brest, France, in February, 1917.

COMMON GULL (*Larus c. canus*).—9786, nestling, marked by the late W. I. Beaumont in the Lynn of Lorn, off Lismore, Argyllshire, on July 5th, 1910. Reported by the Rev. P. G. Kennedy at Sixmile-bridge, co. Clare, on Feb. 15th, 1917.

BRITISH LESSER BLACK-BACKED GULL (*Larus f. affinis*).—35610, nestling, marked by Miss A. Pease at Farne Islands, Northumberland, on Aug. 4th, 1914. Reported by Mr. C. A. Brockbank near Cartagena, Spain, on Nov. 15th, 1916.

34059, nestling, marked by Mr. F. W. Smalley at Foulshaw, Westmorland, on July 8th, 1913. Reported by Mr. W. Knowles in Lancashire, in March, 1917.

35033, nestling, marked by Mr. H. W. Robinson at Foulshaw, Westmorland, on July 14th, 1916. Reported by Mr. C. de Lacerda at Portimao, Algarve, Portugal, in Nov., 1916.

37225, nestling, marked as 35033, on July 20th, 1916. Reported by Mr. B. M. Payne at Valencia, Spain, on Jan. 1st, 1917.

37198, nestling, marked as 35033 on July 20th, 1916. Reported by Mr. W. C. Tait at Portimao, Algarve, Portugal, on July 19th, 1917.

MARKED ABROAD AND RECOVERED IN ENGLAND.

STARLING (*Sturnus vulgaris*).—Rossitten, F15943, nestling, marked at Hirschburg, near Ribnitz, Mecklenburg, on May 31st, 1913. Reported by Mr. H. Bernhard-Smith near Bude, Cornwall, during winter of 1913.

Moskwa Ornith. Komitet, 6160F, nestling, marked at Lidsen, near Volmar, Livonia, Russia, on May 29th—June 11th, 1915. Reported by Mr. J. Williams at Corran, Cornwall, in March, 1916.

Moskwa Ornith. Komitet, 2768F, marked at Livenhof, Vitebsk, Russia, on May 15th—28th, 1914. Reported by Mr. H. Donnan in *Cage Birds* as recovered at Kilbright, Carrowdore, co. Down, in Feb. or March, 1917.

LAPWING (*Vanellus vanellus*).—Rossitten, 18039, nestling, marked on the Isle of Fehmern, Baltic, on June 10th, 1913. Reported by the Rev. M. C. H. Bird at Hickling, Norfolk, on Feb. 11th, 1915. Rossitten, 17625, marked near Domnau, East Prussia, on May 29th, 1913. Reported by Mr. A. Sadler at Chichester, Sussex, on Feb. 25th, 1916.

SANDWICH TERN (*Sterna sandvicensis*).—Museum Leiden, 6872, nestling, marked at Kerkwerf, prov. Zeeland, Holland, on June 29th, 1912. Reported by Mr. A. Patterson off Great Yarmouth, Norfolk, on August 13th, 1917.

BLACK-HEADED GULL (*Larus ridibundus*).—Rossitten, 24601E, marked at Hemmelsdorf, near Lübeck, Baltic, on June 28th, 1914. Reported by Mr. W. A. Gunn at the mouth of the Usk, Monmouthshire, on Aug. 21st, 1914.

Rossitten, 19357, marked at Hiddensee, Baltic, on June 9th, 1914. Reported by Mr. E. Howarth at Doncaster, Yorks, in Nov., 1914.

Rossitten, 26323E, marked at Rossitten, Baltic, on July 21st, 1914. Reported by Mr. J. H. Gurney near Downham Market, Norfolk, on Dec. 5th, 1914.

Rossitten, 25111E, marked on the Isle of Riems on June 15th, 1914. Reported by Mr. D. Seth-Smith at Lea Bridge, London, on Oct. 24th, 1915.

Rossitten, 11425 and 11426, nestlings, marked at Wendisch Langendorf, Pomerania, on June 25th, 1913. Reported from Norwich, Norfolk, and Harwich, Essex, at the beginning of Feb., 1917.

NOTES

FOOD OF THE BLUE TIT.

As many people hold the opinion that the Blue Tit (*Parus c. obscurus*) does serious injury to the fruit crop by the destruction of buds, the following observations in a fruit-producing district of Kent appear to be worth recording. At the beginning of December, 1916, I noticed a Blue Tit pecking at a fruit bud on a young Ecklenville seedling apple tree in my garden. It remained on the tree for more than half an hour, pecking at the bark in various places and pecking out numerous buds, after which it visited three other similar trees, but only stayed there for about ten minutes. After it had gone I inspected the first tree and found most of the fruit buds untouched, but some had the inside eaten out, which were evidently diseased. One had the remains of a partly eaten maggot. During the next few weeks a Tit, probably the same bird, returned to the trees at intervals, but never remained for more than a few minutes. All the trees cropped well this year, and the first tree had fifty-two apples on it early in June: the others varied from twenty-eight apples upwards. The numbers and healthy condition of the fruit convinced me that only maggot-infested buds had been eaten. I may add that I have often noticed the Great Tit (*Parus m. newtoni*) pulling caterpillars of both species of Cabbage White off Brussels sprouts and eating them in quantities.

FREDERICK D. WELCH.

[The economic status of the Blue Tit cannot, of course, be settled by any isolated observation on its habits, but must depend on the results of careful investigation on the lines followed by Messrs. Newstead, Collinge, Theobald and others. Most of the damage done by this species appears to take place in the autumn, pears being especially liable to its attacks, but Mr. Newstead mentions one case in which fruit buds were extensively taken, but no traces of insects could be discovered.—ED.]

HOOPOE IN CO. DONEGAL.

In September, 1917, a Hoopoe (*Upupa e. epops*) was shot by Mr. R. R. H. Nolen at Greencastle, Co. Donegal, close to the shore of Lough Foyle. Mr. R. J. Ussher (*Birds of Ireland*, p. 112) only mentions two previous occurrences in Donegal out of 117 recorded from Ireland up to 1900. The bird recorded proved to be a female. W. H. WORKMAN.

SNOWY OWL IN CO. ANTRIM.

My friend Mr. Herbert Malcomson had the interesting experience of examining a fine specimen of the Snowy Owl (*Nyctea nyctea*) at Mr. James Robin's, the taxidermist's, which was shot near Glenavey about November 12th-13th, 1917. Mr. Ussher states that over thirty have been recorded from Ireland, but only two of those mentioned in the *Birds of Ireland*, p. 118, are from Co. Antrim, and both date back to 1835 (Thompson, *Nat. Hist. of Ireland, Birds, I.*, p. 96).

W. H. WORKMAN.

[We have also received a note from Mr. W. C. Wright respecting the same bird.—Ed.]

BLACK-THROATED, RED-THROATED AND GREAT NORTHERN DIVERS ON LAKE WINDERMERE, WESTMORLAND.

With reference to my note in *British Birds* (Vol. IV., p. 220) on the occurrence of a Black-throated Diver (*Colymbus arcticus*) on Lake Windermere on February 24th, 1910, I regret to state that this record is erroneous, the bird in question eventually proving to be an adult male Red-throated Diver (*C. stellatus*).

However, on January 9th, 1915, an immature female Black-throated Diver was shot on the lake by Mr. T. Battersby as it flew over his boat.

On January 5th, 1917, I shot an immature male Great Northern Diver (*C. immer*). Two other Divers which I saw on the lake the same day were, I believe, of the same species.

It is comparatively seldom that Divers are not present on the lake from November to March, individuals remaining for several weeks, but great difficulty is found in identifying satisfactorily birds so similar in plumage and so shy in nature without securing them, which is, in itself, no easy matter.

Perhaps I may state here that in the Museum at Keswick, Cumberland, there are two Divers labelled Black-throated and Red-throated respectively. Both are Red-throated Divers in winter-plumage.

D. G. GARNETT.

BREEDING OF THE COMMON SANDPIPER IN OXFORDSHIRE.

HITHERTO the only record of the breeding of the Common Sandpiper (*Tringa hypoleuca*) in Oxfordshire has been that mentioned in Mr. O. V. Aplin's work on the *Birds of Oxfordshire*, p. 159. In this case a nest with eggs was found in 1885 by Mr. A. F. Hall at the junction of the Glyme with the Evenlode. In May, 1904, some eggs were brought for

identification to Mr. G. Tickner, which had been found by a boy between Sandford and Nuneham, close to the river bank. Being too much incubated for blowing, they had been boiled. These eggs were undoubtedly Sandpiper's: one is still in Mr. Tickner's possession, and has been seen by me.

However, in 1910, after considerable search, Mr. Tickner found a pair breeding at Nuneham, and on May 6th flushed the bird from a nest with two eggs on the Oxfordshire side of the river. In 1912, he again found another nest on May 13th, with two eggs, between Pinkhill Lock and Bablockhythe, close to the river which separates Oxfordshire from Berkshire. There is good reason to believe that the birds have bred on other occasions at both places, as Mr. Tickner has seen them accompanied by two and three obviously immature young in July.

F. C. R. JOURDAIN.

GREEN SANDPIPER IN KING'S CO.

It may be of interest to record that I identified an adult Green Sandpiper (*Totanus ochropus*) seen on the wing on Ballyheishall Bog, near Edenderry, King's Co., Ireland, on November 15th, 1917. I have not seen any of these birds in this locality hitherto, and Mr. Ussher (*Birds of Ireland*, p. 297) gives no record for this species for King's Co.

HELEN M. RAIT KERR.

LITTLE AUKS IN KENT, SUSSEX, BUCKS AND HANTS.

In the *Field* (Nov. 24th, 1917), a Little Auk (*Alle alle*) was reported by Captain Somerset Webb as having been picked up alive but exhausted, at Woodchurch, Kent, on November 11th, 1917. Mr. H. Scarlett (*loc. cit.*) also records another bird, picked up on the downs above Firle, Sussex, on the same day. Dr. Hartert informs us that a third was found also alive in Sir Thomas Barlow's garden near Wendover, Bucks, on November 11th, but died the following day, as recorded in the *Bucks Herald*; while a fourth was picked up dead on the Halton (Weston Turville) Reservoir, Bucks, by Sergeant J. W. S. Toms, R.F.C., on November 17th, which had evidently been dead for several days. This bird is now in the Tring Museum. Mr. R. Edward Coles also sent us some remains of a fifth specimen, found by him at New Milton, Hants, about a mile and a half from the sea, on November 13th. The greater part of this bird had been eaten, apparently by a hawk, but enough remained to enable Dr. Hartert to identify it with certainty. Evidently all these birds must have wandered inland about the same time, probably on the same day.

F. C. R. JOURDAIN.

ARCTIC SKUA IN NORTHAMPTONSHIRE.—Mr. O. V. Aplin (*Field*, Nov. 17, 1917) states that he has recently examined a specimen of the Arctic or Richardson's Skua (*Stercorarius parasiticus*) which was sent to be stuffed from Daventry on October 13th, 1917, and which he believes to be a bird of the year.

CLUTCHES OF DWARF EGGS OF BLACK-HEADED GULL.—Mr. P. F. Bunyard sends us particulars of two more clutches of dwarf eggs of this species: one belonging to Mr. Van Pelt Lechner (presumably from Holland), which measures 36×27 , 34×25 , and 33×25.5 mm., while the other, in his own collection, is considerably larger, the eggs averaging 44.6×32 mm., though still much below the average size of normal eggs, which measure 52.6×37.1 mm.

REMARKABLE NESTING OF TREE CREEPER.—The Hon. G. E. Graham Murray (*Scot. Nat.* 1917, p. 293) states that this summer no fewer than four pairs of Tree Creepers (*Certhia f. britannica*) nested simultaneously in a small toolshed, measuring 10 ft. by 8 ft., at Stenton, near Dunkeld, placing their nests between the boards and the corner posts of the building. Evidently the birds are still common here and apparently nesting sites are scarce.

SPOONBILL IN OUTER HEBRIDES.—Mr. D. Mackenzie records (*Scot. Nat.* 1917, p. 293) a Spoonbill (*Platalea l. leucorodia*), apparently a bird of the year, which was shot on the shore of Broadbay, near Stornoway, on October 6th. This is believed to be the first known occurrence of the Spoonbill in the Outer Hebrides.

SHEDDING OF STOMACH-LINING BY BIRDS.—Mr. W. L. McAtee contributes an important paper to the *Auk* (1917, pp. 415-421) on this subject. Our readers will probably remember that in *Brit. Birds* (VI., pp. 334-336) Mr. Hammond Smith described the ejection of the gizzard lining in the Curlew. Mr. McAtee now produces strong evidence that among the Anatidæ the gizzard-lining is periodically shed, ground up and passed out through the intestines. This is apparently also the case in many other groups, and probably is the usual process by which the stomach-lining is renewed when worn out, ejection being comparatively rare except in the case of the Hornbills.



LETTERS



THE BIRDS OF DORSET.

To the Editors of BRITISH BIRDS.

SIRS,—I should be much obliged if any of your readers would be so kind as to send me information about the birds of Dorset, especially since the publication in 1888 of the late J. C. Mansel-Pleydell's book on the birds of the county. Any notes will be welcomed, but I especially want records of the rarer species, and also notes on the extension of range and decrease or otherwise of the more characteristic species inhabiting the county.

F. L. BLATHWAYT.

MELBURY OSMUND RECTORY,
DORCHESTER, DORSET.

JOHN HUNT.

To the Editors of BRITISH BIRDS.

SIRS,—Allusion is made in Captain Gladstone's very exhaustive biography of John Hunt, the Norfolk bird-painter, to a somewhat ancient case containing an Egret and a Night Heron, in which the painted background was presumed to be the work of Hunt (*antea*, p. 128). This bird-case having been taken down for the Hunt exhibition arranged by Mr. Leney at the Norwich Castle Museum, the supposed painting, I am sorry to say, is now discovered to be only a print.

J. H. GURNEY.

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ON THE BREEDING HABITS OF THE HOBBY.

BY

CAPT. M. ASHLEY, R.A.M.C.

I HAVE read with interest the field-notes on the Hobby by the late Captain C. S. Meares (*antea*, pp. 50-4), and as my own observations and those of a friend who has had opportunities for many years of watching the birds when nesting differ in some particulars from Captain Meares's notes, I have thought it would be of interest to record them. These observations were made in Gloucestershire, in the north of Hampshire and in various parts of Wiltshire.

In the first place, the birds seen by Captain Meares appeared so undemonstrative. In my experience, however, the Hobby is one of the most vociferous and demonstrative birds I know; although this is particularly the case before laying, when incubation is well advanced, or when the young have been hatched. Far from "the observation of these dashing little woodland falcons being extremely difficult," in my opinion they are particularly easy to watch. I have remained in the vicinity of a nest when the birds have had incubated eggs or young, until the constant "Greek, greek, greek" has almost got on my nerves; and during the whole time the pair has been either circling around closely enough to be observed easily, or resting at some slight distance away. The Hobby not infrequently so far forgets its natural fear of man as to swoop down in a most aggressive manner within a yard or two of an intruder climbing to a nest with young. I have concealed myself near a tree in which a Hobby has had eggs well advanced in incubation and flushed the sitting bird quite four or five times, but never had I to wait more than fifteen or twenty minutes for her return to the nest. This was done when I was less familiar with the birds than I am now and wished to make sure of the species. It seems to me now that these falcons are so unmistakable and easy to observe that there never can be any doubt as to the species when nesting. They are, I consider, much tamer and more confiding than any of the allied species on the British list. I have remained under a tree for an appreciable period and watched a Hobby on one of the branches at quite a short distance above me. On the occasion in question the mate was sitting about twenty yards away.

It is curious how demonstrative Hobbies are long before they seem to have thought of laying. This trait is sometimes very marked, and Hobbies may circle around and

even swoop towards the observer, uttering their cries meanwhile, many weeks before they have commenced to lay. Under such circumstances, and when observed day after day, the pair would always be found in the same group of trees, and when disturbed would make off for another group of trees equally persistently, perhaps a quarter or half a mile away.

It has never been within my personal experience to know of Hobbies nesting in large woods. On the contrary, the birds seem to choose single trees or small plantations, even when large woods are in the immediate vicinity. A very common site appears to be a small plantation of from four to six acres in extent, and the favourite tree to be selected is, I think, the Scotch fir (I have known one nest in an elm, one in an oak, and one in a fir of a species other than Scotch). The nest when in a plantation is usually near the edge, and preference is shown for positions where trees are somewhat sparsely distributed, the bird being apparently averse to the centre of thick plantations and preferring to nest in trees from which access can easily be obtained to the open.

There is no doubt that Hobbies are very partial to old nesting-sites and return to them year after year. I have known a Hobby to have been shot, and its mate to have been caught by a gin placed in the nest; yet for some reason, so attractive was this nest, that a pair chose it again two years afterwards and laid four eggs.

The usual number of eggs for the first clutch is three, and when the first laying has been taken or destroyed, two is the usual number to be laid. On such occasions the second nest is often within a hundred yards of the first, and I have known it to be within fifty. The Hobby may lay one egg only, although a first clutch; on this occasion the egg was found in a Crow's nest, which had been vacated by the young Crows only six days previously.

As a curious instance of the indifference of certain wild birds to the smaller birds of prey, I have known a Wood-Pigeon and a Hobby to be sitting on eggs in the same tree at the same time.

Two pairs may be nesting within a mile of each other, although previous to nesting the hunting-grounds may have been so close together that it has been difficult to decide whether two pairs were being observed or only one.

Whether the Hobby is sufficiently confiding to ignore the frequent presence of people in the neighbourhood of its nest, or whether its love for an old nesting-site overrides its objection to altered conditions and more frequent disturbance I do not know, but I have known nests in plantations which

were near roads and constantly frequented; I have also known nests in isolated trees within one hundred and fifty yards of a farmhouse.

The Hobby is fond of remaining perched for long intervals on the edge of its nest for some days before eggs have been laid. It is possible that Howard Saunders may have mistaken this habit for that of brooding on an empty nest, which he describes. There is no doubt that this species usually sits very closely. When flushed off the nest the sitting bird is said to "tumble off" like a Peregrine. I have seen this occur markedly on one occasion only, when I shot at the nest with a pebble from a catapult; the Hobby dropped off towards the ground for a couple of yards before she rose, although I am sure I did not strike her with the pebble. Usually when flushed from the nest, the bird drops at first slightly and afterwards rises.

I have never heard the "single short high scream" that Captain Meares describes, although when entering a plantation where a Hobby has perhaps recently laid and has not yet commenced to sit, I have heard a single low "kek" once or twice repeated, and the birds have perhaps left the plantation unseen. This note is, I think, usually uttered when Hobbies see the intruder, whilst still unobserved themselves. On leaving the vicinity, however, on such occasions, I have practically always seen at least one of the birds soaring overhead. On rare occasions I have heard a note which can only be described as a somewhat drawn-out wail, and this appears to occur when the birds have been distressed by disturbance in the neighbourhood of their nest.

I have not noticed down or feathers in any of the nests, except the very little that might be expected in any occupied nest, the presence of which would appear to be accidental.

As regards the distinctive features of the eggs, it appears to me that the eggs of the Hobby are indistinguishable from some of those of the Kestrel. I am not an expert on the markings of eggs, however, and probably it is for this reason that they appear to me so difficult to distinguish.

I do not know the exact incubation period of the Hobby, but I know that on one occasion a clutch of two had been laid by June 30th, and on July 23rd the bird was still sitting; further observations were not made until more than a fortnight later, when the young had been hatched. The earliest date on which I have known a Hobby's nest to contain a full clutch of eggs was on June 12th, but my notes are not very complete on this point, and very probably they often lay earlier.

NOTES ON THE RELATION BETWEEN MOULT
AND MIGRATION AS OBSERVED IN SOME
WADERS

BY

ANNIE C. JACKSON, HON. MEM., B.O.U.

Two papers have appeared in the *Scottish Naturalist* on the relation between migration and moult in birds, viz.: "Notes on some Passerine Birds Found Migrating in Moults," by Leonora Jeffrey Rintoul and Evelyn V. Baxter (*Op. cit.*, 1914, pages 245-252), and "Notes on Migrants and Moults, with Special Reference to the Moults of some of our Summer Visitants," by Claud B. Ticehurst (*Op. cit.*, 1916, pages 29-38). In neither of the above papers has a complete study been made of the relation between the moult and geographical distribution of any one species throughout the year, and it occurred to me when studying the moult and sequence of plumages of the waders that it would be interesting to take one or two species and ascertain where the autumn and spring moults took place, whether in the breeding localities, on migration, or in the winter quarters of each species. In order to obtain the most accurate results only those species were chosen whose breeding-haunts and winter quarters were widely separate, so that it was safe to infer that examples obtained between these two localities were true migrants, and preference was given to those species in which the winter and summer plumages were distinct, in order that there might be no difficulty in determining whether a bird was completing its winter moult or beginning its spring moult, and *vice versa*.

The following species were selected:—

- Caspian Plover (*Charadrius asiaticus*).
- American Golden Plover (*C. d. dominicus*).
- Asiatic Golden Plover (*C. d. fulvus*).
- Curlew-Sandpiper (*Erolia ferruginea*).
- Little Stint (*E. m. minuta*).
- Temminck's Stint (*E. temminckii*).
- Baird's Sandpiper (*E. bairdii*).
- Bonaparte's Sandpiper (*E. fuscicollis*).
- Semi-palmated Sandpiper (*Ereunetes pusillus*).
- Broad-billed Sandpiper (*Limicola falcinellus*).
- Yellowshank (*Tringa flavipes*).
- Greater Yellowshank (*T. melanoleuca*).
- Spotted Redshank (*T. erythropus*).

A detailed account of the species of which the longest series were examined is appended ; it has not been thought worth while to give the species with a small series in detail, but the data so obtained are included in the summary given below.

SUMMARY OF OBSERVATIONS.

AUTUMN MOULT OF ADULTS.

1. (A) Adults may acquire some winter body-feathers before leaving their breeding-grounds : only in rare instances (one or two examples of *C. d. fulvus*) is the moult of the wing-quills commenced. (B) Many adults leave the breeding-haunts showing no moult.

2. During migration to winter quarters, in autumn, the body-feathers may be renewed, but the wing-quills only very rarely ; the tail-feathers are occasionally moulted (one specimen of the Greater Yellowshank, Bermuda, Oct., with one central tail-feather in quill, one Sept., New York, moulting the inner primaries, the only bird on migration examined which was moulting the wing-quills).

3. The moult of the remiges and usually the rectrices takes place in winter quarters, where the body-moult is also completed.

SPRING MOULT OF ADULTS.

1. The spring moult begins, and in many cases is completed, in the winter quarters.

2. Birds moulting the body-feathers, in some the tail-feathers, innermost secondaries and wing-coverts, occur on migration north.

3. On arrival at the breeding-haunts the birds are usually in full summer plumage and have completed the spring moult ; in some cases a few body-feathers may be in quill (in one case *C. d. dominicus*, Alaska, May 14th, the innermost secondaries were also in quill), in others, after an interval, the moult starts again, and a few more summer body-feathers are acquired.

JUVENILE.

Juveniles, with a few exceptions (some examples of *T. erythropus*), do not begin the post-juvenile moult before leaving the northern breeding-grounds.

The moult, including the moult of the tail, innermost secondaries and wing-coverts, may be commenced, and in some completed, during migration, but in others it is completed in the winter quarters ; in some the moult is not begun before the birds arrive at their winter quarters.

What has been said regarding the spring moult of the adult holds good for the spring moult of the first winter bird.

CASPIAN PLOVER (*Charadrius asiaticus*).

DISTRIBUTION.—Breeds in south-east Russia and through Khirgiz Steppes to salt-steppes of Turkestan. Winters in West India and Africa.

AUTUMN MOULT OF THE ADULT.

- (A) *In breeding-haunts.* None moulting.
 (B) *On migration south.* None moulting.
 (C) *In winter quarters.* Two October and November, Orange River Colony, in full body- and wing-moult, and one of them moulting the tail-feathers also.

SPRING MOULT OF THE ADULT.

- (A) *In winter quarters.* One December, Natal, in full body-moult; two January and February, Somaliland, both in full body-moult, and one moulting innermost secondaries and wing-coverts also; one January, British East Africa, the same; one February, Damara Land, has acquired many summer feathers, but is apparently not in moult; one February, South Abyssinia, moulting body-feathers; one a first summer bird, March, B.E. Africa, in full body-moult, also innermost secondaries.
 (B) *On migration north.* One March, Jeddah, moulting body-feathers.
 (C) *In breeding-haunts.* One March, Samarkand, and one April, Lenkoran, not moulting.

JUVENILE.

No juveniles in moult were examined from the breeding-grounds or on migration. Two birds from winter quarters were in moult, one August, Abyssinia, and one October, Zululand; both commencing moult on the head.

AMERICAN GOLDEN PLOVER (*Ch. d. dominicus*).

DISTRIBUTION.—Breeds in arctic North America. Winters in Brazil and Argentine.

AUTUMN MOULT OF THE ADULT.

- (A) *In breeding-haunts.* One July, Alaska, in full body-moult, one no date the same, and one or two others not in moult.
 (B) *On migration south.* One August and one September, Truro, and one September, Toronto, have acquired many winter body-feathers, but are not in moult; one autumn, Massachusetts, acquiring winter body-feathers.
 (C) *In winter quarters.* One December, Buenos Ayres, almost in full winter plumage and moulting tail and wings; one February, same locality, similar, but still acquiring winter feathers on mantle.

SPRING MOULT OF THE ADULT.

- (A) *In winter quarters.* One January, Peruvian Amazons, commencing body-moult; one March, Uruguay, has acquired some summer feathers.
 (B) *On migration north.* One March, Texas, acquiring summer body-feathers; one May, Illinois, in full body-moult (not tail), some innermost secondaries and median coverts.

(c) *In breeding-haunts.* Three May, Alaska, were acquiring a few summer body-feathers, and one some innermost secondaries. Several other specimens were examined from the same locality in May, but were not in moult.

JUVENILE.

None were examined in moult from the breeding-grounds: one on migration, September, St. Vincent, was just commencing moult; many others, chiefly from localities in the West Indies, in September and October, showed no signs of moult, and it would appear that the post-juvenile moult usually takes place in the winter quarters; one January, Peruvian Amazons, and one not dated, Amazons, were in body-moult.

ASIATIC GOLDEN PLOVER (*Ch. d. fulvus*).

DISTRIBUTION.—Breeds in eastern arctic Asia and Alaska. Winters in Pacific Ocean, south to New Zealand.

AUTUMN MOULT OF THE ADULT.

(A) *In breeding-haunts.*—Five July, Yenesei River, moulting the body-feathers, one the innermost secondaries as well; two same month and locality in full body-moult and moulting the inner primaries. (One moulting the secondaries.)

(B) *On migration south.* Two August, Manchuria, one August and one September, Tibet, have acquired some winter feathers, but apparently are not in moult: one November, Lake Baikal, is moulting the body-feathers.

(c) *In winter quarters.* Two September, Shillong and S.E. Luzon, are moulting the body-feathers, and the latter the wings as well. One October, Admiralty Islands, one October, Hainan, one October, New Caledonia, one November, South Celebes, are all moulting the primaries and some the body-feathers and tail as well; two December, Formosa and Loochoo Islands, are in body-moult.

SPRING MOULT OF THE ADULT.

(A) *In winter quarters.* One February, Laccadives: March birds from Siam, Foochow, Marianne Islands, Raipoor, British Burma, Malay Peninsula, Australia: and April and May examples from Burma, S. Andaman, Foochow, Calcutta, Shanghai, Cebu Island, Amoy, Hakodadi, Canton, etc., were all moulting the body-feathers.

(B) *In breeding-haunts.* One June, getting a few summer feathers on body. Yenesei River.

JUVENILE.

Juveniles showing no moult were examined from the following localities: Amur Bay, Pribyloff Islands, Foochow, Australia, Labuan, Singapore, etc.: others in body-moult in winter quarters from the following localities: S. Andaman, Loochoo Islands, Somaliland, Selangor, Luzon, Tongatabu Island, Samoa Islands, Ceram (Mollucas), etc.

CURLEW-SANDPIPER (*Erolia ferruginea*).

DISTRIBUTION.—Breeds in arctic regions of Asia, winters in Africa (from Mediterranean to tropical and south Africa), India, Malay Peninsula and even Australia.

AUTUMN MOULT OF THE ADULT.

(A) *Breeding-haunts.* None moulting.

(B) *On migration south.* Three August, Yorkshire, Hampshire, and Essex, have acquired a good deal of winter plumage but are not in moult.

(C) *In winter quarters.* One August, Malay Peninsula, moulting body-feathers, one December, Upper Burma, moulting the primaries, one not dated, Australia, in full body- and wing-moult.

SPRING MOULT OF THE ADULT.

(A) *In winter quarters.* Three March, Malay Peninsula, in body-moult, one also moulting the innermost secondaries; two April, Calcutta, one April, S.W. Africa, and two May, India, in body-moult.

(B) *On migration north.* Two April, Orotava, Tenerife, and one May, Cyprus, in body-moult; three May, China, in full body-moult. Many specimens from Spain, Italy, Egypt, China, etc., were not in moult.

(C) *In breeding-haunts.* None moulting.

JUVENILE.

(A) *In breeding-haunts.* None moulting.

(B) *On migration south.* One November, North France, in body-moult: one October, Isle of Sheppey, as above and many not in moult.

(C) *In winter quarters.* One October, Ceylon, three November, Cape Colony, and one December, British Burma, all in body-moult, one bird also moulting the central pair of tail-feathers.

LITTLE STINT (*E. m. minuta*).

DISTRIBUTION.—Breeds west Siberian tundras and islands to North Cape, and migrates south to Africa and India.

AUTUMN MOULT OF THE ADULT.

(A) *In breeding-haunts.* Two July, Yenesei, one beginning and one in full body-moult; three July, Petchora, starting moult on head (one of these birds having been shot from a nest with eggs), one July, Petchora, has acquired a few new winter feathers, but is not in moult; two August, Russian Lapland, are just commencing the body-moult.

(B) *On migration south.* Two August, South Spain and Nyassaland, starting body-moult.

(C) *In winter quarters.* Two August, India, in body-moult, one moulting the inner primaries; one August, Transvaal, and one October, Damara Land, in body-moult; two November and February, Cape Colony, in body- and wing-moult, the November specimen moulting the tail as well.

SPRING MOULT OF THE ADULT.

(A) *In winter quarters.* One March, South Andaman, in body-moult; two March, Ceylon, in body-moult, and one of them moulting the outer primaries as well; one April, Transvaal, in body- tail- and wing-moult; several May specimens from India in full body-moult, some moulting the primaries as well; one May, Transvaal, in full body-moult.

(B) *On migration north.* Two March, Kandahar, moulting body and wings; two May, Egypt, in body-moult; one May, Cyprus, finishing body-moult; one spring, Turin, moulting a few feathers on mantle; one June, Havre, no body-moult, but moulting tail-feathers.

(c) *In breeding-haunts.* Two July, Petchora, getting a few summer feathers on body, one shot from a nest with eggs.

JUVENILE.

None of the specimens examined from the breeding-localities or on migration south were in moult.

The following were in moult in winter quarters: two Khartum were in body-moult, one January finishing body-moult, one February, Lado (Egyptian Sudan), completing first winter moult and moulting primaries.

SEMI-PALMATED SANDPIPER (*Ereunetes pusillus*).

DISTRIBUTION.—Breeds from arctic shores of North America south to mouth of Yukon river and to south Ungava. Winters from Texas and Carolina through West Indies and Central America to Patagonia.

AUTUMN MOULT OF THE ADULT.

(A) *In breeding-haunts.* One July, Franklin Bay¹(Canada), shot from nest with three eggs, in full body-moult into winter-plumage; one Fort George, June (shot with three young), in full body-moult.

(B) *On migration south.* Two August, Ipswich and Truro, Massachusetts, in body-moult; one August, Truro, has acquired some winter feathers, but apparently is not in moult; one August, Toronto, and one September, Ipswich, are both in body-moult; one August, New Jersey, has acquired some winter feathers, but is not in moult.

(c) *In winter quarters.* Some July and August specimens from the West Indies are in body-moult, three or four have acquired some winter feathers, but are not in moult; one September, Virginia Beach, in body-moult; one October, Florida, one November, Lower Amazons, and one November, Texas, are all in body-moult; one not dated, Bolivia, in body- and wing-moult.

SPRING MOULT OF THE ADULT.

(A) *In winter quarters.* Two Bahia, in full body-moult; February, March and April specimens from the West Indies all moulting body-feathers, as are two from Florida and two from Brazil and two March and April from Guatemala.

(B) *On migration north.* One May, Ipswich (Mass.), and one May, Illinois, both in body-moult, the latter almost in full breeding-plumage; one June, Toronto, acquiring a few body-feathers. Birds from Toronto, Truro (Mass.), Indiana, etc., and a few from breeding-haunts in May and June were not in moult.

JUVENILE.

One *E. pusillus mauri*, July, Alaska, was beginning to moult on the mantle and head. Specimens not in moult occurred from Labrador, Brazil (September), Grenada (September), Florida (October), Bermuda (October), etc. Two from Florida, one not dated and one October, were in body-moult.

YELLOWSHANK (*Tringa flavipes*).

DISTRIBUTION. Breeds from Kotzebue Sound, Alaska, north Mackenzie, central Keewatin and south Ungava to valley of Upper

Yukon, south Saskatchewan and north Quebec. Winters in Argentine, Chile and Patagonia, and casually in Mexico, Florida and the Bahamas.

AUTUMN MOULT OF THE ADULT.

(A) *In breeding-haunts.* A few examined, but none in moult.

(B) *On migration south.* Two July, Ontario and Bermuda, starting body-moult; six July and August, Grenada and St. Vincent, in body-moult, in some just commencing, in others well advanced: one August, North Ecuador, has acquired some winter body-plumage but does not appear to be in moult; one September, Virginia Beach, in body-moult.

(C) *In winter-quarters.* One August, Paraguay, has acquired a good many winter feathers; two September, one October, Argentine, one in full and two completing body-moult; one October, northern Yucatan, moulting the inner primaries and two central pair of tail-feathers; two November, Buenos Ayres, one commencing body-moult, the other in full winter plumage, moulting inner primaries and two central pairs of tail-feathers; one January, Lower Amazons, with 2nd primary in quill, also 3rd pair of tail-feathers.

SPRING MOULT OF THE ADULT.

(A) *In winter quarters.* Three February, Argentine, commencing body-moult; two March, Buenos Ayres, in full body-moult, one with 2nd primary in sheath; two March, valley of Mexico and Florida, in full body-moult; one April, Central Chile, starting body-moult.

(B) *On migration north.* One February, Jamaica, some body-moult; some March specimens, all from localities in the West Indies, in body-moult; two, March and April, Texas, completing moult; one March, Texas, was in full body-moult, also moulting innermost secondaries and with 6th pair of tail-feathers in quill; several April and May specimens from Peru, Venezuela, British Guiana, Mexico, Ontario, etc., in full breeding-plumage and not in moult.

(C) *In breeding-haunts.* All those examined from breeding-localities showed no trace of moult.

JUVENILE.

(A) *In breeding-haunts.* None moulting.

(B) *On migration south.* Two August, Truro and Colorado, starting body-moult; one October, St. Vincent, in body-moult.

(C) *In winter quarters.* One November, Northern Argentine, with body-moult well advanced and central tail-feathers in quill; one November, Patagonia, with body moult almost complete, central tail-feathers and innermost secondaries in quill; one December, Ecuador, in body-moult.

C. J. ALEXANDER.

CHRISTOPHER JAMES ALEXANDER was born at Croydon on March 24th, 1887. He was seriously wounded near Passchendaele on October 4th, 1917, and it seems almost certain that he was killed, or died after being put on the ambulance, though the only information of his death yet received is unofficial and lacking in detail.

Several members of the family in older generations, notably his great-grandfather, James Backhouse of York, had been distinguished by their interest in natural history; and the love of birds, which was destined to become one of the ruling motives of my brother's life, was obtained very early, largely through the influence of our uncle, Mr. J. B. Crosfield, of Reigate. He won entrance and leaving scholarships at Bootham School, York, and was a distinguished member of its Natural History Society, which is the oldest in any school. During his schooldays he collected butterflies and moths, and gave much of his time both then and later to the study of botany and geology. His interest in science and natural history was, in fact, never narrowly departmental: he could always collate his observations on the avifauna of a district with a full knowledge of the geological and botanical environment and minute observations of meteorological phenomena; nor were his studies of these subjects merely subsidiary to the interest in birds: his careful notes on plant distribution both in England and Italy are of special value, and some of them he sent to Professor Seward at Cambridge.

After leaving school in 1904 my brother gained a scholarship at the South-Eastern Agricultural College at Wye, Kent, and remained there, first as a student and then, after he had taken his B.Sc. in Agriculture, on the staff, until the end of 1909. From Wye he frequently visited Romney Marsh and other parts of Kent. In this way he added much to the knowledge of Kentish ornithology and natural history already obtained from living at Tunbridge Wells. Soon after he left school I made the joyful discovery that his ornithological bent was almost exactly like my own; we had always spent a lot of time watching birds together, often also with my brother, W. B. Alexander, now in Australia; but somehow the discovery of our identity of ornithological outlook came quite suddenly. We began by making careful observations on the departure of autumn migrants in September, 1905 (though we had a number of records of arrivals and departures since 1897); and when I returned to school we began a regular interchange of bird letters

that has lasted twelve years without a break, except when we were together.

Amongst the thousand joyful memories of this close comradeship that crowd through my mind it is impossible to choose those things most worthy of record, for many things that mean a great deal to me might seem trivial to others.

Some characteristics of our methods may be noted. We always found our chief interest in observing the habits of birds during those seasons when domestic duties are not uppermost in their minds. The month of June, which to the egger is, I suppose, the most exciting month of the year, was to us the dullest. True, after a time, we found a satisfactory way of occupying that month, by "mapping" the summer migrants in their nesting-areas, but as an important part of this was comprised in the effort to discover just when each pair arrived, the really effective mapping was generally finished by the end of May. Still, we were not slow to appreciate the close relationship between bird distribution and migration; so that in order to obtain a thorough understanding of migration it was necessary to study carefully the breeding distribution of all the birds of our districts.

We made daily observations on bird song; and from the beginning of 1906 we kept daily lists of birds seen, in the order in which we saw them, noting those heard singing. The making of lists was always an immense delight; apart from the daily list there were lists for the month, for the year, for the various countries, counties, districts, and sometimes even parishes, in which we spent our time. Much of this labour was, of course, of no scientific value, but it all tended towards accuracy and fulness of observation, and thus led to a number of interesting discoveries of the movements and partial distribution of birds. The complicated migrations and daily movements in winter of Finches and Buntings; the formation, wanderings and dispersal of the flocks of Tits and other small birds; the autumn congregation of Swallows and other species; the passage in spring and autumn of Chats; the time of arrival and departure of the individual Warblers and Flycatchers; the comparative abundance of allied species—all these and other features of bird-life in Kent underwent a far closer scrutiny than would have been the case with less complete note-making. We gained much more pleasure from these species than from birds of prey and other large creatures. Small birds are much easier to watch; they are far more abundant than large

birds in this country; and there seems to be much more variety in their habits. And in spite of what has sometimes been said, they are usually easy to identify, for both my brother and I seemed to find that even species most notorious for "skulking" would, if given the chance, soon appear and show themselves. When first he was in Flanders, even without binoculars, he had no difficulty in identifying all the Long-tailed Tits he saw as *A. c. roseus*.

This is not to say that we were cold to the excitement of seeing large birds. One April day, after a long and uneventful walk over Romney Marsh, from Appledore to Dungeness, we sat down on the point, tired out, while our tea was being got ready, glad to have no more walking to do. Suddenly twelve big birds came flying right towards us, and passed within a hundred yards—Brent Geese—the first we had ever seen. A couple of minutes later we were consulting as to the possibility of walking the five miles (half of it shingle) to catch the train at Littlestone: such is the magical effect of an exciting bird on the tired ornithologist! But this I compare in my mind with the far greater rapture of coming upon a party of Alpine Accentors and a Wall-Creeper on a great slab of rock above Torre Pellice, in the Cottian Alps, in December, 1915, one of our last bird adventures together. And better still was the sight and sound of half-a-dozen Snowfinches singing and soaring, their white wings flashing in the sunlight, near the top of M. Viglio in the Roman Apennines, two and a half years before.

Whilst my brother was at Wye we found great pleasure in contributing information to Dr. N. F. Ticehurst's *History of the Birds of Kent* and the B.O.C. Migration investigation; these important works and *British Birds*, which was just then launched, seemed to provide the help we needed in our work.

At the end of 1909 my brother left Wye, and for a year he was at Reading, adviser on plant diseases under the University College and Berkshire County Council. During this year he got a very fair knowledge of the ornithology of the county, and mapped a considerable proportion of all the Corn- and Gird Buntings that were breeding in Berkshire that year. Then he spent a few months at home, where he began to map Thrushes and Robins on a scale of 25 in. to the mile; the next three months he was combating plant diseases at Suckley, Worcestershire. After that, in June, 1911, he obtained a post as *rédacteur* in the International Institute of Agriculture at Rome.

This was not his first journey abroad. We spent a winter at Arcachon when he and I were respectively 11 and 9 years

old ; and we kept notes of birds seen and heard even then. In August, 1905, he spent some weeks at Champéry, Switzerland, whence he brought roots of Alpine plants, several of which, carefully tended by him from time to time, still flourish. He had a remarkable facility for understanding languages, and, apart from the value of this to him in his work at the International Institute, it helped him to become intimate with Italians, so that by the time the war came he felt himself almost more Italian than English.

During his years in Italy—first at Rome and then at Albano—my brother spent nearly all his spare time observing the distribution and migrations of the birds of Rome province. The Institute is situated in the magnificent Villa Umberto Primo (Borghese gardens), where all sorts of birds appeared on migration and many species nested. One year he watched a Goldfinch on its nest from his window in the intervals of *rédaction*. When he lived at Albano he bathed daily in summer in the lake after his work, and mapped quantities of Nightingales and Icterine Warblers on the wooded slopes. His week-ends were often spent at Fiumicino, where he explored the shore, the Isola Sacra, the ancient Porto, and the Tiber mouth. For over two years he added something new to his Fiumicino list on every visit. The rarities seen there included Siberian Chiffchaff and Gannet.

By reason of the vast differences in altitude in the province, from sea-level to the heights of the Apennines, his task of making a complete study of its ornithology was of special interest. He gave particular attention to the effect of such a natural feature as the Alban Hills, standing over 3,000 feet high in the middle of the low Campagna, on migration, and to the comparison between bird-distribution in the Alban Hills and at similar altitudes in the Apennines. A summary of his observations on bird-distribution and on song in winter-quarters was contributed to *British Birds* this autumn ; but much valuable material is still unpublished. His observations on Flanders ornithology, contained in his letters, also include much of value.

After Italy joined in the War my brother wished to join the Italian army, but was found medically unfit. In view of much that is said of the conflict of Italian and Slav ambitions on the Adriatic coast it may be worth noting that he felt especially keenly that we had "let down" Serbia badly, and later he had the same feeling about Roumania. Happily he did not live to hear of the Italian disaster.

It was no easy matter for him to set aside the Quaker principles of many generations of ancestors ; but at an earlier

time he had, with courageous honesty, felt bound to reject much of the orthodox religious dogma, that had at first meant a great deal to him, when he found it was no longer true for himself. Again he strongly disliked all forms of authoritative and imperialist politics, and counted himself a Socialist in the Continental sense, utterly opposed to the policy of the Italian Catholic party. He was impatient of the voluntary system of recruiting, thinking it better in time of war that the Government should decide who were required for fighting and who ought to stick to their work; and so, when the British representative on the committee of the Agricultural Institute said that the British Government wanted all the single men, he was ready to come. He preferred to enlist as a private, and joined the Buffs on February 29th, 1916. Most of his training was at Dover, where he had chased Dark Green Fritillaries and watched Shrikes in his first school-days, eighteen and twenty years before.

In June he went to France, and was in the fighting on the Somme, in Belgium and near Albert before Christmas, always able to banish something of the gruesome surroundings by looking and listening for the birds—and often rewarded by the sight of good things, such as a Green Sandpiper put up from a flooded trench, a Great Grey Shrike on the cheerless downs at Christmas-time, and a Bustard that flew over the camp one day in February, 1917. Then one night when he was on sentry duty he broke his leg; it was supposed only to be sprained, and was not properly treated for a fortnight; so in March he was in England again, and spent his convalescence at a military hospital in Monmouthshire, where he was able to see the coming migrants in April. Then to Shoreham for further training, until his leg was really well; there we had a fine walk by the Adur and over the Downs; and on July 14th, when he had his draft leave from Sittingbourne, we spent a beautiful evening out in the Forest at Tunbridge Wells, watching half-a-dozen Nightjars dancing in the air, and listening to them, and to a Corncrake, and the gurgling and drumming of a Snipe—peaceful sounds of summer. The next morning we watched a family of Wood-Wrens being fed, at a place where a pair appeared this year after eight years' absence, only a few yards from where we had watched a family at the end of July, 1905, the day on which we "discovered" each other.

Several letters followed from France, ending with one on September 30th, in which he wrote of a Quail they had put up, which, with Pied Flycatcher, Woodchat and Melodious Warbler seen passing a few days before, made 107 species

for the year—a wonderful total under such conditions. “The sun is just sinking into the mists,” he concluded: “it really looks quite wintry, in spite of the heat.” And then they went up the line again.

His devotion to natural history had made him shy and reserved, so that social intercourse with any but very simple, unassuming, frank people, or those who shared his interests, was a torment to him, but he found a new life when he joined the Army, and made friends with many men in the Buffs and afterwards in the Queen’s, to which he was transferred after the battle of the Somme. All his natural sympathy and affection, which had been reserved for the very few, seemed at last to be expended on many; and it was not thrown away. As son, nephew and brother he had forged bonds that death cannot break; he had devoted himself without measure to the interest of a few chosen intimates about Rome; and now he had become the faithful comrade of all in need.

His work seems hardly to have begun; and he himself, glad as he was to get the two articles on Roman ornithology completed for *British Birds* while he was in England this year, did not consider that he had nearly completed his observations even in that region. But, such as it is, all his work is methodical, scientific, accurate, full of insight and judgment, and, above all, the true expression of a life devoted to the study of Nature.

H. G. A.

NOTES

ALBINISTIC YELLOW WAGTAIL IN YORKSHIRE.

ON August 15th, 1917, just below Hardrow Force, in Wensleydale, I saw a peculiar Yellow Wagtail (*Motacilla f. rayi*), which may be worth recording. It was with normal Yellow Wagtails, running about among some cows, and looked most conspicuous at a little distance. The whole of the wings and tail appeared to be pure white, head and nape greyish, and the rest of the plumage a paler yellow than the normal colour. Judging from its markings, I took it to be a male bird.

H. G. ALEXANDER.

WAXWINGS IN KENT AND SOMERSET.

ON November 4, 1917, while walking from Sandwich to Minster, I came across seven Waxwings (*Bombycilla garrulus*) feeding on hawthorn berries, of which there is a heavy crop this year.

J. VINCENT.

A WAXWING was shot at Banwell, Somerset, on January 3rd, 1918.

F. A. BRUTON.

DOUBLE NEST OF SPOTTED FLYCATCHER.

ON June 16th, 1917, I found a remarkable nest of the Spotted Flycatcher (*Muscicapa s. striata*) near Gidea Park in Essex.



ABNORMAL NEST OF SPOTTED FLYCATCHER.

(Photo by G. K. Baynes.)

The nest was in an open cart shed, and consisted of two perfectly formed cups built into two rough depressions in the

woodwork, and joined together so as to be easily detached as a single structure.

Each cup was perfectly finished and lined with hair and feathers, and the left-hand one contained two fresh and normal eggs. The entire nest was fresh and obviously the production of one pair of birds. The excellent photograph is by my friend Mr. Baynes.

CLIFFORD BORRER.

LATE STAY OF WILLOW-WARBLER IN YORKSHIRE.

MR. SAM LONGBOTTOM of Bingley informs me that he saw a Willow-Warbler (*Phylloscopus trochilus*) on October 31, 1917, by the side of the River Aire, near Bingley. He got within a yard or two of the bird and watched it for some time, so that no confusion with the Chiffchaff is possible. After the breeding-season they frequent my garden daily, but usually leave in September.

E. P. BUTTERFIELD.

[A few stragglers are occasionally recorded during the latter part of October. Thus two were seen on the Skerries (Anglesey), October 21st-22nd, 1910, and one in Essex on October 22nd, 1911, while several came on board a P. & O. liner between Ushant and Finisterre on October 23, 1910; but as a rule they are rarely seen after the first half of October. A single bird was reported from Hampshire on November 5, 1912. (Cf. *Bull. B. O. C.*, Vols. XXX., XXXII and XXXIV).—EDS.]

NUMBERS IN SWALLOW BROODS IN 1917.

HAVING sent you the percentage for broods of Swallows (*Hirundo r. rustica*) for several years, I now append the same for the past summer of 1917 for North Lancashire and Westmorland.

1917 was a very good year for Swallows, but not so good as 1915, whereas 1916 was a bad year, and 1913 the worst on record. As I have already shown, June showed 65·5 per cent. of full broods as compared with 68 per cent. in June, 1915. In my paragraph, *antea* p. 67, when comparing June's heavy percentage of full broods with other years, I made the mistake of giving the whole summer's percentage for 1915 and 1911. For the whole summer, 45·7 per cent. were full broods, as compared with 50 per cent. in 1915 and 45 per cent. in 1911.

The following table gives the percentages since 1909, with the exception of 1914, when none were marked:—

		Nests visited.	Broods of Six or more	Broods of Five.	Average Full Broods.	Average Brood.
1909	..	11	0	0	0	3·27
1910	..	45	0	15	33%	3·89
1911	..	60	3	24	45%	4·4
1912	..	20	0	8	40%	3·95
1913	..	22	0	3	13·6%	3·27
1914	..	None.				
1915	..	38	5	14	50%	4·65
1916	..	42	0	12	28·5%	4·0
1917	..	70	4	28	45·7%	4·3

H. W. ROBINSON.

COMMON BUZZARDS IN ESSEX.

FOR the last two years I have observed the Common Buzzard (*Buteo b. buteo*) in the neighbourhood of Ilford in late summer and autumn. In 1916 a single bird haunted the district from August 23rd to 27th, and what appeared to be the same bird was seen again on September 26th and October 8th. It was in good plumage, with no flight-feathers missing, and was generally to be seen soaring over a hillock where there is a rabbit warren. In 1917 a pair frequented the same spot from July 20th to 23rd inclusive.

COLIN MURRAY.

CORMORANTS IN SHROPSHIRE.

ABOUT the middle of September, 1917, a party of five Cormorants (*Phalacrocorax c. carbo*) came into Shropshire and remained in the district for several weeks. On September 15th three of them were flying about over the town of Shrewsbury, where they attracted a good deal of attention from the populace. During the afternoon two of them alighted on the cross-bar (which points N.) below the weathercock on the top of the spire of St. Mary's church, but, alarmed by the movement of the "cock" in the wind, soon quitted it in trepidation. Eventually the three settled to roost on the large gilt cross on the dome of St. Chad's church. Two of them were still there next morning, and were seen about the town several times subsequently. I heard reports of Cormorants from various places in North Shropshire during the ensuing eight or nine weeks, from which I gathered that there were altogether five birds here. They appeared all to be

immature, and one which was shot on Betton Pool on October 26th was certainly so. It is not at all uncommon for Cormorants to appear in autumn on the meres and pools of Shropshire, or to remain there fishing for a week or so at a time, but I have never before known them to come right into Shrewsbury, nor to remain in the neighbourhood for so long a time. In this connexion, however, it may be well to recall that just a century ago there was a colony of Cormorants on a small island in the Severn at Fitz, four miles west of Shrewsbury. They were usually to be seen perched on the top of some tall ash trees, from whence now one and then another would dash downwards into the water. They were there from about 1813 to 1839, but the number, originally fourteen, gradually dwindled till only seven were left, when some Rooks came and took possession of the trees: the Cormorants then left and never returned. In my younger days many old residents remembered these birds, but, although they were constantly under observation, they were never known to nest.

H. E. FORREST.

LITTLE AUKS IN STAFFORDSHIRE, NORFOLK AND SUFFOLK.

I HAVE just had brought to me the remains of a Little Auk (*Alle alle*). The bird was picked up exhausted by a farm-boy at Gorsty Hill, near Cheadle, Staffordshire, on the morning of December 15th, 1917. He unfortunately killed it, and attempted to preserve the skin but, failing, threw it away. This makes seven definite records of this species for our county, besides several of which full data are lacking. The last reported were picked up exhausted on February 2nd and 3rd, 1912.

JOHN R. B. MASEFIELD.

MR. LENEY received a Little Auk (*Alle alle*) from Horning on November 11th, 1917, and Mr. Saunders had two, picked up on the beach near Yarmouth on November 13th and 15th. Two were also seen by Mr. R. J. Pinchin of Cley in November.

Mr. C. D. Doughty tells me that two or three Little Auks were flying about near Dunwich, East Suffolk, on November 11th, and also that one was swimming round the pier all day on November 12th at Southwold. November 11th seems to have been a fatal day for them: there was a high wind from the north on the evening of the 10th, which at Yarmouth rose to a gale (Force 6), and it may have been this which blew them in. The 11th was comparatively calm here with us.

J. H. GURNEY.

A NOTE ON THE BRITISH PUFFIN.

REFERRING to our Note (*antea*, p. 162) on the races of the Puffin (*Fratercula arctica*), we should like first of all to thank Dr. Hartert for the very full and interesting explanation he has given of his reasons for his action in proposing to regard the British race as a distinct subspecies.

At the same time we must confess that we are not altogether satisfied.

In the first place we would point out that Dr. Hartert's four Norwegian specimens (and he only has four) came from the Vesteraal Islands in N. lat. 69°, north of the Arctic Circle. The wings of the four measure respectively 177, 168, 167, 166 : average 169 mm.

The four birds in the British Museum came from the neighbourhood of Christiansund, about N. lat. 63°, over 350 miles further south. The one perfect specimen measures 161 ; the worn male is slightly less, but would not probably have exceeded 161 if perfect.

From this we can infer with tolerable certainty that there is a progressive diminution in size on the Norwegian coasts as we go south, as is the case elsewhere.

If this be so (and until we are able to handle a larger number of Norwegian birds I do not see how we can assume anything else), how are we to settle where Linnæus's bird came from ? Was it the northern larger bird from the Arctic or the bird from the south of Norway ? If the latter, and to our thinking this would be the most satisfactory conclusion, surely it would be unnecessary to give another name to the British bird, whose wing measures 158·5 against, say, 161.

The fact is we have here a species which, like many others, becomes progressively larger as it goes further north. If we like to distinguish the two extreme forms by subspecific names, let us do so : there is some convenience in this course. It seems to us, however, to be mis-using nomenclature to make three subspecies—a large, and a small, and an intermediate one, differing only in the wing-measurement by a few millimetres.

At any rate, until the type-locality of Linnæus's Puffin is fixed and it is proved that the southern Norwegian bird is as large as the northern one, we prefer to use the Linnæan name for the British Puffin.

No one has a greater admiration than ourselves for Dr. Hartert's work, which is characterised by such extreme accuracy and thoughtfulness. but we do feel that in the matter of the British Puffin he has gone too far in what the Americans conveniently term "speciation." W. L. SCLATER.

C. W. MACKWORTH PRAED.



LETTERS



SUPPOSED OCCURRENCE OF BUFF-BACKED HERON IN SOMERSET.

To the Editors of BRITISH BIRDS.

SIRS,—Mr. F. W. Smalley (*antea*, p. 147), while recording a Buff-backed Heron from Norfolk, writes: "I do not look upon the evidence for the bird said to have been shot at Martock (Somerset), January 28, 1909, as being satisfactory." I agree regretfully that I have no certain proof of the authenticity of this bird, such as the handling of the specimen in the flesh, but the purely circumstantial evidence points to its having been genuinely obtained, viz. the skinning looks like an amateur's work, as the head is stuffed with cotton wool, and it was left behind in vacated lodgings at Shepton Mallet in an old cardboard box, together with skins, similarly prepared and equally old, of a Golderest, a Chiffchaff and a Stoat, six 12-bore cartridges, thirteen very small bore dust-shot cartridges, a pair of scissors and a small quantity of cotton wool. Around the Heron's neck was rolled and pinned a piece of an old newspaper, on the margin of which was printed "Martock, January 28, 1909, ♂." This raises the question, on what evidence are we to include rare visitors to Britain? If only on the examination of a specimen in the flesh, dead or alive, our ornithological publications will need considerable revision.

STANLEY LEWIS.

WELLS, SOMERSET,

DOUBTFUL *PHYLLOSCOPI* IN KENT, SUSSEX AND FLANDERS.

To the Editors of BRITISH BIRDS.

SIRS,—In some notes on birds seen at Dungeness in 1916 (*British Birds*, X, pp. 263-6) I recorded some *Phylloscopi* seen by myself during the second week of September and identified as *Ph. trochilus evermanni*.

This identification was confirmed by observations made by Miss. E. L. Turner in the previous May, and the Editors of *British Birds* generously accepted my identification, as they have done on former occasions. It is therefore with a sense of the apology due to them that I have to confess that my identification was almost certainly incorrect.

In recording these birds I mentioned that they had a peculiar note, that all were skulking, and dashed from bush to bush; that they were a trifle slimmer and distinctly paler and greyer in colour than the ordinary Willow-Wrens, seen with them, and that the legs were pale, as I thought; but I am afraid I must have been careless in making this last observation.

This year I was surprised to come across several passing *Phylloscopi* near Tunbridge Wells, on September 8th, all making the note of the supposed *Ph. t. evermanni*; but I was not able to get a good view of the legs of any of them. I again heard one on the Sussex side, near Groombridge, on the 9th. Next day I went to Dungeness, and spent

five days there. The bushes usually haunted by Warblers had been largely stripped of their leaves by violent rain-storms at the end of August, and it was therefore much easier to get clear views of birds seen in them.

On the 12th there were a number of *Phylloscopi* in the bushes, some of them uttering the familiar note. To my astonishment I found that each of these, of which I got good views, had quite dark, blackish legs. On the 13th, at one of the farms on Romney Marsh, I again found a collection of *Phylloscopi*, mostly making this note, and all with dark legs, except one obvious Willow-Wren, which was uttering the proper Willow-Wren note. On the 15th I again had good views of several in the Dungeness bushes. In addition to the other distinctions noted last year I noticed that these birds showed a yellowish patch on the side.

Later in the month at Cranbrook I heard and saw single birds uttering this note, on September 27th and 30th. The former was for a short time in company with an ordinary Chiffchaff, but was apparently passing up a small valley, working south-west.

After my visit to Dungeness I wrote about these birds to my brother in France, and in his last letter, replying to this, he wrote, "I should like to have further details about the *Phylloscopus* with the shrill note: I got a very good view of one the other evening, and found its legs were of a greyish-brown colour, though possibly they looked paler owing to the sun shining on them; it had a much more decided eyestripe than an ordinary Chiffchaff which was working along the hedge in the opposite direction (so that the two met and chased for a moment), but this did not reach behind the eye: it also seemed to me to have more pale yellow on the edge of the wing, and was certainly less brown on the sides."

I can hardly doubt that this bird seen by my brother, on September 27th, and another heard the same day, within fifty miles of Dungeness, were of the same race as those I have seen and heard, and it would seem probable that they are all really *Phylloscopus collybita abietinus*. But having already made one mistake, I will not plunge headlong into what may prove to be another.

It seems to me almost certain that there must have been more birds of this race passing through the south-east of England this autumn than normally: but I hope in future years other ornithologists on the east and south-east coasts will be on the look-out for shrill voiced *Phylloscopi*.

It is rather humiliating to have to confess oneself in error over the identification of birds belonging to the family to which I have always given the closest attention: and I am afraid such a mistake is likely to lead those who have been inclined to trust my word in the past to doubt it in future. I can only apologize once more to the Editors of *British Birds* for having induced them to allow the mistake to appear in their pages.

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ASSISTED BY

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

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NOTES ON THE KINGFISHER (*Alcedo ispida ispida*).

BY

W. ROWAN, B.Sc.

ONE of those numerous little Midland streams that take their origin in the Dunstable Downs flows, at a distance of about four miles from its source, through a farmyard. It was in this yard, one sunny day in May, that I was suddenly startled by a brilliant flash of blue passing like a streak through the farm and up the stream, to be lost beneath the overhanging willows and crowded herbage of the banks.

This was the third time I had seen the Kingfisher in this farmyard. On the two previous occasions I thought a nest in the immediate neighbourhood was unlikely, and troubled no more about it.

But now, as I saw him again, on May 28th. 1917. I changed my mind, and decided to watch. Several times during the afternoon he passed up or down the stream, but only settled twice. The first time he used the same perch that he had used on the previous occasions. Here he sat for some minutes, jerking his head and tail in characteristic fashion, till the approach of one of the men sent him precipitately up stream, taking, as he did several times subsequently, a short cut across a bend over a meadow. The second time he perched higher up the stream, in the early evening, when I was privileged to see one of the prettiest sights I have ever seen. It also constituted the first (and only) time I have seen a Kingfisher taking a bath. Four times, with very short intervals between, he shot down perpendicularly into the water, right under, and back to his perch, five feet up, where he fluffed out his feathers and preened himself. Every time he dived he sent upwards a small shower of spray, converted by the evening sun into a miniature rainbow, to be interrupted almost immediately by the rivalling hues of its gorgeous little creator, as he shot back to his seat. After the last dive he continued to preen himself for three minutes, and then, apparently satisfied, flew up the stream.

But I was left with no clue as to the whereabouts of the nest. However, I had drawn my friend the farmer's attention to the birds, and the nesting-hole was discovered some days later by one of the hands, who took his lunch in one of the sheds thenceforth daily, in the hopes of seeing what he did eventually see—the bird going in to feed the young. The roof of the nest was later dug away, revealing six youngsters, which flew on June 18th.

On what date the birds laid again I do not know, but their second clutch of five eggs hatched out on August 3rd or 4th. During the rearing of this brood I paid the birds a number of visits.

The nesting-hole, two feet above water-level, is directly opposite the main part of the farmyard, where men, horses, poultry, and creaking carts and farm implements make the place noisy throughout the day. The stream is only about twenty feet broad, and just on the other side is a shed in which pig-food is prepared. (This proved useful later on for observation.) From here men tramp twice a day, backwards and forwards, to feed the pigs. The required water is scooped up from the stream exactly opposite the nesting-hole. The perpetual clanking of pails would, I should have imagined, prove obnoxious to these birds, yet they were content to breed here for a second year. I have known this place for eleven years, and never saw a Kingfisher in the neighbourhood till last year. That they nested here, and used the same hole as this season, was demonstrated by the similar behaviour of the birds in connection with the same perch. Moreover, I have searched the banks carefully, and found no other possible hole.

More than that, they reared a second brood, and this despite the fact that the roof of their home was frequently being lifted for inspection of their first family.

There seems to be some difference of opinion on the subject of double broods with Kingfishers. Howard Saunders (*Manual*, p. 280) definitely states that two broods are produced in some seasons, and Jourdain (*British Bird Book*, II, p. 448) also says that a second brood is often reared, but Newton (*Yarrell*, II, p. 447) speaks of definite proof as still lacking.

E. Eykyn (*Wild Life*, Vol. V., No. 1) states dogmatically that they never rear a second brood. Yet here is an instance beyond doubt. For the producers of the first family which chose a farmyard as a nesting-site were in possession of this territory, and it is against all the laws of chance that a second pair of birds of such relative rarity should not only breed in the same ground but should also choose the same site directly afterwards. But apart from this, even if Kingfishers do use ready-made holes, a point that still requires proof, they would surely not adopt one with a leaky roof.

Incidentally, this second clutch affords the latest nesting-date with which I am acquainted for this species. The birds were actually sitting on eggs in August.

Mr. Jourdain, however, informs me that the latest breeding-date of which he has any note is that recorded by Mr. G. W. Murdoch (*Brit. Birds*, II., p. 204), where four nearly fledged young were found in Yorkshire on October 10th, 1908. Mr. Steele-Elliott has also recorded young on August 6th, in Bedfordshire.

During the first few visits I merely watched the birds and made some notes, finally trying to photograph them. I find that this plan works out best, as having once got the photographs, one's interest is apt to wane and one does not trouble to watch further, thus missing most of the interesting points.

The nesting-hole was approximately two feet long, terminating as usual in a rounded chamber, the floor of which was sunk about half-an-inch beneath the run. On August 5th, when I first examined the nest, there were but few fish-bones, in the usual half-digested condition. The nest was perfectly clean, but down the shaft vile dark green filth was oozing out at the entrance. The hole at the nest end was almost clean. The young were then blind and naked. On August 7th they were in the same state but considerably larger, and I now heard their peculiar "purring" noise for the first time. Both now and subsequently, my approach always elicited this sound, which could be heard through the boarded roof at a considerable distance when the birds grew bigger. On this day, when I removed the top, one of the old birds was brooding, which remained there crouching in the corner farthest removed from the shaft with its family the whole time that I was fixing up my camera to photograph them. This took me ten minutes, and I ended up in the stream! I could not see the red on the base of the mandible attributed to the female, so presumably it was the male. I eventually put my hand down, when the old bird pecked my fingers viciously, waddled across the nest, disappeared down the shaft, and emerged at the proper place and flew up the stream.

On the last occasion on which I could get time to run over (August 20th) the youngsters were getting well fledged (Fig. 1). Up to that time they had remained silent whenever the roof was removed. This day I thought I should like to see them making their churring noise, so left the top off for some ten minutes to accustom them to the light, and then, without moving my head, which was the only part of me visible to them, I lightly tapped the entrance with a stick with some leaves at its extremity. Immediately two of them

began to chur. I kept my eyes on one. He continued without a break for three-quarters of a minute, the whole time opening and closing his mouth at an average rate of five times in twelve seconds. This was accompanied with the vibration of the feathers down the length of the throat. His head was raised throughout.

And now, by the fortunate accident of having chosen this moment for my experiment, the riddle of the clean nest and



YOUNG KINGFISHERS ABOUT A FORTNIGHT OLD.

Photo. by W. Rowan.

filthy run was solved, for almost immediately one of the other youngsters waddled to the centre, turned round, backed to the shaft, and in a way exactly similar to a nestling Willow Wren, found the exit and there defæcated. The action was unmistakable, though that was all I could see. I should imagine, however, if guess work is permissible, from the comparative cleanliness of the immediate nest-end of the shaft, that the excreta are forcibly ejected, as with most hawks.

Besides the "purring" noise, the youngsters, at this age

at all events, are capable of emitting the note of the adult, as one of them demonstrated very successfully when I took them out of the nest.

From the first time I looked at the young to the last their hind toes were firmly pressed against the back of the tarsus, a peculiarity I have failed to notice with any other species. The mouth, which was at first flesh-coloured, got considerably darker as the birds grew older. At the age of 12-14 days they were completely clothed in feather sheaths, the tips of the feathers just showing, those on the breast being a dirty grey with a pale red tinge, the rest, except for a patch behind the eye, a dark slaty blue. Two of the brood disappeared between the 16th and 20th days of life. One was found drowned further down the stream, the other probably shared a similar fate. The remaining three left the nest on August 31st or September 1st.

The bones in the nest rapidly accumulated towards the end. Why these were so few at the commencement, since this was the second brood, I cannot say, unless the burrow was cleaned out by the parents after the first brood had flown.

The old birds came to the nest at approximately half-hour intervals. For the first fortnight they apparently carried no food; certainly they brought no fish. Twice, when the bird was quite close to me before entering the nest, I imagined that I saw something in the beak, but I am not at all sure. This, as Pycraft points out (Kirkman's *British Bird Book*), is at the bottom of the widely-accepted view that Kingfishers feed their young at first by regurgitation. But if this be so it ceases when the nestlings are about a fortnight old, for whole fish are thence onwards brought in. Personally I am inclined to think that the young are fed in the normal manner throughout, possibly at first on crustacea. When fish were brought, the intervals between feedings seemed to me to be longer than previously.

Apparently one bird hunted up stream and the other down. I never saw them break this rule. One day, before I had my hide-up, I lay in the trunk of an old willow about thirty yards away from the nest, up stream. On one visit the bird that hunted from this end flew over the tree, instead of under it, and noticed me. She emitted her alarm-note two or three times as she flew past the nest, and settled on a projecting root far beyond it, whence she soon returned to the nest and flew in. After a minute she came out again, but returned, as always, up stream, this time making a detour across the meadow to avoid me.

Not until they were feeding the young on fish did I find one of their fishing-stations. This was about a quarter of a mile up stream, the lowest branch of an overhanging willow. Here the bird seemed to have forgotten her habit, so conspicuous whenever she perched in the vicinity of the nest, of jerking her head and tail, a movement which always brings to my mind the Ringed Plover. She sat perfectly motionless, intent on the water beneath, suddenly to dive and shoot back with a fish, which was promptly swallowed. Then she dived again and came up apparently empty-handed." A third time she dived and returned with a fish, this time banging it four or five times on the perch, and then disappearing down stream with it. Her method of diving was quite similar to that on the day when I saw her taking a bath, but there was no attempt at preening this time.

Here and at the nest her attitude when perching was always the same, with the tail hanging down perpendicularly. When the head was jerked the tail was simultaneously jerked forwards, bobbing for a second right under the perch. I never saw either of the birds adopt any of those fantastic attitudes so frequently attributed to them in illustrations. My sketch (Fig. 2) is one of a series made at the time.

Just before flight there is a general compression of the plumage, when for a second there is a leaning forward, before the precipitate launch into the air, but to the last moment the tail points down.

I never saw the two birds at the same time, nor did I see either of them hover over the water, as they are said to do on occasions preparatory to diving. I did see one of them,



USUAL ATTITUDE OF ADULT WHEN PERCHING.

Drawn by W. Rowan.

on one occasion only, dive while in full flight. The object of this was not apparent, for, so far as I could see, the beak held nothing when the bird flew on.

I spent two long afternoons and a morning in trying to photograph the birds. Nine or ten yards from the nesting-hole, and on the same side of the stream, the bank bulges out a few feet. Here I erected a hiding-tent. Exactly opposite, leaning over the stream, is the old willow which was constantly used as a perch. Owing to the overhanging of the bank I was unable to see the actual hole from here. Between me and the nest was a short stump projecting out of the water. I trained the camera, for which I had made a miniature hide on the bank, on it, and then retired about fifty yards down the stream with a long-distance release. Here I remained throughout the afternoon, but, though the birds came with surprising regularity about twice an hour, one from up stream, the other from down, they never alighted on the stump. Sometimes they flew straight in, at others they used the willow. Even the hunter, from down stream, twice flew past the nest to settle here for a minute before going in.

My next efforts were concentrated one morning on this willow, but the spot was so shaded and the light so poor that the results were nil.

As a final resource, I stretched a leafy twig across the nesting-hole, thus blocking the entrance. I then put up a perch a couple of feet out, and fixed my camera still further out in the stream, going into my tent with the release. I thought she would surely use this convenient perch to think the matter over. After nearly half an hour the bird from up stream returned with a fish straight to the nest, when she shot upwards like a rocket, into the orchard and round my tent, to settle, again upstream, about a hundred yards away. Ten minutes elapsed before she again came back, hovered like a Kestrel for a few seconds outside the hole, and then flew to my willow and settled on the usual branch, not two feet away from my head. She seemed particularly agitated, jerking her head and tail more frequently and more energetically than usual. Then she returned to the nest, hovered, finally settling *on the camera!* After a minute she again went to the nest, hovered, and then settled on my perch, and gave me my first chance of a photograph. The thrill and excitement of that moment is quite indescribable. Here she remained for a couple of minutes, at first facing the camera and then the nest, to which she flew

once more, and apparently settled, as for some minutes she was lost to view, finally coming back to my perch. Here she sat for five minutes while I sketched her. I then got out and stood up on the bank to reset the shutter. Still she sat there only a few yards off, bobbing her head at me for quite an appreciable time before departing precipitately up the stream. She still had the fish, which she retained throughout. This looked to me like a minnow when the bird settled beside my tent. The head end was held in the beak, the tail end hanging straight out.

It was nearly three-quarters of an hour before she returned again, this time flying straight to the nest, where she disappeared for a minute or two and then settled on my perch. After one or two more tries at getting in she gave it up in disgust, flew past me, and settled on a projecting root about ten yards higher up. There she sat, pensive and perturbed, for some minutes, and then flew to my willow for a moment, and then back to the nest. Again she disappeared for some time before settling once more on my perch. I then showed myself, and she flew back up stream. Again she held a fish all the time. I wondered what she had been doing at the hole, and examined this. The twig had apparently been pulled partially out. As far as I could see, she hung on to the bank below the hole and tugged at the impediment, while all the time holding the fish in her beak.

By this time the shadow of a barn was on my perch, so I removed the obstacle and packed up the camera. When the bird eventually returned, she settled straight on the perch, apparently still puzzling out the problem. I could hear the churring of the young quite distinctly at my tent, nine yards away, as the old bird made her way in.

The whole afternoon the bird from down stream never put in an appearance. It may be that for once the pair were fishing on the same stretch in company, but I never saw them together.

A NOTE ON THE NESTING OF THE SWALLOW.

BY

J. H. OWEN.

SWALLOWS (*Hirundo r. rustica*) begin to repair old nests or build new ones very soon after their arrival. Eggs are found in some years at the end of April, but the second week in May is the usual time to expect them. It is hard to say exactly how many broods are reared in the summer, but probably three is quite a normal number. The birds frequently use the same nest for more than one brood, but often build new nests for the later broods if available sites are situated quite near the first nest. The nest is usually in a more or less dark place inside a building, but sometimes it is placed on the outside of a house or building, as a House Martin's nest is, but of course consisting only of a mere ledge and not built up to the eaves like the Martin's nest. The eggs number four to six, and are laid daily, and usually very early in the morning. The number decreases in the later sets to three or four eggs. Judging by the nests I have observed, incubation proper does not begin until the bird is laying the last egg, and lasts a few hours over fifteen days. One whole set, however, hatched in fourteen days and three hours only. When the eggs hatch, the shells are usually carried away and dropped, but it is very common for the shell of one egg to be scratched over the rim of the nest. Incubation is probably shared by both birds, and both birds are on the nest at night to within two days of the young flying: one in the nest, and the other usually perched on the edge. Brooding over the young is shared by both birds.

When the young are hatched, the eyes are not open: they have rather thick tufts of long light grey silky down, with whitish tips, on spine, wings, back of head, above and between the eyes. The mouth and tongue are yellow, with the flanges much lighter, almost white. Roof of mouth and base of tongue spurred. Feather quills are visible under the skin along the side bones on the third day. By the ninth day the quills are through all over the body, and the flight feather-quills are $\frac{3}{8}$ inch long.

For some days the old birds swallow the fæces: then they are sometimes swallowed and sometimes carried away and dropped. On the 8th day (often later) the young begin to eject them over the edge of the nest, and afterwards this method is adopted to the end of the nestling period.

Each time when one parent is heard bringing food, the other slips off the nest: it is unusual to see both at the nest together. After the food has been disposed of, the gapes of the young are examined, and undigested matter removed. This is necessary as the young are fed on many kinds of flies and small moths, and many parts of flies are quite impossible for young birds to digest. Then the fæces are looked for and dealt with. If the bird remains at the nest the well of the nest is cleaned up, and then the bird broods.

The parents seem to bring very little food at each visit and, as a rule, only one young one gets fed. Visits are, on an average, paid to the nest rather oftener than once in three minutes, according to my notes: at times very much oftener. The old birds are very alert while brooding, and the head is almost always on the move; this is not nearly so much the case during incubation.

The usual length of the nestling period is twenty-one days. I have known the young stay as long as twenty-four days, and shorter periods than twenty-one have been recorded. The young can always fly well before they leave the nest. Sometimes they leave the nest to return to it to rest at intervals during the day. At other times this rest is taken on roofs: they will perch on wires, but cannot stand thus for long and do not seem to get real rest in such a position until they are somewhat older. At night the young all collect in the nest for a considerable period, especially the last brood of the year. The parent birds do not seem to roost anywhere near the young after some two nights or so before the end of the nestling period.

While the young are in the nest they seem to recognize flying insects as food, for they always try to capture those that come within reach. After leaving the nest they have to be fed by the parents for some time. While they usually, and especially at first, receive the food while they are perched or sitting on a roof, it is a common enough sight to see them fed on the wing. Both birds fly upwards, as it were along the arms of an inverted V, and when they meet at the point there is a distinct pause long enough for the food to be transferred.

THE MOULTS AND SEQUENCE OF PLUMAGES OF THE BRITISH WADERS.

BY

ANNIE C. JACKSON, HON. MEM. B.O.U.

PART V.

GENUS *Erolia*.

THE species included in this genus have a complete moult in autumn: in the American and Siberian Pectoral Sandpipers, Baird's Sandpiper and Bonaparte's Sandpiper, the body-moult takes place in early autumn (August and September) while the moult of the wing-quills is deferred till winter or early spring, and is often not completed before the commencement of the spring moult. The spring moult is partial, involving the body-feathers, sometimes the central pair of tail-feathers, in some all tail-feathers, some innermost secondaries and coverts and usually some median and lesser coverts; in the Stints the remiges also are moulted in spring. The summer plumage is distinct from the winter plumage except in the Buff-breasted Sandpiper. The sexes are alike in plumage, but in the Knot and the Curlew-Sandpiper they differ slightly in summer plumage.

The juvenile plumage rather resembles that of the adult in summer in the Dunlin, American Pectoral Sandpiper and Siberian Pectoral Sandpiper, and that of the adult in winter in the Knot, Baird's Sandpiper and the Purple Sandpiper; in the Curlew-Sandpiper, the Stints and Bonaparte's Sandpiper, the upper-parts are distinct, but the under-parts are much like the adult in winter plumage. The moult from the juvenile to the first winter plumage involves the body-feathers, sometimes the central pair of tail-feathers, in some all the tail-feathers, innermost secondaries and coverts and usually some median and lesser coverts. The first winter plumage resembles that of the adult, but may be distinguished from it. No first winter specimens of the American Pectoral Sandpiper or the Buff-breasted Sandpiper were examined; The spring moult of the first winter bird is like that of the adult. No first summer specimens of the Curlew-Sandpiper, American Pectoral Sandpiper, Bonaparte's Sandpiper or the Buff-breasted Sandpiper were examined; first summer Siberian Pectoral Sandpiper and Baird's Sandpiper cannot be distinguished from the adults; first summer Dunlin, Stints and Purple Sandpiper are only to be distinguished when the retained juvenile wing-coverts are not too abraded.

KNOT (*E. c. canutus*).

ADULTS.—Complete moult from July to October. From February to June there is a partial moult involving the body-feathers (not all the scapulars or all the feathers of the back, rump and upper tail-coverts), sometimes the central pair of tail-feathers, occasionally an odd pair of tail-feathers or a single feather, innermost secondaries and coverts and some median and lesser coverts, but not the rest of the tail-feathers nor the wings; in some specimens a few winter body-feathers are retained. The winter and summer plumages are distinct, the sexes are alike in winter plumage but in summer the female has the upper-parts greyer, the feathers with the greyish-white edges predominating and not nearly so richly marked with orange-cinnamon as in the male; under-parts paler and intermixed with a few white feathers, lower belly more or less white, vent white; in some specimens the breast, belly and flanks are intermixed with a few white feathers (in some, faintly tinged russet) with markings and transverse subterminal barrings of sepia; under tail-coverts white, in some faintly tinged pale russet, with more numerous streaks and markings of black-brown.

The wings and bills of the female average longer than those of the male.

JUVENILE.—*Male and female.*—Like the adult in winter plumage but the feathers of the upper-parts and innermost secondaries and coverts are ash-brown or sepia with darker subterminal borders and edged white, cream or buff (not ash-grey, with dark shafts and light edges as in the adult); cheeks and sides of neck usually tinged buff and more narrowly streaked dusky or ash-grey than in the adult, breast creamy or light buff narrowly streaked and spotted with ash-brown; flanks white, irregularly marked and barred ash-brown and tinged buff (in the adult the breast is white, the feathers with wavy bars, in some narrow streaks, of ashy-brown, and the flanks are without the buff tinge and often more heavily barred and marked ash-brown); tail-feathers as in the adult, but edged buff; median coverts ash-brown mostly, with a subterminal border of dark brown and broadly tipped buff or white (not ash-grey fringed white and faintly edged white at sides as in adult); lesser coverts sepia or dark ash-grey narrowly edged light buff or white (not dark ash-grey narrowly edged white as in the adult).

FIRST WINTER.—*Male and female.*—The juvenile body-plumage (not all the scapulars), apparently central pair of tail-feathers, some innermost secondaries and their coverts, some median and lesser coverts but not the rest of the wings or tail-feathers are moulted from September to December. After this moult the birds resemble the adults but are distinguished by the retained juvenile median and lesser coverts.

FIRST SUMMER.—Only one specimen examined (Lincolnshire, August 3rd), which was moulting into second winter plumage. It was easily distinguished from the adult bird by the presence of one or more juvenile scapulars. Moult probably as in the adult.

DUNLIN (*E. a. alpina*).

ADULTS.—Complete moult from July to November. From March to June there is a partial moult involving the body-feathers (not all the scapulars or all the feathers of the back and rump), very occasionally the central pair of tail-feathers, or an odd tail-feather, sometimes some innermost secondaries and coverts, but not the rest of the tail-feathers nor the wings. Sometimes a few winter feathers are retained on the mantle. The winter and summer plumages are distinct and the sexes

are alike in plumage, but the female is the larger and has the bill and wings longer than the male.

N.B.—The amount of black on the belly in summer varies individually.

JUVENILE.—*Male and female.*—Resembles the adult in summer plumage but differs in having the feathers of the black-brown crown with ochraceous-buff, rather than pinkish-cinnamon. edges; nape ash-brown streaked dusky, and more or less suffused with buff (in the adult the nape is dusky-white or buffish-white, in some washed pinkish-cinnamon with pronounced streaks of dusky); the black-brown mantle and scapulars in the adult have the feathers broadly edged and marked with orange-cinnamon, while in the juvenile these feathers are narrowly margined with cream, light or ochraceous buff; back, rump and central upper tail-coverts ash-brown, some of the upper tail-coverts black-brown, the feathers edged ochraceous-buff (in the adult the back and rump are ash-brown interspersed with new black-brown feathers edged orange-cinnamon and the new central upper tail-coverts are black-brown tipped and irregularly marked orange-cinnamon); lower throat and upper breast greyish-buff, light or warm buff, the feathers streaked and spotted sepia (in the adult, these areas are white or buff heavily streaked black-brown); belly white, spotted and blotched sepia or dusky-brown (in the adult black, the feathers with faint white tips and more or less white towards base, intermixed to a greater or lesser extent with white); flanks white, in some washed buff with large spots or streaks of dusky (in the adult white in some marked dusky); tail-feathers as in adult winter plumage, but edged light buff: wing as in adult in winter but the innermost secondaries and coverts edged light or ochraceous buff instead of faintly margined white as in the adult; median and lesser coverts ash-brown fringed warm or ochraceous buff instead of with whitish edges as in the adult.

FIRST WINTER.—*Male and female.*—The juvenile body-plumage (usually not the feathers of the rump but occasionally some), some innermost secondaries and coverts, some median and lesser coverts, but apparently not the tail-feathers and not the rest of the wings, are moulted from August to November. After this moult the birds are like the adults, but are distinguished by the retained juvenile feathers of the back and rump and the retained juvenile wing-coverts.

N.B.—One female (February) had retained all the juvenile innermost secondaries and coverts and wing-coverts and was not in moult.

FIRST SUMMER.—Moult as in the adult, but apparently the central tail-feathers are not moulted. Plumage as in the adult, from which the first summer bird is distinguished by the buff edges of the retained juvenile wing-coverts, usually least abraded on the innermost median coverts.

In *E. a. sakhalina* the moults and sequence of plumages are the same as in *E. a. alpina*. In spring, however, the central tail-feathers appear to be more generally moulted and in one specimen a new median covert had been acquired.

(To be continued.)

NOTES

ROCK-PIPIT IN CAMBRIDGESHIRE.

My brother's recent record of Rock Pipits inland in France reminded me of an observation of my own which I probably ought to have recorded. On October 10th, 1915, I heard the note of a Rock Pipit (*Anthus spinoletta*) on Milton Sewage Farm, Cambridge. I saw the bird fly, and heard the note repeated several times, but I could not get a close enough view to be certain whether it was *A. s. petrosus* or *A. s. spinoletta*; but I doubt if it was quite dark enough or large enough for the former.

H. G. ALEXANDER.

ABSENCE OF FIELDFARES IN WINTER, 1917-1918.

ONE of the most remarkable features of the winter of 1917-18 has been the absence or extreme scarcity of the Fieldfare (*Turdus pilaris*) in the British Isles. Among the districts from which its absence has been noted may be mentioned: Dorset, none near Wimborne at Christmas, 1917 (J. Bartlett, *Field*, February 9th, 1918); Somerset, none (Dr. J. Wigglesworth, *in litt.*); Wilts., none near Warminster (J. Bartlett, *l.c.*); S.E. Sussex, none seen (Dr N. F. Ticehurst); Surrey, a flock of sixteen seen on Epsom Common, no others (C. G. Sitzler, *Field*, February 16th, 1918); Norfolk, none identified with certainty near Norwich (J. H. Gurney, *in litt.*); West Berks., only one flock of eight seen in early November, 1917, by G. Tickner; Oxford, none seen in north (O. V. Aplin, *Field*, Feb. 2, 1918); none seen in south (F. C. R. Jourdain); Herts., only one pair seen on February 3rd (Lieut. B. E. F., *Field*, Feb. 16, 1918); near Tring Dr. Hartert reports one flock seen by C. Oldham in November, 1917, and two birds in January, 1918, by F. Young; Bedford, one big flight seen at end of November, none since (Major G. Haines, *Field*, February 9th, 1918); Warwick, none near Birmingham, December 6th to January 14th (C. Suffern, *Field*, *l.c.*); S. Northants, none seen (O. V. Aplin, *Field*, Feb. 2, 1918); Leicester, none near Lutterworth (Major H. Jury, *Field*, *l.c.*); Notts., none near Rainworth (J. Whitaker, *Field*, January 26th, 1918); Lincoln, extraordinary scarcity noted (J. Allison, Louth, *Field*, Feb. 16, 1918); S.W. Lancs., none (D. H. S., *Field*, February 9th, 1918); Yorks., none near Beverley (F. Boyes, *Field*, February 2nd, 1918); only two seen, in company with thirty Redwings, Pateley Bridge (C. Barlow, *Field*, Feb. 16, 1918).

Mr. J. M. Goodall sends us the interesting note that a large flock, perhaps two hundred in number, passed through Bembridge, Isle of Wight, about the end of October or early in November, 1917. The direction of this flight was from N.W. to S.E.

Probably the same conditions obtain in Scotland and Ireland, for E. E. Dennis (*Field*, February 9th, 1918) reports none observed in Dumfries, and B. St. A. Jenner also (*loc. cit.*) states that no Fieldfares or Redwings have been seen in Co. Kerry.

F. C. R. JOURDAIN.

COMMON BUZZARD IN DERBYSHIRE.

A COMMON BUZZARD (*Buteo b. buteo*) haunted one of the gullies which runs from Dovedale to Hanson Grange, during the late autumn of 1916. I first heard of it on November 18th, 1916, and subsequently saw it several times. Rabbits are very numerous in this part of the Dale, and are snared for the market, but the Carrion Crows are apt to attack the snared animals in the early morning, and in consequence poison appears to have been laid for them. During the very severe weather in January, 1917, the Buzzard must have picked up one of the baits, and on January 27th it was found dead and brought to me. I forwarded it at once to the Derby Museum, where it has been well set up, and is now on exhibition.

E. GRINDEY.

SPOONBILLS IN DEVONSHIRE.

ON January 28th, 1918, I had an excellent opportunity of observing two adult Spoonbills (*Platalea l leucorodia*) feeding on the mud-flats at the estuary of the River Plym, Laira, near Plymouth, and watched them for a considerable time through glasses.

PAUL L. PARKER.

WHOOPEES IN WARWICKSHIRE.

A SOLITARY WHOOPER (*Cygnus cygnus*) joined the Mute Swans on my pool of twenty acres and stayed there for about four days. On January 28th, 1918, I examined it with the aid of glasses, and noticed that in size it was little inferior to the "Pens." It did not appear to mix on friendly terms with the other Swans, but swam by itself, frequently uttering its whooping call-note, which was not in the least like the "Tong" of Bewick's Swan. The yellow bill, with its black tip, agreed closely with the figure in Yarrell's *British Birds*. On February 17th, two more Wild Swans were on the pool, feeding in the shallow water. They had conspicuous yellow bills and were about the same size as the pen. By the morning of February 18th, they had moved on. This is not

the first time that wild Swans have visited the pool, for a few years ago eight or ten settled on the water, calling loudly; but as I did not see them myself, I did not make a note of the date, nor can I say which species they belonged to.

E. DE HAMEL.

BEWICK'S SWAN IN WARWICKSHIRE.

ON January 11th, 1918, Mr. R. H. Baillie reported a strange Swan in the Park at Satton Coldfield. From his description I felt no doubt that it would prove to be a Bewick's Swan (*Cygnus b. bewickii*), but went immediately to verify the identification. I found it with a party of twenty-one Mute Swans. It was very restless and uneasy, but has settled down since then, and was still there on February 15th, although several of the Mute Swans left when the ice disappeared.

The difference in size between it and the Mute Swans was very noticeable, and the yellow on the bill was confined to a patch on each side. There is no mention of this species in the article on Birds by R. F. Tomes in the *Victoria History of Warwick*, so that this appears to be the first record for the county.

B. A. CARTER.

[As the localities from which these birds are recorded are only five or six miles apart, it might be expected that they would prove to belong to the same species, but there seems no doubt that in both cases they were correctly identified.—EDS.]

BRENT GEESE IN NORTH STAFFORDSHIRE.

Two Brent Geese (*Branta b. bernicla*) were seen in the Churnet Valley near Oakamoor at the end of March, 1917, one of which was shot and correctly identified. This perhaps is worthy of record, as Staffordshire examples of the Brent Goose have been seldom obtained.

T. SMITH.

[This record must not be confused with the unsatisfactory note in Mr. J. R. B. Masefield's *Zoological Record for Staffordshire*, published in the *Rep. and Trans. N. Staffs. Field Club*, 1916-17, where it is stated that "Two flocks of Wild Geese were seen flying low over Cheadle in January, 1917, and two birds alighted, which were described by the observer as very small dark birds, so that apparently they must have been Brent Geese, of which we have only four previous records for the county." We must enter an earnest protest against the admission of records on insufficient and anonymous evidence of this kind. If better evidence exists, it should be stated.—EDS.]

EIDER DUCK ON RIVER RODING IN ESSEX.

ON February 21st, 1917, I saw a flock of seven Eider Ducks (*Somateria. m. mollissima*) on the River Roding, and on March 10th, 1917, saw ten at the same place. The stretch of river on which I saw the birds is only a few hundred yards from the Thames. It is now over forty years since I began to shoot on the banks of the Thames (chiefly in Essex), and I am well aware that the appearance of this species on fresh water is quite exceptional, but I am quite confident that my identification is correct. When last seen they were on the wing, flying south-east.

COLIN MURRAY.

GANNET IN RADNORSHIRE.

A GANNET (*Sula bassana*) was seen flying over Knighton in a south-westerly direction on June 6th, 1911, and was captured by a farmer close to Penybont (13 miles from Knighton). When caught it was in company with a flock of domestic geese. The farmer killed it and brought it in to a bird-stuffer at Knighton, where it was seen by me.

OWEN R. OWEN.

RED-NECKED GREBE IN SHROPSHIRE.

ON September 14th, 1917, Mr. James G. Lang watched for some time an adult Red-necked Grebe (*Podiceps g. griseigena*) on the Teme near Ludlow. Concealed by an alder-bush, he was able to observe it whilst himself unseen. The bird came so close to him that he was able to note every detail of the plumage, and particularly noticed the rich red neck and conspicuous white patch on the wings. There are always several Little Grebes on the water here, but his attention was first drawn to the bird in question by its being about double the size, though not so large as the Great Crested Grebe. The Red-necked Grebe has only twice before been recorded in Shropshire—an example in the collection of the late Thomas Bodenham obtained on the Severn, near Wroxeter, about 1850, and another close to Shrewsbury in 1888.

H. E. FORREST.

RED-THROATED DIVER INLAND IN LINCOLNSHIRE.

My brother, the Rev. H. F. Allison, Vicar of Scothern, six miles from Lincoln, writes to me: "On December 30th, 1917, I heard in my stable-yard, in the middle of the village, at 4.30 p.m., a harsh 'Cark, cark,' twice repeated. It was a Red-throated Diver (*Colymbus stellatus*) in immature plumage: I think a male by its size. As it could not rise,

and had its upper mandible broken, I reluctantly had it killed, and sent it to the Lincoln Museum, to see if my identification was correct." This was subsequently confirmed by the Curator.

JOHN ALLISON.

LATE STAY OF COMMON SANDPIPER IN STAFFORDSHIRE.

It may be of interest to note that a Common Sandpiper (*Tringa hypoleuca*) remained in the Churnet Valley at East-wall throughout the late autumn of 1917 until December 15th, when it was last seen.

Probably the bird took its departure on the advent of snow and severe frost, which set in about the above date.

It was regularly seen throughout October and November, on September 29th; and again on October 27th, when I visited the locality, I saw a Common Sandpiper which was perhaps the same bird. Our breeding Sandpipers generally leave much earlier in the autumn, but during September birds in transit come under notice.

T. SMITH.

GREY PHALAROPE IN HAMPSHIRE.

A GREY PHALAROPE (*Phalaropus fulicarius*) was caught alive at Barton, in the parish of Milton, on January 26th, 1918, by a boy. It died in his pocket, and was brought to me the same day.

J. E. KELSALL

BLACK-TAILED GODWITS IN KENT.

ON January 10th, 1918, a Sergeant-Major of the Royal Engineers when out shooting on the mud-flats skirting Pegwell Bay brought back with him a Black-tailed Godwit (*Limosa limosa*) which he told me he had shot from a flock of twenty of this species. In East Norfolk it is seen chiefly on spring migration, in April and May, and I have only once seen it there in January.

J. VINCENT.

A NOTE ON THE BRITISH PUFFIN.

MESSRS. W. L. SCLATER and C. W. Mackworth Praed (*antea*, p. 214) have once more discussed the forms of the European Puffin. They infer that the form from northern Norway is different from the one from southern Norway, and that the latter is the same as that from the British Isles, while the differences from the birds of the Vesteraal Islands are so slight that they should not be separated.

I regret that I cannot agree with this interpretation. I stand by the fact that my four birds from the Vesteraal

Islands are larger than British Puffins. It is true that it is a very small series, but it is, after all, more convincing than what is available from Christiansund, and it is supported by statements in other books. I doubt very much whether Puffins from northern Norway differ from those of Christiansund, which, though 350 miles further south, probably belongs to the northern fauna: in fact, Messrs. Selater and Praed called it themselves "N. Norway," while they seem now to think that it belongs to southern Norway, which is of doubtful limitation. Moreover, if there is a "progressive diminution in size on the Norwegian coasts as we go south"—which is not a general fact from which further conclusions can be drawn—then the southern birds are not the same as the northern ones, and might well be separated, as the diminution would probably not be continuously progressive.

The point, however, which seems to be most important to the authors of the note on p. 214 is that the type locality of Linnæus's Puffin is not fixed, and they say that, until this is done "and it is proved that the southern Norwegian bird is as large as the northern one," they "prefer to use the Linnæan name for the British Puffin."

This uncertainty is, to some extent, removed by my herewith designating as the type locality of Linnæus's *Alca arctica* the Vesteraal Islands. If this is done we are, in my opinion, not only justified in separating the British Puffin, but we *must* do so, even if birds from Southern Norway should be smaller than those from the Vesteraal Islands. The designation of the Vesteraal Islands as the *terra typica* is not mere arbitrary choice, but quite justifiable. Linnæus said: "Habitat in rupibus et præcipitiis montium maris atlantici, præsertim in insulis." It is on the islands of northern Norway where the Puffin breeds in millions and is an important article of food, while it is only found in comparatively small numbers in the south.

Nilsson, in *Ornithologia Svecica*, Vol. II., p. 140 (1821), quotes only the Lofoten Islands and others more to the north of them as being inhabited by innumerable flocks, southern Sweden only as being occasionally visited in winter, and of southern Norway he says nothing. It is therefore more likely that Linné examined specimens from where millions live than from where it is rare and local.

It is curious that Messrs. Praed and Selater should feel that in this case I go too far in "speciation," as many modern American and European Ornithologists now go further than I in separating subspecies (and even species!) on very "slight"

grounds, and I believe that they will in time agree with me in principle and interpretation of the facts.

ERNST HARTERT.

[Now that Dr. Hartert has designated the Vesteraal Islands as the *terra typica* of Linnæus's *Alca arctica*, we think that nothing can be gained by further discussion of this subject at present. The supposition that birds from Christiansund are intermediate or identical with the British race rests on the evidence of the one perfect skin in the British Museum. Until a series from this district is available for comparison, the status of the south Norwegian birds must remain undetermined.—EDS.]

THIRD OOLOGICAL DINNER.—A full report of the Third Oological Dinner, which took place on September 26th, 1917, at Pagani's Restaurant, will be found in the *Ibis*, 1918, pp. 179-187. The subject chosen for illustration was Erythrism, and some wonderful series of "red" eggs were exhibited, perhaps the most striking being Mr. H. Massey's series of erythristic eggs of *Larus argentatus* and *L. marinus*. Mr. Stuart Baker's address is also reprinted (*t. c.*, pp. 68-75) and will be found of much interest to Oologists.

CONTINENTAL COAL-TITS IN DORSET.—Mr. W. P. Curtis states (*Proceedings Dorset Natural History and Antiquarian Field Club*, XXXVII., p. 150) that he is satisfied that he was able to identify two Coal-Tits as belonging to this race (*P. a. ater*) after watching them on several occasions at a distance of twenty feet at Parkstone, Dorset, in the later part of January, 1915.

BRITISH WILLOW-TITS IN DORSET. — Messrs. W. P. and H. E. Curtis state (*Proceedings Dorset Natural History and Antiquarian Field Club*, XXXVII., p. 152) that they identified two pairs of these birds (*P. atricapillus kleinschmidti*) at Canford, Dorset, in 1915. The first pair was watched boring out a hole in a rotten oak-limb on April 4th, while the second was similarly engaged on a holly stump on May 1st, and subsequently laid four eggs therein but then deserted. This second pair was also watched by Dr. F. G. Penrose, who agreed with the identification, which is also confirmed by their mode of nidification. This would appear to be the first definite record of this species from Dorset, where, of course, the Marsh Tit (*P. palustris dresseri*) is a common species.

WOOD-WREN IN CO. FERMANAGH.—In the *Irish Nat.*, 1917, p. 196, Mr. J. P. Burkitt states that a Wood-Wren

(*Phylloscopus sibilatrix*) was heard and seen on May 18, 1917, by Mr. H. E. Rathborne near the north shores of Lough Erne. On May 28 it was seen again both by Mr. Burkitt and Mr. Rathborne, and the latter heard either this or another bird between this date and June 7, but not subsequently.

HEN-HARRIERS IN NORTH DERBYSHIRE.—Mr. E. Peat saw Hen-Harriers (*Circus c. cyaneus*) on two occasions in Leash Fen on October 16th, 1916. He had a good view of the first in the morning with glasses, and an even better one in the afternoon of the second, the bird perching on a post about two hundred yards away, and is sure that they were two different birds. (Orn. Report for Derbyshire, 1916, in *Journ. Derbyshire Arch. & Nat. Hist. Soc.*, 1917, p. 242.)

BREEDING HABITS OF BAIRD'S SANDPIPER.—*The Condor* (May-June, 1917, pp. 77-84) contains an interesting article on the "home life" of Baird's Sandpiper (*Erolia bairdii*) by Mr. Joseph Dixon, as observed on the North Alaskan Coast and at Herschel Island in 1914. It is illustrated with photographs, showing the eggs *in situ*, the male bird incubating and an immature bird squatting on the shingle. The courtship appears to be conducted in silence, and the duty of incubation is shared by both sexes.

GREEN SANDPIPER IN KING'S COUNTY.—Mrs. H. M. Rait Kerr states that in addition to the Green Sandpiper (*Totanus ochropus*) already recorded (*antea*, p. 190) another was shot at Rathmoyle in August or September about eight years ago, and was identified by the late Captain Longworth-Dames (*Irish Nat.*, 1918, p. 31).

BLACK TERN AND ARCTIC SKUA IN CO. MAYO.—Mr. R. F. Ruttledge (*Irish Nat.*, 1917, p. 194) records a Black Tern (*Hydrochelidon n. nigra*) seen at close quarters on Lough Mask on September 13th, 1917. Only two records from Co. Mayo are given by Ussher (*Birds of Ireland*, p. 312). An Arctic Skua (*Stercorarius parasiticus*) was also seen on September 12th, near Inishmaine, Lough Mask.

OBITUARY.

CAPTAIN LEONARD GRAY, of the Essex Regiment, who resided at Laurel Bank, Chelmsford, and died at Alexandria on July 31st last whilst on active service, was one of several sons of the late Mr. Charles Harrison Gray, of Goldlay House, Chelmsford, a prominent townsman.

From his schoolboy days, Captain Gray had taken a keen interest in ornithology and had been an active collector of birds' eggs, often visiting Scotland and other districts favourable for collecting. He was not an extensive contributor to ornithological literature, but he sent notes occasionally to *British Birds*. Thus, in 1908 and 1909, he recorded the nesting of the Lesser Redpoll at Chelmsford (vol. ii., p. 203, and vol. iii., p. 123), and in 1912 he sent a note on the nesting of the Crossbill in Suffolk (vol. iv., p. 14). In private life he practised as a solicitor.

Captain Gray bequeathed his collection of eggs and the cabinets containing it to the Corporation Museum at Chelmsford; but, as it has not yet been received there, no information is available as to its extent and interest. M. C.

LETTERS.

THE BREEDING-HABITS OF THE HOBBY.

To the Editors of BRITISH BIRDS.

SIRS,—With reference to the recent papers on the breeding-habits of the Hobby, a few observations based on notes made in 1907 may be of interest. A nest visited on June 20th in Oxfordshire was in the middle of a large oak-wood. The sitting bird left the nest when we were about 50 yards away, and was almost immediately joined by her mate, when they began to wheel round above the nest and became very noisy and demonstrative. Their behaviour was very similar to that of Peregrines with young. These actions were continued all the time we were in the neighbourhood of the nest. The latter was a Carrion Crow's, with a new lining of twigs, presumably added by the Hobbies.

The eggs were three in number, incubated some eight or nine days, and quite distinct from any eggs of the Kestrel I have ever seen.
HITCHIN, HERTS. J. BEDDALL SMITH.

REVIEWS

Transactions of the London Natural History Society for the year 1916. London, 1917. 8vo. Price 3s.

WE are glad to see that Ornithology is well represented in this year's *Transactions*. There is an excellent photograph by Mr. P. J. Hanson of a Norfolk nest of Montagu's Harrier, taken in 1899, and, in addition to the Report of the Research Committee for 1916, no fewer than three papers are concerned with Ornithology. Mr. F. J. Stubbs contributes an article on "The London Gulls," in which he shows that previously to the winter of 1894-95 they were only known as rare stragglers, with the exception of the winters of 1887-8 and 1892-3, when some numbers appeared. Mr. J. A. Simes's paper on "Aspects of Bird Life in Europe," though interesting and showing signs of originality in thought, nevertheless betrays entire ignorance of the work of scientific workers of late years. Dr. Sharpe's views of the division of the genus *Garrulus* as enunciated in 1877 are somewhat out of date at the present time, and cannot be said to represent the views of modern Ornithologists. The suggestions with regard to the Russet Wheatear and Spanish Sparrow are also quite untenable. A new departure, which should prove useful, is the "Report on the Birds of Epping Forest for 1916," as the list in Mr. Buxton's Guide was first published in 1884, and the status of many species has undergone considerable alteration since that time. We are glad to learn that the Wanstead Park Heronry contained seventy-two nests in 1916, and think it probable that the presence of large numbers of Jays is detrimental to the smaller passerine birds, as suggested in the Report.

F. C. R. JOURDAIN.

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| 29a. Sharpe, Second Collection from Fao, Ibis, 1891, pp. 103-116. | 53. Baird, Brewer and Ridgway, "History of North American Birds," 5 Vols. |
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THE MARSH-WARBLER.
(Drawn by Mr. E. C. Arnold.)

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FIELD NOTES ON THE MARSH-WARBLER

BY

LIEUT. D. H. MEARES.

IN a few favoured counties in the West of England, the Marsh-Warbler, which until comparatively recent times has always been considered a rare summer migrant, is now known to be a fairly abundant species, and it may be frequently and almost commonly observed in many localities, often widely separated, which afford it congenial surroundings. There is no doubt that it is extending its range yearly in a northerly and easterly direction over the country, and fresh records for new counties are continually forthcoming.

The Marsh-Warbler is one of the latest of our visitors to reach its summer haunts, and is seldom heard before the middle of May.

The localities which it seems to prefer are low-lying osier-beds in the vicinity of streams and canals, and damp waste places in the beds of rivers, or alluvial ground which is thickly covered with a rank and luxuriant growth of tall weeds. The old workings of gravel or clay pits, and brickyards and sewage farms where beds of nettles flourish and where docks, cow-parsley, figwort, meadow-sweet and tall grasses and sapling trees form a dense undergrowth are also favourite spots. In such places several pairs of birds may be found in close proximity, and two or three cocks are sometimes heard singing at the same time.

Unlike most of our rarer birds, the Marsh-Warbler is often found in the vicinity of populous places, and close to cottages, tramways, railway sidings and playgrounds, and more than once we have seen the hen-bird sitting unconcernedly on her eggs within five yards of a public footpath used by many hundreds of persons every day.

The Marsh-Warbler dislikes a tangled growth of vegetation, and is seldom found where brambles and briars flourish, nor does it as a rule frequent reeds and rushes. Though it likes moist ground, it avoids bogs and peaty places, and, unlike the Reed-Warbler, it never frequents vegetation growing up over water. Though it seems to avoid trees and tall hedges, we have seen it nesting in the rank weeds in neglected corners of fields and in the nettle beds surrounding rubbish heaps and refuse dumps. Usually the places it frequents are on the level of the stream or canal that runs through them, or actually below the level of the surroundings.

It is difficult to obtain a good view of the Marsh-Warbler amidst the dense foliage, but its presence can always be detected by the powerful and melodious song which it pours forth incessantly. The song is varied and richer in tone than the song of the Reed and Sedge-Warblers, with a mixture of notes somewhat resembling the Nightingale and Blackbird, but it also includes the characteristic jarring and chirping notes common to birds of its genus. It undoubtedly imitates the notes of some of the other warblers, and incorporates them in its song. In the early morning and in the evening, when heavy mists are hanging over the ground, it is often heard singing particularly vigorously.

In the field, apart from its unmistakable song, the Marsh-Warbler is difficult to distinguish from the Reed-Warbler, and also, at any distance, from the Sedge-Warbler, both of which birds are often found on the same ground. If one is fortunate enough to obtain a clear view of the bird at close quarters, especially through good binoculars, the Marsh-Warbler appears greenish olive-brown above, and the white breast merges at the flanks into the faintest sulphur-buff. The pale, almost flesh coloured legs and feet also form a useful distinguishing mark.

The Marsh-Warbler is one of the latest birds to commence nesting, seldom beginning to build before June. The nest is usually built about two feet from the ground, and is always suspended from two or more stems of tall weeds or sapling shoots of young trees, usually willows, and is placed amidst dense straight-growing vegetation. It is never built over water.

One nest was suspended from a sapling elm and the stem of a nettle, two feet from the ground, and within a few yards of a much frequented footpath, surrounded, however, by dense foliage, and within a hundred yards of a river. This nest was constructed, as usual, of flat blades and round stalks of grasses welded together with bits of wool and hair, and lined with hair. The nest was fairly deep, but not so cylindrical in shape or so compact as that of the Reed-Warbler, being looser in texture and less neatly woven and finished off. The male bird was singing incessantly within thirty yards of the nest. A second nest was suspended from three sapling shoots of willow, close to the edge of a small osier-bed, and some 150 yards or so from the river. Another very beautiful nest was built in the very corner of a withy-bed only twenty-five yards from a cottage, and was suspended from the stems of a nettle, the dead stem of a last year's dock and a willow-herb, and constructed of grasses welded together with coloured

wool, various pieces of scrap linen, and lined with coconut fibre instead of the usual hair lining.

Others were suspended two and a half feet from the ground in cow-parsley and figwort, well concealed amongst very thick but not tangled growth of grasses and weeds, and were only one hundred and fifty yards apart, the male birds in each case singing incessantly about twenty yards from their nests.

Yet another nest was suspended three feet from the ground from the lateral fork of a willow branch, and the male Warbler was singing vigorously right over the nest.

In the choice of a site for its nest the Marsh-Warbler seems partial to the edges of trampled spaces, footpaths and cattle tracks through the herbage, and it appears to have no objection to the site of its home being littered with old newspapers, paper bags and other rubbish left by picnic parties and trippers.

The eggs are laid about the first week of June, and incubation seldom begins until mid-June. Five eggs are the usual complement for the first sitting and normally one brood only is reared each season.

If, however, the first nest is taken or destroyed by the cutting of grass and weeds in the withy-beds, a cultural operation which is usually done with bill-hooks about the time the birds begin to sit, a second nest will be commenced immediately very close to the site of the first, and a clutch of four eggs laid within a fortnight. If this nest too is destroyed, a third and even a fourth attempt will be made to rear a brood at intervals of a fortnight or less, though the third clutch will usually only contain three eggs. The Marsh-Warbler is very partial to one particular spot, and we have frequently noticed that the nest is built within a few yards of the site chosen the previous year.

Marsh-Warbler's eggs are very handsome and quite distinct. They are slightly larger than those of the Reed-Warbler. There are at least two distinct types of eggs. In the one, the ground colour is distinctly bluish, at times reaching almost the intensity of the Bullfinch's egg, which some eggs of this type somewhat closely resemble. The other extreme type is a dirty white or ash-grey ground colour, faintly tinged with blue. Both types are boldly and beautifully marked principally at the large end of the egg with spots and blotches of purplish brown, and violet-grey, with lighter violet markings which often form a bold zone round the top of the egg. The centres of some of the darker spots are nearly black, which give the eggs a very beautiful appearance.

The ground colour is much clearer and less obscured in the eggs of the Marsh-Warbler than in Reed-Warbler's eggs and they do not show the heavy markings of green which almost hide the ground colour in most eggs of the Reed-Warbler. Green is almost absent from Marsh-Warbler's eggs.

Like most Warblers, the Marsh-Warbler sits very lightly and slips quietly off the nest into the thick foliage on the first sign of alarm, but it may be seen on the nest if the position is known beforehand.

Incubation lasts a fortnight, and when the young are hatched the male ceases his song and both the parents feed the nestlings with the greatest diligence. The fact that the autumnal moult commences in July might also account for the silence of the Marsh-Warbler during that month and August.

Once the young have left the nest, very little is ever seen or heard of the Marsh-Warblers, nor can they be easily distinguished then from the young of other allied Warblers which are found abundantly in the same haunts.

ORNITHOLOGICAL NOTES FROM NORFOLK
FOR 1917.

24TH ANNUAL REPORT.

BY

J. H. GURNEY, F.Z.S.

WEATHER CONDITIONS.

THE EFFECT OF FROST.--The great snow in Ireland on January 28th was soon followed by similar weather in England. On February 2nd we in Norfolk had ten degrees of frost, and birds of all kinds began to disappear rapidly, either by death or by migration. On February 7th the cold was intense, the thermometer only one degree above zero; it then became evident that a vast number of birds would die. It is not easy to say what species perished in greatest numbers during this fatal week, but on my side of Norwich there was a consensus of opinion that Blackbirds were the hardest hit. In one parish of about seven hundred and thirty-five acres, the dead Blackbirds were estimated at one hundred, several of them lying in ditches, but a few had crept into rabbit-holes, or had been dragged in by rats. The white-headed male Blackbird† which was the subject of a note last year (*British Birds*, X, p. 234) held out bravely until February 10th, when it was picked up before any vermin had time to spoil it. The life of another white cock,‡ which would also have perished, was saved by a trap, and subsequent good feeding. Very quickly Wood-Pigeons were discoverable attacking the green leaves of the kale, grown in Norfolk in rows, for lambs. This their somewhat feeble beaks could manage, but they have not the strength to dig into Swede turnips which have been "moulded up," nor to perforate the hard rind of the bulb, unless decay has set in. At this time of the year the provident farmer is always most anxious to preserve what roots are left, and very glad was he, when in a few days, the Pigeons almost to a bird, had migrated south. Meanwhile the sensitive Lapwings, which we are accustomed to see overhead in great flocks, disappeared as if by magic. With them went the Rooks, for when these latter could no longer burrow in the stacks, their last hope was gone, but a small number lingered for no other reason than that they were now too

emaciated to travel. Hooded Crows, carnivorous at any time and now compelled by hunger, laid aside their usual shyness. Quartering estuaries in their search for injured birds, they soon came under Mr. Arthur Patterson's notice at Breydon, where, he writes, they pounced on a Canada Goose which had fallen wounded on the ice, beyond the reach of the gunners. Nor did the Coots escape the vigilance of the Crows, which seem by instinct to find out any bird that is in difficulties, for Mr. Nudd states that on his Broad many Coots died of starvation, and the Crows had a fine time of it. The unfortunate Coots have to put up with a good deal at any time. I am told that they have been known to be frozen to the ice by their tails, when, being startled suddenly, they had to leave these appendages behind them!

The Rev. M. C. Bird received word in February of one being eaten by a 14-lb. pike, whose jaws revealed the black feathers, when he was pulled in on the Broad. This I can easily believe, knowing that a shot Pheasant falling where there are pike stands a very poor chance in the water.

When our inland Broads are frozen over, the Coots have to seek the tidal flats of Breydon, where they hope to find the cord-like stems of *Zostera marina*. During the second week of February Mr. Patterson and Mr. B. Dye estimated that there were about two thousand on Breydon, where they quickly became a target for all the gunners. Fourteen were killed by a single shot (Dye), nor would they be wasted, for some of our fenners prefer a Coot, well cleaned of its thick down, to a Wild Duck.

Great numbers of starving Black-headed Gulls, which had followed the Yare up to Norwich, frequented, not only the suburbs, where many people fed them, but the very streets. Thirty or forty at a time were to be seen on the roofs of houses, when charity of this sort was dispensed. Other persons less kind-hearted, snared them on manure heaps, and among those taken were two which bore Rossitten rings (Nos. 25459 and 11426) and one a Heligoland ring (23181).† The Norwich police, thinking it possible that they were German spy-gulls, promptly reported to the War Office!

In the course of a long stroll on the shore near Happisburgh, Mr. Robert Gurney came across nearly a hundred Gulls, some dead, some dying, but all in an advanced stage of starvation. They were mostly Black-headed and Common Gulls, but with them were two Black-backs, a Razorbill, a Puffin, a Heron and a Brent Goose. An idea of the many birds which were to be found on the shore at this time can

be gathered by some extracts from the journal of Mr. C. G. Doughty of Gorleston, who patrols the sands with a view to such discoveries.

MR. DOUGHTY'S JOURNAL :—

- January 21st. Four Blackbirds, one Woodcock, one Kittiwake, one Black-headed Gull, one Razorbill.
 „ 24th. One Coot, one Guillemot, two Herring-Gulls, six Kittiwakes.
 „ 25th. One Redwing, one Water Rail, two Wild Ducks.
 „ 27th. One Coot.
 „ 29th. One Scoter, one Guillemot, one Common Gull.
 February 3rd. Two Black-headed Gulls.
 „ 10th. An Eared Grebe, this was alive, but allowed itself to be captured.
 „ 12th. One Common Gull.
 „ 14th. One Red-throated Diver.
 „ 16th. One Velvet Scoter, one Grey Plover, one Sanderling.
 March 6th. Two Conger Eels, (one weighed 28 lbs).

My local list of dead birds sacrificed during this terrible frost runs up, with Mr. Doughty's assistance, to forty-two species. In that catalogue are included little birds like the Tree-Creeper, Goldcrest and Robin, as well as the Blue, Marsh- and Coal-Titmice, which Mr. Wallis thinks did not suffer in Cornwall (*British Birds*, X, p. 268). As was to be expected, this great mortality among bird-life (caused by starvation, and not, as a portion of the public believed, by the cold), was in due course followed by its natural sequel— a marked diminution of our favourites and fewer nests in the ensuing summer. Mr. B. B. Riviere, who has had a great deal of experience, particularly noticed the absence of nests of Long-tailed Tits and Golden-crested Wrens. That such very small species requiring, no doubt, hourly feeding, should be decimated, when there was a total absence of minute insect forms (*Diptera*, *Hymenoptera*, etc.) for them, is only natural.

As already stated, not many inland species received a harder blow than the Blackbird, one result of which was that when summer came round again, gardeners were saved the trouble of netting their strawberries. Later on, the quantity of unpicked fruit upon thorns and other berry-bearing trees such as *Viburnum opulus*, was very marked also, testifying to the sad lack of the birds which should have eaten them.

The only species of bird which did not greatly suffer, was the one which could have been best spared, viz., the Common Sparrow.

On February 10th a welcome thaw set in, on the 16th a Robin was carrying building materials for its nest, and a few Wood-Pigeons were beginning to return.

In connection with this tremendous frost, there is one matter which should not be passed over, namely the plague of omnivorous caterpillars, which wrought much harm during the summer in Norfolk, infesting trees of all sorts during June and July. It is hard to say whether this havoc should be correlated with the destruction of bird-life, but if there was no connection, the coincidence is singular.

PREVALENCE OF WESTERLY WIND.—On January 9th there were two wrecks at Cromer, one a Greek ship, the other Spanish, but fortunately without loss of life. While the searchlights were playing on them after dark, their powerful rays revealed to Mr. Henry Cole, who was watching, quantities of Gulls passing, together with some smaller birds. This was two days before the snow began, but the birds may have had some foreboding of it.

During the remainder of the year gales were not so frequent as sometimes, but in the autumn Norfolk had its usual prevalence of westerly winds. The direction of the wind seems to govern the course of flight with birds on our rounded line of coast at Cromer. If closely observed, it will be seen, even when the wind is quite a light wind—force 2 or 3 (Beaufort scale)—that three-fourths of them are going against it. This is especially to be remarked in Gulls, Lapwings, Starlings, Rooks, Chaffinches, Linnets, etc., and is perhaps more noticeable in October than in any other month. During October 1917 there was only one day on which the wind was not west or some point of west. On October 19th there was a pretty steady stream of Lesser Black-backed Gulls, with many Herring-Gulls and a few fine adult Greater Black-backs passing Cromer both by land and sea. They came in constant batches during most of the afternoon, all going against the wind, which was light north-north-west (force 2). Not one passed the other way.

The year has again come to an end without a Sea Eagle (although Mr. Caton-Haigh reports one from Lincolnshire), thanks to the head-money paid for their destruction in Norway. How different from the days when every bird of prey was not proscribed, and a Norfolk naturalist would count five Eagles on the wing at once. Nor has it been a good year for Woodcocks, which considering the comparative immunity they

must have enjoyed in Europe, is rather surprising. Of wild Pheasants and Partridges there was abundance, but not of the Red-legged Partridges which, not being native birds, were less able to stand the frost. The rarities for 1917 are but few—four Ruddy Sheld-Ducks in January (probably escapes) three Ortolan Buntings and a Stork in September, the Buff-backed Heron in October, and nine or ten Glaucous Gulls in the rough weather with which 1917 came to a close, are all. Notice was taken of a red-spangled Partridge in May, and the only other variety calling for remark was a cream-coloured Cuckoo obtained by Colonel Batt at Gresham (*antea*, p. 141).

A dagger (†) as before, indicates examination by the recorder. The rainfall for the year was 27.06 in. (E. Knight).

CLASSIFIED NOTES.

LINNET (*Carduelis c. cannabina*).

On October 14th Mr. Cole remarked a steady migration of Linnets in the neighbourhood of Cromer, passing along the coast in successive batches, and all going north-north-west, against the wind, which was light. This agrees with former observations by Dr. Riviere and others (*cf. Zoologist*, 1913, p. 178 and 1914, p. 179.)

TREE-SPARROW (*Passer m. montanus*).

In June and July Tree-Sparrows were observed by the gardener to be on the Cabbage plants, where they were gathering the superabundant green caterpillars (? *Mamestra brassicae*) which, though small, are exceedingly destructive, but some large yellow ones (not named) were untouched. Although in this instance they were doing good, it is impossible to acquit the Tree-Sparrow of taking some share of the farmer's grain.

ORTOLAN BUNTING (*Emberiza hortulana*).

On September 6th, after a moderate south-easterly wind (force 4), three of these Buntings were identified by Mr. F. J. Richards at Blakeney, where they may now fairly be considered annual September visitants.

BEARDED TIT (*Panurus b. biarmicus*).

Mr. R. Gurney finds that the Bearded Tits, which are such a feature of our Broads—and which were admitted to be unusually plentiful in 1916 (*British Birds*, X, p. 276)—became equally scarce in 1917, and the same evidence of diminution is supplied by Dr. Long (*Bull. B.O.C.*, XXVIII., p. 34). Mr. James Vincent only met with one brood on Hickling during a short visit at the beginning of August, and

in the first week of December 1917 failed to see or hear a single bird in the Horsey and Hickling district. This great decrease is without doubt attributable to the frosts of February, which starved so many birds. One sent to Mr. Saunders was probably a waif which had succumbed, but in most cases a starved bird would sink into the reeds and not be found.

GRASSHOPPER-WARBLER (*Locustella n. naevia*)

One seen by Mr. Nudd on May 1st, and two heard "reeling" by the Rev. F. C. R. Jourdain on May 11th: this Warbler is at no time a common bird in Norfolk.

REDWING (*Turdus musicus*).

To no species was the frost along the coast more fatal than the Redwing. In hard weather large numbers move from inland quarters towards the sea, taught by instinct that there the ground is usually softer and less icebound, but on this occasion it was of little avail. On January 21st Mr. Henry Cole saw Redwings coming off the sea at Cromer, and again on the 22nd and 23rd, when they were passing all day. Soon the poor things began to crowd into and through the town, seeking shelter in yards abutting on the streets, or anywhere. The Redwing seems to be a delicate bird at all times, and it is not surprising that Mr. Patterson also gives a lamentable account of their condition at Yarmouth, where, in a few particular places, resorted to for shelter, they lay on the ground almost one to the square yard. Similar reports, but not quite so bad, came in from Mr. Smith of Sheringham. The result was that when autumn came round, instead of the November flocks of Redwings and Fieldfares trooping overhead, hardly one was to be seen. Thrushes also had yielded to adverse circumstances and died, but in smaller numbers, the bulk of them having gone south before the frost came.

SWALLOW (*Hirundo r. rustica*).

The great movement of Swallows recorded by Dr. B. B. Riviere on April 29th (*antea*, p. 66), observed from day-break, but which may have begun long before sunrise, is very noteworthy, because the same thing has been witnessed at Blakeney and Cley, which are some twenty-five miles farther west, in the spring (April and May). Further observations will probably prove it to be an annual passage, and often on a very large scale. But what is even more remarkable is the vast autumnal passage of House Martins

and Swallows in September, flying as a rule against the wind, north-west or north-north-west.

HOOPOE (*Upupa e. epops*).

A Hoopoe at Thornham on September 3rd (S. H. Long). Nearly every Norfolk occurrence of the Hoopoe in the last thirty-five years has been on the coast: September being the favourite month. An inland record in 1910 (*Zoologist*, 1911, p. 166) originated in a mistake.

LESSER SPOTTED WOODPECKER (*Dryobates m. comminutus*).

On the hardest day of the frost in February (the 7th) the jarring of this species could be heard among the beech trees faintly vibrating. This may have been an expiring effort in the vain search for such wood-boring beetles (*Hylesinus* and *Rhagium*) as had outlived the extreme cold, if indeed any had done so. That both Woodpecker and beetles were soon dead can not be doubted. However, some must have survived, for a nest was examined on May 25th (Walter) or rather the following day which was in a fir stump and only measured 1.5 by 1.4 in.

Whether any Green Woodpeckers collapsed I do not know, or whether any resorted to the thatched roofs of cottages, where warmth from the chimneys gives insects a chance, of which the Woodpecker knows how to take advantage.

LITTLE OWL (*Athene n. noctua*).

None appeared at Swainsthorpe, where they nested last year, but from statistics collected by Dr. Deacon and Dr. Long it seems that Little Owls were seen in Braconash hard by, as well as at Easton, Great Melton, and other places. At Melton an identified egg † was taken from an oak tree (Bainbridge). On December 8th one appeared at Hempstead for the first time: orders were at once issued for its protection. Another was trapped at Swanington (S. H. Long).

During one of the raid nights Owls were flying round the town of Cromer (H. Cole), species not identified.

BARN-OWL (*Tyto a. alba*).

THE BENEFITS IT CONFERS ON MAN.—On April 5th a Barn-Owl, brought into Norwich to be stuffed, proved to contain six shrew-mice, so recently swallowed that the last one † was still quite perfect. Last year on May 10th both our Owls were asleep in the Owl-tub on a very odoriferous congeries of mice—and rat—remains, together with five eggs, one of which was only about half the normal size. In an adjacent fork of the beech-tree were the bleached bones of

one mole, and a good many small rats and mice. Who can deny the beneficial nature of this species, which is of such service to man? Yet I once counted the skins of forty-six Barn-Owls in a bird-stuffer's shop in Norfolk, but am thankful to think that the efforts of the Norwich Naturalists' Society have done much to check such senseless persecution. One of my Owls apparently carried off a small mouse-trap, no doubt having seen and seized the mouse which was in it.

WHITE STORK (*Ciconia c. ciconia*).

About September 9th a White Stork was viewed by several persons at Lowestoft. It took up its quarters on one of the parapets of the Catholic Church, to which roosting-place it returned every evening, and finally took its departure unharmed.

SPOONBILL (*Platalea l. leucorodia*).

The first Spoonbills to visit their time-honoured resort, Breydon Broad, were a pair which droppped in on May 20th, as usual during the night. The wind the day before had been high (S.E. 4), but according to the Weather Report there was none at all at the time of their coming. Liking their quarters, and being well guarded by Mr. Jary, they stayed until June 5th. After an interval ano her appeared on July 21st (N.N.E., fine) and stayed until the 29th, and that was all for 1917. Judging from Spoonbills in confinement, there can be few such silent birds in existence, a great contrast to most of the noisy frequenters of Breydon.

HERON (*Ardea cinerea*).

On April 6th Dr. Riviere found four occupied nests at Earlham, which hatched out on April 11th; this small Heronry, which has successively flourished in woods at Keswick, Taverham and Costessey, ceased at Earlham in 1904. Mr. Carr had two pairs which nested at Ditchingham. The Heron is a species which does not increase, although nearly every Heronry in East Anglia is well protected.

BUFF-BACKED HERON (*Ardeola i. ibis*).

A male of this species was shot on some marshes near Yarmouth (being as usual in attendance on cattle) on October 23rd, as recorded by Mr. Smalley (*antea*, p. 146). The wind that day at Cromer was north-west, and I had noted Rooks on passage moving against the direction of the upper clouds, *i.e.* towards N.W. On the evening of the 22nd it had been registered at Yarmouth as W.S.W., force 4, which would

probably mark the time of this rare Heron's arrival in England. It is curious that a hundred and twelve years should have elapsed since the last occurrence of a species which is common so near to England as Spain. Its stomach contained newts, probably a usual food, although not mentioned by Saunders. I once dissected one in Egypt, which had in it eleven small frogs. The Yarmouth bird also had a River Bull-head.

BITTERN (*Botaurus stellaris*).

Sharp weather in January or February always brings to Norfolk some Bitterns, which have been frozen out from marshes on the Continent, probably those in Holland, where it is more abundant, and the effect of a fish famine soon shows itself on these birds. On January 29th Sir T. Troubridge rose one at Runceton, where two days afterwards the gardener caught another. A third was flushed at Catfield, a fourth on February 2nd at Fleggburgh (Saunders), a fifth near Cley (Pashley), and a sixth on February 5th near Yarmouth (Dye). This is not more than a hard season usually affords to the gunners, who also secured two or three more at the end of the following December.

With regard to the breeding of the Bittern, I am happy to be able to state that very favourable reports are to hand. Without entering into particulars, it is enough to say that Dr Riviere is of opinion that several pairs may have nested. Booming was also heard in the spring in districts far removed from the Broads whence the previous breeding records were derived.

Anyhow, there is no doubt that as early as April there were several Bitterns about. One observer tells how on March 29th he listened in the evening to more than one booming in the reeds, and at the same time there were one or more on the wing also calling, but in a different key. During May they were heard by Dr. Long and the Rev. F. C. R. Jourdain in at least three places in the Broads district. The only naturalist, however, who was fortunate enough to see a nest, was Miss E. L. Turner, who examined one recently vacated. It had held two young Bitterns on June 6th (the older pair of young ones having probably left the nest), and some egg-shells, proof sufficient of its identity. The booms of a Bittern have been said to be always an odd number, generally three or five, which Ray doubted (*The Ornithology*, p. 282), but my limited observation rather confirms it, though he is right enough in saying that "It begins to bellow" about the beginning of February.

The soaring aloft in circles, of which Continental writers speak, has not yet been noticed.

[FLAMINGO (*Phaenicopterus ruber*).

Between July 4th and 25th a Flamingo was seen at Salt-house by various persons; it then changed its quarters to Breydon Broad, where I tried unsuccessfully to get a view of it. It was possibly the South American Flamingo, of the escape of which Mr. Witherby was informed earlier in the year.]

[RUDDY SHELD-DUCK (*Casarca ferruginea*).

In the beginning of January four Ruddy Sheld-Ducks, which from their tameness were thought to have escaped, were approached on Breydon, near the town, by Mr. Jary. It will be remembered that four were seen at Hickling in October 1916, and either two or four in November 1915, and two by the sea in January 1914, besides one in May 1913, and two in October 1912. Where they all come from is a mystery.]

SHOVELER (*Spatula clypeata*).

May 11th: Two nests examined by Mr. Jourdain on the Broads. What is peculiar about this species is that it is a bird of two seasons: the following winter dates are to hand:—January 26th, adult male (B. Dye); February 5th, female (M. C. Bird); 8th, two at Kilverstone and one on the river at Colney; 10th, a male at Yarmouth (Dye).

SMEW (*Mergus albellus*).

During February several fine Smews occurred, Mr. E. C. Saunders having as many as five on different dates, and Mr. E. T. Roberts one. This latter, a fine male shot near Barton, contained a number of small *Notonectu* †.

MANX SHEARWATER (*Puffinus p. puffinus*).

September 26th.—A dead Manx Shearwater † picked up in a turnip-field at Northrepps, quite dried up as if it had been starved, and lain there a long time. (Mr. W. R. Lysaght has a Levantine Shearwater (*Puffinus p. yelkouan*) shot on Blakeney bar, September 22nd, 1891).

GREAT CRESTED GREBE (*Podiceps c. cristatus*).

Both the Great Crested Grebe and the Red-necked Grebe were hard put to it during the frost. On February 2nd Mr. Dye reported five Great Crested Grebes in the Brydon

channel, and on the 4th they were still there (Patterson), battling against a heavy snow-storm, with Coots clambering over the bank to take refuge from the drift-ice. March always sees them returning to our inland waters, unless the weather be something very exceptional: Dr. Long counted twenty Grebes on South Walsham Broad on April 8th, nearly all in pairs.

WOOD-PIGEON (*Columba p. palumbus*).

A great flock of Wood-Pigeons in four battalions was seen by Mr. Doughty on January 5th flying in from the sea at Gorleston: wind, W.N.W. 2. rain and snow. October 9th.—The first band of autumn arrivals observed near Beeches by Mr. Smalley.

STOCK-DOVE (*Columba œnas*).

On February 16th eight half-starved Stock-doves † ventured on to the ice of a small pond, in quest of maize thrown to the Ducks, a bold proceeding, the more so as the pond was in a frequented garden: but it was in a neighbourhood where this little Pigeon has always been common. In this part of Norfolk it is not unusual to come across a dead Stock-dove, always in good feather, unruffled, and without any sign of disease in the throat or elsewhere. Has this been remarked by others? It cannot be the result of fighting or the plumage would be ruffled.

At Blakeney they use the rabbit-holes on the sandhills for breeding-places, but nearer Norwich any large hole such as a deserted pigeon-cote, or the roof of a summer-house is acceptable. Tubs put up for Owls are continually pre-occupied by Stock-doves, which is somewhat annoying to Owl protectors.

STONE-CURLEW (*Burhinus œ. œdicnemus*).

May 25th.—A nest containing the customary two eggs † (if the slight depression in the bracken lined with rabbit's droppings can be called a nest) within four miles of Norwich, and within twenty yards of where the same pair hatched last year (J. H. Walter). I understand the young came off on June 9th and 10th; last year Mr. Walter registered their hatching on June 17th.

GREEN SANDPIPER (*Tringa ochropus*).

The probability of the Green Sandpiper having nested in Norfolk was emphasised in last year's "Notes" (*British*

Birds, X, p. 242) and there are now fresh facts to advance. First, in Hånworth Park, near Cromer, where there is a stream which broadens into a small lake, two Green Sandpipers were observed by Colonel Barclay and his friends during the summer of 1917; they were seen either singly or together on different occasions during May, June, and July. Although they were considered to be breeding, no search was made for the nest. About the 4th August Colonel Barclay again saw the pair of old Sandpipers, and at once detected what he surmised to be four or five young ones with them. He is not certain of the number, but believes there were five, which would be in excess of a normal brood. These youngsters were smaller than the old birds, and lighter in colour. By approaching slowly he was enabled to get so near, on at least one occasion, as to see distinctly tufts of down about their plumage, but he refrained from shooting one, even in the cause of science, although aware of the desirability of securing absolute proof. Secondly, from a recent interview with Sir Hugh Beevor, it appears almost certain that the Green Sandpiper has bred on his property, at Wilby. The eggs were not discovered, but the young ones were found when "no bigger than Wheatears." A reward offered to the keeper if he could show the nest and eggs *in situ* another year, has at present produced no result. Thirdly, the supposed instance near King's Lynn in 1888, recorded by the late Colonel Butler (*Zoologist*, 1888, p. 306) must not be overlooked, as there is good reason to believe it authentic.

Fourthly, there is the case cited by Lubbock of a pair of old Sandpipers with four others, believed to be young ones on July 23rd, 1840 (*Trans. Norwich Naturalists' Soc.* vol. ii, p. 426). Nevertheless, in all these cases the possibility of the birds having been Wood-Sandpipers must be admitted, the breeding of which has been indubitably proved in Norfolk (*Zoologist*, 1846, p. 1324), by the shooting of a young one incapable of flying a hundred yards.

REDSHANK (*Tringa totanus*).

Throughout the spring and summer the Redshank, which seems increasing, was abundant at Breydon (Jary). It has few enemies to contend with, except the prowling gunner, but on July 28th a Peregrine Falcon † was observed to seize one. The Redshank rose with others from the mud, and like a bolt the Tiercel came down from the clouds and carried it off. The time of year was decidedly unusual for this bird of prey to be in Norfolk.

WHIMBREL (*Numenius p. phaeopus*).

On July 28th I saw many Whimbrel on Breydon Flats, and was informed that they had been continually in evidence during the spring, yet none ever breed.

BLACK-HEADED GULL (*Larus ridibundus*).

On July 1st Dr. Long and Mr. R. Gurney visited the Gullery at Wells—which is no longer confined to the immediate neighbourhood of Mow-Creek—where they estimated the number of breeding birds at about one hundred. In the middle of this settlement, on the open marsh, was found a Common Tern's nest, containing eggs.

Besides the three ringed Gulls already mentioned, a fourth labelled "Helgoland, 22763." was received by Mr. Cole from Salthouse. This was killed, but two of the others (Nos. 2381 and 25459) escaped, and have probably found their way back again to Rossitten.

GLAUCOUS GULL (*Larus glaucus*).

The constant storms of sleet and snow, which prevailed at the end of December, and during the subsequent month, were probably responsible for the presence of several Glaucous Gulls. The first was received on December 24th by Mr. Pashley, who afterwards had another, while Dr. Riviere had one † of a pair which fell to a right and left shot at Blakeney. A fifth was watched by Sir Digby Pigott at Sheringham, and Mr. Patterson further records that one or two were seen at sea off Yarmouth. One was seen at Cromer by Mr. H. Cole on December 25th, and on January 10th, 1918, three were seen together, one adult and two immature birds. On the first occasion Mr. Cole says he was near enough to have taken a photo, but no cameras are allowed on the beach. It is some years since there has been a flock of these Gulls on the coast.

NOTES

CONTINENTAL JAYS IN NORFOLK.

I HAVE for some time suspected that the Continental Jay (*Garrulus g. glandarius*) must occur in Norfolk during the winter because, though not a very common bird in the nesting season (which is hardly surprising, considering the extent of game preservation), Jays are remarkably abundant in Norfolk during the winter months, it being no uncommon thing to see as many as fifteen or twenty put out of one small wood by the beaters, when covert-shooting. During the past winter I have had the opportunity of examining a good many Norfolk-killed specimens, and have been struck by the greyness of the back of some of them.

I therefore recently sent five skins, which had been shot in Norfolk during January and February, 1918, to Dr. Hartert at Tring.

He has very kindly compared them with the series in the Tring Museum, and reports that three of them are undoubtedly of the Continental race (*Garrulus g. glandarius*), the remaining two being British (*Garrulus g. rufitergum*). I believe the only other counties from which the Continental Jay has up to now been recorded are Kent and Sussex. B. B. RIVIERE.

MARSH-WARBLED BREEDING IN SUSSEX, WARWICKSHIRE AND STAFFORDSHIRE.

ON July 12th, 1917, I found on an island in a Sussex pond a nest with three eggs, which I at once suspected of being those of a Marsh-Warbler (*A. palustris*). Several pairs of Reed-Warblers nest at the pond, but I had never known them breed outside the reeds, which form an extensive bed. This nest, however, was in meadow-sweet at the edge of the island, and it was roughly made and had handles, which, though not very striking to begin with, soon became a prominent feature when the nest had been blown about a bit by the wind, and more especially when the eggs were superseded by the heavier nestlings. None of the stems went through the nest itself. One egg was taken and submitted to Mr. Jourdain, who stated that it might well be a Marsh-Warbler's, though not of the typical type, but rather approaching an unusual variety of the Reed-Warbler. After the other two eggs had hatched out, one of the old birds was shot, its most marked feature just afterwards being the extreme lightness

of the legs. They were a dirty white, with a greenish yellow tinge at the "knees" (tibio tarsal joints), and yellow soles to the feet. There was no rufous anywhere about the bird; its rump was a little lighter and the crown a bit darker than the back, it had a broad but short cream eye-stripe, and there was a fine flush of yellow on the flanks.

The bird was subsequently shown to Mr. Ogilvie Grant and Mr. Grönvold at the British Museum, and they both expressed themselves quite satisfied with the identification. The Marsh-Warbler has only once before been recorded as breeding in Sussex, but, should it return to breed in this locality, it will in future receive adequate protection.

E. C. ARNOLD.

[Our thanks are due to Mr. Arnold for contributing the coloured plate of the Marsh-Warbler, reproduced from his water-colour sketch, and illustrating the characteristics of the species.—EDS.]

ON June 1st, 1917, I heard and identified a Marsh-Warbler (*Acrocephalus palustris*) in the Avon Valley near Warwick. There can be no doubt that I had also heard it on May 24th, but the song was almost drowned among those of Sedge- and Reed-Warblers and Whitethroats in an extensive osier bed, and I had no time to identify the songster. On June 4th I revisited the place, and watched a pair. On the 8th two birds were singing, and these two I heard subsequently during the month. By July 5th both had stopped singing. I saw one bird as late as July 31st, so I quite expect both pairs were nesting: but unfortunately my efforts to find a nest were fruitless. The tangle became extremely dense by the middle of June, so that it was almost impossible to see any birds moving through the osiers, and quite impossible to avoid disturbing them when I wanted to approach their haunts. I was never able to give more than about an hour to the search, and the early cessation of the song was a further difficulty. So the only nests I happened to discover were one of Reed-Warbler and two of Whitethroats.

This is, as far as I can discover, the first record of Marsh-Warblers in Warwickshire for over forty years, and possibly the most northerly record of summer residence in this country, with the exception of the Staffordshire record by Mr. Davies (*British Birds*, X, p. 118). It is not, however, a surprising extension of the breeding-range of the species, as its British headquarters appear to be in the counties immediately to the south, and largely in the same water-shed.

H. G. ALEXANDER

On June 22nd 1914, while cutting nettles from round some young trees planted by a brook side at Wood Eaton, near Stafford, a nest and five eggs of the Marsh-Warbler (*Acrocephalus palustris*) were found. The nest was about 3 ft. from the ground, suspended between a nearly dead alder plant and high nettles close to the water-side.

The eggs are in my collection, and the Rev. F. C. R. Jourdain, to whom I have submitted one, informs me that it is undoubtedly that of a Marsh-Warbler. This appears to be the most northerly recorded breeding-place of this species.

C. E. MORRIS EYTON.

ABSENCE OR SCARCITY OF FIELDFARES IN WINTER 1917-1918.

We have received some supplementary notes on this subject in addition to those already published (*antea*, p. 231): Wilts., Mr. G. B. Hony reports none seen in the Tidworth district; Somerset, only two or three reported in 1918 (Dr. J. Wigglesworth); Kent, flocks of fourteen, about forty and sixteen seen February 20-21 and March 4th near Dover; also eighteen near Lydd, March 16th, 1918 (Capt. W. S. Medlicott); S. Oxon., twenty seen on March 9th, 1918, at Kingham (W. Warde Fowler), about six seen March 1st, 1918, Oxford (Rev. E. Peake); Herts., only one seen near St. Albans up to January 15th, 1918 (W. Rowan); Norfolk, Mr. J. H. Gurney reports a flock of twenty at Intwood on February 24th, and two or three at Keswick a day or two later; nearly fifty reported at Povingland on March 4th by Dr. Long; several parties seen on March 2nd at Mundesley, probably passage migrants (B. B. Riviere); Warwicks, none seen, Sutton Coldfield (Miss B. A. Carter); Lincoln, none seen (Capt. W. S. Medlicott); Salop, Miss F. Pitt reports five on October 10th, 1917, going west; and twenty on October 16th perched on trees near Bridgnorth; Staffs., a few stragglers seen about October 10th and 12th near Cheadle, but none since (J. R. B. Masefield); Lancs. and Cheshire, none seen (H. Bentham); Yorks., three flocks (possibly the same birds) seen on three occasions during latter half of February, 1918 near Skipton (W. Rowan); Major W. B. Arundel saw a flock of twenty on February 21st, 1918, and about twenty-five were reported to him on January 23rd, near Ackworth; a flock of about eighty on moors near Hipswell, February 16th 1918; one near Scotton January 27th, 1918 (Howard Bentham); Westmorland, only one small flock seen at Ambleside, November 27th, 1917 (A. Astley); Ireland: Co. Down, two or three heard on November 17th, 1917; at Hillsborough (N. H. Foster); three seen about the same

time by Dr. Boyd at the same place; one seen near Hillsborough, March 1st, 1918 (N. H. Foster), and three seen two miles south, about the same date (J. Gibson); Co. Fermanagh, none seen (J. P. Burkett). In an Editorial note in the *Field*, March 16th, 1918, it is stated that reports of the scarcity of the Fieldfare have also been received from South-east Essex, Hants. (Emsworth), Kent (Canterbury), Staffs. (Rugeley); Denbigh (Wrexham); and also from Kirkcudbright (Castle Douglas) and Queens Co. (Stradbally).

F. C. R. JOURDAIN.

VARIETY OF SWALLOW IN KIRKCUDBRIGHTSHIRE.

AT Bridge of Dee, Kirkcudbrightshire, on the evening of August 27th, 1917, I noticed a Swallow (*Hirundo r. rustica*) flying about in company with several other normally coloured ones, which had the whole of the upper surface light chocolate, with the exception of the scapulars, wing-coverts and primaries, which were a much darker shade of the same colour. The under-surface was also light chocolate, slightly paler than the back. I watched it with field-glasses for about half an hour when it disappeared and I never saw it again.

STANLEY PERSHOUSE.

EARLY OCCURRENCE OF SWALLOW IN LANCASHIRE.

A SWALLOW (*Hirundo r. rustica*) was seen by Major R. H. Edmondson and Captain A. F. J. R. George in the Pilling district near Blackpool, Lancs., on March 5th, 1918. The weather had been mild, prevailing wind E., with inclination towards N.

JAMES R. HALE.

HEN-HARRIER IN KENT.

ON February 17th, 1918, a few miles from Dover, I saw flying overhead, about twenty yards up, a female Hen-Harrier (*Circus cyaneus*), and watched her for five minutes with strong glasses as she quartered the ground, searching for an evening meal.

W. S. MEDLICOTT.

CORMORANTS IN STAFFORDSHIRE.

MR. GILBERT WARDLE reported to me that on September 28th, 1917, and for several following nights, a Cormorant (*Phalacrocorax c. carbo*) roosted on the cross-bar of a church at Leek. Another frequented Trentham Lake from April to October, 1916, and again in April, 1917.

J. R. B. MASEFIELD.

REDSHANKS APPARENTLY BREEDING IN RADNORSHIRE.

ON May 4th, 1915, I observed a pair of Redshanks (*Tringa totanus*) on Llandegley Rhos, near Penybont, Radnorshire.

They were very demonstrative, flying overhead and uttering their plaintive cry. I think they had young, but though I looked around for the nest I was unable to find it. This is, I believe, the first time that this species has been met with in the breeding season in Radnorshire, and I hope to revisit the place this year to see if they have established themselves there.

OWEN R. OWEN.

LESSER TERN IN RADNORSHIRE.

ON September 23rd, 1915, a Lesser Tern (*Sterna a. albifrons*) was picked up in a very exhausted state on the banks of the River Teme, close to Knighton. It died two days after capture.

OWEN R. OWEN.

GREAT SKUAS ON YORKSHIRE COAST.

DURING the first week in November, 1917, two Great Skuas (*Stercorarius s. skua*) were shot on the Yorkshire coast near Flamborough. One of them was a very old bird and the other immature, the latter being much the larger bird. They are now in the Kendal Museum.

H. W. ROBINSON.

LITTLE AUK IN CAMBRIDGESHIRE.

ON February 17th, 1918, in a field at Coton, near Cambridge, I found the decomposed remains of a Little Auk (*Alle alle*). The bird had evidently been killed by a Hawk or Owl, as the head was missing.

MAUD D. HAVILAND.

AN OLD RECORD OF ROSE-COLOURED STARLING IN FLINTSHIRE.—In *British Birds*, IX, p. 273, Mr. T. A. Coward gives an extract from the *London Journal*, September 21st, 1861, relating to the recent capture of a Rose-coloured Starling (*Pastor roseus*) at the Point of Air light, and suggests that this is probably the same specimen as that recorded by Mr. A. O. Walker as killed in 1862 (*circ.* December) at the same place. While looking over some early volumes of the *Field* I found the same paragraph printed in the issue for August 31st, 1861, where it is given as an extract from *Eddowes' Shrewsbury Journal*. It is evident that the bird could not have been killed in September, as suggested by Mr. Coward, but probably the correct date is some time in August, 1861.

F. C. R. J.

AN OLD RECORD OF THE GOSHAWK IN STAFFORDSHIRE.—Mr. J. R. B. Masefield informs us that in the *Guide to the Birds in the Hull Museum*, p. 10, it is stated that: "In Sir Henry Boynton's Collection, given to Hull, the Goshawk was shot at Uttoxeter in the act of killing a Partridge in 1857." There are only two previous records of the Goshawk (*Accipiter g. gentilis*) for Staffordshire.

SANDWICH TERN BREEDING IN CO. GALWAY.—Mr. R. F. Ruttledge (*Irish Nat.*, 1918, p. 15) records the nesting of the Sandwich Tern (*Sterna s. sandwichensis*) in Co. Galway for the first time. Mr. Glanville counted twenty birds in one group on Mutton Island on June 12, 1917, and on June 17th found five nests with eggs.

CLUTCHES OF DWARF EGGS OF BLACK-HEADED GULL.—Mr. J. M. Goodall informs us that he has in his collection a set of three dwarf eggs of *Larus ridibundus*, measuring 42×30 , 44×31 , and 43×30 mm., so that six of these sets are now known to be in existence, three from Cumberland, one from Norfolk, one from Ireland, and one from Holland. The most interesting point about Mr. Goodall's clutch is the fact that the eggs were not infertile, as is almost always the case, but all contained well-formed embryos. Another set from the same district contains one normally shaped egg, 38×30 mm., and two small distorted eggs about the size of marbles, all infertile.

AN UNRECORDED EGG OF THE GREAT AUK.—It is somewhat surprising to find that a hitherto unrecorded egg of the Great Auk (*Alca impennis*) should still exist, but at the meeting of the British Ornithologists' Club on January 9th Mr. E. Bidwell showed a very handsome and well-preserved specimen, free from flaws, and neatly blown with two holes, which is the property of Mr. F. R. Rowley. At the time of the publication of Mr. T. Parkin's pamphlet in 1911 on *The Great Auk* seventy-three eggs were known to be in existence, and the present specimen raises the number to seventy-four. Mr. Rowley's egg is not of the "blotched" type, but the markings consist of irregular wavy lines tending to form a zone at the big end.

MR. A. H. PATTERSON'S MS. NOTES.—We are informed by Mr. C. A. Stephen, the Norwich City Librarian, that Mr. A. H. Patterson has presented to the Norwich Public Library all his notebooks from 1878 to date, as well as a set of his published works, articles, letters, etc. For many years past Mr. Patterson has watched and studied the wild life of the Breydon estuary, and his notebooks contain a mine of information with regard to the fauna of the district, as well as many pen-and-ink drawings and coloured sketches. Fortunately most of the Ornithological records have already been published in the *Zoologist*, the *Trans. Norf. and Norw. Nat. Soc.*, and Mr. Patterson's own books on Norfolk. We congratulate the Norwich Library on the acquisition of this interesting and valuable series of original notes, which form a history of Breydon in diary form for the last forty years.

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ASSISTED BY

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

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THE EFFECT OF THE WINTER OF 1916-1917 ON OUR RESIDENT BIRDS.

BY THE

REV. F. C. R. JOURDAIN, M.A.

AND

LIEUT. H. F. WITHERBY, R.N.V.R.

PART I.

THE widespread destruction of Bird-life caused by the severe winter of 1916-1917, and more especially by the prolonged period of frost which extended late into the spring of 1917, was so noticeable that it attracted the attention of the least observant. In most parts of the British Isles the diminution of resident species was most marked during the following summer, and in some cases the destruction was so great as to result in local extermination. That the same conditions also affected some of our winter visitors from the Continent has been proved by the extreme scarcity of the Fieldfare (*Turdus pilaris*) during the winter of 1917-1918. (Cf. *antea*, pp. 231 and 261 : and p. 280.) As the actual severity of the weather was no greater than that experienced frequently in many parts of the Continent, which does not result in any noticeable destruction of Bird-life, it seems at first sight difficult to account for the difference in the effects, but it must be remembered that many of the species which suffered most are at any rate partially migratory, and that there are almost always some parts of the British Islands where even in the depth of winter, comparatively mild and open weather prevails, such as the Devonian peninsula and the south of Ireland. In the spring of 1917, a great part of Ireland and most of the Cornish coast, which for generations have furnished a refuge to frozen-out immigrants, were experiencing the most severe climatic conditions of which we have definite records, as may be seen from a comparison of the articles by Messrs. C. J. Carroll and H. M. Wallis (Cf. *antea*, p. 26 and X., pp. 267-8) and the weakened and already half-starved visitors, were quite unable to adventure upon a Channel crossing and perished by thousands.

Probably in almost all cases it was not the actual cold which caused the mortality, but the long duration of the frost, which held the earth ironbound even to the very edge of the sea, and was accompanied by snow, which buried

the scanty supplies of food still available and so caused death by starvation. In particular, the "glazed frosts," which covered even the tree trunks with a thin film of ice, probably proved specially fatal to the Creepers, Tits and other tree-haunting species.

That somewhat similar results have followed lengthened periods of frost and snow is shown from the somewhat scanty, but still significant, references to previous hard winters.

Even as far back as 1408 Walsingham, in his *Historia Anglicana*, states that the winter was very severe, lasting through December, January, February and March, whence it came to pass that almost all the birds of the Thrush and Blackbird kind perished. "Unde contigit pene cunctas volucres de genere mavisorum vel merularum fame frigoreque perire." For this reference we have to thank Professor Oman.

The winter of 1838 is also noted for its severity and is said to have been fatal to many birds, and the extremely severe weather which lasted from the end of January intermittently to almost the end of March, 1855 (the memorable Crimean winter), proved not only destructive to residents, but also caused great mortality among the earlier summer visitors. In the case of such species as the Swallow and the Martin, this may have been directly attributable to cold, but it must be remembered that the same conditions would also cause the disappearance of insect life. Some interesting details of the effects of this winter may be found in an article by C. Collingwood entitled, "Calendar of Natural Phenomena observed at Purley Park, Berks" (*Zool.* 1855, pp. 4725-38). For its effects on the *Hirundinidæ* in the Midland counties see J. J. Briggs. (*t.c.* pp. 4808-9).

The winter of 1860 was also severe, but not prolonged, and that of 1878-79 was remarkable for extreme cold from December 8th to 25th, and again for a week in January, 1878.

The winter of 1880-81 holds the record for intensity, the cold spell beginning January 9th-10th and ending January 26th. Several references to its effect on animal life may be found in the *Zoologist*, 1881, pp. 196-7, 212 and 255 (Ireland).

Fuller details are obtainable in the case of the great frost of 1890-91, which chiefly affected the south-eastern counties of England. This is very thoroughly treated in an article by A. W. Preston in the *Trans. Norf. and Norw. Nat. Soc.*, V., pp. 191-195. The lowest mean temperature during this period, which extended from November 25th, 1890, to January 22nd, 1891 (59 days), was registered in Hertfordshire (28·5°), and for forty consecutive days the ground was covered with

snow, so that it is not surprising to find that the mortality among the birds was terrible. Some interesting notes on the effects in Hampshire will be found in the *Field* for March 14th, 1891. Mr. T. Southwell remarks that, in Norfolk, while the destruction of Thrushes was very great, there was an almost total absence of Redwings and Fieldfares, which had previously passed on southward. Others of our resident species, which seem to have suffered severely, were Kingfishers, Herons, and various species of Gull.

Another very prolonged spell of cold was that which lasted from about January 26th to February 18th, 1895. During this period the average mean temperature was below 32°. The frost lasted till the end of the first week of March, both in Derbyshire and Oxfordshire. In many respects this winter was not unlike 1916-17, and it is unfortunate that we have so little on record of its effects on Bird-life.

In the case of the 1916-17 winter, the first real cold was met with at the end of November, 1916. No serious injury was done till late in 1917. January was cold and wintry, with much snow in many places, the temperature everywhere much below normal. February was very dry, with an unusually severe frost and anticyclonic conditions. The climax of the cold was from February 2nd to 8th, the coldest since 1895 in many places. The only parts unaffected were the south coast of Cornwall, part of west Scotland and the Irish coast-line. In the meteorological returns hundreds of birds were reported as killed at Broadford, co. Clare. From Totland Bay the last of twenty-two consecutive night frosts was reported on February 11th, while at Hampstead a series of forty-one consecutive frosts ended on February 14th. Even at Limerick the ice bore for thirty-three days ending February 18th, and on Dartmoor frost lasted for ninety-one days, the longest period since 1855.

March was also cold and unsettled, with frequent snowfalls. There was no real break in the cold, which was most severe from the 6th to the 10th, especially on the east side of Great Britain.

April was marked by abnormal and persistent cold and frequent snowfalls, followed by drought. In Scotland cold and inclement weather lasted till the 17th or 18th. This April was the coldest for thirty or forty years, and very heavy snowstorms took place in Northumberland and Ireland. Undoubtedly these last two months were the fatal periods for most of our resident birds, already weakened by the long periods of privation in January and February.

As will be seen from the appended list of those who have

collaborated with us in the preparation of this report, our information with regard to the English counties is, with a few exceptions, fairly complete. From Wales we have but few returns, and our reports from Scotland and Ireland are quite insufficient material on which to base any general conclusions.

It is satisfactory to be able to state that although locally some species have altogether disappeared, there is no reason to believe that any of our resident birds has been exterminated. There are several significant records of the re-appearance of species in 1918 in districts from which they were entirely absent in 1917, but it will be several years before some of those birds which suffered most severely can possibly recover themselves, or return to their original status.

In arranging records we have decided, for the sake of convenience, to arrange the records under Counties and to group them in the twelve Watsonian Provinces. These Provinces are, of course, purely arbitrary, and do not coincide with the results obtained by the more natural system of defining the limits of each faunal area by the water-partings, adopted by Messrs. Harvie-Brown and Buckley, for Scotland, but have been adopted for convenience in classifying the records. Where a full report on the status of each resident species has been received the letter (R) follows the name of the recorder.

PROVINCE : I. PENINSULA.—

Cornwall : (Cf. H. M. Wallis, *British Birds*, X., p. 267) ;
 Devon : C. Collier (Culmstock), A. H. Machell Cox (Plymouth), W. W. White (Budleigh Salterton), G. Tickner (Tiverton) ; Somerset : D. J. Wigglesworth (Mendip, etc.), S. Lewis (Mid and East), R. H. Read (S. Cadbury).

II. CHANNEL.—

Wilts : Rev. D. P. Harrison (Swindon) ; Dorset : W. J. Ashford (Poole), Dr. F. Penrose (Swanage R), Rev. F. L. Blathwayt (Osmond Melbury) ; Hants : Miss B. E. Stilwell (Yateley), R. E. Coles (New Forest), F. E. Blagg (Petersfield), Dr. J. H. Salter (Ringwood), J. M. Goodall (I. of Wight) ; Sussex : H. G. Attlee (Hastings), Col. H. W. Feilden (Burwash), R. Ware (Frant).

III. THAMES.—

Kent : H. G. Alexander (Tonbridge R), Miss M. Kleinwort (Maidstone), E. G. B. Meade Waldo (Hever), Col. R. H. Rattray (Tonbridge R), P. F. Bunyard (Cf. *Bull. B.O.C.* XXXVIII., p. 20 R) ; Surrey : J. B. Crosfield (Reigate R), London N. H. Soc. (per Hon. Sec.) C. W. Colthrup

(Dulwich), P. F. Bunyard (*loc. cit.*); Essex: Ornith. Committee London N. H. Soc. (per A. Brown, Hon. Sec.), J. H. Owen (Felstead), C. D. Borrer (Romford); Middlesex: Orn. Committee London N. H. Soc. (per A. Brown, Hon. Sec.), R. H. Read (Brent Valley); Herts: Dr. E. Hartert (Tring), C. Oldham (Tring), W. Rowan (St. Albans); Berks: J. L. Hawkins (Reading), Rev. F. C. R. Jourdain (Abingdon R), N. H. Joy (Bradfield), H. Noble (Henley), G. Tickner (North-west), H. M. Wallis (Reading); Oxon.; O. V. Aplin (Bloxham). Rev. E. Peake (Oxford), G. Tickner (Oxford); Bucks: (see under Herts).

IV. OUSE.—

Suffolk: Commodore Lynes (South); Norfolk: J. H. Gurney (*antea*, p. 246), Dr. B. B. Riviere (Norwich). H. M. Upcher (Sheringham); Cambs: H. W. Holben (Cambridge); Beds: G. T. Atchison (Bedford); Hunts: (nil); Northants: R. P. Greg and J. G. Maynard (Rugby).

V. SEVERN.—

Glos. and Monmouth: (nil); Worcester: T. J. Beeston and G. Tomkinson (Kidderminster); Warwick: H. G. Alexander (Warwick); Staffs: W. Davies (Stourbridge), E. de Hamel (Tamworth), T. Smith (Cheadle) and J. R. B. Masfield (Cheadle); Salop: H. E. Forrest and A. Mayall (Shrewsbury), Miss F. Pitt (South), J. Steele Elliott (Dowles), J. H. Owen (Oswestry).

VI. SOUTH WALES.—

Radnor: O. R. Owen (Knighton). (No other returns.)

VII. NORTH WALES.—

Merioneth: G. H. Caton Haigh and F. C. Rawlings (Barmouth). (No other returns.)

VIII. TRENT.—

Lincs: Rev. A. Ellison (Althorpe), J. L. Allison (Louth), G. H. Caton Haigh (N. Cotes); Leicester: H. G. Attlee (Leicester); Rutland: (nil); Notts: Miss E. Mellish (Worksop), C. E. Pearson (Lowdham), J. Whitaker (Rainworth); Derby: H. G. Attlee (Matlock and Buxton), N. H. Fitzherbert (Somersal), E. Grindey (Ashburne), E. Peat (Baslow), F. Taylor (Buxton).

IX. MERSEY.—

Cheshire: S. G. Cummings (Chester), R. P. Greg (Styal); E. W. Hendy (Alderley Edge), O. J. Wilkinson (N. West); Lancs: H. Massey (Didsbury); Dr. H. J. Moon (Fylde), C. K. Parker (Rossendale), C. K. Stobart (Parbold), H. W. Robinson (Lancaster).

X. HUMBER.—

Yorks : H. G. Alexander (Askrigg), Major W. B. Arundel (Pontefract), E. P. Butterfield (Wilsden), W. Greaves (Hebden Bridge).

XI TYNE.—

Durham (nil) ; Northumberland : A. Chapman (Wark-on-Tyne). Mrs. Hodgkin (Stocksfield), J. S. T. Walton (Stocksfield).

XII. LAKELAND.—

Westmorland : A. Astley (Ambleside), Miss M. Garnett (Windermere) ; Cumberland : G. Bolam (Alston), T. L. Johnston (Carlisle).

SCOTLAND.—

Ayr : Miss Blyth ; Lanark : J. Bartholomew (Glasgow) ; Kirkcudbright : Miss Pershouse ; Edinburgh : Rev. W. Serle ; Ross : W. R. O. Grant (Fortrose).

IRELAND.—

C. J. Carroll (*antea*, p. 26), Mrs. Rait Kerr (Co. Meath), C. B. Moffat (Wexford R), R. F. Rutledge (Mayo).

From the coast of North France one report has also been received ; and we have to thank Professor A. A. Rambaut and Mr. Bellamy for their help in the Metereological section of this report.

(*To be continued.*)

THE "BRITISH BIRDS" MARKING SCHEME.*

PROGRESS FOR 1917.

BY

LIEUT. H. F. WITHERBY, R.N.V.R.

THE ringing accomplished in 1917 shows only a slight decrease on the year before, a result which, under the circumstances, must be regarded as eminently satisfactory. The following are the grand totals of the birds ringed :—

NUMBER OF BIRDS RINGED.				
In 1909	...	...	...	2,171
„ 1910	...	...	...	7,910
„ 1911	...	...	...	10,416
„ 1912	...	...	...	11,483
„ 1913	...	...	...	14,843
„ 1914	...	...	...	13,024
„ 1915	...	...	...	7,767
„ 1916	...	...	...	7,107
„ 1917	...	...	...	6,926
Total	...	...	...	<u>81,647</u>

We are glad to welcome a comparatively new recruit at the head of the list of birds ringed, Mr. H. W. Holder having ringed the fine total of one thousand and sixty. There follow some well-known and ardent supporters in Mr. A. Mayall with nine hundred and seventy-four, Dr. H. J. Moon with seven hundred and thirty-six and Mr. J. R. B. Masefield with five hundred and twenty. Mr. J. Bartholomew has nearly reached the five hundred, Mr. F. E. Blagg is well over four hundred, while Messrs. H. W. Robinson, J. G. Maynard and S. K. Barnes have all ringed over three hundred each. Mr. T. Smith, whose first experience of ringing was in 1917, has made an excellent start with over two hundred, while five others have ringed over one hundred each.

Being away from home and very much occupied I hope I shall be forgiven for omitting to give this year details of the more interesting recoveries. The proportion of recoveries has risen slightly, and it is rather remarkable that the percentage did not rise considerably in those birds such as Starling and Song-Thrush which suffered so severely in the winter of 1916-17.

* For previous Reports see Vol. III., pp. 179-182, for 1909; Vol. IV., pp. 204-207, for 1910; Vol. V., pp. 158-162, for 1911; Vol. VI., pp. 177-183, for 1912; Vol. VII., pp. 190-195, for 1913; Vol. VIII., pp. 161-168, for 1914; Vol. IX., pp. 222-229, for 1915; Vol. X., pp. 150-156, for 1916.

The percentage now stands at 3.1, this being calculated on the 74,721 birds ringed from 1909 to 1916, of which 2,372 have been reported up to date. As in former reports, I have given below the detailed percentages of recoveries in certain species.

SOME PERCENTAGES OF RECOVERIES.

Species.	Number Ringed 1909-16.	Number of these Recovered to date.	Percentages of Recoveries.
Starling	6,088	393	6.4
Greenfinch	2,072	23	1.1
Linnet	920	9	1.1
Chaffinch... ..	2,039	33	1.6
Sky-Lark... ..	1,364	13	.9
Meadow-Pipit	1,055	17	1.6
Pied Wagtail	593	16	2.7
Spotted Flycatcher	515	1	.1
Willow-Warbler	1,464	13	.8
Whitethroat	298	3	1.0
Mistle-Thrush	529	16	3.0
Song-Thrush	7,774	116	1.4
Blackbird	4,308	129	2.9
Redbreast	2,200	92	4.1
Hedge-Sparrow	1,517	34	2.2
Swallow	4,594	32	.6
Martin	1,159	13	1.1
Sand-Martin	569	3	.5
Cuckoo	83	5	6.0
Sparrow-Hawk	60	10	16.6
Heron	110	16	14.5
Mallard	570	129	22.6
Cormorant	470	82	17.2
Shag	156	15	8.9
Gannet	198	12	6.0
Wood-Pigeon	153	7	4.5
Lapwing	3,588	92	2.5
Redshank	235	13	5.5
Curlew	186	13	6.9
Snipe	164	14	8.5
Woodcock	345	44	12.7
Sandwich Tern	655	8	1.1
Common Tern	2,919	73	2.5
Black-headed Gull	11,946	515	4.3
Common Gull	507	14	2.7
Herring-Gull	510	17	3.3
Lesser Black-backed Gull	2,537	108	4.2
Puffin	901	1	.1

NUMBER OF BIRDS "RINGED."

MESSRS. H. W. HOLDER (1060), A. Mayall (974), Dr. H. J. Moon (736), MESSRS. J. R. B. Masefield (520), J. Bartholomew (486), F. E. Blagg (436), H. W. Robinson (357), J. G. Maynard (350), S. K. Barnes (301), T. Smith (204), O. J. Wilkinson (159), H. J. Vaughan (124), J. A. Anderson (116), C. F. Archibald (105), Mrs. Rait Kerr (102), Miss F. Pitt (90), Mr. F. A. Bruton (54), Mrs. Patteson (50), Capt. A. W. Boyd (44), Mr. R. P. Greg (43), Miss V. E. Buxton (42), Mr. T. L. Johnston (40), Miss B. A. Carter (37), Messrs. W. C. Wright (36), E. W. Hendy (35), H. G. Alexander (32), Miss C. M. Acland (30), Major H. S. Greg (30), Mr. T. C. Hobbs (30), Capt. M. Portal (30), Messrs. P. A. Chubb (29), H. Whitley (29), J. Appleby (22), the Rev. E. U. Savage (22), Major W. F. Mackenzie (21), Mr. C. H. Stobart (21), and many others who have ringed under twenty each.

	'09-'11	'12	'13	'14	'15	'16	'17	Total
Rook ...	65	35	23	5	45	6	38	217
Jackdaw ...	31	6	15	33	26	23	29	163
Starling ...	1558	1469	1133	646	914	368	560	6648
Greenfinch ...	336	439	381	344	190	382	254	2326
Twite ...	—	—	24	18	—	—	—	42
Redpoll, Lesser	8	19	45	22	1	37	—	132
Linnet ...	148	64	148	151	214	195	162	1082
Bullfinch ...	24	18	22	20	29	23	18	154
Chaffinch ...	380	360	331	397	252	319	338	2377
Sparrow, House	202	60	175	17	7	3	—	464
Sparrow, Tree	90	33	27	14	7	4	9	184
Bunting, Yellow	48	127	41	32	47	32	47	374
Bunting, Reed	50	17	39	49	15	18	98	286
Lark, Sky ...	60	138	390	253	328	195	213	1577
Pipit, Tree ...	59	38	27	42	4	16	8	194
Pipit, Meadow	134	120	318	169	183	131	113	1168
Wagtail, Yellow	1	—	22	28	13	12	16	92
Wagtail, Grey	24	23	17	22	7	12	—	105
Wagtail, Pied...	83	100	114	110	93	93	91	684
Tit, Great ...	297	73	221	67	65	10	16	749
Tit, Blue ...	210	124	228	70	3	12	11	658
Tit, Coal ...	38	9	24	7	10	—	—	88
Tit, Marsh ...	28	3	17	1	3	—	—	52
Tit, Long-tailed	3	5	28	1	1	3	—	41
Jay ...	8	4	7	7	4	—	—	30
Wren, G.-crested	31	—	1	—	1	7	—	40
Shrike, R.-backed	30	9	8	14	14	29	13	117
Flycatcher, S.	152	54	84	84	78	63	115	630
Chiffchaff ...	23	5	14	9	—	5	8	64
Warbler, Willow	296	266	251	271	257	123	146	1610
Warbler, Wood	39	7	20	9	—	2	—	77
Warbler, Reed	14	14	60	37	1	15	19	155
Warbler, Sedge	17	21	43	—	4	32	53	170

	'09-'11	'12	'13	'14	'15	'16	'17	Total
Warbler, Garden	25	17	20	9	15	16	9	111
Blackcap ...	19	4	7	23	23	12	17	105
Whitethroat ...	108	21	43	25	40	61	34	332
Whitethroat, L.	25	15	20	8	23	23	3	117
Fieldfare ...	78	7	—	—	—	—	—	85
Thrush, Mistle	90	83	82	85	98	91	45	574
Thrush, Song	1389	739	1197	1818	1131	1500	680	8454
Redwing ...	27	4	5	4	1	2	—	43
Ouzel, Ring ...	9	22	20	22	—	8	—	81
Blackbird	1009	448	626	975	499	751	453	4761
Wheatear ...	17	34	19	57	23	17	8	175
Whinchat ...	65	21	41	69	53	26	54	329
Stonechat ...	29	8	55	30	2	12	—	136
Redstart ...	51	26	31	42	40	6	—	196
Nightingale ...	15	—	8	4	7	7	—	34
Redbreast ...	580	282	355	471	249	263	244	2444
Sparrow, Hedge	333	226	268	269	228	193	140	1657
Wren ...	109	76	101	141	134	106	26	693
Dipper ...	35	23	15	23	17	10	5	128
Swallow ...	1170	421	653	734	896	720	1470	6064
Martin ...	214	104	160	275	198	208	401	1560
Martin, Sand ...	91	1	118	182	44	133	116	685
Nightjar ...	6	11	4	9	2	6	7	45
Wryneck ...	31	12	11	31	22	34	25	166
Cuckoo ...	21	23	23	6	5	5	13	96
Owl, Barn ...	10	19	14	9	14	3	6	75
Owl, Tawny ...	19	18	7	13	17	—	11	85
Kestrel ...	6	8	—	10	10	5	6	45
Hawk, Sparrow	24	11	5	11	4	5	—	60
Heron, Common	49	30	24	2	1	4	—	110
Sheld-Duck ...	27	10	1	2	9	—	—	49
Mallard ...	170	52	200	76	42	30	70	640
Teal ...	25	1	22	10	25	1	12	96
Wigeon ...	4	—	2	11	38	15	6	76
Duck, Tufted ...	5	—	20	15	22	3	—	65
Cormorant ...	28	54	266	122	—	—	—	470
Shag ...	4	23	15	114	—	—	—	156
Gannet ...	—	—	134	56	8	—	—	198
Shearwater, Mx.	—	60	9	—	—	—	—	69
Wood-Pigeon ...	45	33	26	18	17	14	11	164
Dove, Stock ...	11	7	9	9	2	3	4	45
Dove, Turtle ...	23	—	10	4	11	10	3	61
Oystercatcher	31	6	10	31	6	—	7	91
Plover, Ringed	47	20	28	20	7	4	2	128
Plover, Golden	4	13	7	6	9	4	—	43

	'09-'11	'12	'13	'14	'15	'16	'17	Total
Lapwing ...	590	676	558	1078	444	242	168	3756
Sandpiper, C. ...	44	36	24	23	13	20	7	167
Redshank ...	36	68	28	61	27	15	35	270
Curlew, Common	58	55	15	39	9	10	7	193
Snipe, Common	45	34	22	44	6	13	28	192
Woodcock ...	84	57	83	89	32	—	—	345
Tern, Sandwich	160	22	203	270	—	—	23	678
Tern, Common	2291	380	51	195	1	1	174	3093
Tern, Arctic ...	26	1	3	47	—	—	8	85
Tern, Little ...	44	85	35	9	—	1	—	174
Gull, B.-headed	5194	2660	3915	164	—	13	—	11946
Gull, Common	432	27	11	17	—	20	7	514
Gull, Herring	170	178	82	61	—	19	1	511
Gull, L. Blk.-bkd.	211	122	454	1317	214	219	—	2537
Gull, G. Blk.-bkd.	22	1	2	53	—	—	—	78
Kittiwake ...	15	—	2	16	—	—	—	33
Razorbill ...	34	—	2	24	—	—	—	60
Puffin ...	31	108	207	553	—	2	—	901
Moor-Hen ...	57	24	39	34	65	21	27	267

NOTE.—Forty-four species, of which less than thirty individuals each have been ringed, are omitted from this list as also are game-birds and those of which the identification was not certain.

MANX ORNITHOLOGICAL NOTES : 1916-17.

BY

P. G. RALFE.

THE following notes are intended to continue the record for the Isle of Man from the Article in *British Birds*, Vol. IX, pp. 290-292.

MISTLE-THRUSH (*Turdus v. viscivorus*).—In 1916 a nest was again built on a "crane" in Scarlett limestone quarry, against the axle of an iron wheel, and on April 8th, it contained four eggs, which were duly hatched.

BLACKBIRD (*Turdus m. merula*).—In 1916, in the above quarry, there was also a nest of the Blackbird on the wheel of an unused engine in a shed.

REDSTART (*Ruticilla ph. phœnicurus*).—On May 6th, 1917 Col. H. W. Stevenson saw one in his garden at Castletown. This date is in keeping with previous appearances, always seemingly on passage, of the species in Man.

HOUSE MARTIN (*Delichon u. urbica*).—In 1916 and 1917 a small colony of this rather scarce and local Manx bird established itself on the Post Office and other houses in Castletown.

EAGLE (sp. ?)—In "*Mannin*," No. 9, p. 525 (1917). Mr. G. W. Wood quotes a letter (*Hist. MSS. Com. Ormonde MSS. (N.S. v. IV.)*) from Governor Henry Nowell to the Marquis of Ormonde (Guardian to William, Earl of Derby and Lord of Man) dated in 1676. "And I cannot also omit but give your Grace an account that there is of late an eagle coming into this isle, which is a fowl that very seldom and scarce in an age cometh here, it being a place where never any such birds useth to breed, and that there is all possible care taken for to preserve her here, it being observed to be very lucky when any such is seen in the island." This passage which makes the Eagle a rare and casual visitor, is unexpected in view of Bishop Wilson's statement about 50 years later, that an "airy" existed, and of the fact that Eagles bred in Man till the early part of last century. Perhaps Nowell was mistaken, but he had long been connected with the island, took an interest in such matters, and had good opportunities for authentic information. Rather unexpected, too, is the zeal to preserve the strange visitor

PEREGRINE FALCON (*Falco p. peregrinus*).—Further interesting information about the "Coronation Falcons," whose due presentation was the condition of the feudal tenure of Man, is given by Mr. Wood in the above-mentioned article. From Nowell's letter it appears that a falconer was kept, and the places of the hawk's resort carefully watched.

PINK-FOOTED GOOSE (*Anser brachyrhynchus*).—On March 1st, 1916, during a spell of biting weather, Mr. Wm. Kissack shot a specimen on a small dam at Ronaldsway. It was a solitary bird, the first recorded for Man, and has been given by Mr. Kissack to the Isle of Man Natural History and Antiquarian Society. The pink of the bill and feet was finely developed.

TEAL (*Anas c. crecca*).—Mr. W. E. Cottier found a nest with eight eggs in the Ballaugh Curragh in 1916. There are few records of its breeding, which however is probably regular, though in small numbers.

TUFTED DUCK (*Nyroca fuligula*).—This species, previously very rarely recorded in the Island, must have occurred rather frequently in the winter of 1916–17. On February 9th a fine drake was shot by Mr. T. E. Jefferson, out of a party of three, on a quarry "dub" near Ballasalla. On February 4th I found the skeleton and wings of a picked specimen in the Lhen valley, and a little later several times saw a living specimen on a pool in the same neighbourhood. In a case of local birds given to the Manx Museum by Lieut.-Col. Geo. Moore in 1915 is another fine male, shot in the neighbourhood of Castletown.

COMMON TERN (*Sterna hirundo*) (see *British Birds* Vol. V, pp. 80, 303). In July 1917, at another locality not far distant from that mentioned by Mr. Wenner, Mr. C. H. Wells, who photographed the birds from a tent, was able to ascertain that a small Tern colony consisted of this species. This colony, Mr. Wells states, was thinly scattered over a considerable space, where Lesser Terns also were breeding. On July 24th–26th when Mr. Wells visited the place, only one Common Tern's nest contained three eggs, all the others two.

LITTLE TERN (*Sterna a. albifrons*).—In 1914 the colony had shifted about a mile, to a sand and gravel bank where Arctic Terns were breeding amid the coarser shingle, but the smaller birds nested principally in the bare sand, forming simple hollows without lining. On July 6th there were many such nests with eggs. Some nested here again in 1915 and probably

in 1916 and 1917. But in 1916 and 1917 another colony had been formed about three miles away. There may have been some twelve nests here, on sandy ground with much sea-rocket and similar vegetation, but the colony did not seem to prosper, and probably few eggs were hatched.

HERRING GULL (*Larus a. argentatus*).—In 1917 an order by the Lieutenant-Governor, based on special legislation, permitted the taking of Gulls' eggs up to May 30th. Great numbers of eggs seem accordingly to have been gathered.

This, along with other species, suffered severely in the very cold weather of February, 1917.

COMMON GUILLEMOT (*Uria t. troille*).—So little is known of the Ringed variety in Man that it is worth mentioning that in 1917 Mr. C. H. Wells saw a few, among ordinary birds on Spanish Head. (Mr. Graves and I once saw a single specimen on the Calf.)

LITTLE AUK (*Alle alle*).—In February, 1916 a specimen was taken in a field at the Craig, Andreas, about three miles from the sea. The captor tried vainly to keep it alive, and on its death gave it to (the late) Mr. J. C. Bacon, who informed me of the occurrence. On March 19th, 1916 Mr. W. G. Cooper found a mutilated specimen on the edge of the Ayre (a seaside waste) under Ballakinnag, Andreas.

NOTES

YELLOW-BROWED AND BARRED WARBLERS IN LINCOLNSHIRE.

I FIND I have omitted to place on record the occurrence of a Yellow-browed Warbler (*Phylloscopus s. superciliosus*) at North Cotes, on September 18th, 1915, and also of a Barred Warbler (*Sylvia nisoria*) at the same place on October 20th, 1916.

Both species have appeared so frequently that they may be considered almost as regular visitors to this county, and would, no doubt, be found on any part of the East Coast if carefully watched for.

G. H. CATON HAIGH.

FIELD-NOTES ON THE MARSH-WARBLER.

LIEUT. D. H. MEARES finishes his interesting notes on the Marsh-Warbler by telling us that when once the young have left the nest, very little is seen or heard of them, nor can they easily be distinguished from the young of other allied Warblers. Doubtless the last words are true, in respect of their outward appearance: but my experience is that they can be distinguished by their own alarm-notes as well as those of their parents. They stay two or three days in their osier-bed after leaving the nest, and I have several times had them all around me and occasionally within two or three feet of my head. The alarm-note of the parents is peculiar, more like the angry croak of the Nightingale than any other bird's note known to me: but it is now and then interrupted by a musical Lark-like whistle, which is also heard in the song. I copy these words from a diary, July 12th, 1896. The young have the same note, but it is shorter and weaker, as I noted on July 18th. (This was an unusually late nesting-season for these birds). The young were much darker and more rufous on the back than the parents, the breast and throat duller white, in fact almost buff, and the bill was yellow.

W. WARDE FOWLER.

ABSENCE OR SCARCITY OF FIELDFARES IN WINTER 1917-1918.

THE great scarcity of the Fieldfare (*Turdus pilaris*) in the British Isles during the winter of 1917-18 has now been so conclusively proved, that we do not propose to publish any further notes on the subject (Cf. *antea*, pp. 231 and 261). In

order to render the records as complete as possible we add a few references from various sources. Apparently a few flocks have passed through England on their way from the Continent.

Kent : H. G. Alexander reports two and one, seen in mid-November, 1917, near Tunbridge Wells.

Essex : A mixed flock of five Fieldfares and eight or nine Redwings seen on March 20th, 1918, in S.E. Essex (F. W. Frohawk, *Field*, April 6th, 1918).

Leicester : Flock of fifteen to twenty Fieldfares seen on March 20th, and similar party on following day at Market Bosworth (R. A. Oswald Brown, *Field, loc. cit.*).

Staffs : Flocks noted on November 3rd, and a few on 12th ; some in a mixed flock of Thrushes on 24th : also two small flocks on January 16th and one flock on March 1st, 1918, near Froghall (T. Smith *in litt.*).

Lancs : Not a single Fieldfare or Redwing seen in district from south of Manchester to Cheshire border from autumn 1917 to spring 1918, an unprecedented record in nearly 50 years' experience (H. Massey, *in litt.*).

Yorks : Sir A. E. Pease reports several flocks passing over Guisbrough on January 22nd, 1918 ; one of about sixty, another of about eighty, and a third of about a hundred, moving southward. No others seen.— A few small parties, September 27th, 1917, at Blackhalls. No others seen till March 19th, 1918, a flock of 200 between Danby and Castleton in Cleveland (C. E. Milburn).

Scotland : Messrs. E. V. Baxter and L. J. Rintoul report no Fieldfares or Redwings seen up to February 5th, 1918, at Largo, Fifeshire (*Scott. Nat.*, 1918, p. 93), and Mr. O. H. Mackenzie (*op. cit.*, p. 34) states that no Fieldfares and only about twenty Redwings have been seen by him in West Ross.

F. C. R. JOURDAIN.

RING-OUZEL IN CO. WICKLOW IN WINTER.

ON January 14th, 1918, a Ring-Ouzel (*Turdus t. torquatus*) was observed eating the berries of a *Cotoneaster frigida* at Mullagh Grange Con., co. Wicklow. The bird was shot and proved to be a female in excellent condition.

W. J. WILLIAMS.

[Ussher (*Birds of Ireland*, p. 8) says : "Thompson and Kinahan have mentioned irregular occurrences in winter, and other instances of this have been known since, but such are decidedly rare." Thompson (*Nat. Hist. of Ireland*, I., p. 152) gives no details, but says merely that this species has occasionally been met with in Ireland during winter. In Great Britain such occurrences are by no means rare, and

J. E. Harting even goes so far as to propound the astonishing theory that the Ring-Ouzel is a resident with us! See *Handbook of British Birds*, 1st Edit., p. 12; 2nd Edit., p. 41.

F. C. R. JOURDAIN.]

SNOWY OWLS REPORTED IN STAFFORDSHIRE AND OXFORDSHIRE.

THE Rev. J. O. Coussmaker, of Hamstall Ridware, near Rugeley, writing in the *Field* (19th Jan., 1918) states that while driving from Lichfield about 3.45 p.m., near Pipe Ridware Church, he saw a Snowy Owl (*Nyctea nyctea*) not forty yards away. It tried to settle on a hedge, but failed and fell over backwards, but quickly recovered itself and continued its flight. He adds that it had "some brown feathers" on its back. Mr. Coussmaker is familiar with most of our common birds and has recorded several of the rarer species, such as the Dartford Warbler and Woodlark, from his neighbourhood, so that confusion with the White-breasted Barn-Owl (*Tyto a. alba*) should be impossible. Curiously enough the presence of a Snowy Owl was reported to me under very similar conditions on Otmoor, Oxfordshire, about the end of March 1917, during the wintry weather which then prevailed. The bird was first seen by Messrs. Wicks and Jeans, while driving out to Beckley from Oxford, about 3 p.m. It was flying low along the hedgerows and on one occasion turned and came towards them, so that they had a good view of it. Both agreed that it was unlike any Owl they had seen before and the descriptions of the size and plumage agreed closely with that of the Snowy Owl. The bird was also seen subsequently by Mr. Hall of Beckley hunting a hedgerow near Otmoor. I hesitated to record this specimen because none of the observers knew a Snowy Owl by sight, and a Barn-Owl on the wing seen suddenly at close quarters looks larger than it really is. I may add that I have seen a Barn-Owl blunder right into a quickset hedge in daylight and had no difficulty in capturing it. Even the dark spots on the plumage of all but very old Snowy Owls have their parallel in the small spots on the breasts and flanks of the Barn-Owl. The great difference in size, the absence of yellowish brown on the upper surface, and the striking brown irides of the Snowy Owl at once serve to identify it when seen by an ornithologist, but a considerable element of doubt must attach to cases such as that just quoted. F. C. R. JOURDAIN.

GLOSSY IBIS IN NORTH LANCASHIRE.

A GLOSSY IBIS (*Plegadis falcinellus*) was shot at Garstang, North Lancashire, in September 1917, and is now in the collec-

tion of Mr. F. Sessions. Mitchell in his *Birds of Lancashire* only mentions four records, the last being as long ago as 1859.

H. W. ROBINSON.

BITTERNS IN SOMERSET.

THERE has been an unusual influx of Bitterns (*Botaurus stellaris*) into Somerset during the past winter (1917-18), no less than five birds having put in an appearance, four of which were 'unfortunately shot. They all occurred between the middle of December, 1917 and the middle of January, 1918. One was shot on Kenn Moor, near Yatton, in the latter half of December and another on Locking Moor, near Weston-super-Mare, on December 26th, both of these localities being within a few miles of the Bristol Channel. During the first week in January one was shot in the neighbourhood of Martock in the east of the county, and during the second week another was obtained near North Petherton within a few miles of Bridgwater. The only bird which apparently escaped was one which was observed by Mr. Gould on two occasions during the second week in January, by a stream near Porlock in the extreme west of the county. One of these cases, the Weston one, was made the subject of a prosecution, and it is to be hoped that the publicity given to this case will have the effect of ensuring the bird a better welcome in future.

J. WIGLESWORTH.

SHELD-DUCK AND SHOVELER IN WARWICKSHIRE.

ON February 4th, 1918, I saw a Sheld-Duck (*Tadorna tadorna*) in Sutton Park. Evidently it was an immature bird, as it had not the chestnut band. I believe that this species has not been recorded at Sutton Coldfield.

The Shoveler (*Spatula clypeata*) was shot at Sutton Coldfield in 1867, as stated by Mr. R. F. Toms (*Vict. Hist. Warwick.*). I saw a pair in Sutton Park on April 19th, 1912, a pair on March 4th, and two males on April 1st, 1918.

B. A. CARTER.

LARGE NUMBERS OF RED-THROATED DIVERS IN NORTH LANCASHIRE.

ALTHOUGH the Red-throated Diver (*Colymbus stellatus*) is always fairly common in Morecambe Bay in winter, during the past winter of 1917-18 it has been present there in enormous numbers, being one of the most numerous, if not the commonest diving bird in the bay.

H. W. ROBINSON.

SWALLOWS NESTING IN TREES.—The *Scottish Naturalist*, 1918, p. 21, contains a note from Mr. C. Kirk, in which it is stated on the authority of Captain T. S. Morrin, R.A.M.C.,

that Swallows (*Hirundo r. rustica*) in France nest commonly in trees in districts where the buildings have all been levelled. One poplar tree which was left standing by the Germans had at least a dozen nests in it, the lowest about ten feet from the ground. They also breed frequently in the dug-outs. House Martins (*Delichon u. urbica*) were also present, but it is not definitely stated that they nest in trees. For notes on Swallows nesting in trees in England see *British Birds*, Vol. V, p. 143.

KITE IN PERTSHIRE.—Mr. P. Webster (*Scottish Naturalist*, 1918, p. 21) states that "during a recent holiday" he noticed on three occasions at intervals of a day or so, a large bird of prey, with a deeply forked tail, obviously a Kite (*Milvus milvus*), being chased by Peregrines. As this was in the middle of the nesting-season we presume that it took place in May or June, 1917. The locality is given as the Loch Ard district.

LETTER.

ICELAND NOT GLAUCOUS GULL IN NORFOLK.

To the Editors of BRITISH BIRDS.

SIRS,

My friend, Mr. Gurney, in his interesting Report (*antea*, p. 258), has, I see, given my name as a witness to the appearance of Glaucous Gulls on the Norfolk Coast, during the late spell of arctic weather.

The bird which I was privileged to watch closely for three or four days in succession, on the beach at Sheringham, and duly reported to him, was, unless I am entirely mistaken, a rarer visitor. The body was much smaller and the wings proportionally much longer than those of the Glaucous Gull. The general colour of the bird was a dull white. The neck and shoulders were less clean-looking than the rest of the body, but, though I looked for it, I could not trace anything like a defined mantle. As there were no brown mottlings visible, the bird was presumably adult. As it was commonly either in company with, or not far from, Herring-Gulls and Lesser Black-Backs I had every facility for estimating its comparative size.

I am well aware that the visits of the Iceland Gull are so few and far between that any story of its supposed appearance is to be received with caution.

Mr. Gurney, in his list of Norfolk birds, contributed to Mason's History of the County, writes: "Mr. Stevenson and I, after numerous enquiries, can only certify one undoubted specimen"—a young female snot at Caister in November, 1874. But I am as satisfied as, without actually handling, it is possible to be, that the Sheringham bird was an Iceland Gull (*Larus leucopterus*), and could have been nothing else.

Mr. Upcher—than whom few in England have a better knowledge of the northern Gulls—was with me on one occasion; and I think I may venture to take upon myself to say that he was as satisfied as I that the apparently tired, white-winged Gull that we watched together at a distance, at times, of less than a stone's-throw—whatever else it may have been, was *not* a Glaucous, and as the legs and feet were not black, the bird could not have been an Ivory Gull.

T. DIGBY PIGOTT.

THE LODGE, SHERINGHAM.

5th April, 1918.

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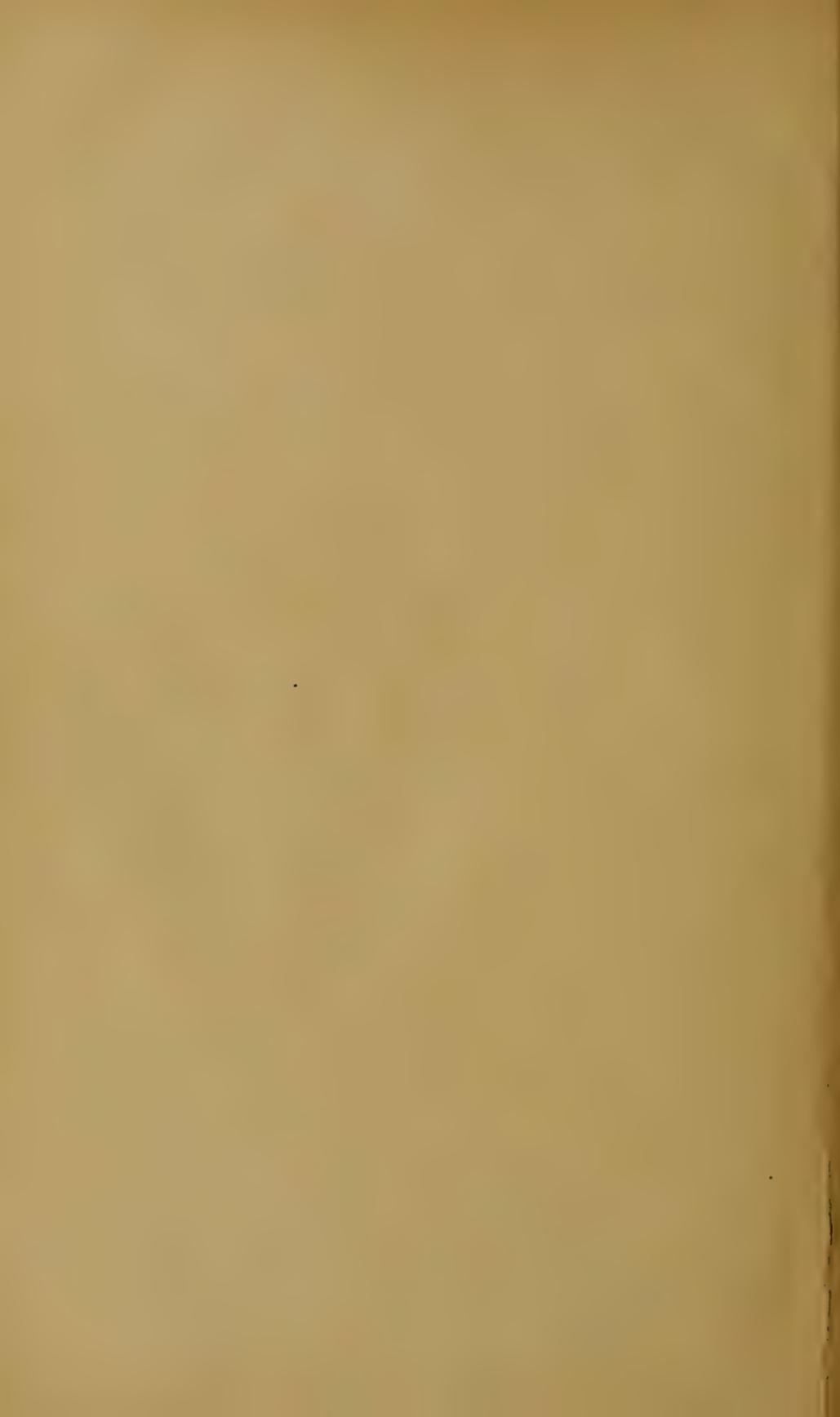
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